


SOLID CARBIDE
KERAMIK
GEWINDEDREHEN
FRÄSEN
DRILLS
VOLLHARTMETALL
CERAMIC TOOLS
DREHEN
PARTING AND GROOVING
TOOLING SYSTEMS
AB- UND EINSTECHDREHEN
BOHRER
THREADING
PSC
MILLING
AUFNAHMEN
TURNING

# TURNING
# DREHEN
## Highlights

## New turning line

Canela is launching a completely new turning line that provides a complete solution for all types of applications and materials with new insert geometries, combined with upgraded carbide grades. The innovative turning solutions that Canela is offering are designed to meet the high customer demands for tool life and productivity.



## Neue Linie zum Drehen

Canela führt eine komplett neue Linie zum Drehen ein, die eine komplette Lösung für alle Typen von Anwendungen und Materialien bietet, mit neuen Einsatzgeometrien kombiniert mit verbesserten Hartmetall-Sorten. Die innovativen Drehlösungen, die Canela anbietet, sind so konzipiert, daß sie den hohen Kundenanforderungen an Werkzeug-Standzeiten und Produktivität gerecht werden.

## WDM..

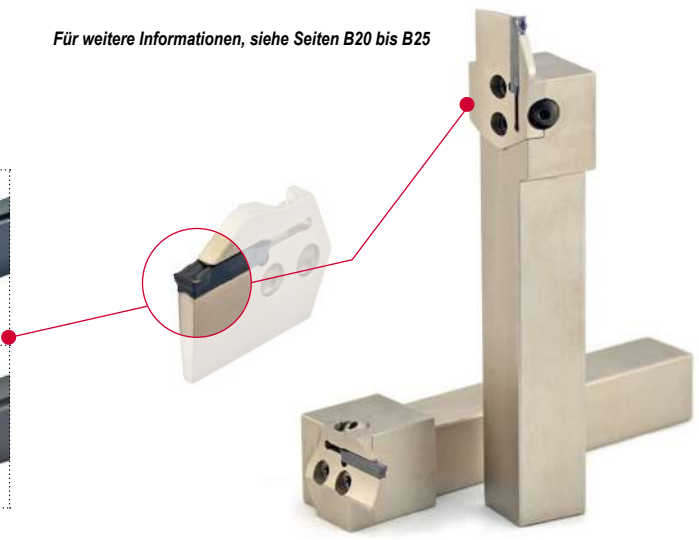
Wide range of toolholders and cartridges, which allow multiple combinations for all grooving needs. Easy to use modular blade system that offers ultimate rigidity and accuracy for stability when grooving and side turning.
The V-system ensures that the blade is securely fixed, giving high rigidity for stable grooving.

*For more information see pages B20 to B25*

Ein breites Sortiment an Haltern und Kurzklemmhaltern, die vielfältige Kombinationsmöglichkeiten für alle Einstechbedürfnisse ermöglicht.
Ein einfach zu anwenden modulares Schneidsystem, welches die optimale Starrheit und Genauigkeit beim Einstechen und Längsdrehen anbietet. Das V-System garantiert, dass der Messer sicher befestigt ist, was dann eine hohe Starrheit für stabiles Schlitzen gewährleistet.

*Für weitere Informationen, siehe Seiten B20 bis B25*





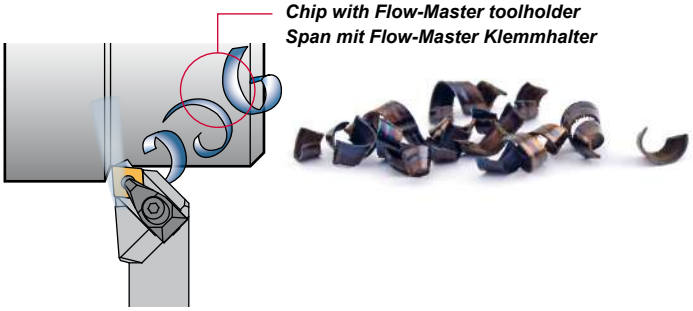



# Flow-master

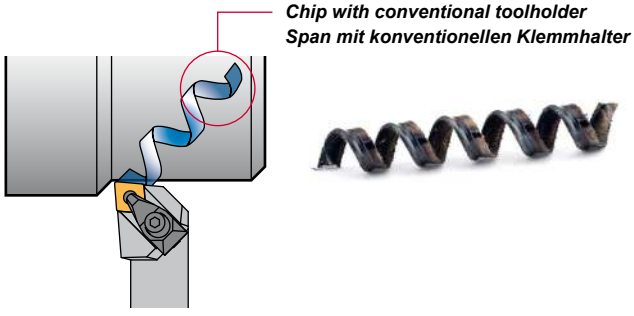
The Flow-Master coolant system works by delivering the machine coolant with maximum efficiency. The volume and speed of coolant coming out direct to the insert cutting edge improves machining performance.
Flow-Master tooling is extremely effective removing heat from the cutting edge, cooling the chips rapidly and helping to break them faster. Chips with poor heat removal are malleable and flexible, not breaking properly and adding extra heat to the cutting edge.

Das Flow-Master Kühlmittel-System bringt das Kühlmittel mit maximaler Effizienz an die Schneide. Das max. Volumen des Kühlmittels wird mit hohem Druck direkt an die Schneidkante geführt und verbessert die Bearbeitungsleistung.
Dieses System ist äußerst effektiv, da es die Wärme von der Schnittkante schnell abführt, Späne werden schneller abgekühlt und brechen dadurch besser. Späne mit einer schlechten Wärmeabfuhr sind verformbar und flexibel, brechen nicht richtig und leiten weniger Wärme von der Schnittkante ab.

***Chip with Flow-Master toolholder***
***Span mit Flow-Master Klemmhalter***



***Chip with conventional toolholder***
***Span mit konventionellen Klemmhalter***





# MILLING FRÄSEN

## Highlights

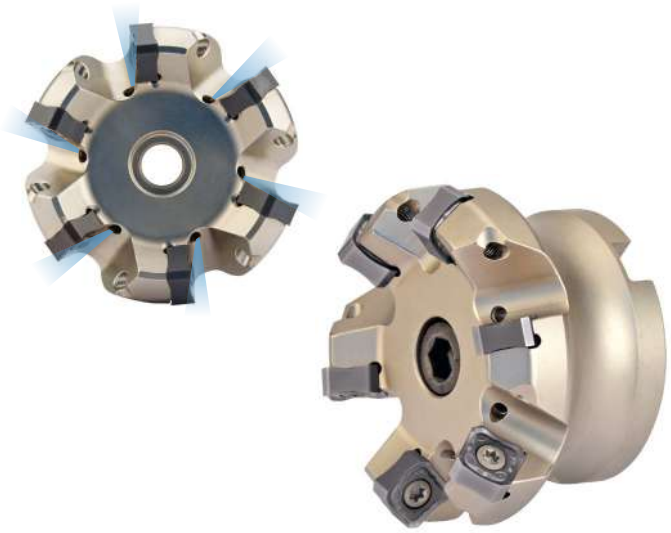
## Ecomill 45º

The Ecomill series features a highly effective 45 degree face mill with very strong square inserts with positive cutting angles. The result is effective machining and lower costs thank to its 8-cornered inserts. Diameter range of 50-500 mm.

***For more information see pages F26 and F27***

Die Ecomill Serie bietet einen hochwirksamen 45-Grad-Planfräser mit sehr starken vierkantigen Wendeschneidplatten mit positiven Schnittwinkel an. Das Ergebnis ist eine effektive Bearbeitung und geringere Kosten dank der Wendeschneidplatten mit 8 Schneidkanten. Durchmesser-Bereich von 50 bis 500 mm.

***Für weitere Informationen, siehe Seiten F26 und F27***



## Ecomill 90º



Ecomill is a highly efficient double-sided 90-degree shoulder face mill with negative inserts, but with positive cutting angles. This is a low cutting force cutter, where both sides of the insert can be used to benefit the overall economy.

***For more information see pages F66 to F71***

Ecomill ist ein hoch effizienter doppelseitiger 90-Grad-Eck- und Planfräser mit negativen Wendeschneidplatten, aber mit positiven Schnittwinkeln. Dieser Fräser braucht niedrige Schnittkräfte, und es können beide Seiten der Wendeschneidplatten verwendet werden, um Kosten zu sparen.

***Für weitere Informationen, siehe Seiten F66 bis F71***





## Mill-Plus

The Mill-Plus insert features a high helix sharp cutting edge, which in turn provides fast metal removal.
Mill-Plus milling cutters can be used for very steep helical interpolations for penetration into deep cavities.

*For more information see pages F84 to F87*

Die Mill-Plus Wendeschneidplatte verfügt über eine stark spiralförmige Schneidkante, die wiederum eine schnelle Metallentfernung ermöglicht.
Die Mill-Plus Fräser können zum Bohrzirkularfräsen eingesetzt werden, für die Bearbeitung von tiefen Kavitäten.

*Für weitere Informationen, siehe Seiten F84 bis F87*



## Chamfer-Plus

Chamfers, V-cuts, undercuts, preparation for welding, and deburring operations along the workpiece edges are frequent operations. Depending upon the type of machine and set-up, these operations can be performed in a variety of ways. Chamfer-Plus is suitable when a long edge cutter is needed.

*For more information see page F45*

Fasen, V-Schnitte, Gewindefreistiche, Vorbereitung zum Schweißen und Entgraten entlang der Werkstückkanten sind häufige Anwendungen. Je nach Art der Maschine und Aufspannung können diese Bearbeitungen auf unterschiedliche Weise durchgeführt werden. Chamfer-Plus ist geeignet, wenn man einen Walzenstirnfräser braucht.

*Für weitere Informationen, siehe Seite F45*





# PSC

## Highlights







## PSC ISO 26623-1

Canela presents its range of PSC tools and holders. These tools are widely used for the most productive machining operations on lathes with either manual or automatic tool changers, multitask machining centers and vertical turn-mill machines. Both quick change adaptation systems include integral shank tools and a wide variety of stationary and rotating machine turret and spindle adapters, extensions, reducers and toolholders.



Canela stellt seine Palette von PSC-Werkzeuge und -Aufnahmen vor. Diese Werkzeuge werden für die meist produktivere Zerspanung auf Drehmaschinen mit manuellem oder automatischem Werkzeugwechsler, auf Multitasking-Bearbeitungszentren und auf vertikalen Fräsmaschinen verwendet. Beide Schnellwechsel-Systeme bestehen aus PSC-Werkzeugen und einer Vielzahl von statischen und rotierenden Adaptern, Verlängerungen, Reduzierhülsen und Aufnahmen für Maschinenrevolver und Spindeln.



# TOOLING AUFNAHMEN

## Highlights



mexin

*Member of CANELA Group*
*Unternehmen der CANELA Gruppe*

## DIN 69871-A

Characteristics:
Cylindrical antivibratory shell mill adaptors. DIN 69871-A
For cutters with driving slot DIN 138.

**Special for mould and die makers**

Vibration reduced up to 60% compared to any other conventional shell mill adaptor, as they are manufactured with materials and mechanisms having antivibration properties.

*For more information see pages I35 to I37*

Eigenschaften:
Zylindrische schwingungsgedämpfte Aufsteckfräsdorne. DIN 69871-A
Für Fräser mit Quernut DIN 138.

**Besonders empfohlen für Werkzeug- und Formenbau**

60% weniger Schwingungen im Vergleich mit anderen konventionellen Aufsteckfräsdornen, da diese Ausführung mit schwingungsdämpfenden Materialien und Mechanismen hergestellt wird.

*Für weitere Informationen, siehe Seiten I35 bis I37*



*A11.160*

## JIS B 6339-BT





# Antivibratory shell mill adaptors
# Schwingungsgedämpfte Aufsteckfräsdorne



## HSK DIN 69893-1

Characteristics:
Cylindrical antivibratory shell mill adaptors. HSK DIN 69893-1
For cutters with driving slot DIN 138.
**Special for mold and die makers.**

*For more information see pages I82 to I83*

Eigenschaften:
Zylindrische schwingungsgedämpfte Aufsteckfräsdorne. HSK DIN 69893-1
Für Fräser mit Quernut DIN 138.
**Besonders empfohlen für Werkzeug- und Formenbau.**

*Für weitere Informationen, siehe Seiten I82 bis I83*



## PSC ISO 26623-1

**MATERIAL:**
- Chromium-manganese carburized steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburized, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburized layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle: tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.

*For more information see pages E100 to E125*

**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel: Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

*Für weitere Informationen, siehe Seiten E100 bis E125*

# SOLID CARBIDE
# VOLLHARTMETALL

ALBERG
*Member of CANELA Group*
*Unternehmen der CANELA Gruppe*

## HIGH PERFORMANCE
## HOCHLEISTUNG










## SOLID CARBIDE
## VOLLHARTMETALL





6510 6610 6520 6530 6640 6020 6021 6030 6031 6040 6041 6320 6321

## DRILLS
## BOHRER



7320 7520 7323 7523

## OTHERS
## ANDERE



84 86 87 88

# CERAMIC
# KERAMIK

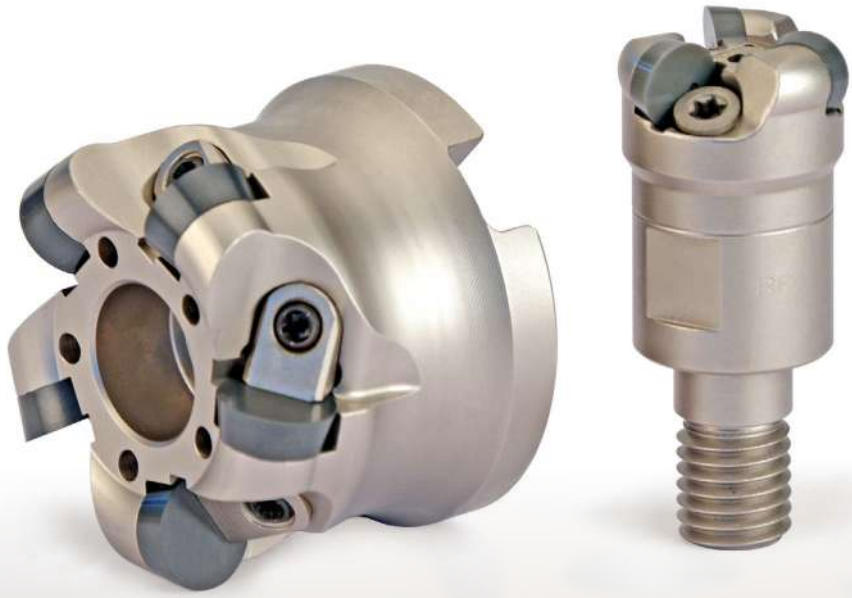
## *Highlights*

## *Ceramic milling cutters*

Ceramic inserts run faster than carbide inserts, so productivity is highly increased in high-temperature machining.

## *Fräser für Keramik-Wendeschneidplatten*

Die Keramik-Wendeschneidplatten arbeiten schneller als die Hartmetall-Wendeschneidplatten. Auf dieser Weise erhöht sich die Produktivität bei hohen Temperaturen.





## Ceramic tool systems

Canela ceramic clamping systems enable productive turning of cast iron, steel, hardened steels and other difficult to machine materials.
Three proven clamping systems support customers in all machining tasks.

## Keramik-Werkzeugsysteme

Die Canela Keramik-Klemmsysteme ermöglichen eine produktive Zerspanung von Guß, Stahl, gehärteten Stählen und andere schwer zu zerspanenden Materialien. Drei erprobte Klemmsysteme unterstützen die Kunden bei allen Zerspanungsaufgaben.









# SPECIALS
# SONDERWERKZEUGE
## Highlights

## AEROSPACE

Canela develops innovative tooling solutions for aerospace. The range includes tools for lighter materials that reduce airframe weight, materials such as high temperature alloys, composite materials, and aluminum alloys. Canela produces tooling products for a variety of applications uniquely suited for high efficiency machining of super alloys as well as other difficult-to-machine aerospace materials.

## LUFT- UND RAUMFAHRT

Canela entwickelt innovative Werkzeuglösungen für die Luft- und Raumfahrt. Das Sortiment umfasst Werkzeuge für leichtere Materialien, die das Gewicht des Flugwerks reduzieren, wie Hochtemperatur-Legierungen, Verbundwerkstoffe und Aluminiumlegierungen. Canela produziert Werkzeuge für eine Vielzahl von Anwendungen, die für die hocheffiziente Bearbeitung von Superlegierungen und von anderen schwer bearbeitenden Materialien für die Luft- und Raumfahrt besonders geeignet sind.







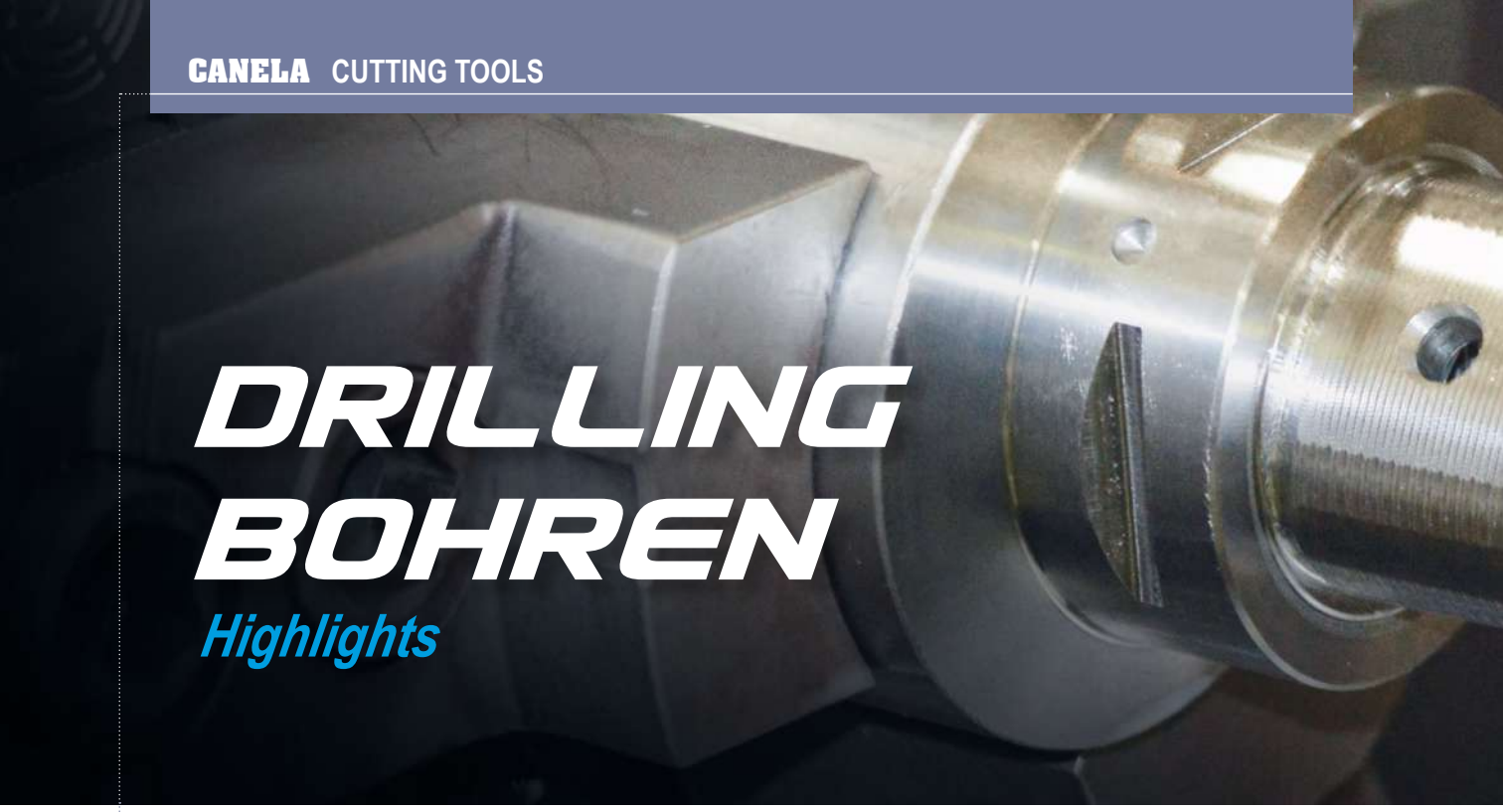
## AUTOMOTIVE

Canela supplies special tools for all machining needs, taking into consideration the characteristics of machine tool, workpiece and cycle time. Our cutting tools specialists support initial tooling set-up, test periods and analyze machining processes in existing machine lines.

## AUTOMOBIL-INDUSTRIE

Canela liefert Sonderwerkzeuge für alle Bearbeitungsanforderungen unter Berücksichtigung der Eigenschaften von Werkzeugmaschine, Werkstück und Zykluszeit. Unsere Schneidwerkzeuge-Spezialisten unterstützen sowohl die erste Werkzeug-Einrichtung, als auch die Testzeiten, und analysieren auch die Bearbeitungsprozesse bei den bestehenden Maschinenanlagen.





# DRILLING
# BOHREN

## *Highlights*

### *Drills*

Brand new square insert design for maximum drilling efficiency. Excellent cutting performance and chip control due to the optimized geometry and chip breaker of the inserts, central and peripheral.

### *Bohrer*

Nagelneue vierkantige Wendeschneidplatten-Design für maximale Bohrleistung. Ausgezeichnete Schneidleistung und Spankontrolle durch die optimierte Geometrie und durch den Spanbrecher der Wendeschneidplatte, zentral und peripherisch.







## PSC

Canela has enhanced its drill program with the addition of the PSC clamping system for indexable inserts. The 45.. drills range in diameter from 15 to 43 mm with a depth of cut of 3xD.

*For more information see pages E92 to E94*

Canela hat sein Bohr-Programm mit dem PSC-Spannsystem für Wendeschneidplatten erweitert.
Die Durchmesser der 45.. Bohrer gehen von 15 bis 43 mm, mit einer Schnitttiefe von 3xD.

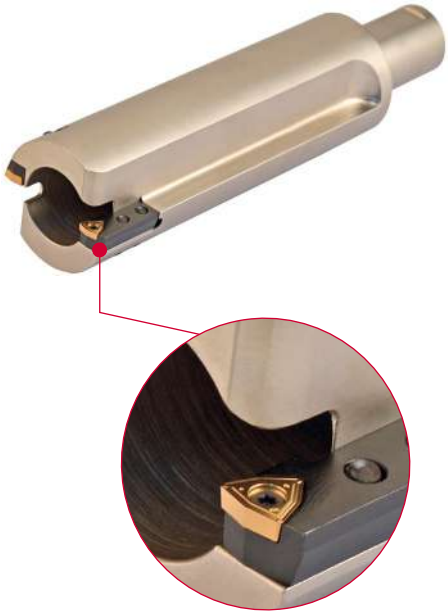
*Für weitere Informationen, siehe Seiten E92 bis E94*



## Trepanning drills

Trepanning is used for larger hole diameters and where machine power is limited, because it is not as power consuming as solid drilling. The trepanning tool does not machine the whole diameter, only a ring at the periphery. Instead of removing all the material in the form of chips, a core is left in the center of the hole – consequently, this method is for through-hole applications.

*For more information see page H08*



## Kernbohrer

Das Kernbohren wird bei größeren Bohrungsdurchmessern verwendet, sowie bei begrenzter Maschinenleistung, weil es nicht so viel Energie braucht als das Vollbohren. Der Kernbohrer bearbeitet nicht den ganzen Durchmesser, sondern nur einen Ring an der Peripherie. Anstatt das ganze Material als Späne zu entfernen, bleibt ein Kern in der Mitte des Loches. So ist diese Methode für Durchgangslochanwendungen geeignet.

*Für weitere Informationen, siehe Seite H08*

# TURNING
# DREHEN



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A30-34 Rhombische Wendeschneidplatten 80°
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A38 KNUX Wendeschneidplatten
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## TURNING
## DREHEN



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## PARTING AND GROOVING
## AB- UND EINSTECHDREHEN



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D10-15 Fräser für Keramik-Wendeschneidplatten
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D34-40 Bohrstangen
D41-53 PSC Keramikhalter mit oberer Klemmung

A

## PSC



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E41-50 Lever lock toolholders
E51-65 Center screw toolholders

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# MILLING
# FRÄSEN



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F04 CVD/PVD coated carbide
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F03 Unbeschichteter Hartmetall
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F14 Rectangular inserts
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F14 Rechteckige Wendeschneidplatten
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H03 Code system
H05-07 Drills
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|---|---|---|---|
| I02 | Code system | I02 | Kodifizierung |
| I03 | Technical information | I03 | Technische Auskünfte |
| I05-24 | Arbors and adaptors | I05-24 | Aufnahmen |
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| DIN 69871-A | | DIN 69871-A | |
|---|---|---|---|
| I28 | Code system | I28 | Kodifizierung |
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| HSK DIN 69893-1 | | HSK DIN 69893-1 | |
|---|---|---|---|
| I78 | Code system | I78 | Kodifizierung |
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|---|---|---|---|
| I100 | Code system | I100 | Kodifizierung |
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## TOOLING SYSTEMS
## AUFNAHMEN



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### Morse shanks


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## SPARE PARTS FOR TURNING AND MILLING
## ERSATZTEILE ZUM DREHEN UND FRÄSEN



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J06 Lock pins
J06-09 Clamps
J10-15 Shim seats
J15 Seats
J16-17 Levers
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### Ersatzteile zum Drehen


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J06 Rohrstifte
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J10-15 Unterlegplatten
J15 Kassetten
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### Milling spare parts


J20-22 Screws
J22 Washers
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# INSERTS
# WENDESCHNEIDPLATTEN

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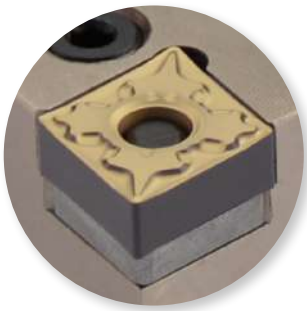
# NEW
# Turning line
# NEUE
# Linie zum Drehen

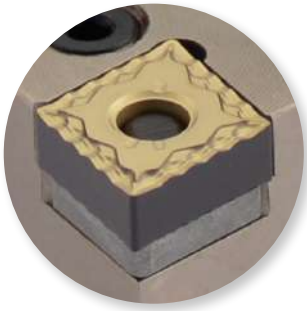
## -FC



FC chipbreaker is engineered for light finishing operations at high speeds in the 0,08 mm to 0,3 mm feed range at depths of cut between 0,2 to 2,5 mm.
Main application area:
Cutting depth (Ap): 0,2 - 2,5 mm
Feed (f): 0,08 - 0,3 mm

Der FC Spanbrecher ist für leichte Schlichtoperationen mit hohen Schnittgeschwindigkeiten und einem Vorschub von 0,08 bis 0,3 mm und eine Schnitttiefe von 0,2 bis 2,5 mm entworfen worden.
Haupt-Einsatzbereich:
Schnitttiefe (Ap): 0,2 - 2,5 mm
Vorschub (f): 0,08 - 0,3 mm

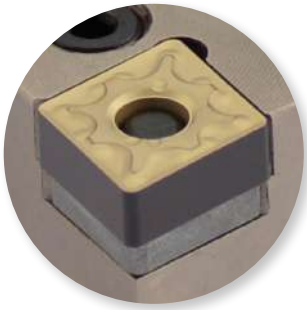
## -FMC



Alternative chipbreaker for light cutting of carbon steel and alloyed steel.
Double-sided chipbreaker.
Higher chip control and small cutting depths. The wavy edge is ideal for copying and back turning. Recommended for workpieces with a hardness between 200 and 300 HB.
Main application area:
Cutting depth (Ap): 0,5 - 2,5 mm
Feed (f): 0,05 - 0,25 mm

Alternativer Spanbrecher für die leichte Zerspanung von Kohlenstoffstahl und legiertem Stahl.
Doppelseitiger Spanbrecher.
Höhere Spankontrolle und geringe Schnittiefen. Die wellige Schneidkante ist zum Kopieren und Rückwärtsdrehen gut geeignet.
Empfohlen für Werkstücke im Härtebereich 200-300 HB.
Haupt-Einsatzbereich:
Schnitttiefe (Ap): 0,5 - 2,5 mm
Vorschub (f): 0,05 - 0,25 mm

## -MC



MC chipbreaker provides a positive rake angle with land for high edge strength in medium duty applications on a wide range of materials. Recommended for general purpose use on all types of steel and stainless steels.
Main application area:
Cutting depth (Ap): 1,0 - 3,5 mm
Feed (f): 0,15 - 0,35 mm

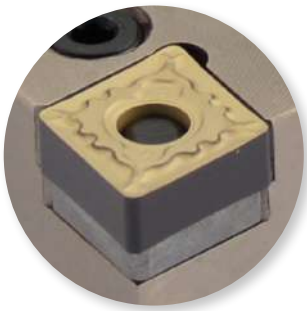
Der MC Spanbrecher gibt einen positiven Schnittwinkel, mit einer Fase für eine höhere Festigkeit der Schnittkante in mittleren Anwendungen bei einer breiten Palette von Materialien.
Empfohlen für allgemeine Bearbeitung in allen Sorten von Stahl und rostfreiem Stahl.
Haupt-Einsatzbereich:
Schnitttiefe (Ap): 1,0 - 3,5 mm
Vorschub (f): 0,15 - 0,35 mm



## Available in / Verfügbar in

# TN15, TN20, TN30 and/und TN35

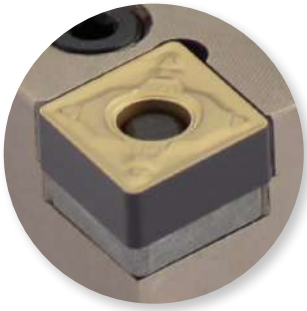
## -MFC



MFC chipbreaker provides excellent chip control with low cutting forces and free cutting action over a broad range of light duty applications.
Recommended for light duty use on carbon alloys.
Main application area:
Cutting depth (Ap): 0,5 - 4,0 mm
Feed (f): 0,15 - 0,5 mm

Der Spanbrecher MFC sichert eine ausgezeichnete Spankontrolle mit niedrigen Schnittkräften und einem freien Spanschnitt in einer breiten Palette von leichten Anwendungen.
Empfohlen für leichte Anwendungen in Kohlenstoff-Legierungen.
Haupt-Einsatzbereich:
Schnitttiefe (Ap): 0,5 - 4,0 mm
Vorschub (f): 0,15 - 0,5 mm

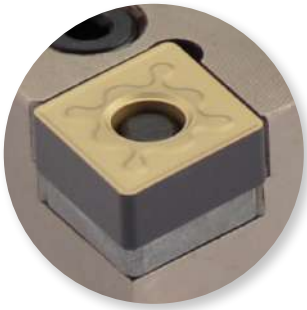
## -MHC



Alternative chipbreaker for medium cutting of carbon steel and alloyed steel.
First recommendation for rough cutting of mild steel.
Double-sided chipbreaker.
The flat land offers high resistant cutting edges.
Main application area:
Cutting depth (Ap): 1,0 - 5,0 mm
Feed (f): 0,2 - 0,8 mm

Alternativer Spanbrecher für die mittlere Zerspanung von Kohlenstoffstahl und legiertem Stahl.
Erste Empfehlung für das Schruppen von Baustahl.
Doppelseitiger Spanbrecher. Die flache Fase bietet eine hohe Schneidkantenstabilität.
Haupt-Einsatzbereich:
Schnitttiefe (Ap): 1,0 - 5,0 mm
Vorschub (f): 0,2 - 0,8 mm

## -RC



The RC chipbreaker is suitable for high feed rates and depths of cut that normally require single-sided inserts. The chipbreaker has a wide negative T-land, which gives high edge strength.
Main application area:
Cutting depth (Ap): 1,5 - 5 mm
Feed (f): 0,3 - 0,5 mm

Der Spanbrecher RC ist für hohe Vorschübe, und auch für Schnitttiefen geeignet, für die im Normalfall einseitige Wendeschneidplatten eingesetzt werden. Der Spanbrecher hat eine negative Fase, die eine hohe Kraft auf die Schnittkante gibt.
Haupt-Einsatzbereich:
Schnitttiefe (Ap): 1,5 - 5 mm
Vorschub (f): 0,3 - 0,5 mm

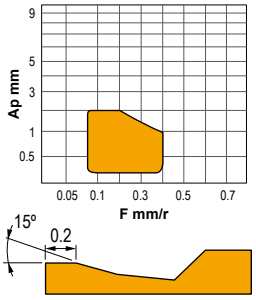
# Geometries / Geometrien

## -FC



FC chipbreakers are engineered for light finishing operations at high speeds in the 0,08 mm to 0,3 mm feed range at depths of cut between 0,2 to 2,5 mm.
Main application area: Cutting depth (Ap): 0,2 - 2,5 mm
Feed (f): 0,08 - 0,3 mm

Die FC Spanbrecher sind für leichte Schlichtoperationen zu hohen Geschwindigkeiten mit einem Vorschub von 0,08 mm bis 0,3 mm und einer Schnitttiefe von 0,2 to 2,5 mm.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,2 - 2,5 mm
Vorschub (f): 0,08 - 0,3 mm

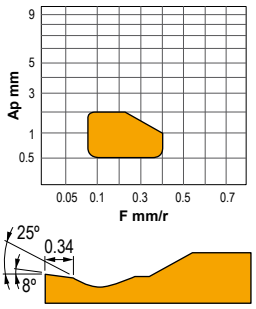



## -FMC



Alternative chipbreaker for light cutting of carbon steel and alloyed steel.
Double-sided chipbreaker.
Higher chip control and small cutting depths.
The wavy edge is ideal for copying and back turning.
Recommended for workpieces with a hardness between 200 and 300 HB.
Main application area: Cutting depth (Ap): 0,5 - 2,5 mm
Feed (f): 0,05 - 0,25 mm

Alternativer Spanbrecher für die leichte Zerspanung von Kohlenstoffstahl und legiertem Stahl.
Doppelseitiger Spanbrecher.
Höhere Spankontrolle und geringe Schnittiefen.
Die wellige Schneidkante ist zum Kopieren und Rückwärtsdrehen gut geeignet.
Empfohlen für Werkstücke im Härtebereich 200-300 HB.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,5 - 2,5 mm
Vorschub (f): 0,05 - 0,25 mm

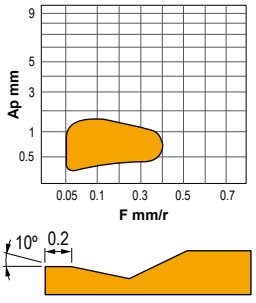



## -CC



CC chipbreakers combined with the performance of Cermets provide for efficient chip control in finishing and light machining operations.
Recommended for finishing steels and cast iron.
Main application area: Cutting depth (Ap): 0,2 - 1,5 mm
Feed (f): 0,05 - 0,4 mm

Die CC Spanbrecher kombiniert mit der Leistung des Cermets sorgen für effiziente Spankontrolle beim Schlichten und beim leichten Schruppen.
Empfohlen zum Schlichten von Stahl und Guß.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,2 - 1,5 mm
Vorschub (f): 0,05 - 0,4 mm

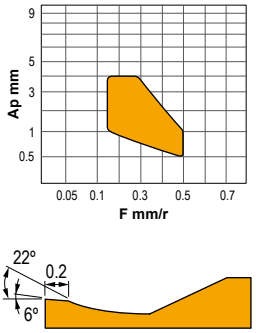



## -MC



MC chipbreakers provide a positive rake angle with land for high edge strength in medium duty applications on a wide range of materials.
Recommended for general purpose use on all types of steel.
Main application area: Cutting depth (Ap): 1,0 - 3,5 mm
Feed (f): 0,15 - 0,35 mm

Die MC Spanbrecher geben einen positiven Schnittwinkel mit einer Fase für eine hohe Festigkeit der Schnittkante in mittleren Anwendungen bei einer breiten Palette von Materialien.
Empfohlen für die allgemeine Bearbeitung von allen Stahlsorten.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1,0 - 3,5 mm
Vorschub (f): 0,15 - 0,35 mm



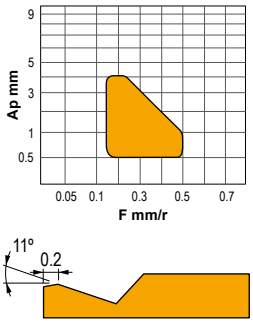
# Geometries / Geometrien

## -MFC



MFC chipbreakers provide an excellent chip control with low cutting forces and a very free cutting action over a broad range of light duty applications.
Recommended for light duty use on carbon alloys and stainless steels.
Main application area: Cutting depth (Ap): 0,5 - 4,0 mm
Feed (f): 0,15 - 0,5 mm

Der MFC Spanbrecher sorgt für eine ausgezeichnete Spankontrolle mit niedrigen Schnittkräften und hat eine sehr positive Spanleitstufe für eine breite Palette von leichten Anwendungen.
Empfohlen für leichte Anwendungen in Kohlenstoff-Legierungen und rostfreiem Stahl.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,5 - 4,0 mm
Vorschub (f): 0,15 - 0,5 mm

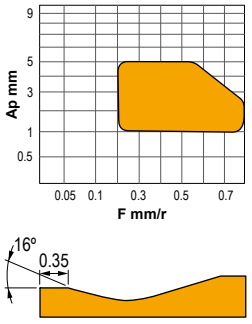



## -MHC



Alternative chipbreaker for medium cutting of carbon steel and alloyed steel.
First recommendation for rough cutting of mild steel.
Double-sided chipbreaker.
The flat land offers high resistant cutting edges.
Main application area: Cutting depth (Ap): 1,0 - 5,0 mm
Feed (f): 0,2 - 0,8 mm

Alternativer Spanbrecher für die mittlere Zerspanung von Kohlenstoffstahl und legiertem Stahl.
Erste Empfehlung für das Schruppen von Baustahl.
Doppelseitiger Spanbrecher.
Die flache Fase bietet eine hohe Schneidkantenstabilität.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1,0 - 5,0 mm
Vorschub (f): 0,2 - 0,8 mm

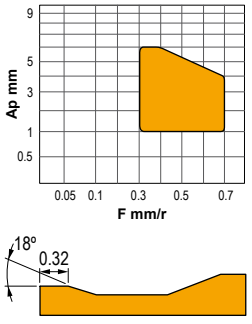



## -RC



RC is the strongest chipbreaker for double-sided inserts.
It is suitable for high feed rates and depths of cut that normally require single-sided inserts.
It has a wide negative T-land, which gives high edge strength.
Main application area: Cutting depth (Ap): 1,5 - 5,0 mm
Feed (f): 0,3 - 0,5 mm

RC ist der stärkste Spanbrecher für doppelseitige Wendeschneidplatten.
Er ist für hohe Vorschübe geeignet und auch für Schnitttiefen, die normalerweise einseitige Wendeschneidplatten benötigen.
Er hat eine negative breite Kante, die eine hohe Kraft zu der Schnittkante gibt.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1,5 - 5,0 mm
Vorschub (f): 0,3 - 0,5 mm

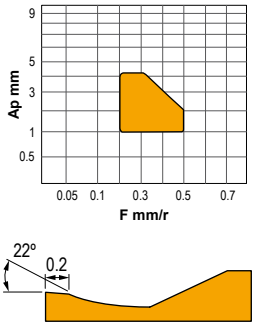



## -KC



First recommendation for medium cutting of cast iron.
Optimum balance between sharpness and high resistant cutting edges for general use.
Main application area: Cutting depth (Ap): 1,0 - 4,0 mm
Feed (f): 0,2 - 0,5 mm

Erste Empfehlung für die mittlere Zerspanung von Gußeisen.
Exzellenter Ausgleich zwischen Schärfe und hoher Schneidkantenstabilität für allgemeine Anwendungen.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1,0 - 4,0 mm
Vorschub (f): 0,2 - 0,5 mm



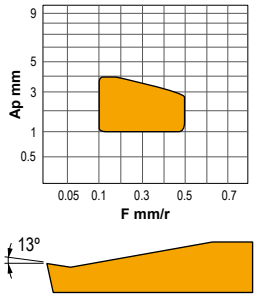
# Geometries / Geometrien

## -TC



First recommendation for medium cutting of stainless and mild steel and for light cutting of difficult-to-cut materials. Double-sided chipbreaker.
The sharp cutting edge gives best performance.
Main application area: Cutting depth (Ap): 1,0 - 4,0 mm
Feed (f): 0,1 - 0,5 mm

Erste Empfehlung für die mittlere Zerspanung von rostfreiem und weichem Stahl und für die leichte Zerspanung von schwer zu bearbeitenden Werkstoffen.
Doppelseitiger Spanbrecher. Die scharfe Schneidkante gibt eine sehr gute Leistung.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1,0 - 4,0 mm
Vorschub (f): 0,1 - 0,5 mm

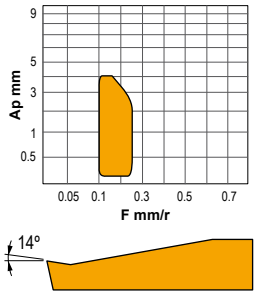



## ..NGP



For medium duty machining of tough work materials, above all chrome-nickel based alloys.
It minimises the tendency of these materials to adhere to the insert.
Main application area: Cutting depth (Ap): 0,1 - 4 mm
Feed (f): 0,1 - 0,25 mm

Für mittlere Bearbeitung von schwer zu bearbeitenden Materialien, vor allem für Legierungen mit Chrom- und Nickelbasis. Sie minimiert die Neigung dieser Materialien, an der Wendeschneidplatte zu haften.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,1 - 4 mm
Vorschub (f): 0,1 - 0,25 mm

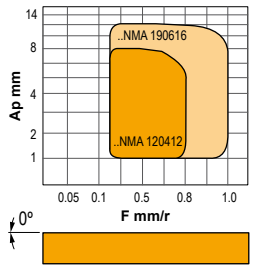



## ..NMA



Double-sided insert for short chipping materials.
Strong cutting edge.
Main application area: Cutting depth (Ap): 1 - 12 mm
Feed (f): 0,2 - 1 mm

Doppelseitige Wendeschneidplatte für kurzspanige Materialien.
Starke Schnittkante.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1 - 12 mm
Vorschub (f): 0,2 - 1 mm

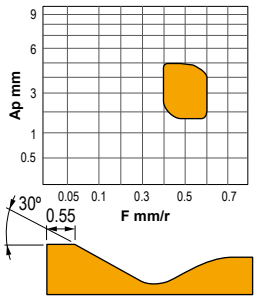



## ..NMM



Chipbreaker for single-sided inserts.
It has a positive cutting edge that gives rise to low cutting forces.
Main application area: Cutting depth (Ap): 2,5 - 6 mm
Feed (f): 0,4 - 0,6 mm

Spanbrecher für einseitige Wendeschneidplatten.
Sie hat eine positive Schnittkante für niedrige Schnittkräfte.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 2,5 - 6 mm
Vorschub (f): 0,4 - 0,6 mm

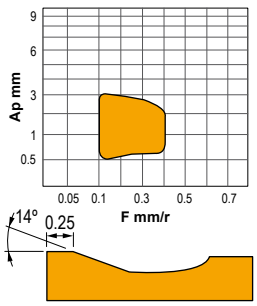



## ..NMX



Light duty positive/negative inserts provide excellent chip control in light feed ranges using high positive shear angles.
Recommended for machining of steels and other materials.
Main application area: Cutting depth (Ap): 0,5 - 3 mm
Feed (f): 0,1 - 0,4 mm

Positive/negative Wendeschneidplatten gewährleisten eine hervorragende Spankontrolle bei niedrigen Vorschüben, indem man extrem positive Spanwinkel verwendet. Empfohlen für die Bearbeitung von Stahl und anderen Materialien.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,5 - 3 mm
Vorschub (f): 0,1 - 0,4 mm



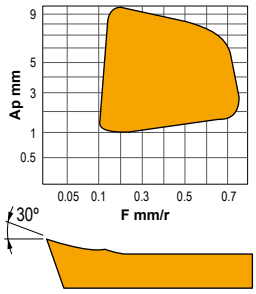
# Geometries / Geometrien

## -AL



This geometry can be used for turning aluminium, light alloys, non ferrous materials, high-melting metals, plastics, glass fiber, reinforced plastics, laminated board, carbon and fine ceramics.
Main application area: Cutting depth (Ap): 1 - 10 mm
Feed (f): 0,1 - 0,75 mm

Diese Geometrie kann für das Drehen von Aluminium, rostfreien Stählen, Nichteisenmetallen, leicht schmelzbaren Metallen, Kunststoff, Glasfiber, verstärkte Kunststoffe, Walzplatten, Kohle und feiner Keramik verwendet werden.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 1 - 10 mm
Vorschub (f): 0,1 - 0,75 mm

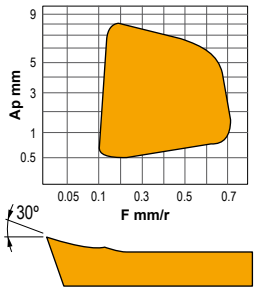



## -AP



Suitable for aluminium, light alloys, non ferrous materials, high-melting metals, plastics, glass fiber, reinforced plastics, laminated board, carbon and fine ceramics.
Main application area: Cutting depth (Ap): 0,5 - 8 mm
Feed (f): 0,1 - 0,7 mm

Geeignet für Aluminium, leichten Legierunge, Nichteisenmetallen, leicht schmelzbaren Metallen, Kunststoff, Glasfiber, verstärkte Kunststoffe, Walzplatten, Kohle und feine Keramik verwendet werden.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,5 - 8 mm
Vorschub (f): 0,1 - 0,7 mm

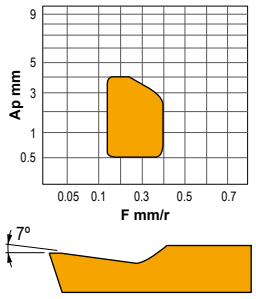



## ..MR



This geometry provides chip control in the finishing and medium duty range.
Positive rake that reduces cutting forces and power consumption.
It can also be used on low-strength and stainless steels.
Main application area: Cutting depth (Ap): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm

Diese Geometrie erlaubt eine Spankontrolle in Schlicht-Operationen und mittleren Bearbeitungen. Die positive Schnittkante reduziert die Schnittkräfte und benötigt wenig Antriebsleistung. Es kann auch in wenig wiederstandsfähige Stählen und in rostfreiem Stahl verwendet werden.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,5 - 4 mm
Vorschub (f): 0,15 - 0,4 mm

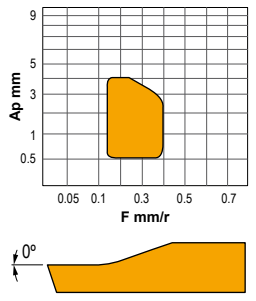



## ..MT



Light to medium-duty machining operations. Low cutting forces and reduced power requirements thanks to positive rake angle. Good chip control over a wide range of materials. It is also used on short-chipping cast-iron materials.
Main application area: Cutting depth (Ap): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm

Für leichte bis mittlere Bearbeitungsoperationen. Dank der positivenSchnittwinkel braucht man nur niedrige Schneidkräfte und eine geringe Antriebsleistung. Gute Spankontrolle in einer breiten Anwendungspalette. Es wird auch in kurzspanendem Guß verwendet.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,5 - 4 mm
Vorschub (f): 0,15 - 0,4 mm

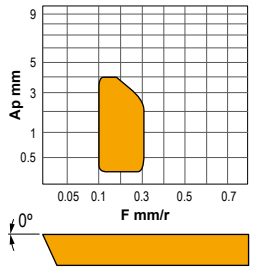



## ..MW

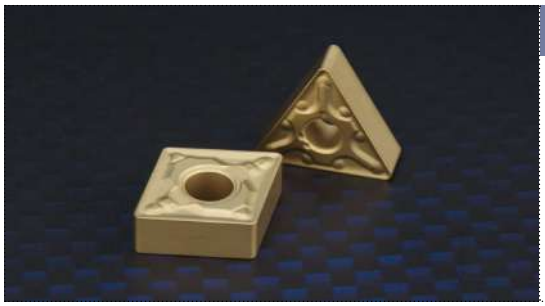


Double-sided insert for short chipping materials.
Strong cutting edge.
Main application area: Cutting depth (Ap): 0,2 - 4 mm
Feed (f): 0,1 - 0,3 mm

Doppelseitige Wendeschneidplatte für kurzspanenden Materialien.
Verstärkte Schnittkante.
Haupt-Einsatzbereich: Schnitttiefe (Ap): 0,2 - 4 mm
Vorschub (f): 0,1 - 0,3 mm



# CVD



## CVD coated carbide

The CVD coatings are generated by a chemical reaction at high temperatures (700-1050ºC). All CVD coatings provide a high wear resistance due to its excellent adhesion to cemented carbide.

CVD coatings are the first choice in a large turning range where wear resistance is important.

# Features of CVD coated carbide

| Material | | Grade | Colour | Coating composition | Definition |
|---|---|---|---|---|---|
| **P** Steel |  | ***TN15*** | ● | $TiCN+Al_2O_3+TiN$ | Wear resistant finishing to intermediate grade suitable for many applications on steel, cast iron, stainless steel and high temperature alloys. It is generally used at higher speeds where deformation may be a problem. The multi-layer coating includes TiCN and aluminium oxide. |
| |  | ***TN20*** | ● | $TiCN+Al_2O_3+TiN$ | General purpose wear resistant grade. It has an enriched substrate that has exceptionally good deformation as well as fracture resistance. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel and stainless steel at lower speeds than TN15. |
| |  | ***TN30*** | ● | $TiCN+Al_2O_3+TiN$ | General purpose wear resistant turning grade. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel at lower speeds thanTN15.<br>This turning grade is for demanding metal removal operations, including cutting through scale at low speeds through heavy interruption, and problem machining of stainless steel at low speed and poor rigidity. |
| **M** Stainless |  | ***TN35*** | ● | $TiCN+Al_2O_3+TiN$ | New coated grade developed to machine stainless steel and heat-resistance alloys. This grade is only used in combination with the MC chipbreaker. First choice for stainless steel applications. |
| **K** Cast iron |  | ***TK15*** | ● | $TiCN+Al_2O_3$ | CVD grade for gray, ductile nodular cast iron with excellent balance of wear and fracture resistance. The smooth coating prevents insert failure such as welding and chipping, providing a consistent cutting perfomance. |

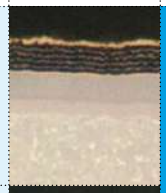
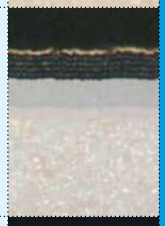
# Grade characteristics

| Grade | Substrate | | | Coating Layer | |
|---|---|---|---|---|---|
| | Hardness (HRA) | T.R.S (GPa) | Surface | Composition | Thickness |
| **TN15** | 90.3 | 2.0 | Tough | Accumulated $TiCN-Al_2O_3+Ti$ Compound | Thick |
| **TN20** | 90.3 | 2.0 | Tough | Accumulated $TiCN-Al_2O_3+Ti$ Compound | Thick |
| **TN30** | 90.0 | 2.2 | Tough | Accumulated $TiCN-Al_2O_3+Ti$ Compound | Thick |
| **TN35** | 89.0 | 2.6 | - | Ti Compound | Thin |
| **TK15** | 91.0 | 2.2 | - | $TiCN-Al_2O_3$ Compound | Thick |

## CVD-beschichteter Hartmetall

Die CVD-Beschichtungen erfolgen durch eine chemische Reaktion bei hohen Temperaturen (700-1050ºC). Alle CVD-Beschichtungen verfügen über eine hohe Verschleißfestigkeit, weil sie eine hervorragende Haftung auf dem Hartmetall haben.
Die CVD-Beschichtungen sind die erste Wahl bei einer breiten Drehpalette, bei der die Verschleißfestigkeit wichtig ist.

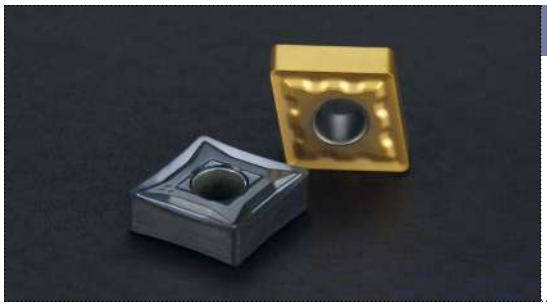
# Eigenschaften von CVD-beschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| Es ist eine verschleißfeste Sorte zum mittleren Schruppen und Schlichten in Stahl, Guß, rostfreiem Stahl und hochlegierte Stähle. Normalerweise wird sie bei hohen Schnittgeschwindigkeiten verwendet, wo die Verformung ein Problem sein kann. Die mehrlagige Beschichtung enthält TiCN und Aluminiumoxid. | $TiCN+Al_2O_3+TiN$ | | ***TN15*** |  | **P** Stahl |
| Es ist eine allgemeine verschleißfeste Sorte. Sie enthält ein angereichertes Substrat, das eine hervorragende Verformung und Bruchfestigkeit hat. Die mehrlagige Beschichtung enthält Aluminiumoxid, um zusätzliche Wärme und verschleißfestigkeit zu erreichen.Es wird für die Bearbeitung von Stahl und rosfreiem Stahl bei niedrigeren Geschwindigkeiten als TN15 benutzt. | $TiCN+Al_2O_3+TiN$ | | ***TN20*** |  | |
| Es ist eine allgemeine verschleißfeste Sorte zum Drehen. Die mehrlagige Beschichtung enthält Aluminiumoxid, um zusätzliche Wärme und Verschleißfestigkeit zu erreichen. Es wird für die Bearbeitung von Stahl bei niedrigeren Geschwindigkeiten als TN15 benutzt. Diese Sorte ist für Operationen mit großen Spanabfluß geeignet, auch mit unterbrochenen Schnitten und für die problematische Bearbeitung von rostfreiem Stahl bei niedrigen Geschwindigkeiten und ungünstigen Bedingungen. | $TiCN+Al_2O_3+TiN$ | | ***TN30*** |  | |
| Es ist eine neue beschichtete Sorte für die Bearbeitung von rostfreiem Stahl und hitzebeständigen Legierungen. Diese Sorte wird nur zusammen mit dem MC-Spanbrecher benutzt. Es ist die erste Wahl für Anwendungen in rostfreiem Stahl. | $TiCN+Al_2O_3+TiN$ | | ***TN35*** |  | **M** Rostfreier Stahl |
| CVD-Sorte für Grauguß und Kugelgraphit mit einem ausgezeichneten Widerstand gegen Verschleiß und Bruch. Die glatte Beschichtung vermeidet Probleme wie Verschweißen oder Risse, und bietet eine hervorragende Schnittleistung. | $TiCN+Al_2O_3$ | | ***TK15*** |  | **K** Guß |

# Sorteneigenschaften

| Sorte | Substrat | | | Beschichtung | |
|---|---|---|---|---|---|
| | Härte (HRA) | T.R.S (GPa) | Oberfläche | Zusammensetzung | Dicke |
| **TN15** | 90.3 | 2.0 | Zäh | Akkumuliertes $TiCN-Al_2O_3+Ti$ Verbund | Dick |
| **TN20** | 90.3 | 2.0 | Zäh | Akkumuliertes $TiCN-Al_2O_3+Ti$ Verbund | Dick |
| **TN30** | 90.0 | 2.2 | Zäh | Akkumuliertes $TiCN-Al_2O_3+Ti$ Verbund | Dick |
| **TN35** | 89.0 | 2.6 | - | Ti Verbund | Dünn |
| **TK15** | 91.0 | 2.2 | - | $TiCN-Al_2O_3$ | Dick |

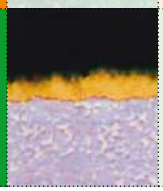
# PVD



## PVD coated carbide

PVD coatings offer wear resistance due to their hardness. The coating process involves the evaporation of metal, which reacts with nitrogen to form a hard nitride coating. The full process is made at relatively low temperatures (400-600ºC).
PVD coatings are recommended when sharp cutting edges are needed.

# Features of PVD coated carbide

| Material | | Grade | Colour | Coating composition | Definition |
|---|---|---|---|---|---|
| **P** Steel |  | ***TL20*** | ● | TiAlN | Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel. |
| |  | ***TIN25*** | ● | TiN-TiC-TiN | Coated with TiN-TiC-TiN. The coating has a thickness of 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant. |
| **M** Stainless |  | ***TS15*** | ● | TiAlN | Coated TiAlN grade in the K20 range. It is used on cast iron, aluminium and heat-resistant alloys. It works well on cobalt based alloys and synthetic materials, and is suitable for finishing on heat-resistant alloys. |
| **S** Heat resistant alloys |  | ***TS20*** | ● | TiN+TiAlN+TiN | Coated TiN+TiAlN+TiN grade for machining super alloys. It has a fine grain of 0.8 µm and a hardness of HV30 1820 and it offers an excellent rupture and heat resistance. |
| **N** Non ferrous materials |  | ***ZR10*** | ● | $TiB_2$ | Micrograin grade with an extremely hard single $TiB_2$ layer for machining aluminium, copper alloys and plastics. |

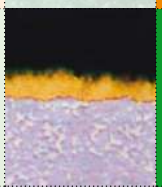
# Grade characteristics

| Grade | Substrate | | Coating Layer | |
|---|---|---|---|---|
| | Hardness (HRA) | T.R.S (GPa) | Composition | Thickness |
| **TL20** | 91.5 | 2.5 | (Al,Ti)N | Thin |
| **TIN25** | 90.5 | 2.0 | TiN | Thin |
| **TS15** | 91.5 | 2.5 | (Al,Ti)N | Thin |
| **TS20** | 90.5 | 2.5 | (Al,Ti)N-Ti Compound | Thin |
| **ZR10** | 99.2 | 2.8 | $TiB_2$ | Thin |

## PVD-beschichteter Hartmetall

Aufgrund Ihrer Härte bieten PVD-Beschichtungen Verschleißfestigkeit an. Der Beschichtungsprozess beinhaltet die Verdampfung des Metalls, das mit Stickstoff reagiert, um eine harte Nitridbeschichtung auszubilden. Der ganze Prozess erfolgt bei relativ niedrigen Temperaturen (400-600°C).
PVD-Beschichtungen werden empfohlen, wenn man scharfe Schneidkanten braucht.

# Eigenschaften von PVD-beschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| PVD beschichtete Sorte mit TiAlN und einer Gleitschicht. Sie hat einen niedrigen Reibungswert und eine niedrige Schneidenenergie beim Schlichten. Die scharfe Schneidkante reduziert den Schneidenaufbau und erzeugt eine hervorragende Oberfläche. Empfohlen für legierten Stahl. | TiAlN | | ***TL20*** |  | **P** Stahl |
| Mit TiN-TiC-TiN beschichtet. Die Dicke der Schicht ist 3-5 Mikron und ist zur Bearbeitung von Stahl, legierten Stahl und rostfreien Stahl geeignet, mit oder ohne Kühlung. | TiN-TiC-TiN | | ***TIN25*** |  | |
| Es ist eine TiAlN-beschichtete Sorte im K20 Bereich. Sie ist für Guß, Aluminium und hitzebeständige Legierungen geeignet. Sie hat gute Eigenschaften für die Bearbeitung von Kobaltlegierungen und synthetischen Materialien und ist zum Schlichten in hitzebeständigen Legierungen besonders gut geeignet. | TiAlN | | ***TS15*** |  | **M** Rostfreier Stahl |
| Beschichtete TiN+TiAlN+TiN Sorte zur Bearbeitung von Super-Legierungen. Sie hat eine Feinkornschicht von 0.8 µm und eine Härte von HV30 1820, und sie bietet eine ausgezeichnete Bruch- und Hitzebeständigkeit an. | TiN+TiAlN+TiN | | ***TS20*** |  | **S** Hitzebeständige Legierungen |
| Mikrokorn-Sorte mit einer einzigen sehr harten $TiB_2$-Schicht, zur Bearbeitung von Aluminium, Kupfer-Legierungen und Kunststoff. | $TiB_2$ | | ***ZR10*** |  | **N** Nicht-Eisen-Metalle |

# Sorteneigenschaften

| Sorte | Substrat | | Beschichtung | |
|---|---|---|---|---|
| | Härte (HRA) | T.R.S (GPa) | Zusammensetzung | Dicke |
| **TL20** | 91.5 | 2.5 | (Al,Ti)N | Dünn |
| **TIN25** | 90.5 | 2.0 | TiN | Dünn |
| **TS15** | 91.5 | 2.5 | (Al,Ti)N | Dünn |
| **TS20** | 90.5 | 2.5 | (Al,Ti)N-Ti Verbund | Dünn |
| **ZR10** | 99.2 | 2.8 | $TiB_2$ | Dünn |

# UNCOATED CARBIDE



## UNCOATED CARBIDE

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

# Features of UNCOATED CARBIDE

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| P Steel |  | ***PM25*** | | WC+TiC+TaC+Co | General purpose uncoated grade in the P30 range. This tough, economical grade is suitable to work carbon steels, alloyed steels, tool steels and stainless steels. PM25 provides toughness and resistance to deformation in roughing and semi-finishing applications. |
| |  | ***PM40*** | | WC+TiC+TaC+Co | Roughing grade in the P35 range. This tough grade is for structural, cast and tool steels. It is recommended when toughness is more important than wear resistance. |
| K Cast iron |  | ***KM15*** | | WC+Co | Finishing grade in the K10 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys. |

# Application

| ISO | Composition | Features | Workpiece |
|---|---|---|---|
| P | WC+TiC+TaC+Co | Heat resistance, excellent plastic deformation resistance. | Carbon steel, alloy steel, stainless steel. |
| M | WC+TiC+TaC+Co | General tools stable heat resistance with strength. | Carbon steel, alloy steel, stainless steel, cast steel. |
| K | WC+Co | High strength and superior wear resistance. | Carbon iron, non-ferrous metal, plastic, etc. |

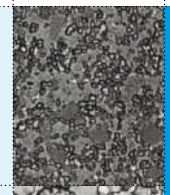
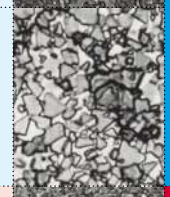
# Properties

| Grade | Hardness (HRA) | TRS (Kgf/mm$^2$) | Young's modulus (103Kgf/mm$^2$) | Thermal expansion coefficient (10$^{-6}$/°C) | Thermal conductivity (cal/cm·sec·°C) |
|---|---|---|---|---|---|
| KM15 | 90.9 | 250 | 63 | - | 105 |
| PM25 | 91.9 | 200 | 56 | 5.2 | 45 |
| PM40 | 91.3 | 230 | 53 | 5.2 | - |

## UNBESCHICHTETES HARTMETALL

- Die hervorragende Wärmerißbeständigkeit ermöglicht eine Bearbeitung mit Kühlmittel.
- Unbeschichtetes Hartmetall eignet sich zur Bearbeitung von verschiedenen Werkstoffen.
- Hohe Zähfestigkeit und geringe Schneidkraft.
- Niedrige Affinität zum Werkstoff.

# Eigenschaften von unbeschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| Allgemeine unbeschichtete Sorte im P30 Bereich. Diese zähe und wirtschaftliche Sorte ist zur Bearbeitung von Kohlenstoffstahl, legiertem Stahl, Werkzeugstahl und rostfreiem Stahl gut geeignet. PM25 hat eine gute Zähigkeit und Verschleißfestigkeit in Schrupp- und mittlere Schlichtarbeiten. | WC+TiC+TaC+Co | | ***PM25*** |  | **P** Stahl |
| Es ist eine Sorte zum Schruppen im P35 Bereich. Diese zähe Sorte ist für Baustahl, Stahlguß und Werkzeugstahl geeignet, insbesonders wenn die Zähigkeit wichtiger als die Verschleißfestigkeit ist. | WC+TiC+TaC+Co | | ***PM40*** |  | |
| Es ist eine Sorte zum Schlichten im K10 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständigen Legierungen geeignet. Sie hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetischen Materialien und ist für das Schlichten in hitzebeständigen Legierungen besonders gut geeignet. | WC+Co | | ***KM15*** |  | **K** Guß |

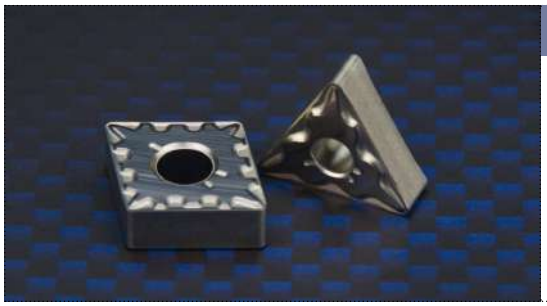
# Anwendung

| ISO | Zusammensetzung | Eigenschaften | Bearbeitungsstück |
|---|---|---|---|
| **P** | WC+TiC+TaC+Co | Hitzebeständigkeit, ausgezeichneter Widerstand gegen plastische Verformung. | Kohlenstoffstahl, legierter Stahl, rostfreier Stahl. |
| **M** | WC+TiC+TaC+Co | Stabile Hitzebeständigkeit mit Stärke. | Kohlenstoffstahl, legierter Stahl, rostfreier Stahl, Stahlguß. |
| **K** | WC+Co | Hohe Festigkeit und hervorragende Verschleißfestigkeit. | Kohlenstoff-Eisen, Nicht-Eisen-Metall, Kunststoff, usw. |

# Sorteneigenschaften

| Sorte | Härte (HRA) | TRS (Kgf/mm²) | Youngscher Modul (103Kgf/mm²) | Wärmeausdehnungs-Koeffizient ($10^{-6}$/°C) | Wärmeleitfähigkeit (cal/cm·sec·°C) |
|---|---|---|---|---|---|
| **KM15** | 90.9 | 250 | 63 | - | 105 |
| **PM25** | 91.9 | 200 | 56 | 5.2 | 45 |
| **PM40** | 91.3 | 230 | 53 | 5.2 | - |

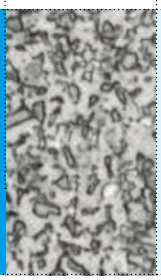
# CERMET



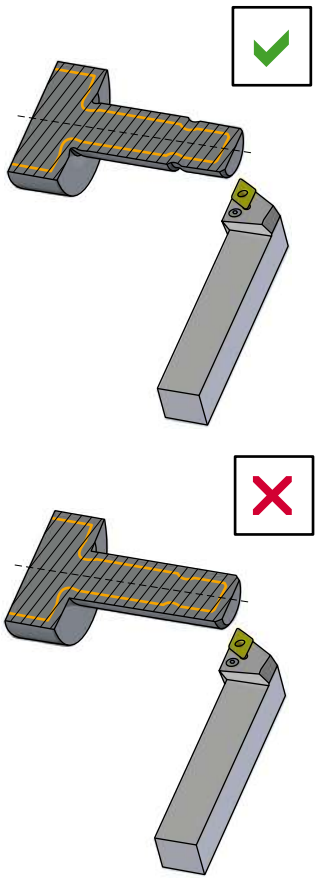
## CERMET

- Maximum heat and wear resistance.
- Excellent resistance to oxidation.
- For very high cutting speeds.
- Ideal for finishing.
- Universal application.

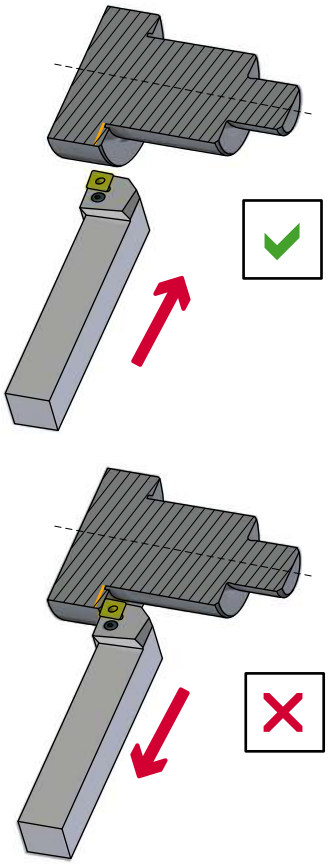
# Features of CERMET

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| **P** Steel |  | ***NC25*** | ○ | Ti+W+Ta/Nb | NC25 is a newly developed Cermet applicable for a wide range of cutting conditions as a standard grade for general machining of steel. It can successfully be used for a range of cutting speeds from 100 to 200 m/min with better wear resistance than conventional TiC Cermet. It gives an excellent performance from semi-finish to finish operation of ductile cast iron at cutting speeds of 200 m/min. or less. |

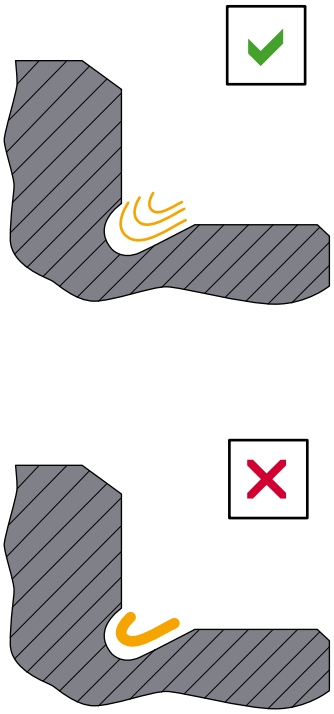
## *Application recommendations*



It is required to prerough following the profile precisely.



Use conventional approach for face turning.

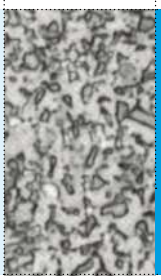


Several cuts are required for deep applications.

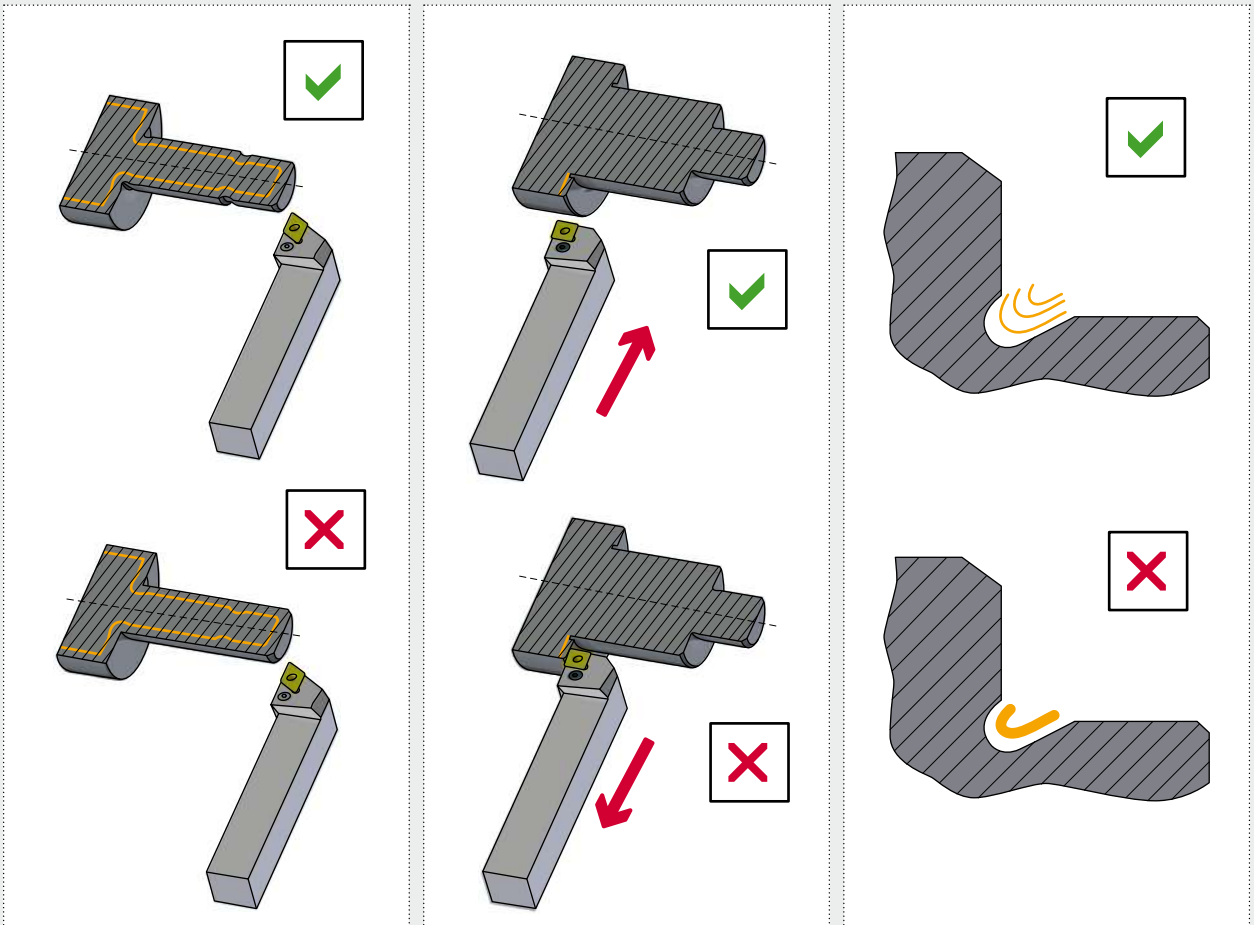
## CERMET

- Maximale Hitzebeständigkeit und Verschleißfestigkeit.
- Ausgezeichnete Oxidationsbeständigkeit.
- Für sehr hohe Schnittgeschwindigkeiten.
- Ideal zum Schlichten.
- Für alle Anwendungen.

# Eigenschaften von CERMET

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| NC25 ist ein neuentwickeltes Cermet, das für eine Vielfalt von Schnittbedingungen geeignet ist, als Standardsorte zur Stahlbearbeitung. Es wird mit Erfolg für einen großen Schnittgeschwindigkeitsbereich von 100 bis 200 m/min mit einer besseren Verschleißfestigkeit als konventionelles TiC Cermet. Es gibt eine hervorragende Leistung bei geringem Schruppen und auch bei Schlichten von Temperguß bei eine Geschwindigkeit von 200 m/min. oder weniger. | Ti+W+Ta/Nb | | ***NC25*** |  | **P** Stahl |

## *Anwendungen-Empfehlungen*

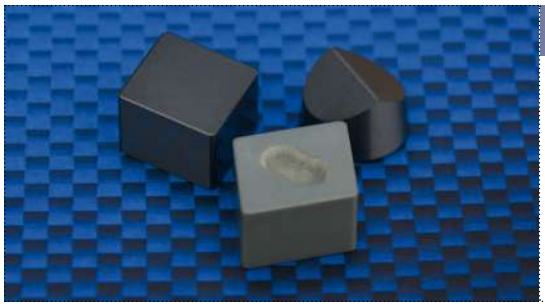


Beim Vorschruppen ist es erforderlich, das Profil genau zu folgen.

Beim Plandrehen versuchen Sie konventionell an das Werkstück zu gehen.

Für tiefe Anwendungen braucht man mehrere Schnitte.

# CERAMIC



## CERAMIC

Ceramic grades are able of running at high speeds, thus reducing expensive machining time. Ceramic inserts are recommended for hard turning of 38HRC to 64HRC hardened steel, or for roughing and finishing of cast iron.

Ceramic maintains good surface finishes due to its low affinity to workpiece materials.

## Features of CERAMIC

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| **K** Cast iron |  | ***CX9*** | | $Al_2O_3$ | CX9 is a highly wear-resistant tool that has been formed into microstructure by adding a trace amount of zirconia ($ZrO_2$) to highly pure alumina ($Al_2O_3$), the main component of this tool material. |
| |  | ***CC2*** | | $Al_2O_3$+TiC | This material is well-balanced between wear resistance and fracture resistance, and it works well in a wide range of cutting cast iron and in the turning of hard materials. |
| |  | ***CX6*** | | SiAlON | CX6 is a ultimate silicon-nitride material that has been developed to improve the notch wear of the conventional ceramics that contain silicon nitride.<br>It reduces notch wear amount in machining gray cast iron. |
| **S** Heat resistant alloys |  | ***CW1*** | | $Al_2O_3$-based | CW1 is a whisker-reinforced composite ceramic material with silicon-carbide whisker added to alumina.<br>Excellent wear resistance with high toughness and crack resistance for heat-resistant alloys and high-hardened mill rolls. |
| **P** Steel |  | ***CC7*** | | $Al_2O_3$+TiC | Since it has the finest grain size particle with a high melting point, the composite CC7 improves both hardness and strength, and it shows superior performance as a special material for machining high-hardened materials. |

## Ceramic main application areas

| | | | |
|---|---|---|---|
|  |  |  |  |
| Cast iron | Aerospace | Roll turning | Hardened materials |

## KERAMIK

Keramik-Sorten können zu hohen Geschwindigkeiten arbeiten, wodurch die teuren Bearbeitungszeiten reduziert werden.
Keramische Wendeschneidplatten sind für die Bearbeitung von gehärtetem Stahl von 38HRC bis 64HRC geeignet, und auch zum Schruppen und Schlichten von Grauguß. Wegen seiner niedrigen Affinität zu den Materialien des Werkstücks gibt Keramik eine gute Oberflächengüte.

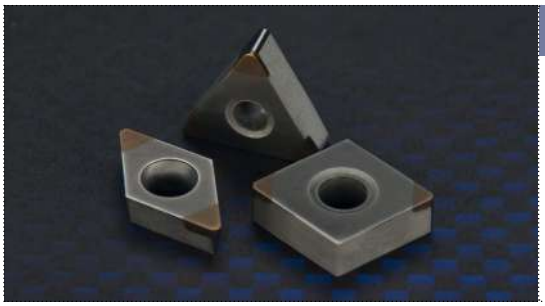
# Eigenschaften von KERAMIK

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| CX9 ist eine hoch verschleißfeste Sorte, die eine Mikrostruktur geworden ist, indem man eine Spurmenge von Zirkonium ($ZrO_2$) zum Aluminiumoxid ($Al_2O_3$), hinzugefügt hat. | $Al_2O_3$ | | ***CX9*** |  | **K** Guß |
| Dieses Material hat ein gutes Verhältnis zwischen Verschleißfestigkeit und Bruchfestigkeit, und arbeitet gut bei der Bearbeitung von Grauguß und dem Drehen von harten Materialien. | $Al_2O_3$+TiC | | ***CC2*** |  | |
| CX6 ist ein Siliziumnitrid Material, das entwickelt worden ist, um den Kerbverschleiß der konventionellen Keramiken zu verbessern.<br>Es reduziert den Kerbverschleiß bei der Bearbeitung von Grauguß. | SiAlON | | ***CX6*** |  | |
| CW1 ist ein Whiskerverstärktes Komposit-Keramikmaterial, bei dem Whisker-Siliziumkarbide dem Aluminiumoxid beigemischt sind. Hervorragende Verschleißfestigkeit bei hoher Zähigkeit und ausgezeichnetem Widerstand gegen Risse. Für hitzebeständige Legierungen und hoch gehärtete Walzen. | $Al_2O_3$-Basis | | ***CW1*** |  | **S** Hitzebeständige Legierungen |
| Die Feinstkorn-Partikel von Komposit CC7 haben einen hohen Schmelzpunkt. Das verbessert die Härte und die Standzeit und zeigt eine hervorragende Leistung bei der Bearbeitung von hoch gehärteten Materialien. | $Al_2O_3$+TiC | | ***CC7*** |  | **P** Stahl |

# Haupt-Einsatzbereiche von Keramik

| | | | |
|---|---|---|---|
|  |  |  |  |
| Guß | Luft- und Raumfahrt | Walzendrehen | Gehärtetes Material |

# CBN / PCD



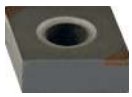
## CBN

- High thermal conductivity, which provides stable cutting.
- Suitable for high speed cutting of cast iron and sintered steel.
- Superior wear resistance when cutting hardened materials.

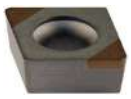
## PCD

- Applicable for turning and milling of non-ferrous materials and non-metals.
- Long tool life due to extreme hardness.
- High cutting speeds and increased cutting productivity.

# Features of CBN / PCD

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| **H** Hard materials |  | ***CB10*** | ● | $TiCN+Al_2O_3+TiN$ | These CBN are formed with a special ceramic binder based on CBN (Cubic Boron Nitride) particles, and the CBN sintered layer increases the thickness of the carbide base. CBN are high-performance tool materials that have high hardness at room temperature and high temperature and are almost free from chemical reactions against the material to be cut. |

| | Materials to be machined with polycrystalline boron nitride **Material** | **Vc = m/min.** | **Infeed f = mm/U** | **Depth of cut ap=mm** |
|---|---|---|---|---|
| ***CBN*** | - Hardened materials and nitriding steels. | 60-120 | 0,03-0,2 | 1 |
| | - High temperature and corrosion resistant alloys with high nickel or cobalt content. | 70-150 | 0,03-0,15 | 1 |
| | - Gray cast iron, especially hard and abrasion resistant types. | 300-600 | 0,10-0,5 | 3 |
| | - High speed steel (HSS). | 60-120 | 0,03-0,1 | 1 |
| | - Metal powder spraying. | 60-120 | 2 | 1 |

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| **N** Non ferrous materials |  | ***PD10*** | ● | $TiCN+Al_2O_3+TiN$ | PCD consists of a 0,5 mm thick diamond layer, which is inseparably connected to a carbide base. This polycrystalline diamond layer originates at a pressing operation by bonding of the smallest diamond grains, supported by a metallic bonding agent. This cutting material has also a very long tool life. |

| | Materials to be machined with polycrystalline diamond **Material** | **Vc = m/min.** | **Infeed f = mm/U** | **Depth of cut ap=mm** |
|---|---|---|---|---|
| ***PCD*** | - Aluminium alloys under 3% SIC | 200-2000 | 0,05-0,4 | up to the whole diamond cutting edge |
| | - Aluminium alloys up to 12% SIC | 150-1000 | 0,05-0,4 | |
| | - Aluminium alloys up to approx. 21% SIC | 100-800 | 0,05-0,4 | |
| | - Brass, magnesium, zinc alloys. | 200-2000 | 0,05-0,4 | |
| | - Copper, bronze, lead alloys. | 200-1000 | 0,05-0,4 | |
| | - Duro and thermoplastics with and without fillers e.g. epoxy resin. | 100-1000 | 0,05-0,2 | |
| | - Hard papers. | 200-600 | 0,10-0,3 | |
| | - Hard and soft rubber with and without fillers. | 100-500 | 0,10-0,3 | |
| | - Graphite and pre-sintered carbide. | 100-500 | 0,10-0,4 | |
| | - Aluminium oxide, silicon, tungsten. | 50-180 | 0,1 | 700 |

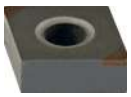
## CBN

- Hohe Wärmeleitfähigkeit, die ein stabiles Schneiden erlaubt.
- Geeignet zum Schneiden bei hohen Geschwindigkeiten von Guß und gesintertem Stahl.
- Sehr hohe Verschleißfestigkeit bei gehärteten Materialien.

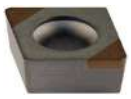
## PCD

- Geeignet zum Drehen und Fräsen von Nicht-Eisen-Metalle und Nichtmetalle.
- Hohe Standzeit aufgrund seiner extremen Härte.
- Hohe Schnittgeschwindigkeiten und erhöhte Effizienz beim Schneiden.

# Eigenschaften von CBN / PCD

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| CBN wird mit einem speziellen Keramik-Bindemittel gebildet, das CBN-Partikel (kubisches Bornitrid) enthält. Die gesinterte CBN-Schicht liegt auf der Hartmetall-Basis. CBN sind hochleistende Materialien, die eine hohe Härte bei Raumtemperatur und auch bei hoher Temperatur haben, und fast keine chemische Reaktionen gegen das zu bearbeitendes Material zeigen. | $TiCN+Al_2O_3+TiN$ | ● | ***CB10*** |  | **H** Harte Materialien |

| **Schnitttiefe ap=mm** | **Vorschub f = mm/U** | **Vc = m/min.** | Mit polykristalinem Bornitrid zu bearbeitende Materialien **Werkstoff** | |
|---|---|---|---|---|
| 1 | 0,03-0,2 | 60-120 | - Gehärtete Materialien und nitrierter Stahl. | ***CBN*** |
| 1 | 0,03-0,15 | 70-150 | - Hohe Temperaturen- und korrosionsbeständige Legierungen mit einem hohen Anteil an Nickel oder Kobalt. | |
| 3 | 0,10-0,5 | 300-600 | - Grauguß, insbesonders hart und abrasionsbeständige Typen. | |
| 1 | 0,03-0,1 | 60-120 | - Schnellarbeitstahl (HSS). | |
| 1 | 2 | 60-120 | - Metallpulver zum Spritzgießen. | |

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| PCD besteht aus einer 0,5 mm dicken Diamant-Schicht, die mit einer Hartmetall-Basis untrennbar verbunden ist. Diese polykristaline Diamant-Schicht entsteht bei einer Pressoperation, die sehr kleine Diamant-Körner mit einem metallischen Bindemittel zusammenbindet. Diese Sorte erzielt auch sehr lange Standzeiten. | $TiCN+Al_2O_3+TiN$ | ● | ***PD10*** |  | **N** Nicht-Eisen-Metalle |

| **Schnitttiefe ap=mm** | **Vorschub f = mm/U** | **Vc = m/min.** | Mit polykristalinem Diamant zu bearbeitende Materialien **Werkstoff** | |
|---|---|---|---|---|
| bis der ganzen Diamant-Schnittkante | 0,05-0,4 | 200-2000 | - Aluminium-Legierungen unter 3% SIC | ***PCD*** |
| | 0,05-0,4 | 150-1000 | - Aluminium-Legierungen bis 12% SIC | |
| | 0,05-0,4 | 100-800 | - Aluminium-Legierungen bis ca. 21% SIC | |
| | 0,05-0,4 | 200-2000 | - Messing-, Magnesium- und Zink-Legierungen. | |
| | 0,05-0,4 | 200-1000 | - Kupfer-, Bronze- und Blei-Legierungen. | |
| | 0,05-0,2 | 100-1000 | - Duro-Kunststoff und Thermoplast mit und ohne Füller z. B. Epoxidharz. | |
| | 0,10-0,3 | 200-600 | - Harte Papiere. | |
| | 0,10-0,3 | 100-500 | - Harter und weicher Gummi mit und ohne Füller. | |
| | 0,10-0,4 | 100-500 | - Graphit und vorgesintertes Hartmetall. | |
| 700 | 0,1 | 50-180 | - Aluminiumoxid, Sylizium, Tungsten. | |

# Insert selection / Wendeschneidplattenwahl

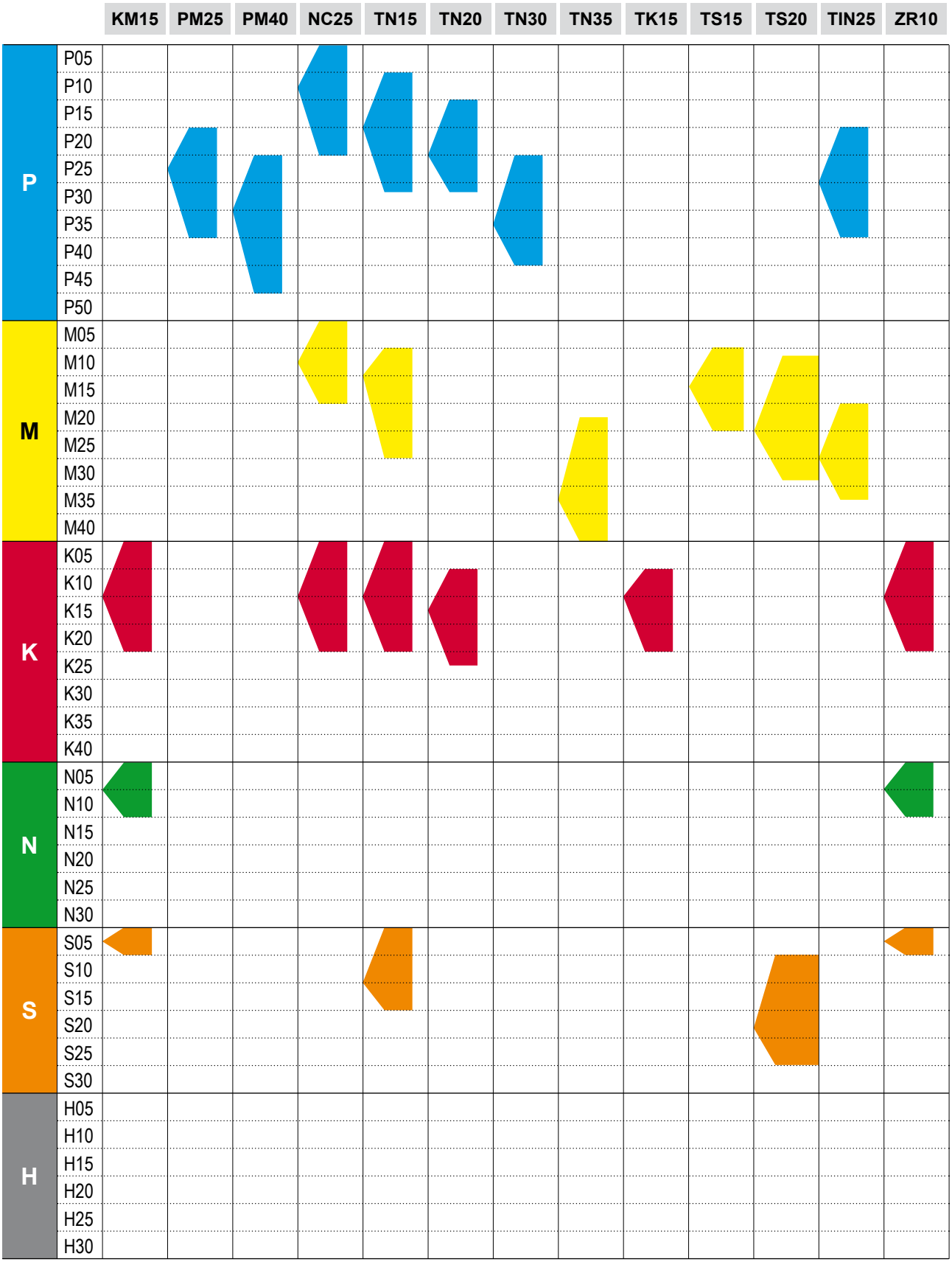
● Main application / Haupteinsatzbereich
○ Extended application / Nebeneinsatzbereich

| | Machining type<br>Bearbeitungsart | | Material<br>Werkstoff | Continuous<br>Ununterbrochen ● | Slight interruption<br>Leicht unterbrochen | Interruption<br>Unterbrochen |
|---|---|---|---|---|---|---|
| **- FC**  | Finishing / Schlichten | ● | ● | TN15 | TN15 | TN30 |
| | Medium / Medium | ○ | ○ | TN15 | - | - |
| | Roughing / Schruppen | | ○ | TN15 | - | - |
| **- FMC**  | Finishing / Schlichten | ● | ● | TN15 | TN15 | - |
| | Medium / Medium | ○ | | - | - | - |
| | Roughing / Schruppen | | | - | - | - |
| **- CC**  | Finishing / Schlichten | ● | ● | NC25 | NC25 | - |
| | Medium / Medium | | | - | - | - |
| | Roughing / Schruppen | | ● | NC25 | - | - |
| **- MC**  | Finishing / Schlichten | ● | ● | TN15 | TN15 | TN30 |
| | Medium / Medium | ● | ● | TN35 | TN35 | TN35 |
| | Roughing / Schruppen | | ○ | TN15 | - | - |
| **- MFC**  | Finishing / Schlichten | ○ | ● | TN15 | TN15 | TN30 |
| | Medium / Medium | ● | | - | - | - |
| | Roughing / Schruppen | ○ | | - | - | - |
| **- MHC**  | Finishing / Schlichten | | ● | TN15 | TN20 | TN30 |
| | Medium / Medium | ● | | - | - | - |
| | Roughing / Schruppen | ● | | - | - | - |
| **- RC**  | Finishing / Schlichten | | ● | TN15 | TN15 | TN30 |
| | Medium / Medium | ○ | ○ | - | - | TN30 |
| | Roughing / Schruppen | ● | | - | - | - |
| **- TC**  | Finishing / Schlichten | ● | ● | TS20 | TS20 | - |
| | Medium / Medium | ● | | - | - | - |
| | Roughing / Schruppen | ● | ● | TS20 | TS20 | - |
| **- KC**  | Finishing / Schlichten | ● | | - | - | - |
| | Medium / Medium | ● | | - | - | - |
| | Roughing / Schruppen | ● | ● | TK15 | TK15 | TK15 |

● Main application / Haupteinsatzbereich
○ Extended application / Nebeneinsatzbereich

| | Machining type<br>Bearbeitungsart | | Material<br>Werkstoff | Continuous<br>Ununterbrochen ● | Slight interruption<br>Leicht unterbrochen ◔ | Interruption<br>Unterbrochen ✣ |
|---|---|---|---|---|---|---|
| ..NGP  | Finishing / Schlichten | ● | ● | TS15 | TS15 | - |
| | Medium / Medium | ● | ○ | TS15 | TS15 | - |
| | Roughing / Schruppen | | ● | TS15 | - | - |
| ..NMA  | Finishing / Schlichten | ● | | - | - | - |
| | Medium / Medium | ● | | - | - | - |
| | Roughing / Schruppen | ● | ● | TK15 | TK15 | TK15 |
| ..NMM  | Finishing / Schlichten | | ● | - | TN15 | TN30 |
| | Medium / Medium | | ○ | - | - | TN30 |
| | Roughing / Schruppen | ● | | - | - | - |
| ..NMX  | Finishing / Schlichten | ● | ● | NC25 | NC25 | - |
| | Medium / Medium | ○ | | - | - | - |
| | Roughing / Schruppen | | ○ | NC25 | - | - |
| - AL  | Finishing / Schlichten | ● | | - | - | - |
| | Medium / Medium | ● | ● | KM15 - ZR10 | KM15 - ZR10 | KM15 - ZR10 |
| | Roughing / Schruppen | ● | ○ | KM15 - ZR10 | - | - |
| - AP  | Finishing / Schlichten | ● | | - | - | - |
| | Medium / Medium | ● | ● | KM15 - ZR10 | KM15 - ZR10 | KM15 - ZR10 |
| | Roughing / Schruppen | ○ | ○ | KM15 - ZR10 | - | - |
| ..MR  | Finishing / Schlichten | ● | ● | TN15 | TN30 | TN30 |
| | Medium / Medium | ● | ○ | TN15 | TN30 | - |
| | Roughing / Schruppen | ○ | ○ | TN15 | - | - |
| ..MT  | Finishing / Schlichten | ● | ● | TN15 | TN15 | TN30 |
| | Medium / Medium | ● | ● | TN35 | TN35 | TN35 |
| | Roughing / Schruppen | | ● | TN15 | - | - |
| ..MW  | Finishing / Schlichten | ● | ● | PM25 | PM25 | PM25 |
| | Medium / Medium | ● | | - | - | - |
| | Roughing / Schruppen | | ● | KM15 | KM15 | KM15 |

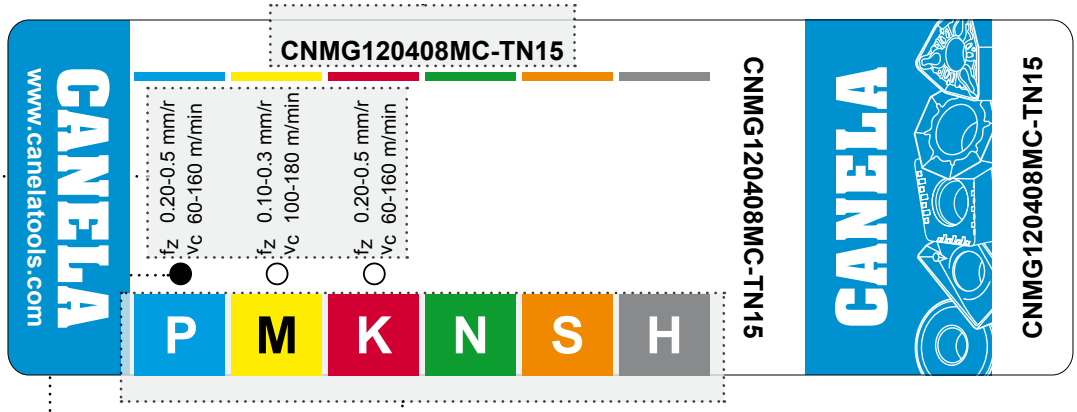
# Grade chart / Tabelle von Sorten



# Label designation system / Etiketten-Bezeichnungssystem

## Code key / Bezeichnung

| Shape<br>Form | Side clearance angle<br>Freiwinkel | Tolerances<br>Toleranzen | Type<br>Typ | Inscribed circle<br>Innenkreis | Thickness<br>Dicke | Corner chamfer/nose radius<br>Ecken-Schrägkante/Eckenradius | Chipbreaker<br>Spanbrecher | Grade<br>Sorte |
|---|---|---|---|---|---|---|---|---|
| C | N | M | G | 12 | 04 | 08 | MC | TN15 |




## Material group
## Werkstoff-Gruppe

### Application area
### Einsatzbereich

- ● Main application
  Haupteinsatzbereich
- ○ Extended application
  Nebeneinsatzbereich

### Cutting data
### Schnittbedingungen

**fz**: Feed / Vorschub
**vc**: Speed / Geschwindigkeit

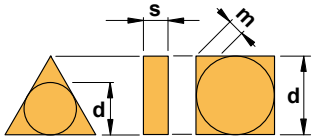
| | |
|---|---|
| P | **Blue: Steel**<br>Machining, cementation, tempered and constructional steels.<br>**Blau: Stahl**<br>Automatenstähle, Vergütungstähle, gehärtete Stähle und Baustähle. |
| M | **Yellow: Stainless steel**<br>Machining, cementation, tempered and constructional steels.<br>**Gelb: Rostfreier Stahl**<br>Automatenstähle, Vergütungstähle, gehärtete Stähle und Baustähle. |
| K | **Red: Cast iron**<br>Cast iron, grey cast iron, tempered iron, spheroidal cast iron, CGI, sintered iron.<br>**Rot: Guß**<br>Guß, Grauguß, Temperguß, Sphäroguß, CGI, Sinterguß. |
| N | **Green: Non ferrous materials**<br>Al wrought and Al cast alloys, copper, copper alloys, non metal materials.<br>**Grün: Nicht-Eisen-Metalle**<br>Al-Knetlegierungen und Al-Druckgußlegierungen, Kupfer, Kupferlegierungen, nicht metallische Materialien. |
| S | **Orange: Heat-resistant alloys / titanium**<br>Ni/Co-base alloys, Ti alloys.<br>**Orange: Hitzebeständige Materialien / Titanium**<br>Ni/Co basierte Legierungen, Ti-Legierungen. |
| H | **Grey: Hard materials**<br>Hardened steels (≥ 45 HRC), chilled castings, hard cast irons.<br>**Grau: Harte Materialien**<br>Gehärtete Stähle (≥ 45 HRC), Kokillenguß, Hartguß. |

# ISO Code key / ISO Bezeichnung

| INSERT SHAPE<br>FORM DER WENDEPLATTE | |
|---|---|
| V | Rhombic 35°<br>Rhombisch 35° |
| D | Rhombic 55°<br>Rhombisch 55° |
| E | Rhombic 75°<br>Rhombisch 75° |
| C | Rhombic 80°<br>Rhombisch 80° |
| M | Rhombic 86°<br>Rhombisch 86° |
| K | Parallelogram 55°<br>Parallelogramm 55° |
| B | Parallelogram 82°<br>Parallelogramm 82° |
| A | Parallelogram 85°<br>Parallelogramm 85° |
| L | Rectangular 90°<br>Rechteckig 90° |
| P | Pentagonal 108°<br>Fünfkant 108° |
| H | Hexagonal 120°<br>Sechskant 120° |
| O | Octagonal 135°<br>Achtkant 135° |
| R | Round<br>Rund |
| S | Square 90°<br>Vierkant 90° |
| T | Triangular 60°<br>Dreikant 60° |
| W | Trigon 80°<br>Trigon 80° |
| X | Special design<br>Spezielles Design |

**TOLERANCES**
**TOLERANZEN**

| | m | Ø d | s |
|---|---|---|---|
| A | ±0.005 | ±0.025 | ±0.025 |
| F | ±0.005 | ±0.013 | ±0.025 |
| C | ±0.013 | ±0.025 | ±0.025 |
| H | ±0.013 | ±0.013 | ±0.025 |
| E | ±0.025 | ±0.025 | ±0.025 |
| G | ±0.025 | ±0.025 | ±0.013 |
| J | ±0.005 | ±0.05 - ±0.15 | ±0.025 |
| K | ±0.013 | ±0.05 - ±0.15 | ±0.025 |
| L | ±0.025 | ±0.05 - ±0.15 | ±0.025 |
| M | ±0.08 - ±0.20 | ±0.05 - ±0.15 | ±0.13 |
| N | ±0.08 - ±0.20 | ±0.05 - ±0.15 | ±0.025 |
| U | ±0.13 - ±0.38 | ±0.08 - ±0.25 | ±0.13 |

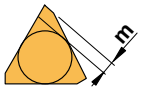



Detail of M Class insert tolerance (Tolerance of nose height **m**)
Detailtoleranz für Wendeschneidplatten M-Klasse (Toleranz ohne Radius **m**)

| D.I.C | △ | □ | 80° | 55° | 35° | ○ |
|---|---|---|---|---|---|---|
| **6.35** | ±0.08 | ±0.08 | ±0.08 | ±0.11 | ±0.16 | - |
| **9.525** | ±0.08 | ±0.08 | ±0.08 | ±0.11 | ±0.16 | - |
| **12.70** | ±0.13 | ±0.13 | ±0.13 | ±0.15 | - | - |
| **15.875** | ±0.15 | ±0.15 | ±0.15 | ±0.18 | - | - |
| **19.05** | ±0.15 | ±0.15 | ±0.15 | ±0.18 | - | - |
| **25.40** | - | ±0.18 | - | - | - | - |
| **31.75** | - | ±0.20 | - | - | - | - |

Detail of M Class insert tolerance (Tolerance of inscribed circle **d**)
Detailtoleranz für Wendeschneidplatten M-Klasse (Toleranz des Innenkreises **d**)

| D.I.C | △ | □ | 80° | 55° | 35° | ○ |
|---|---|---|---|---|---|---|
| **6.35** | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 | - |
| **9.525** | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 |
| **12.70** | ±0.08 | ±0.08 | ±0.08 | ±0.08 | - | ±0.08 |
| **15.875** | ±0.10 | ±0.10 | ±0.10 | ±0.10 | - | ±0.10 |
| **19.05** | ±0.10 | ±0.10 | ±0.10 | ±0.10 | - | ±0.10 |
| **25.40** | - | ±0.13 | - | - | - | ±0.13 |
| **31.75** | - | ±0.15 | - | - | - | ±0.15 |




Triangular insert with a facet (Secondary cutting edge)
Dreikant-Wendeplatte mit Seitenschneide (Nebenschneide)

**C N M G**

| CLEARANCE ANGLE<br>FREIWINKEL | |
|---|---|
| A | 3° |
| B | 5° |
| C | 7° |
| D | 15° |
| E | 20° |
| F | 25° |
| G | 30° |
| N | 0° |
| P | 11° |

**SYMBOL FOR FIXING AND/OR FOR CHIPBREAKER**
**BEFESTIGUNGS- UND/ODER SPANBRECHERSYMBOL**

| | Metric / Metrisch | | | |
|---|---|---|---|---|
| | **Hole**<br>**Loch** | **Hole configuration**<br>**Loch-Konfiguration** | **Chipbreaker**<br>**Spanbrecher** | **Figure**<br>**Abbildung** |
| N | Without hole / Ohne Loch | - | No / Nein | |
| R | Without hole / Ohne Loch | - | One-sided / Einseitig | |
| F | Without hole / Ohne Loch | - | Double-sided / Doppelseitig | |
| A | With hole / Mit Loch | Cylindrical hole<br>Zylindrisches Loch | No / Nein | |
| M | With hole / Mit Loch | Cylindrical hole<br>Zylindrisches Loch | One-sided / Einseitig | |
| G | With hole / Mit Loch | Cylindrical hole<br>Zylindrisches Loch | Double-sided / Doppelseitig | |
| W | With hole / Mit Loch | Cylindrical hole +<br>One countersink (40-60°)<br>Zylindrisches Loch +<br>Einseitige Senkung (40-60°) | No / Nein | |
| T | With hole / Mit Loch | | One-sided / Einseitig | |
| Q | With hole / Mit Loch | Cylindrical hole +<br>Double countersink (40-60°)<br>Zylindrisches Loch +<br>Doppelseitige Senkung (40-60°) | No / Nein | |
| U | With hole / Mit Loch | | Double-sided / Doppelseitig | |
| B | With hole / Mit Loch | Cylindrical hole +<br>One countersink (70-90°)<br>Zylindrisches Loch +<br>Einseitige Senkung (70-90°) | No / Nein | |
| H | With hole / Mit Loch | | One-sided / Einseitig | |
| C | With hole / Mit Loch | Cylindrical hole +<br>Double countersink (70-90°)<br>Zylindrisches Loch +<br>Doppelseitige Senkung (70-90°) | No / Nein | |
| J | With hole / Mit Loch | | Double-sided / Doppelseitig | |
| X | - | - | - | Special / Spezielles Design |

## SYMBOL FOR INSERT SIZE
## SYMBOL FÜR WENDEPLATTENGRÖSSE

| V | D | C | S | T | W | R | |
|---|---|---|---|---|---|---|---|
| | 04 | 03 | 03 | 06 | | | 3,97 |
| 08 | 05 | 04 | 04 | 08 | | | 4,76 |
| 09 | 06 | 05 | 05 | 09 | 03 | | 5,56 |
| | | | | | | 06 | 6,00 |
| 11 | 07 | 06 | 06 | 11 | 04 | | 6,35 |
| 13 | 09 | 08 | 07 | 13 | 05 | | 7,94 |
| | | | | | | 08 | 8,00 |
| 16 | 11 | 09 | 09 | 16 | 06 | | 9,52 |
| | | | | | | 10 | 10,00 |
| | | | | | | 12 | 12,00 |
| 22 | 15 | 12 | 12 | 22 | 08 | | 12,70 |
| | 19 | 16 | 15 | 27 | 10 | | 15,87 |
| | | | | | | 16 | 16,00 |
| | 23 | 19 | 19 | 33 | 13 | | 19,00 |
| | | | | | | 20 | 20,00 |
| | 27 | 22 | 22 | 38 | | | 22,22 |
| | | | | | | 25 | 25,00 |
| | 31 | 25 | 25 | 44 | | | 25,40 |
| | 38 | 32 | 31 | 54 | | | 31,75 |
| | | | | | | 32 | 32,00 |

## INSERT CORNER
## ECKENRADIUS




| | | | |
|---|---|---|---|
| 00 | 0,0 | 12 | 1,2 |
| M0 | 0,0 | 16 | 1,6 |
| 02 | 0,2 | 20 | 2,0 |
| 04 | 0,4 | 24 | 2,4 |
| 08 | 0,8 | 32 | 3,2 |

## SECONDARY CUTTING EDGE
## WINKEL DER NEBENSCHNEIDE

| | | | |
|---|---|---|---|
| A | 45° | F | 85° |
| D | 60° | P | 90° |
| E | 75° | | |



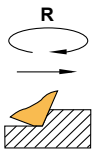

## CLEARANCE ANGLE
## FREIWINKEL

| | | | |
|---|---|---|---|
| A | 3° | F | 25° |
| B | 5° | G | 30° |
| C | 7° | N | 0° |
| D | 15° | P | 11° |
| E | 20° | Z | Special Spezielles |

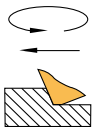



## CUTTING DIRECTION
## DREHRICHTUNG

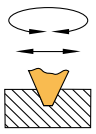
R



L



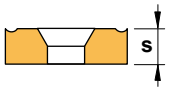
N



# 12 04 08 E N FC

## SYMBOL FOR INSERT THICKNESS
## SYMBOL FÜR WENDEPLATTENDICKE

| SYMBOL | THICKNESS (mm) DICKE (mm) |
|---|---|
| 01 | 1,59 |
| 02 | 2,38 |
| 03 | 3,18 |
| T3 | 3,97 |
| 04 | 4,76 |
| 05 | 5,56 |
| 06 | 6,35 |
| 07 | 7,94 |
| 09 | 9,52 |




## SYMBOL FOR CUTTING EDGE CONDITION
## SYMBOL FÜR SCHNEIDKANTENAUSFÜHRUNG

| SYMBOL | CUTTING EDGE SCHNEIDKANTE |
|---|---|
| F | Sharp<br>Scharf |
| E | Honed<br>Abgerundet |
| T | Chamfered<br>Gefasst |
| S | Chamfered and honed<br>Gefasst und abgerundet |
| K | Double-chamfered<br>Doppelgefasst |
| P | Double-chamfered and honed<br>Doppelgefasst und abgerundet |

## SYMBOL FOR CHIPBREAKER
## SYMBOL FÜR SPANBRECHER

| | | |
|---|---|---|
| AL | AP | CC |
| FC | FMC | KC |
| MC | MFC | MHC |
| MR | MT | MW |
| NGP | NMA | NMM |
| NMX | RC | TC |

**ADMT-R**

*Page* *Seite A30* 15° 7°

**CCET**

*Page* *Seite A30* 7°

**CCGT-AL**

*Page* *Seite A30* 7°

**CCGT-AP**

*Page* *Seite A31* 7°

**CCMT**

*Page* *Seite A31* 7°

**CCMW**

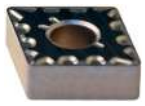
*Page* *Seite A31* 7°

**CNGP**

*Page* *Seite A32* 0°

**CNMA**

*Page* *Seite A32* 0°

**CNMG-CC**

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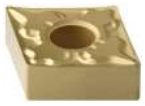
**CNMG-FC**

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**CNMG-FMC**

*Page* *Seite A32* 0°

**CNMG-KC**

*Page* *Seite A33* 0°

**CNMG-MC**

*Page* *Seite A33* 0°

**CNMG-MFC**

*Page* *Seite A33* 0°

**CNMG-MHC**

*Page* *Seite A33* 0°

**CNMG-RC**

*Page* *Seite A33* 0°

**CNMG-TC**

*Page* *Seite A34* 0°

**CNMM**

*Page* *Seite A34* 0°

**DCGT-AL**

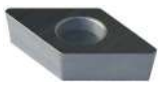
*Page* *Seite A35* 7°

**DCGT-AP**

*Page* *Seite A35* 7°

**DCMT**

*Page* *Seite A35* 7°

**DCMW**

*Page* *Seite A35* 7°

**DNGP**

*Page* *Seite A36* 0°

**DNMA**

*Page* *Seite A36* 0°

**DNMG-FC**

*Page* *Seite A36* 0°

**DNMG-FMC**

*Page* *Seite A36* 0°

**DNMG-KC**

*Page* *Seite A36* 0°

**DNMG-MC**

*Page* *Seite A37* 0°

**DNMG-MFC**

*Page* *Seite A37* 0°

**DNMG-MHC**

*Page* *Seite A37* 0°

**DNMG-TC**

*Page* *Seite A37* 0°

**DNMX**

*Page* *Seite A37* 0°

**KNUX**

*Page* *Seite A38* 0°

**RCGT-AL**

*Page* *Seite A38* 7°

**RCGT-AP**

*Page* *Seite A38* 7°

**RCMT**

*Page* *Seite A39* 7°

**RNMG**

*Page* *Seite A39* 0°

**SCGT-AL**

Page Seite A40 7°

**SCMT**

Page Seite A40 7°

**SCMT-39**

Page Seite A40 7°

**SCMW**

Page Seite A40 7°

**SNMG-FMC**

Page Seite A41 0°

**SNMG-KC**

Page Seite A41 0°

**SNMG-MHC**

Page Seite A41 0°

**SNMG-RC**

Page Seite A41 0°

**SNMG-TC**

Page Seite A42 0°

**SNMM**

Page Seite A42 0°

**SPMR**

Page Seite A43 11°

**SPUN**

Page Seite A43 11°

**TCGT-AL**

Page Seite A44 7°

**TCMT**

Page Seite A44 7°

**TCMW**

Page Seite A44 7°

**TNMA**

Page Seite A45 0°

**TNMG-CC**

Page Seite A45 0°

**TNMG-FC**

Page Seite A45 0°

**TNMG-FMC**

Page Seite A45 0°

**TNMG-KC**

Page Seite A45 0°

**TNMG-MC**

Page Seite A46 0°

**TNMG-MFC**

Page Seite A46 0°

**TNMG-MHC**

Page Seite A46 0°

**TNMG-TC**

Page Seite A46 0°

**TNMX**

Page Seite A46 0°

**TPMN**

Page Seite A47 11°

**TPMR**

Page Seite A47 11°

**TPUN**

Page Seite A47 11°

**TPUX**

Page Seite A47 11°

**VBMT**

Page Seite A48 5°

**VCGT-AL**

Page Seite A48 7°

**VCGT-AP**

Page Seite A48 7°

**VCMT**

Page Seite A48 7°

**VNGP**

Page Seite A49 0°

**VNMG**

Page Seite A49 0°

**VNMG-TC**

Page Seite A49 0°

**WNMA**

Page Seite A50 0°

**WNMG-FC**

Page Seite A50 0°

**WNMG-FMC**

Page Seite A50 0°

**WNMG-KC**

Page Seite A50 0°

**WNMG-MC**

Page Seite A50 0°

**WNMG-MFC**

Page Seite A51 0°

**WNMG-MHC**

Page Seite A51 0°

**WNMG-TC**

Page Seite A51 0°

## *Ceramic inserts*
## *Keramik-Wendeplatten*


**CNGA**

*Page* *Seite A54* 0°

**CNGN**

*Page* *Seite A54* 0°

**CNGX**

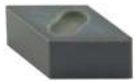
*Page* *Seite A54* 0°

**DNGA**

*Page* *Seite A54* 0°

**DNGN**

*Page* *Seite A54* 0°

**DNGX**

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**GWG**

*Page* *Seite A55* 3°

**RCGX**

*Page* *Seite A55* 7°

**RNGN**

*Page* *Seite A55* 0°

**RPGN**

*Page* *Seite A56* 0°

**SNGA**

*Page* *Seite 56* 0°

**SNGN**

*Page* *Seite A56* 0°

**SNGN**

*Page* *Seite A56* 0°

**SNGX**

*Page* *Seite A57* 0°

**TNGA**

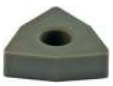
*Page* *Seite A57* 0°

**TNGN**

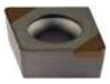
*Page* *Seite A57* 0°

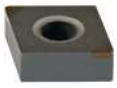
**VNGA**

*Page* *Seite A57* 0°

**WNGA**

*Page* *Seite A58* 0°


## *CBN/PCD Inserts*
## *CBN/PCD Wendeschneidplatten*


**CCMW**

*Page* *Seite A59* 7°

**CNGA**

*Page* *Seite A59* 0°

**DCMW**

*Page* *Seite A59* 7°

**DNGA**

*Page* *Seite A59* 0°

**SNGA**

*Page* *Seite A59* 0°

**TCMW**

*Page* *Seite A60* 7°

**TNGA**

*Page* *Seite A60* 0°

**TPMN**

*Page* *Seite A60* 11°

# Inserts ADMT-R

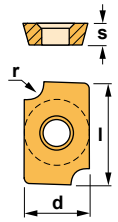
More information see page A30

# Wendeschneidplatten ADMT-R

Für weitere Informationen, siehe Seite A30



## Parallelogram inserts / Positive
## Parallelogramme Wendeschneidplatten / Positiv

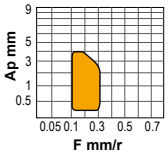



**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



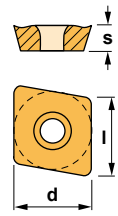



### ADMT-R

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADMT 1503R1.0 | 15,00 | 3,18 | 9,52 | 1,0 | | | | | | | | | | | | ● | |
| ADMT 1503R1.5 | 15,00 | 3,18 | 9,52 | 1,5 | | | | | | | | | | | | ● | |
| ADMT 1503R2.0 | 15,00 | 3,18 | 9,52 | 2,0 | | | | | | | | | | | | ● | |
| ADMT 1503R2.5 | 15,00 | 3,18 | 9,52 | 2,5 | | | | | | | | | | | | ● | |
| ADMT 1503R3.0 | 15,00 | 3,18 | 9,52 | 3,0 | | | | | | | | | | | | ● | |
| ADMT 1503R3.5 | 15,00 | 3,18 | 9,52 | 3,5 | | | | | | | | | | | | ● | |
| ADMT 1503R4.0 | 15,00 | 3,18 | 9,52 | 4,0 | | | | | | | | | | | | ● | |
| ADMT 1503R4.5 | 15,00 | 3,18 | 9,52 | 4,5 | | | | | | | | | | | | ● | |
| ADMT 1503R5.0 | 15,00 | 3,18 | 9,52 | 5,0 | | | | | | | | | | | | ● | |

## 80º Rhombic inserts / Positive
## Rhombische Wendeschneidplatten 80º / Positiv

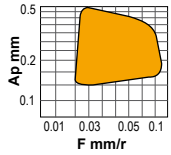



**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



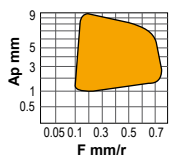



### CCET

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCET 030102 | 3,60 | 1,39 | 3,50 | 0,2 | ● | | | | ● | | | | | | | | |
| CCET 040102 | 4,40 | 1,79 | 4,30 | 0,2 | ● | | | | ● | | | | | | | | |



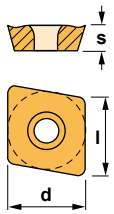



### CCGT-AL

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCGT 060202-AL | 6,45 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | | | | ○ |
| CCGT 060204-AL | 6,45 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | | | | ○ |
| CCGT 09T302-AL | 9,65 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | | | | ○ |
| CCGT 09T304-AL | 9,65 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| CCGT 09T308-AL | 9,65 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |
| CCGT 120402-AL | 12,90 | 4,76 | 12,70 | 0,2 | ● | | | | | | | | | | | | ○ |
| CCGT 120404-AL | 12,90 | 4,76 | 12,70 | 0,4 | ● | | | | | | | | | | | | ○ |
| CCGT 120408-AL | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | | | | ○ |

# 80º Rhombic inserts / Positive
# Rhombische Wendeschneidplatten 80º / Positiv



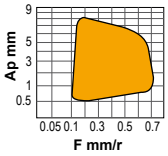

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ● | | | | | | | | | | | | ● |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## CCGT-AP



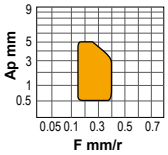



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCGT 060202-AP | 6,45 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | | | | ○ |
| CCGT 060204-AP | 6,45 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | | | | ○ |
| CCGT 09T302-AP | 9,65 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | | | | ○ |
| CCGT 09T304-AP | 9,65 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| CCGT 09T308-AP | 9,65 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |
| CCGT 120402-AP | 12,90 | 4,76 | 12,70 | 0,2 | ● | | | | | | | | | | | | ○ |
| CCGT 120404-AP | 12,90 | 4,76 | 12,70 | 0,4 | ● | | | | | | | | | | | | ○ |
| CCGT 120408-AP | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | | | | ○ |

## CCMT



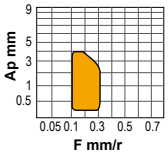



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCMT 060202 | 6,45 | 2,38 | 6,35 | 0,2 | | ● | | | ● | | | | | | | | |
| CCMT 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | ● | | ● | ● | | ● | ● | | | | ● | |
| CCMT 080304 | 8,05 | 3,18 | 7,94 | 0,4 | | ● | | | ● | | | | | | | ● | |
| CCMT 080308 | 8,05 | 3,18 | 7,94 | 0,8 | | ● | | | | | | | | | | ● | |
| CCMT 09T304 | 9,65 | 3,97 | 9,52 | 0,4 | | ● | | ● | ● | | ● | ● | | | | ● | |
| CCMT 09T308 | 9,65 | 3,97 | 9,52 | 0,8 | | ● | | ● | ● | | ● | ● | | | | ● | |
| CCMT 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | ● | | | ● | | ● | | | | | ● | |

## CCMW

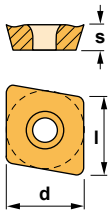





7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCMW 060202 | 6,45 | 2,38 | 6,35 | 0,2 | | | | | | | | | | | | ○ | |
| CCMW 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | ● | | | | | | | | | | ○ | |
| CCMW 080304 | 8,05 | 3,18 | 7,94 | 0,4 | | ● | | | | | | | | | | ○ | |
| CCMW 09T304 | 9,65 | 3,97 | 9,52 | 0,4 | | ● | | | | | | | | | | ○ | |
| CCMW 09T308 | 9,65 | 3,97 | 9,52 | 0,8 | | ● | | | | | | | | | | ○ | |
| CCMW 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | ● | | | | | | | | | | ○ | |

# 80º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 80º / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

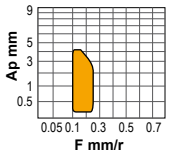
**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ● |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## CNGP



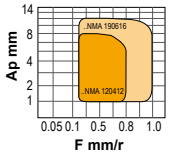
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNGP 120404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | | | | | | | ● | | | |
| CNGP 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | | | ● | | | |



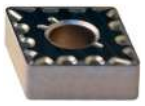

## CNMA



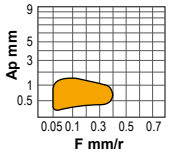
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | | | | |
| CNMA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | | | | ○ | | | | |




## CNMG-CC



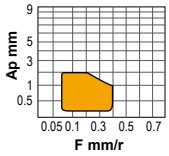
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120404-CC | 12,90 | 4,76 | 12,70 | 0,4 | | | | ● | | | | | | | | | |
| CNMG 120408-CC | 12,90 | 4,76 | 12,70 | 0,8 | | | | ● | | | | | | | | | |




## CNMG-FC



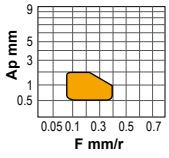
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 090304-FC | 9,65 | 3,18 | 9,52 | 0,4 | | | | | ● | | | | | | | | |
| CNMG 090308-FC | 9,65 | 3,18 | 9,52 | 0,8 | | | | | ● | | | | | | | | |
| CNMG 120404-FC | 12,90 | 4,76 | 12,70 | 0,4 | | | | | ● | | ● | | | | | | |



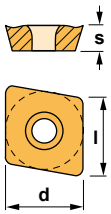

## CNMG-FMC



| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120404-FMC | 12,90 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | | | |



# 80º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 80º / Negativ



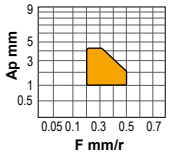

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## CNMG-KC

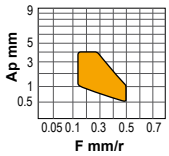





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120408-KC | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | | | | |
| CNMG 120412-KC | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | | | | ● | | | | |

## CNMG-MC

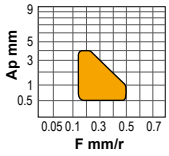





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 090308-MC | 9,65 | 3,18 | 9,52 | 0,8 | | | | | | | | ● | | | | | |
| CNMG 120404-MC | 12,90 | 4,76 | 12,70 | 0,4 | | | | | | | | ● | | | | | |
| CNMG 120408-MC | 12,90 | 4,76 | 12,70 | 0,8 | | | | | ● | | ● | ● | | | | | |

## CNMG-MFC

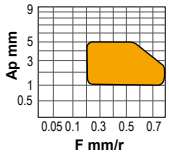





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120408-MFC | 12,90 | 4,76 | 12,70 | 0,8 | | | | | ● | | ● | | | | | | |

## CNMG-MHC

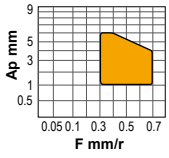





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120408-MHC | 12,90 | 4,76 | 12,70 | 0,8 | | | | | ● | | ● | | | | | | |
| CNMG 120412-MHC | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | ● | | | | | | | |

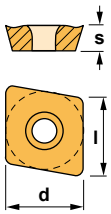
## CNMG-RC






| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120408-RC | 12,90 | 4,76 | 12,70 | 0,8 | | | | | ● | | ● | | | | | | |
| CNMG 120412-RC | 12,90 | 4,76 | 12,70 | 1,2 | | | | | ● | | ● | | | | | | |
| CNMG 160608-RC | 16,10 | 6,35 | 15,88 | 0,8 | | | | | | | ○ | | | | | | |
| CNMG 160612-RC | 16,10 | 6,35 | 15,88 | 1,2 | | | | | | | ○ | | | | | | |
| CNMG 190612-RC | 19,30 | 6,35 | 19,05 | 1,2 | | | | | | | ○ | | | | | | |

# 80º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 80º / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

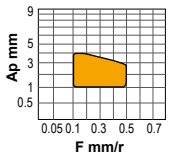
**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## CNMG-TC



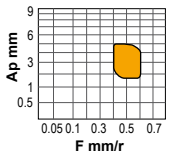
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMG 120404-TC | 12,90 | 4,76 | 12,70 | 0,4 | | | | | | | | | | | ● | | |
| CNMG 120408-TC | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | | | | ● | | |



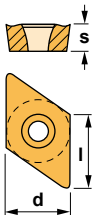

## CNMM



| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNMM 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | ○ | | | | | | |
| CNMM 160612 | 16,10 | 6,35 | 15,88 | 1,2 | | | | | | | ○ | | | | | | |
| CNMM 190612 | 19,30 | 6,35 | 19,05 | 1,2 | | | | | | | ○ | | | | | | |



# 55º Rhombic inserts / Positive
# Rhombische Wendeschneidplatten 55º / Positiv



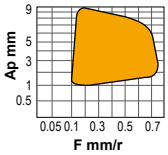

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## DCGT-AL



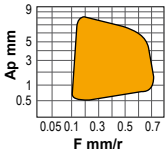



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DCGT 070202-AL | 7,75 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | | | | ○ |
| DCGT 070204-AL | 7,75 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | | | | ○ |
| DCGT 11T302-AL | 11,60 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | | | | ○ |
| DCGT 11T304-AL | 11,60 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| DCGT 11T308-AL | 11,60 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |

## DCGT-AP



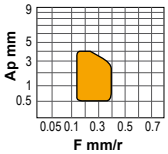



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DCGT 070202-AP | 7,75 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | | | | ○ |
| DCGT 070204-AP | 7,75 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | | | | ○ |
| DCGT 11T302-AP | 11,60 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | | | | ○ |
| DCGT 11T304-AP | 11,60 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| DCGT 11T308-AP | 11,60 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |

## DCMT

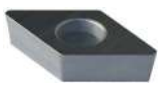


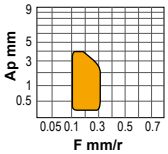



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DCMT 070204 | 7,75 | 2,38 | 6,35 | 0,4 | | ● | | ● | ● | | ● | ● | | | | | |
| DCMT 11T304 | 11,60 | 3,97 | 9,52 | 0,4 | | | | ● | ● | | ● | ● | | | | | |
| DCMT 11T308 | 11,60 | 3,97 | 9,52 | 0,8 | | | | ● | ● | | ● | ● | | | | | |
| DCMT 150408 | 15,50 | 4,76 | 12,70 | 0,8 | | | | | ● | | | | | | | | |

## DCMW

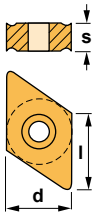





7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DCMW 11T304 | 11,60 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | |
| DCMW 11T308 | 11,60 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | |
| DCMW 150408 | 15,50 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | | | | |

# 55º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 55º / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

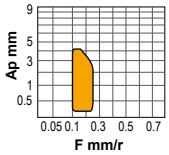
**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## DNGP



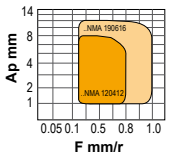
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNGP 150404 | 15,50 | 4,76 | 12,70 | 0,4 | | | | | | | | | | ● | | | |
| DNGP 150408 | 15,50 | 4,76 | 12,70 | 0,8 | | | | | | | | | | ● | | | |




## DNMA



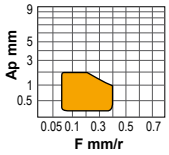
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMA 150608 | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | | | | ○ | | | | |
| DNMA 150612 | 15,50 | 6,35 | 12,70 | 1,2 | | | | | | | | | ○ | | | | |




## DNMG-FC



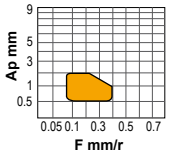
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 110404-FC | 11,60 | 4,76 | 9,52 | 0,4 | | | | | ● | | | ● | | | | | |
| DNMG 110408-FC | 11,60 | 4,76 | 9,52 | 0,8 | | | | | ● | | | | | | | | |
| DNMG 150404-FC | 15,50 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | | | |
| DNMG 150604-FC | 15,50 | 6,35 | 12,70 | 0,4 | | | | | ● | | ● | | | | | | |




## DNMG-FMC



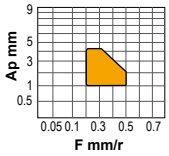
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 150404-FMC | 15,50 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | | | |
| DNMG 150604-FMC | 15,50 | 6,35 | 12,70 | 0,4 | | | | | ● | | | | | | | | |



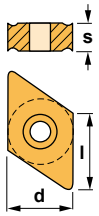

## DNMG-KC



| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 150608-KC | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | | | | ● | | | | |
| DNMG 150612-KC | 15,50 | 6,35 | 12,70 | 1,2 | | | | | | | | | ● | | | | |



# 55º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 55º / Negativ



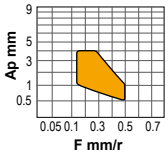

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## DNMG-MC

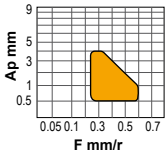





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 110408-MC | 11,60 | 4,76 | 9,52 | 0,8 | | | | | | | | ● | | | | | |
| DNMG 150408-MC | 15,50 | 4,76 | 12,70 | 0,8 | | | | | ● | | | ● | | | | | |
| DNMG 150608-MC | 15,50 | 6,35 | 12,70 | 0,8 | | | | | ● | | ● | ● | | | | | |

## DNMG-MFC

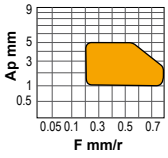





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 150608-MFC | 15,50 | 6,35 | 12,70 | 0,8 | | | | | ● | | ● | | | | | | |

## DNMG-MHC

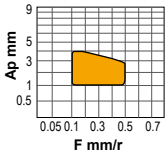





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 150408-MHC | 15,50 | 4,76 | 12,70 | 0,8 | | | | | | ● | | | | | | | |
| DNMG 150608-MHC | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | ● | ● | | | | | | |
| DNMG 150612-MHC | 15,50 | 6,35 | 12,70 | 1,2 | | | | | | | ● | | | | | | |
| DNMG 190608-MHC | 19,40 | 6,35 | 15,88 | 0,8 | | | | | | ○ | ○ | | | | | | |
| DNMG 190612-MHC | 19,40 | 6,35 | 15,88 | 1,2 | | | | | | ○ | ○ | | | | | | |

## DNMG-TC

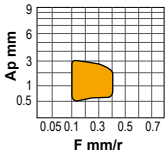





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMG 150608-TC | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | | | | | | ● | | |

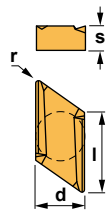
## DNMX






| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DNMX 150604R-22 | 15,50 | 6,35 | 12,70 | 0,4 | | | | | ● | | | | | | | | |
| DNMX 150608R-22 | 15,50 | 6,35 | 12,70 | 0,8 | | | | | ● | | | | | | | | |

## KNUX inserts / Negative
## KNUX Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

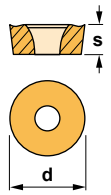
| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



### KNUX

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KNUX 160405L-21 | 16,00 | 4,76 | 9,52 | 0,5 | | ● | | | ● | | ● | | | | | | |
| KNUX 160405R-21 | 16,00 | 4,76 | 9,52 | 0,5 | | | | | ● | | ● | | | | | | |
| KNUX 160405R-32 | 16,00 | 4,76 | 9,52 | 0,5 | | | | | ● | | | | | | | | |
| KNUX 160410L-21 | 16,00 | 4,76 | 9,52 | 1,0 | | | | | | | ● | | | | | | |
| KNUX 160410R-21 | 16,00 | 4,76 | 9,52 | 1,0 | | | | | ● | | ● | | | | | | |
| KNUX 160410R-32 | 16,00 | 4,76 | 9,52 | 1,0 | | | | | | | ● | | | | | | |

## Round inserts / Positive
## Runde Wendeschneidplatten / Positiv

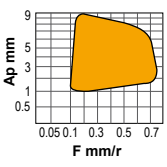



**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



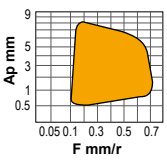



### RCGT-AL

7°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RCGT 0803M0-AL | 3,18 | 8,00 | ● | | | | | | | | | | | | ○ |
| RCGT 1003M0-AL | 3,18 | 10,00 | ● | | | | | | | | | | | | ○ |



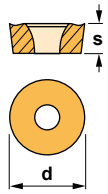



### RCGT-AP

7°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RCGT 0803M0-AP | 3,18 | 8,00 | ● | | | | | | | | | | | | ○ |

## Round inserts / Positive
## Runde Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

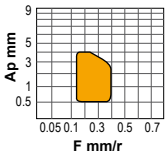
| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



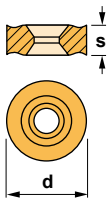
### RCMT

7°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RCMT 0602M0 | 2,38 | 6,00 | | | | | ● | | | | | | | | |
| RCMT 0803M0 | 3,18 | 8,00 | | | | | ● | | | | | | | | |
| RCMT 1003M0 | 3,18 | 10,00 | | | | | ● | | | | | | | | |
| RCMT 10T3M0 | 3,97 | 10,00 | | ● | | | ● | | | | | | | ● | |
| RCMT 1204M0 | 4,76 | 12,00 | | ● | | | ● | | | | | | | ● | |




## Round inserts / Negative
## Runde Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

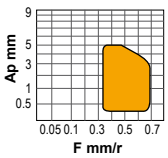
**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

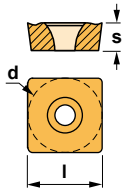


### RNMG

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RNMG 090300 | 3,18 | 9,52 | | | | | | ○ | | | | | | | |
| RNMG 120400 | 4,76 | 12,70 | | | | | | ○ | | | | | | | |
| RNMG 150600 | 6,35 | 15,88 | | | | | | | ○ | | | | | | |
| RNMG 190600 | 6,35 | 19,05 | | | | | | | ○ | | | | | | |
| RNMG 250900 | 9,52 | 25,40 | | | | | | | ○ | | | | | | |



# Square inserts / Positive
# Vierkant-Wendeschneidplatten / Positiv



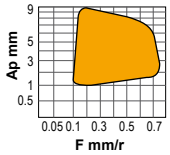

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## SCGT-AL



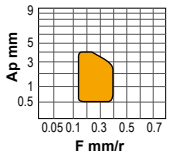



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCGT 09T304-AL | 9,52 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| SCGT 09T308-AL | 9.52 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |
| SCGT 120408-AL | 12,70 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | | | | ○ |

## SCMT



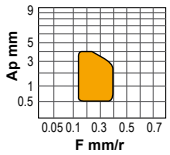



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCMT 09T304 | 9,52 | 3,97 | 9,52 | 0,4 | | | | | ● | | | | | | | | |
| SCMT 09T308 | 9,52 | 3,97 | 9,52 | 0,8 | | | | | ● | | | | | | | | |
| SCMT 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | | ● | | | | | | | | |

## SCMT-39



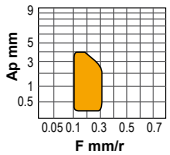



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCMT 09T304-39 | 9,52 | 3,97 | 9,52 | 0,4 | | ● | | | | | | | | | | ● | |
| SCMT 09T308-39 | 9,52 | 3,97 | 9,52 | 0,8 | ○ | ● | | | | | | | | | | ● | |
| SCMT 120408-39 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ● | | | | | | | | | | ● | |
| SCMT 120412-39 | 12,70 | 4,76 | 12,70 | 1,2 | | ● | | | | | | | | | | ● | |

## SCMW

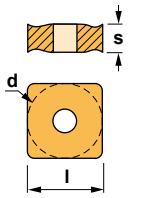





7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCMW 09T308 | 9,52 | 3,97 | 9,52 | 0,8 | | ● | | | | | | | | | | ○ | |
| SCMW 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ○ | | | | | | | | | | ○ | |
| SCMW 120412 | 12,70 | 4,76 | 12,70 | 1,2 | | ○ | | | | | | | | | | ○ | |

# Square inserts / Negative
# Vierkant-Wendeschneidplatten / Negativ



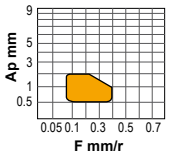

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## SNMG-FMC

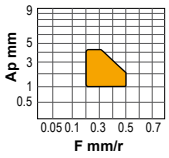





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNMG 120404-FMC | 12,70 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | | | |

## SNMG-KC

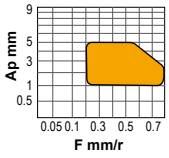





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNMG 120408-KC | 12,70 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | | | | |

## SNMG-MHC

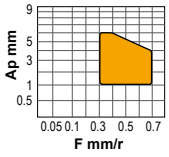





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNMG 120408-MHC | 12,70 | 4,76 | 12,70 | 0,8 | | | | | | ● | ● | | | | | | |

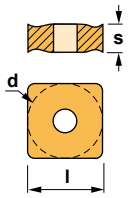
## SNMG-RC






| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNMG 120412-RC | 12,70 | 4,76 | 12,70 | 1,2 | | | | | | | ● | | | | | | |
| SNMG 150612-RC | 15,88 | 6,35 | 15,88 | 1,2 | | | | | | | ● | | | | | | |
| SNMG 190616-RC | 19,05 | 6,35 | 19,05 | 1,6 | | | | | | | ● | | | | | | |

# Square inserts / Negative
# Vierkant-Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

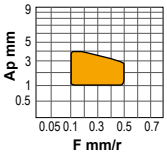
**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## SNMG-TC



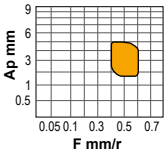
| Reference / Bezeichnung | l | s | d | r |
|---|---|---|---|---|
| SNMG 120408-TC | 12,70 | 4,76 | 12,70 | 0,8 |



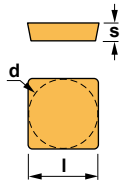

## SNMM



| Reference / Bezeichnung | l | s | d | r |
|---|---|---|---|---|
| SNMM 190616 | 19,05 | 6,35 | 19,05 | 1,6 |
| SNMM 250724 | 25,40 | 7,94 | 25,40 | 2,4 |



# Square inserts / Positive
# Vierkant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

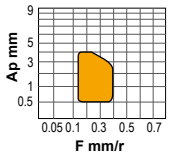
| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



## SPMR

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPMR 090308 | 9,52 | 3,18 | 9,52 | 0,8 | | | | | | ● | | | | | | | |
| SPMR 120304 | 12,70 | 3,18 | 12,70 | 0,4 | | | | | ● | | | | | | | | |
| SPMR 120308 | 12,70 | 3,18 | 12,70 | 0,8 | | ● | | | | ● | | | | | | | |

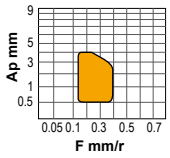




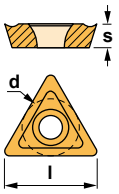

## SPUN

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPUN 090304E | 9,52 | 3,18 | 9,52 | 0,4 | | ● | | | | | | | | | | ● | |
| SPUN 090308E | 9,52 | 3,18 | 9,52 | 0,8 | | ● | | | | | | | | | | ● | |
| SPUN 120304E | 12,70 | 3,18 | 12,70 | 0,4 | | ● | | | | | | | | | | ● | |
| SPUN 120308E | 12,70 | 3,18 | 12,70 | 0,8 | | ● | | | | | | | | | | ● | |
| SPUN 120308F | 12,70 | 3,18 | 12,70 | 0,8 | ● | | | | | | | | | | | | |
| SPUN 120312E | 12,70 | 3,18 | 12,70 | 1,2 | | ● | | | | | | | | | | ● | |
| SPUN 120408E | 12,70 | 4,76 | 12,70 | 0,8 | | ○ | | | | | | | | | | | |
| SPUN 150408E | 15,88 | 4,76 | 15,88 | 0,8 | | ● | | | | | | | | | | | |
| SPUN 150412E | 15,88 | 4,76 | 15,88 | 1,2 | | ○ | | | | | | | | | | | |
| SPUN 190412E | 19,05 | 4,76 | 19,05 | 1,2 | | ○ | | | | | | | | | | | |



# Triangular inserts / Positive
# Dreikant-Wendeschneidplatten / Positiv



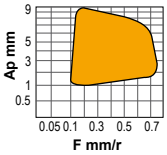

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## TCGT-AL



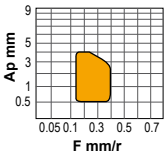



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCGT 110202-AL | 11,00 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | | | | ○ |
| TCGT 110204-AL | 11,00 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | | | | ○ |
| TCGT 16T302-AL | 16,50 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | | | | ○ |
| TCGT 16T304-AL | 16,50 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| TCGT 16T308-AL | 16,50 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |

## TCMT



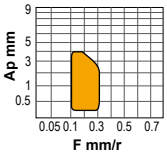



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCMT 090204 | 9,62 | 2,38 | 5,55 | 0,4 | | | | | ● | | | | | | | | |
| TCMT 110204 | 11,00 | 2,38 | 6,35 | 0,4 | | ● | | ● | ● | | | ● | | | | ● | |
| TCMT 16T304 | 16,50 | 3,97 | 9,52 | 0,4 | | ● | | | ● | | ● | ● | | | | | |
| TCMT 16T308 | 16,50 | 3,97 | 9,52 | 0,8 | | ● | | ● | ● | | ● | ● | | | | | |
| TCMT 220408 | 22,00 | 4,76 | 12,70 | 0,8 | | ○ | | | | | | | | | | | |
| TCMT 220412 | 22,00 | 4,76 | 12,70 | 1,2 | | ○ | | | | | | | | | | | |

## TCMW

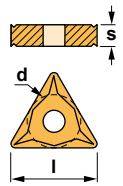





7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCMW 110204 | 11,00 | 2,38 | 6,35 | 0,4 | ● | ● | | | | | | | | | | | |
| TCMW 16T304 | 16,50 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | | | | |
| TCMW 16T308 | 16,50 | 3,97 | 9,52 | 0,8 | ● | ● | | | | | | | | | | | |

# Triangular inserts / Negative
# Dreikant-Wendeschneidplatten / Negativ



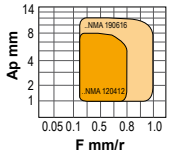

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## TNMA

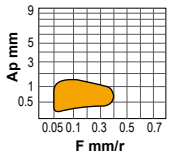





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | | | ○ | | | | |
| TNMA 220408 | 22,00 | 4,76 | 12,70 | 0,8 | | | | | | | | | ○ | | | | |
| TNMA 220412 | 22,00 | 4,76 | 12,70 | 1,2 | | | | | | | | | ○ | | | | |
| TNMA 220416 | 22,00 | 4,76 | 12,70 | 1,6 | | | | | | | | | ○ | | | | |

## TNMG-CC

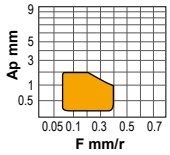





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160404-CC | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | | | | | | | | | |
| TNMG 160408-CC | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | | | | | | | | | |

## TNMG-FC

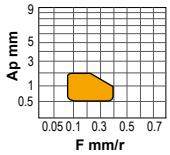





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160404-FC | 16,50 | 4,76 | 9,52 | 0,4 | | | | | ● | | ● | | | | | | |
| TNMG 220404-FC | 22,00 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | | | |

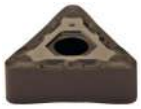
## TNMG-FMC

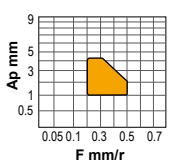





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160404-FMC | 16,50 | 4,76 | 9,52 | 0,4 | | | | | ● | | | | | | | | |

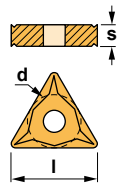
## TNMG-KC






| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160408-KC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | | | ● | | | | |
| TNMG 160412-KC | 16,50 | 4,76 | 9,52 | 1,2 | | | | | | | | | ● | | | | |
| TNMG 220408-KC | 22,00 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | | | | |

# Triangular inserts / Negative
# Dreikant-Wendeschneidplatten / Negativ



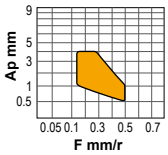

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## TNMG-MC

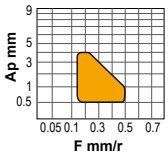





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160404-MC | 16,50 | 4,76 | 9,52 | 0,4 | | | | | | | | ● | | | | | |
| TNMG 160408-MC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | ● | | ● | ● | | | | | |
| TNMG 220408-MC | 22,00 | 4,76 | 12,70 | 0,8 | | | | | ● | | ● | | | | | | |
| TNMG 220412-MC | 22,00 | 4,76 | 12,70 | 1,2 | | | | | ● | | | | | | | | |

## TNMG-MFC

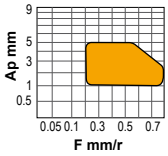





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160408-MFC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | ● | | ● | | | | | | |

## TNMG-MHC

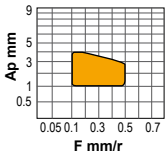





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160408-MHC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | ● | ● | | | | | | |
| TNMG 160412-MHC | 16,50 | 4,76 | 9,52 | 1,2 | | | | | | | ● | | | | | | |
| TNMG 220408-MHC | 22,00 | 4,76 | 12,70 | 0,8 | | | | | | | ● | | | | | | |
| TNMG 220412-MHC | 22,00 | 4,76 | 12,70 | 1,2 | | | | | | | ● | | | | | | |

## TNMG-TC

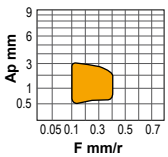





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMG 160408-TC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | | | | | ● | | |

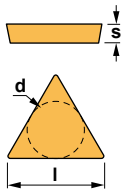
## TNMX






| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TNMX 160404 R | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | | | | | | | | | |
| TNMX 160408 R | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | | | | | | | | | |
| TNMX 160404 L | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | | | | | | | | | |
| TNMX 160408 L | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | | | | | | | | | |

# Triangular inserts / Positive
# Dreikant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

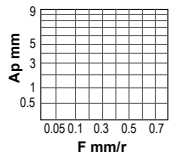
| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |



## TPMN

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPMN 160308 | 16,50 | 3,18 | 9,52 | 0,8 | | | | ● | | | | | | | | | |

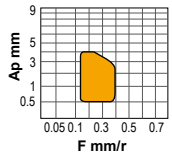





## TPMR

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPMR 090204 | 9,62 | 2,38 | 5,55 | 0,4 | | | | | ● | | | | | | | | |
| TPMR 110304 | 11,00 | 3,18 | 6,35 | 0,4 | | | | | ● | | | | | | | | |
| TPMR 110308 | 11,00 | 3,18 | 6,35 | 0,8 | | | | | | ● | | | | | | | |
| TPMR 160304 | 16,50 | 3,18 | 9,52 | 0,4 | | | | | ● | | ● | | | | | | |
| TPMR 160308 | 16,50 | 3,18 | 9,52 | 0,8 | | | | | ● | | ● | | | | | | |

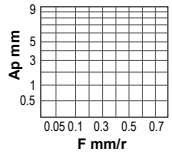





## TPUN

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPUN 110204E | 11,00 | 2,38 | 6,35 | 0,4 | | ● | | | | | | | | | | ● | |
| TPUN 110204F | 11,00 | 2,38 | 6,35 | 0,4 | ○ | | | | | | | | | | | | |
| TPUN 110208E | 11,00 | 2,38 | 6,35 | 0,8 | | ● | | | | | | | | | | ● | |
| TPUN 110304E | 11,00 | 3,18 | 6,35 | 0,4 | | ● | | | | | | | | | | ● | |
| TPUN 110308E | 11,00 | 3,18 | 6,35 | 0,8 | | ● | | | | | | | | | | ● | |
| TPUN 160304E | 16,50 | 3,18 | 9,52 | 0,4 | | ● | | | | | | | | | | ● | |
| TPUN 160304F | 16,50 | 3,18 | 9,52 | 0,4 | ● | | | | | | | | | | | | |
| TPUN 160308T | 16,50 | 3,18 | 9,52 | 0,8 | | ● | | | | | | | | | | ● | |
| TPUN 160308E | 16,50 | 3,18 | 9,52 | 0,8 | | ● | | | | | | | | | | ● | |
| TPUN 160308F | 16,50 | 3,18 | 9,52 | 0,8 | ● | | | | | | | | | | | | |
| TPUN 160312E | 16,50 | 3,18 | 9,52 | 1,2 | | ● | | | | | | | | | | ● | |
| TPUN 160312F | 16,50 | 3,18 | 9,52 | 1,2 | ○ | | | | | | | | | | | | |
| TPUN 220408E | 22,00 | 4,76 | 12,70 | 0,8 | | ● | | | | | | | | | | ● | |
| TPUN 220408F | 22,00 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | | | | |
| TPUN 220412E | 22,00 | 4,76 | 12,70 | 1,2 | | ● | | | | | | | | | | ● | |

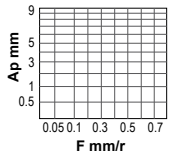




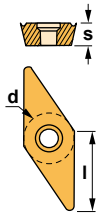

## TPUX

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPUX 110304L | 11,00 | 3,18 | 6,35 | 0,4 | ○ | ● | | | | | | | | | | ● | |
| TPUX 110304R | 11,00 | 3,18 | 6,35 | 0,4 | ○ | ● | | | | | | | | | | ● | |
| TPUX 160304L | 16,50 | 3,18 | 9,52 | 0,4 | ○ | ● | | | | | | | | | | ● | |
| TPUX 160304R | 16,50 | 3,18 | 9,52 | 0,4 | ○ | ● | | | | | | | | | | ● | |
| TPUX 160308L | 16,50 | 3,18 | 9,52 | 0,8 | ○ | ● | | | | | | | | | | ● | |
| TPUX 160308R | 16,50 | 3,18 | 9,52 | 0,8 | ○ | ● | | | | | | | | | | ● | |
| TPUX 220408L | 22,00 | 4,76 | 12,70 | 0,8 | | ○ | | | | | | | | | | | |
| TPUX 220408R | 22,00 | 4,76 | 12,70 | 0,8 | ○ | ○ | | | | | | | | | | | |



# 35º Rhombic inserts / Positive
# Rhombische Wendeschneidplatten 35º / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

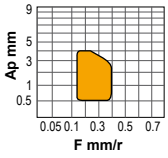
| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## VBMT



5°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VBMT 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | ● | | | | | | | | |
| VBMT 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | ● | | | | | | | | |

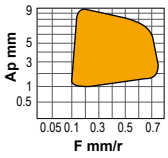



## VCGT-AL



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VCGT 160404-AL | 16,50 | 4,76 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| VCGT 160408-AL | 16,50 | 4,76 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |
| VCGT 160412-AL | 16,50 | 4,76 | 9,52 | 1,2 | ● | | | | | | | | | | | | ○ |
| VCGT 220530-AL | 22,10 | 5,56 | 12,70 | 3,0 | ● | | | | | | | | | | | | ○ |

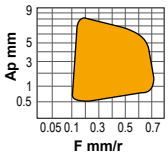



## VCGT-AP



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VCGT 160404-AP | 16,50 | 4,76 | 9,52 | 0,4 | ● | | | | | | | | | | | | ○ |
| VCGT 160408-AP | 16,50 | 4,76 | 9,52 | 0,8 | ● | | | | | | | | | | | | ○ |
| VCGT 160412-AP | 16,50 | 4,76 | 9,52 | 1,2 | ● | | | | | | | | | | | | ○ |
| VCGT 220530-AP | 22,10 | 5,56 | 12,70 | 3,0 | ● | | | | | | | | | | | | ○ |

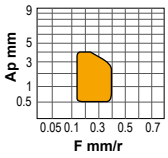



## VCMT

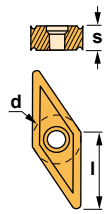


7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VCMT 110304 | 11,00 | 3,18 | 6,35 | 0,4 | | | | | ● | | | | | | | | |
| VCMT 130304 | 13,00 | 3,18 | 7,94 | 0,4 | | | | | ● | | | | | | | | |
| VCMT 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | ● | | | ● | | | | | |
| VCMT 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | ● | | ● | | | | | |



# 35º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 35º / Negativ



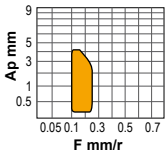

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## VNGP

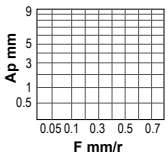





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VNGP 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | | | | | | ● | | | |
| VNGP 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | | | | ● | | | |

## VNMG

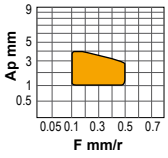





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VNMG 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | ● | | | | | | | | |

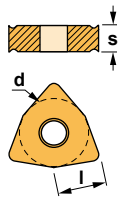
## VNMG-TC






| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VNMG 160408-TC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | | | | | ● | | |

# 80º Trigon inserts / Negative
# Trigon-Wendeschneidplatten 80º / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

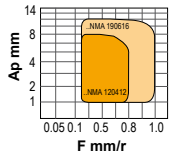
**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## WNMA



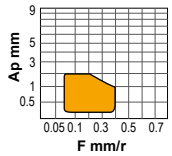
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMA 080408 | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | | | | ○ | | | | |




## WNMG-FC



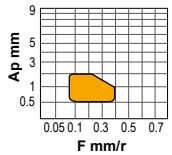
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 080404-FC | 8,14 | 4,76 | 12,70 | 0,4 | | | | | ● | | ● | | | | | | |




## WNMG-FMC



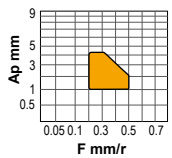
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 080404-FMC | 8,14 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | | | |




## WNMG-KC



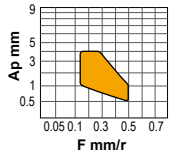
| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 080408-KC | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | | | | |
| WNMG 080412-KC | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | | | | ● | | | | |



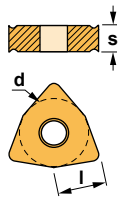

## WNMG-MC



| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 060404-MC | 6,14 | 4,76 | 9,52 | 0,4 | | | | | ● | | | ● | | | | | |
| WNMG 060408-MC | 6,14 | 4,76 | 9,52 | 0,8 | | | | | ● | | | ● | | | | | |
| WNMG 080408-MC | 8,14 | 4,76 | 12,70 | 0,8 | | | | | ● | | ● | ● | | | | | |



# 80º Trigon inserts / Negative
# Trigon-Wendeschneidplatten 80º / Negativ



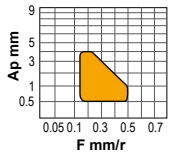

**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ✣ | ✣ | ● | ● | ◕ | ✣ | | | | | ✣ | |
| M | Stainless / Rostfreier Stahl | | ✣ | | ● | | | | ◕ | | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ● | | | | | ◕ | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ◕ | | | | | | | | | | | | ◕ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | ◕ | ✣ | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | | | | |

## WNMG-MFC

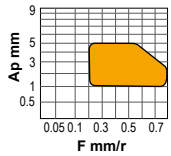





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 080408-MFC | 8,14 | 4,76 | 12,70 | 0,8 | | | | | ● | | | | | | | | |

## WNMG-MHC

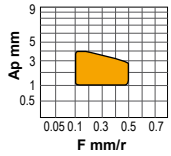





| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 080408-MHC | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | ● | ● | | | | | | |
| WNMG 080412-MHC | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | ● | | | | | | | |

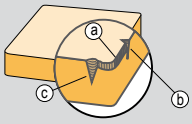
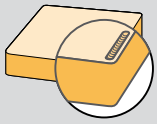
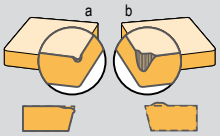
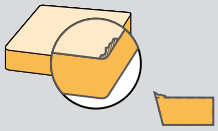
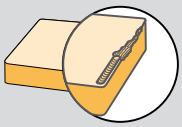
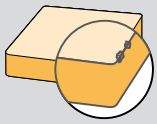
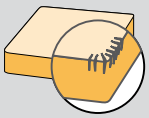
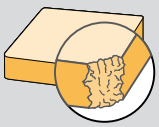
## WNMG-TC



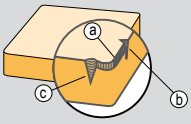
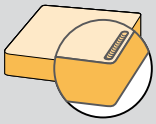
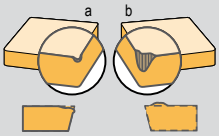
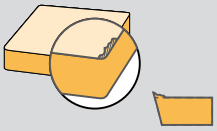
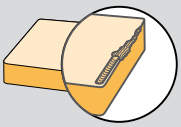
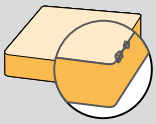
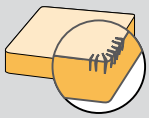
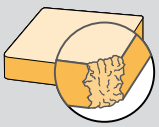



| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | TN35 | TK15 | TS15 | TS20 | TIN25 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WNMG 080408-TC | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | | | | | | ● | | |

## *Turning insert wear and tool life*

| | Problem | Cause and remedy |
|---|---|---|
| **Flank and notch wear**   | ▼ Rapid flank wear causing poor surface finish or out of tolerance (a).<br>▼ Notch wear causing poor surface finish and risk of edge breakage. | ▲ A too high cutting speed or insufficient wear resistance (a).<br>▲ Oxidation or excessive attrition wear caused by a hard surface (b,c).<br>Reduce the cutting speed.<br>Select a more wear resistant grade.<br>Select an $Al_2O_3$ coated grade for steel machining.<br>For work hardening materials select a larger lead angle or a more wear resistant grade. |
| **Crater wear**  | ▼ Excessive crater wear causing a weakened edge. Cutting edge break through on the trailing edge causes poor surface finish. | ▲ Diffusion wear due to too high cutting temperatures on the rake face.<br>Select an $Al_2O_3$ coated grade.<br>Select a positive insert geometry.<br>Obtain a lower temperature by reducing the feed and speed. |
| **Plastic deformation**   | ▼ Plastic deformation (edge depression (a) or flank impression (b)) leading to poor chip control and poor surface finish.<br>Risk of excessive flank wear leading to insert breakage. | ▲ A too high cutting temperature in combination with a high pressure.<br>Select a harder grade with better resistance to plastic deformation.<br>(a) Reduce cutting speed.<br>(b) Reduce feed. |
| **Built-up edge**  | ▼ Built-up edge (B.U.E.) causing poor surface finish and cutting edge frittering when the B.U.E. is torn away. | ▲ Workpiece material is welded to the insert due to:<br>- low cutting speed.<br>- negative cutting geometry.<br>- "sticky" material, e.g. certain stainless steels and pure aluminium.<br>Increase cutting speed.<br>Select a positive geometry.<br>Increase cutting speed drastically. If tool life turns out to be short,apply coolant in large quantities. |
| **Chip hammering**  | ▼ The part of the cutting edge not in cut is damaged through chip hammering. Both the top side and the support for the insert, can be damaged. | ▲ The chips are of an excessive length and are deflected against the cutting edge.<br>Change the feed slightly.<br>Select an alternative insert geometry.<br>Change the lead angle of the holder. |
| **Frittering**  | ▼ Small cutting edge fractures (frittering) causing poor surface finish and excessive flank wear. | ▲ Grade too brittle.<br>▲ Insert geometry too weak.<br>▲ Built-up edge.<br>Select a tougher grade.<br>Select an insert with a stronger geometry.<br>Increase cutting speed or select a positive geometry. |
| **Thermal cracks**  | ▼ Small cracks perpendicular to the cutting edge causing frittering and poor surface finish. | ▲ Thermal cracks due to temperature variations caused by:<br>- Intermittent machining.<br>- Varying coolant supply.<br>Select a tougher grade with better resistant to thermal shocks.<br>Coolant should be applied copiously or not at all. |
| **Insert breakage**  | ▼ Insert breakage that damages not only the insert but also the shim and workpiece. | ▲ Grade too brittle.<br>▲ Excessive load on the insert.<br>▲ Insert geometry too weak.<br>▲ Insert size is too small.<br>Select a tougher grade.<br>Reduce the feed and/or the depth of the cut.<br>Select a stronger geometry, preferably a single sided insert.<br>Select a thicker/larger insert. |

## *Verschleiß und Standzeit der Dreh-Wendeschneidplatten*

| | Problem | Ursache und Maßnahmen |
|---|---|---|
| **Freiflächen- und Kerbverschleiß**   | ▼ Schneller Freiflächenverschleiß, was eine schlechte Oberflächengüte oder eine schlechte Maßgenauigkeit verursacht (a).<br>▼ Kerbverschleiß, was eine schlechte Oberflächengüte und Gefahr von Schneidkantenbruch verursacht (b, c). | ▲ Zu hohe Schnittgeschwindigkeit oder ungenügende Verschleißfestigkeit (a).<br>▲ Oxidation oder zu hoher Abriebverschleiß wegen einer harten Oberfläche (b,c).<br>Schnittgeschwindigkeit reduzieren.<br>Eine verschleißfestere Sorte wählen.<br>Eine Al2 O3 beschichtete Sorte für Stahlbearbeitung wählen.<br>Um kaltverfestigendes Material zu bearbeiten, einen kleineren Einstellwinkel oder eine verschleißfestere Sorte wählen. |
| **Kolkverschleiß**  | ▼ Schneller Kolkverschleiß, was eine schwache Schneidkante verursacht. Die Schneidkante bricht an der Nebenschneide, was eine schlechte Oberflächengüte verursacht. | ▲ Diffusionsverschleiß wegen zu hoher Schnitttemperatur im Spanwinkel.<br>Eine $Al_2O_3$ beschichtete Sorte wählen.<br>Eine positive Schneidengeometrie wählen.<br>Eine niedrigere Temperatur erreichen, indem man Vorschub und Geschwindigkeit reduziert. |
| **Plastische Verformung**   | ▼ Plastische Verformung (a-Schneidkante, b-Freifläche), was schlechte Spankontrolle und eine schlechte Oberflächengüte verursacht. Es gibt ein Risiko zu übermäßigem Freiflächenverschleiß, was Wendeplattenbruch verursacht. | ▲ Zu hohe Schneidtemperatur zusammen mit zu hohem Druck.<br>Eine härtere Sorte mit besserem Widerstand gegen plastische Verformung wählen.<br>Für a) - Schnittgeschwindigkeit reduzieren.<br>Für b) - Vorschub reduzieren. |
| **Aufbauschneide**  | ▼ Schneidenaufbau, der eine schlechte Oberflächengüte und Kantenausbrüche verursacht, wenn man den Schneidenaufbau abreißt. | ▲ Das Werkstückmaterial verschweißt sich mit der Wendeschneidplatte wegen:<br>- zu niedrige Schnittgeschwindigkeit.<br>- negative Schneidengeometrie.<br>- klebriges Material, z.B. einige rostfreie Stähle und Aluminium.<br>Schnittgeschwindigkeit erhöhen.<br>Eine positive Schneidengeometrie wählen.<br>Schnittgeschwindigkeit drastisch erhöhen und wenn die Dauerhaftigkeit sehr klein ist, Kühlmittel reichlich anwenden. |
| **Späneschlag**  | ▼ Der nicht schneidende Teil der Schneidkante ist von den Spänen geschlagen und beschädigt. Dadurch können Spanfläche und Plattensitz beschädigt werden. | ▲ Die Späne sind zu lang und werden gegen die Schneidkante abgelenkt.<br>Vorschub leicht ändern.<br>Eine andere Geometrie wählen.<br>Den Einstellwinkel des Werkzeugs ändern. |
| **Kantenausbrüche**  | ▼ Kleine Ausbrüche längs der Schneidkante, was eine schlechte Oberflächengüte und einen schnelleren Freiflächenverschleiß verursacht. | ▲ Zu verschleißfeste Sorte.<br>▲ Zu schwache Geometrie.<br>▲ Schneidenaufbau.<br>Eine zähere Sorte wählen.<br>Eine Wendeschneidplatte mit einer stärkeren Geometrie wählen.<br>Schnittgeschwindigkeit erhöhen oder eine positive Geometrie wählen. |
| **Kammrisse**  | ▼ Kleine Risse senkrecht zur Schneidkante, was Kantenausbruch und eine schlechte Oberflächengüte verursachen. | ▲ Kammrisse wegen Wärmewechselbelastungen aufgrund von:<br>- Unterbrochenem Schnitt.<br>- Ungleichmässiger Kühlmittelzufuhr.<br>Eine zähere Sorte mit höherem Widerstand gegen Wärmewechselbelastungen wählen.<br>Kühlmittel soll reichlich oder überhaupt nicht zugeführt werden. |
| **Plattenbruch**  | ▼ Plattenbruch, der nicht nur die Wendeschneidplatte selbst, sondern auch den Plattensitz und das Werkstück beschädigt. | ▲ Zu verschleißfeste Sorte.<br>▲ Zu hohe Belastung der Wendeschneidplatte.<br>▲ Zu schwache Wendeschneidplattengeometrie.<br>▲ Zu kleine Wendeschneidplatte.<br>Eine zähere Sorte wählen.<br>Vorschub und/oder Schnitttiefe reduzieren.<br>Eine stärkere Geometrie wählen, vorzugsweise eine einseitige Wendeplatte.<br>Eine dickere/größere Wendeschneidplatte wählen. |

# Ceramic inserts
# Keramik-Wendeschneidplatten

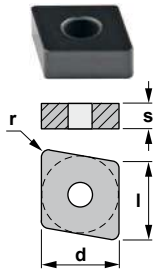
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

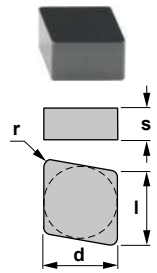
| Material Werkstoff | | Grade Sorte | Continuous Ununterbrochen | Slight interruption Leicht unterbrochen | Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | ■ | | |
| | | CX6 | ■ | ■ | ■ |
| | | CW1 | ■ | ■ | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | ■ | ■ | ■ |
| | | CW1 | ■ | ■ | |
| H | Hard materials Harte Materialien | CC7 | ■ | | |




## CNGA

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte.

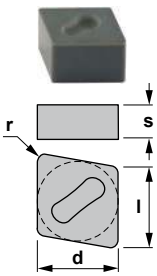
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| CNGA 120404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | ● | |
| CNGA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | ● | |
| CNGA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | ● | | | ● | |




## CNGN

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte.

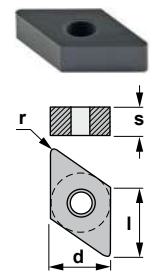
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| CNGN 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | ● | | ● |
| CNGN 120412 | 12,90 | 4,76 | 12,70 | 1,2 | | | ● | | ● |
| CNGN 120708 | 12,90 | 7,94 | 12,70 | 0,8 | | | ● | | ● |
| CNGN 120712 | 12,90 | 7,94 | 12,70 | 1,2 | | | ● | | ● |
| CNGN 120716 | 12,90 | 7,94 | 12,70 | 1,6 | | | | | ● |




## CNGX

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte.

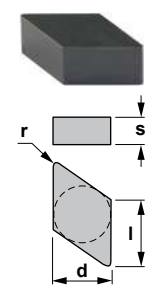
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| CNGX 120708 | 12,90 | 7,94 | 12,70 | 0,8 | ● | ● | | | |
| CNGX 120712 | 12,90 | 7,94 | 12,70 | 1,2 | ● | ● | | | |
| CNGX 120716 | 12,90 | 7,94 | 12,70 | 1,6 | ● | ● | | | |
| CNGX 160712 | 16,10 | 7,94 | 15,87 | 1,2 | ● | | | | |
| CNGX 160716 | 16,10 | 7,94 | 15,87 | 1,6 | ● | ● | | | |




## DNGA

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| DNGA 150404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | ● | |
| DNGA 150408 | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | ● | |
| DNGA 150412 | 12,90 | 4,76 | 12,70 | 1,2 | ● | | | ● | |




## DNGN

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| DNGN 150708 | 15,50 | 7,94 | 12,70 | 0,8 | | | ● | | ● |
| DNGN 150712 | 15,50 | 7,94 | 12,70 | 1,2 | | | ● | | ● |
| DNGN 150716 | 15,50 | 7,94 | 12,70 | 1,6 | | | ● | | |

# Ceramic inserts
# Keramik-Wendeschneidplatten

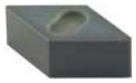
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

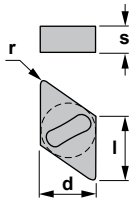
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | | | |
| | | CX6 | | | |
| | | CW1 | | | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | | | |
| | | CW1 | | | |
| H | Hard materials Harte Materialien | CC7 | | | |



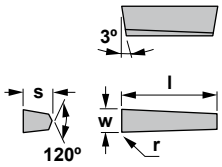



## DNGX

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| DNGX 120708 | 12,20 | 7,94 | 10,00 | 0,8 | ● | | | | |
| DNGX 120712 | 12,20 | 7,94 | 10,00 | 1,2 | ● | | | | |
| DNGX 120716 | 12,20 | 7,94 | 10,00 | 1,6 | ● | | | | |
| DNGX 150708 | 15,50 | 7,94 | 12,70 | 0,8 | ● | | | | |
| DNGX 150712 | 15,50 | 7,94 | 12,70 | 1,2 | ● | ● | | | |
| DNGX 150716 | 15,50 | 7,94 | 12,70 | 1,6 | ● | ● | | | |



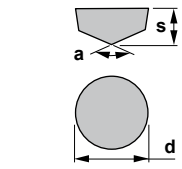



## GWG

Positive insert.
Positive Wendeschneidplatte.

| Reference / Bezeichnung | l | s | w | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| GWG 04 M | 12,00 | 5,00 | 4,00 | 0,5 | ○ | | | | |
| GWG 05 M | 12,00 | 5,00 | 5,00 | 0,8 | ○ | | | | |
| GWG 06 M | 15,00 | 7,50 | 6,00 | 0,8 | ○ | | | | |
| GWG 07 | 15,00 | 7,50 | 7,00 | 0,8 | ○ | | | | |
| GWG 08 | 15,00 | 7,50 | 8,00 | 0,8 | ○ | | | | |
| GWG 10 | 15,00 | 7,50 | 10,00 | 0,8 | ○ | | | | |



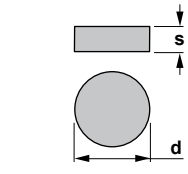



## RCGX

Round positive insert.
Runde positive Wendeschneidplatte.

| Reference / Bezeichnung | s | d | a | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|
| RCGX 060700 | 7,94 | 6,35 | 120° | | | ● | | ● |
| RCGX 090700 | 7,94 | 9,52 | 120° | | ● | ● | | ● |
| RCGX 120700 | 7,94 | 12,70 | 120° | | ● | ● | | ● |
| RCGX 151000 | 10,00 | 15,87 | 120° | | | ● | | ● |
| RCGX 191000 | 10,00 | 19,05 | 120° | | ● | ● | | ● |
| RCGX 251200 | 12,00 | 25,40 | 140° | | | ● | | |






## RNGN

Round negative inserts.
Runde negative Wendeschneidplatte.

| Reference / Bezeichnung | s | d | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|
| RNGN 120400 | 4,76 | 12,70 | | ● | | ● | ● |
| RNGN 120700 | 7,94 | 12,70 | | ● | | ● | ● |

# Ceramic inserts
# Keramik-Wendeschneidplatten

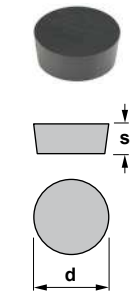
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

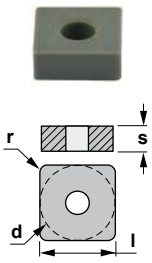
| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | ● | | |
| | | CX6 | ● | ● | ● |
| | | CW1 | ● | ● | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | ● | ● | ● |
| | | CW1 | ● | ● | |
| H | Hard materials Harte Materialien | CC7 | ● | | |




## RPGN

Round negative inserts.
Runde negative Wendeschneidplatte.

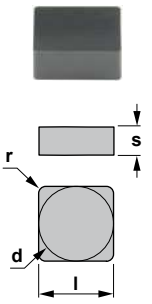
| Reference / Bezeichnung | s | d | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|
| RPGN 060200 | 2,38 | 6,35 | | ● | | | |
| RPGN 090300 | 3,18 | 9,52 | | ● | | | |
| RPGN 120400 | 4,76 | 12,70 | | ● | | | |




## SNGA

Square negative insert.
Vierkantige negative Wendeschneidplatte.

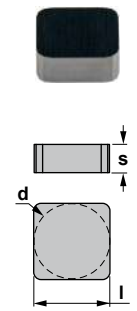
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| SNGA 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | ● | |
| SNGA 120412 | 12,70 | 4,76 | 12,70 | 1,2 | ● | | | ● | |
| SNGA 120416 | 12,70 | 4,76 | 12,70 | 1,6 | ● | | | ● | |




## SNGN

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| SNGN 120404 | 12,70 | 4,76 | 12,70 | 0,4 | | | ● | | |
| SNGN 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | ● | | |
| SNGN 120412 | 12,70 | 4,76 | 12,70 | 1,2 | | | ● | | |
| SNGN 120416 | 12,70 | 4,76 | 12,70 | 1,6 | | | ● | | |
| SNGN 120420 | 12,70 | 4,76 | 12,70 | 2,0 | | | ○ | | |
| SNGN 120424 | 12,70 | 4,76 | 12,70 | 2,4 | | | ○ | | |
| SNGN 120708 | 12,70 | 7,94 | 12,70 | 0,8 | | ● | ● | | ● |
| SNGN 120712 | 12,70 | 7,94 | 12,70 | 1,2 | | ● | ● | | ● |
| SNGN 120716 | 12,70 | 7,94 | 12,70 | 1,6 | | ● | ● | | ● |
| SNGN 120720 | 12,70 | 7,94 | 12,70 | 2,0 | | | ○ | | |




## SNGN

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|
| SNGN 1204ENT | 12,70 | 4,76 | 12,70 | | ● | | | |

# Ceramic inserts
# Keramik-Wendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

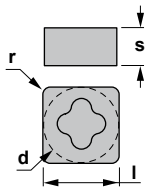
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Material Werkstoff | | Grade Sorte | Continuous Ununterbrochen | Slight interruption Leicht unterbrochen | Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | ■ | | |
| | | CX6 | ■ | ■ | ■ |
| | | CW1 | ■ | ■ | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | ■ | ■ | ■ |
| | | CW1 | ■ | ■ | |
| H | Hard materials Harte Materialien | CC7 | ■ | | |



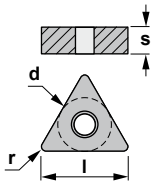



## SNGX

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| SNGX 120708 | 12,70 | 7,94 | 12,70 | 0,8 | ● | | | | |
| SNGX 120712 | 12,70 | 7,94 | 12,70 | 1,2 | ● | | | | |
| SNGX 120716 | 12,70 | 7,94 | 12,70 | 1,6 | ● | | | | |
| SNGX 150708 | 15,87 | 7,94 | 15,87 | 0,8 | ○ | | | | |
| SNGX 150712 | 15,87 | 7,94 | 15,87 | 1,2 | ● | ● | | | |
| SNGX 150716 | 15,87 | 7,94 | 15,87 | 1,6 | ● | ● | | | |



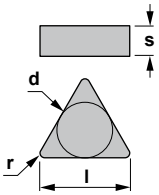



## TNGA

Triangular negative insert.
Dreikantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| TNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | |
| TNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | |
| TNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | | ● | |
| TNGA 160416 | 16,50 | 4,76 | 9,52 | 1,6 | | | | ○ | |



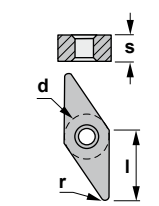



## TNGN

Triangular negative insert.
Dreikantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| TNGN 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | ● | | |
| TNGN 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | ● | | |
| TNGN 160416 | 16,50 | 4,76 | 9,52 | 1,6 | | | ● | | |
| TNGN 160708 | 16,50 | 7,94 | 9,52 | 0,8 | | | ● | | |
| TNGN 160712 | 16,50 | 7,94 | 9,52 | 1,2 | | | ○ | | |






## VNGA

35° rhombic negative insert.
35° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| VNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | |
| VNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | |
| VNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | | ● | |

# Ceramic inserts
# Keramik-Wendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

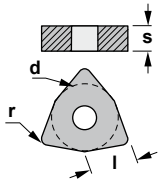
**AVAILABILITY**
- Standard item
- Check availability

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◔ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | ● | | |
| | | CX6 | ● | ● | ● |
| | | CW1 | ● | ● | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | ● | ● | ● |
| | | CW1 | ● | ● | |
| H | Hard materials Harte Materialien | CC7 | ● | | |






## WNGA

80° trigon negative insert.
80° trigon negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| WNGA 080408 | 8,14 | 4,76 | 12,70 | 0,8 | ● | | | ● | |
| WNGA 080412 | 8,14 | 4,76 | 12,70 | 1,2 | ● | | | ● | |

# CBN/PCD Inserts
# CBN/PCD Wendeschneidplatten

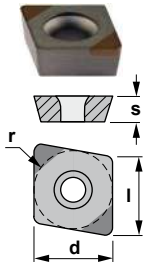
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

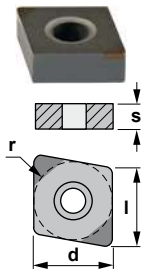
| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CBN | | | |
| H | Hard materials Harte Materialien | CBN | | | |
| N | Non ferrous materials Nicht-Eisen-Metalle | PCD | | | |




## CCMW

80° rhombic positive insert.
80° rhombische positive Wendeschneidplatte.

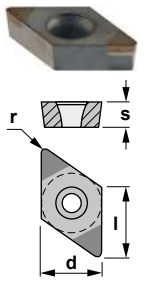
| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| CCMW 060202 | 6,50 | 2,38 | 6,35 | 0,2 | ○ | |
| CCMW 060204 | 6,50 | 2,38 | 6,35 | 0,4 | ● | |
| CCMW 09T304 | 9,70 | 3,97 | 9,52 | 0,4 | ● | |
| CCMW 09T308 | 9,70 | 3,97 | 9,52 | 0,8 | ● | |




## CNGA

80° rhombic negative insert.
80° rhombische positive Wendeschneidplatte.

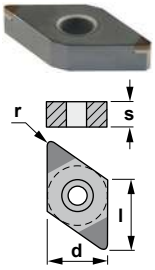
| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| CNGA 120404 | 12,90 | 4,76 | 12,70 | 0,4 | ● | |
| CNGA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | ● | |
| CNGA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | ○ | |




## DCMW

55° rhombic positive insert.
55° rhombische positive Wendeschneidplatte.

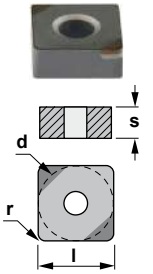
| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| DCMW 070202 | 7,80 | 2,38 | 6,35 | 0,2 | ○ | |
| DCMW 070204 | 7,80 | 2,38 | 6,35 | 0,4 | ● | |
| DCMW 11T302 | 11,60 | 3,97 | 9,52 | 0,2 | ○ | |
| DCMW 11T304 | 11,60 | 3,97 | 9,52 | 0,4 | ● | |
| DCMW 11T308 | 11,60 | 3,97 | 9,52 | 0,8 | ● | |




## DNGA

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| DNGA 150404 | 15,50 | 4,76 | 12,70 | 0,4 | ● | |
| DNGA 150408 | 15,50 | 4,76 | 12,70 | 0,8 | ● | |
| DNGA 150412 | 15,50 | 4,76 | 12,70 | 1,2 | ○ | |




## SNGA

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| SNGA 120404 | 12,70 | 4,76 | 12,70 | 0,4 | ○ | |
| SNGA 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | |
| SNGA 120412 | 12,70 | 4,76 | 12,70 | 1,2 | ○ | |

# CBN/PCD Inserts
# CBN/PCD Wendeschneidplatten

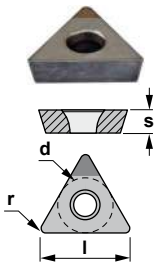
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

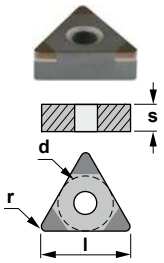
| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CBN | | | |
| H | Hard materials Harte Materialien | CBN | | | |
| N | Non ferrous materials Nicht-Eisen-Metalle | PCD | | | |




## TCMW

Triangular positive insert.
Dreikantige positive Wendeschneidplatte.

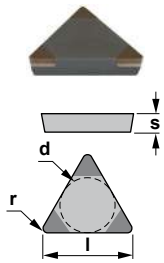
| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| TCMW 110204 | 11,00 | 2,38 | 6,35 | 0,4 | ● | |
| TCMW 16T304 | 16,50 | 3,97 | 9,52 | 0,4 | ● | |
| TCMW 16T308 | 16,50 | 3,97 | 9,52 | 0,8 | ● | |




## TNGA

Triangular negative insert.
Dreikantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| TNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | ● | |
| TNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | ● | |
| TNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | ○ | |




## TPMN

Triangular positive insert.
Dreikantige positive Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CBN | PCD |
|---|---|---|---|---|---|---|
| TPMN 110304 | 11,00 | 3,18 | 6,35 | 0,4 | ● | |
| TPMN 110308 | 11,00 | 3,18 | 6,35 | 0,8 | ● | |
| TPMN 160304 | 16,50 | 3,18 | 9,52 | 0,4 | ● | |
| TPMN 160308 | 16,50 | 3,18 | 9,52 | 0,8 | ● | |
| TPMN 160312 | 16,50 | 3,18 | 9,52 | 1,2 | ● | |



# TOOLHOLDERS
# KLEMMHALTER

Clamping systems / Klemmsysteme — A62

Code system (ISO) / Kodifizierung (ISO) — A63

Applications index / Anwendungen — A64-67

Dimple lock toolholders / Klemmhalter mit Dimple Lock-Klemmung — A68-79

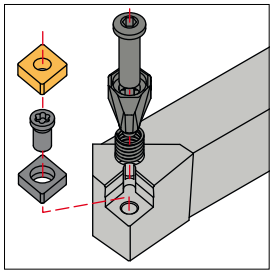
Wedge clamp toolholders / Double lock toolholders / Klemmhalter mit Pratzen-Klemmung / Klemmhalter mit Doppel-Klemmung — A80-93

Lever lock toolholders / Klemmhalter mit Kniehebel-Klemmung — A94-113

Top clamp toolholders / Klemmhalter mit oberer Klemmung — A114-127

Center screw toolholders / Klemmhalter mit Zentralschrauben-Klemmung — A128-165

Cutting data / Schnittdaten — A166-167

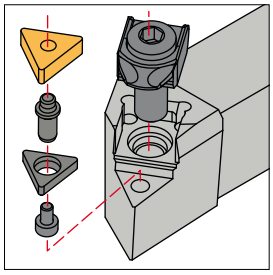


## *(D) Dimple lock*

The “D” clamping system avoids insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.

Das “D”-Klemmsystem vermeidet die Bewegung der Wendeschneidplatte bei hohem Vorschub oder bei stark unterbrochener Bearbeitung dank der genauen Positionierung, die die Wendeschneidplatte sicher befestigt.



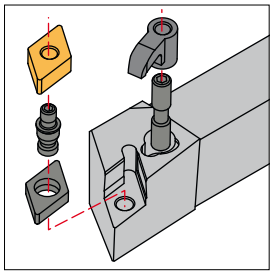


## *(M) Wedge clamp*
## *(M) Pratzen-Klemmung*

Negative inserts require good clamping force for heavy duty work, for this purpose we have designed our “M” system, one of the strongest and safest available.

Die negativen Wendeplatten für sehr schwere Zerspanungsarbeiten benötigen eine gute Klemmung, dafür bieten wir unser “M” Klemmsystem, das eines der stärksten und sichersten ist.



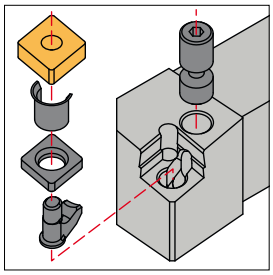


## *(M-K) Double lock*
## *(M-K) Doppel-Klemmung*

The double lock system offers good rigidity in negative inserts clamping. It is the first choice for center hole negative ceramic and cermet inserts.

Das doppelte Klemmsystem bietet eine gute Unbeweglichkeit bei der Klemmung von negativen Wendeschneidplatten. Es ist die erste Wahl für negative Keramik-Wendeschneidplatten mit zentralem Loch und auch für Cermet-Wendeschneidplatten.



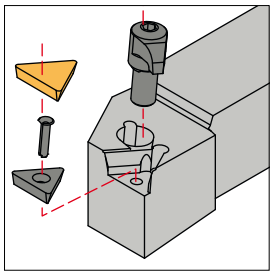


## *(P) Lever lock*
## *(P) Kniehebel-Klemmung*

The classic lever lock system allows a wide range of applications. It is the first choice for general purpose turning toolholders.

Das klassische Hebel-System erlaubt eine breite Reihe von Anwendungen. Es ist die erste Wahl für allgemeine Drehoperationen.



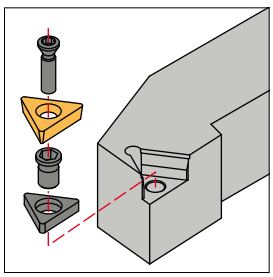


## *(C) Top clamp*
## *(C) Obere Klemmung*

The classic positive insert clamping system is designed to hold flat positive inserts, both with additional or sintered chipbreaker.

Dieses klassische Klemmsystem von positiven Wendeplatten erlaubt die Verwendung von allen Wendeplatten dieses Typs, in üblicher Sinterausführung sowohl als auch mit Spanbrecher.





## *(S) Center screw*
## *(S) Zentralschrauben-Klemmung*

Since the advent of the TORX screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.

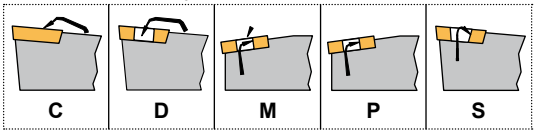
Seit der Einführung der Torx-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch zu klemmen. Unser Programm bietet alle Klemmöglichkeiten mit Schraube.



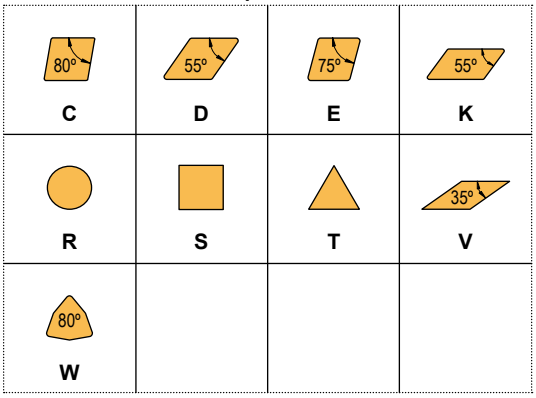
# Code system / Kodifizierung (ISO)

| P | C | L | N | R | 25 | 25 | M | 12 |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

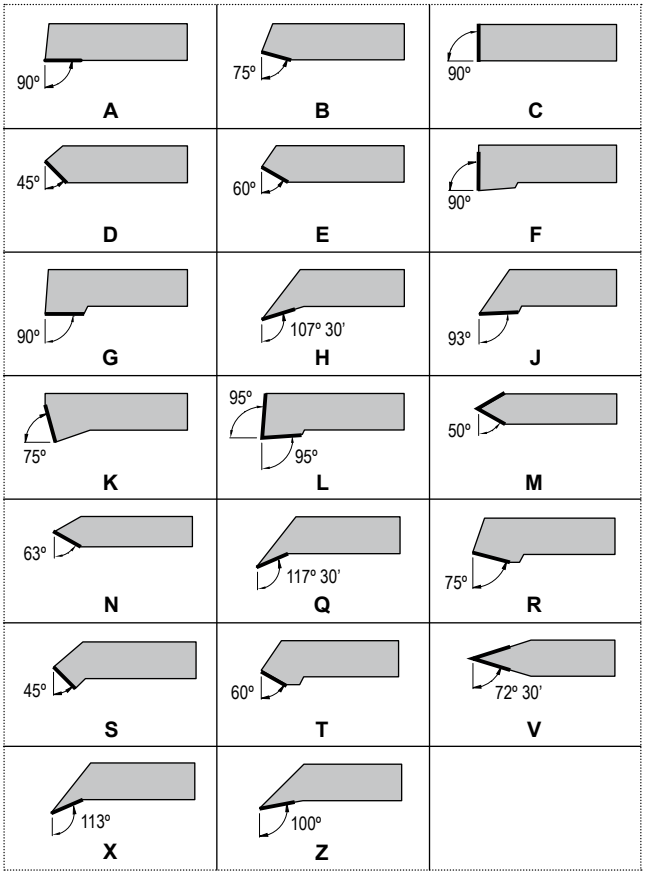
## 1 Clamping method of insert / Klemmsystem



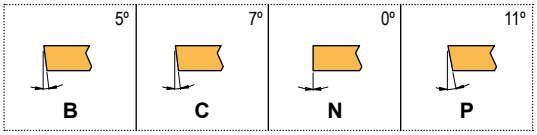

## 2 Insert shape / Wendeschneidplatten-Form



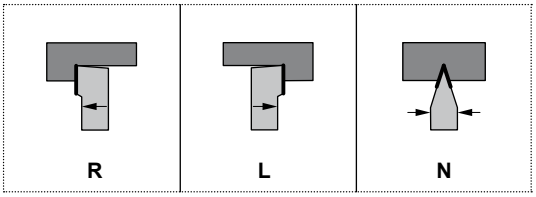

## 3 Holder style / Einstellwinkel



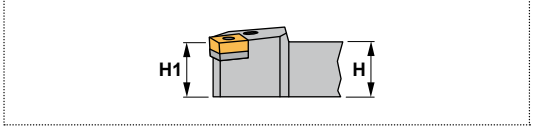

## 4 Clearance angle of insert / Wendeschneidplatten-Freiwinkel



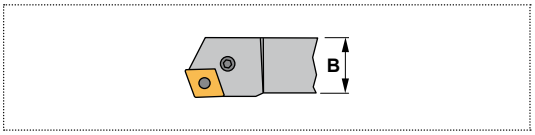

## 5 Hand / Bearbeitungsrichtung



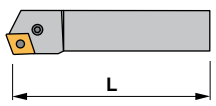

## 6 Shank height, mm / Schafthöhe mm.




## 7 Shank width, mm / Schaftbreite, mm.

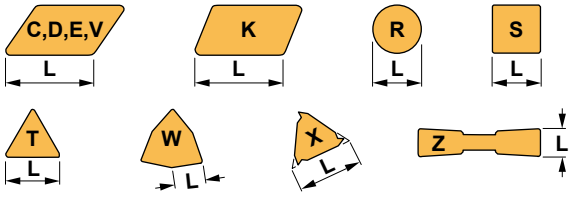



## 8 Tool length, mm / Werkzeuglänge, mm.




| | | | |
|---|---|---|---|
| D | 60 | P | 170 |
| E | 70 | R | 200 |
| F | 80 | S | 250 |
| H | 100 | T | 300 |
| K | 125 | U | 350 |
| L | 140 | V | 400 |
| M | 150 | X | Special Sonder |

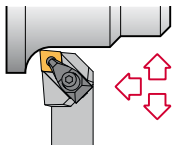
## 9 Cutting edge length, mm / Schneidkantenlänge, mm.



# NEGATIVE TOOLHOLDERS / NEGATIVE KLEMMHALTER

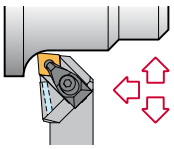
## *Dimple lock toolholders*
## *Klemmhalter mit Dimple Lock-Klemmung*

### DCLN 95º-N



*Page* CN.. 1204..
*Seite A68* CN.. 1906..

### DCLN 95º-A



*Page* CN.. 1204..
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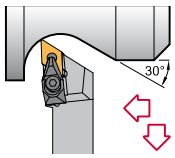
### DDJN 93º-N

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*Seite A70* DN.. 1506..

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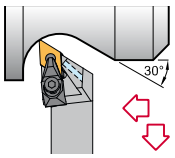


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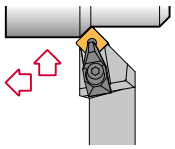
### DSSN 45º-N



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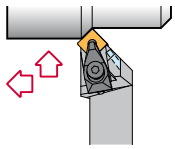

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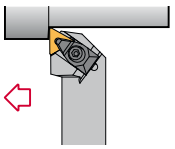
*Seite A73* SNM.. 1906..

### DTGN 90º-N



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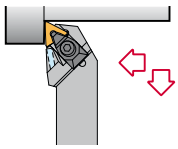
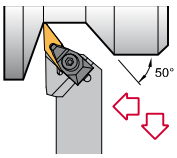
### DTJN 93º-A



*Page*
*Seite A75* TNM.. 1604..

### DVJN 93º-N

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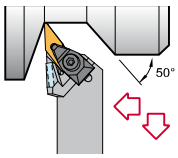
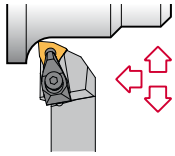
*Seite A76* VN.. 1604..

### DVJN 93º-A




*Page*
*Seite A77* VN.. 1604..

### DWLN 95º-N



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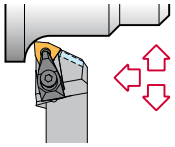
*Seite A78* WNMG 0804..

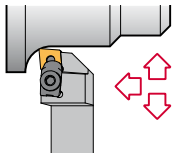
### DWLN 95º-A



*Page* WNMG 0604..
*Seite A79* WNMG 0804..

## *Wedge clamp / Double lock toolholders*
## *Klemmhalter mit Pratzen- und Doppel-Klemmung*

### MCLN 95º



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*Seite A80* CN.. 1906..

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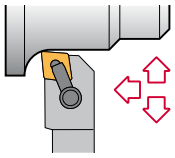

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*Seite A81* CN.. 1906..

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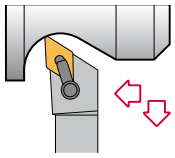

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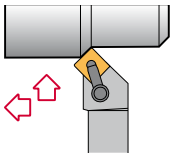

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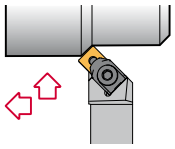
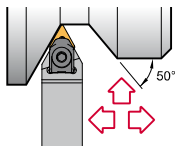
### MSSN 45º



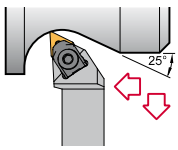
*Page* SNM.. 1204..
*Seite A84* SNM.. 1906..

### MTEN 60º



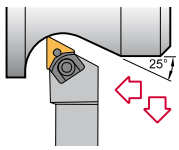

*Page* TNM.. 1604..
*Seite A85* TNM.. 2204..

### MTJN 93º



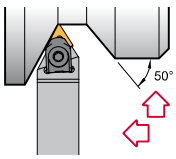

*Page* TNM.. 1604..
*Seite A86* TNM.. 2204..

### MTJN-K 93º



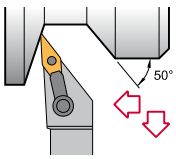

*Page* TNM.. 1604..
*Seite A87* TNM.. 2204..

### MTNN 63º



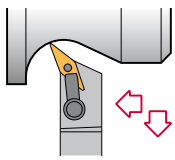

*Page* TNM.. 1604..
*Seite A88* TNM.. 2204..

### MVJN-K 93º



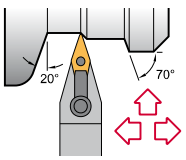

*Page*
*Seite A89* VN.. 1604..

### MVQN-K 117º30'



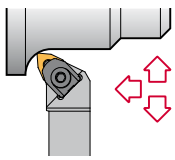
*Page*
*Seite A90* VN.. 1604..

### MVVN-K 72º30'



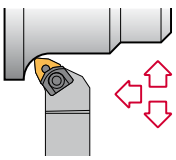

*Page*
*Seite A91* VN.. 1604..

### MWLN 95º



*Page* WNM.. 0604..
*Seite A92* WNM.. 0804..

### MWLN-K 95º

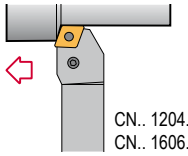


*Page*
*Seite A93* WNM.. 0804..

# NEGATIVE TOOLHOLDERS / NEGATIVE KLEMMHALTER

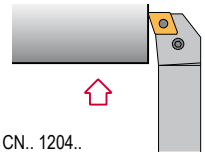
## *Lever lock toolholders*
## *Klemmhalter mit Kniehebel-Klemmung*

### PCBN 75º



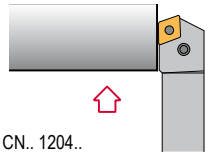
CN.. 1204..
CN.. 1606..
*Page* CN.. 1906..
*Seite A94* CN.. 2509..

### PCFN 90º



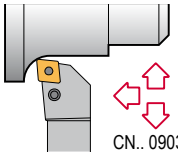
CN.. 1204..
CN.. 1606.. *Page*
CN.. 1906.. *Seite A95*

### PCKN 75º



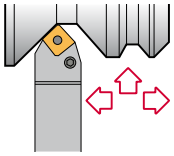
CN.. 1204..
CN.. 1906.. *Page*
CN.. 2509.. *Seite A96*

### PCLN 95º



CN.. 0903..
*Page* ..
*Seite A97* CN.. 2509..

### PCMN 50º



*Page* CN.. 1204..
*Seite A98* CN.. 1906..

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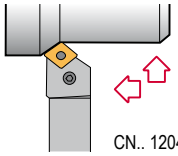
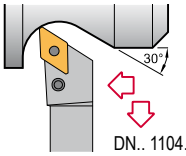


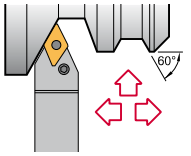
CN.. 1204..
*Page* CN.. 1606..
*Seite A99* CN.. 1906..

### PDJN 93º



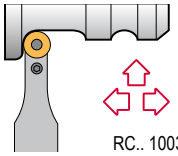

DN.. 1104..
*Page* DN.. 1504..
*Seite A100* DN.. 1506..

### PDNN 63º



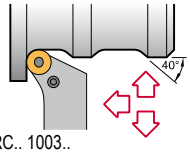

*Page* DN.. 1504..
*Seite A101* DN.. 1506..

### PRDC



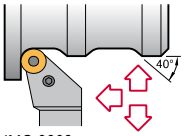
RC.. 1003..
*Page* ..
*Seite A102* RC.. 3209..

### PRSC



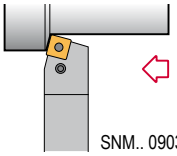

RC.. 1003..
.. *Page*
RC.. 3209.. *Seite A103*

### PRSN



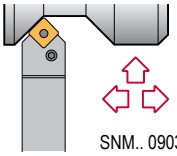

RNMG 0903..
.. *Page*
RNMG 2509.. *Seite A104*

### PSBN 75º



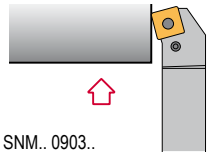
SNM.. 0903..
*Page* ..
*Seite A105* SNM.. 2507..

### PSDN 45º



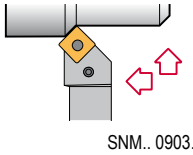
SNM.. 0903..
*Page* ..
*Seite A106* SNM.. 2507..

### PSKN 75º



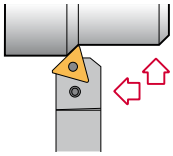
SNM.. 0903..
.. *Page*
SNM.. 2507.. *Seite A107*

### PSSN 45º



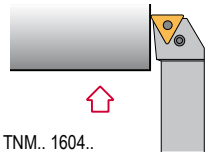
SNM.. 0903..
*Page* ..
*Seite A108* SNM.. 2507..

### PTDN 45º



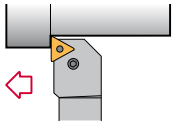
*Page*
*Seite A109* TNM.. 2204..

### PTFN 90º



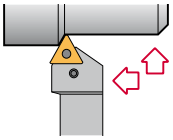
TNM.. 1604..
.. *Page*
TNM.. 2706.. *Seite A110*

### PTGN 90º



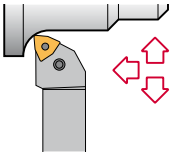
TNM.. 1604..
*Page* ..
*Seite A111* TNM.. 3307..

### PTTN 60º



*Page* TNM.. 1604..
*Seite A112* TNM.. 2204..

### PWLN 95º

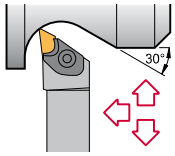


*Page* WNM.. 0604..
*Seite A113* WNM.. 0804..

# POSITIVE TOOLHOLDERS / POSITIVE KLEMMHALTER

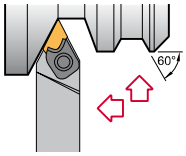
## *Top clamp toolholders*
## *Klemmhalter mit oberer Klemmung*

### CKJN 93º



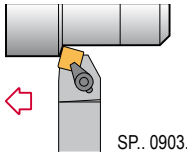

*Page* *Seite A114* KNUX 1604..

### CKNN 63º



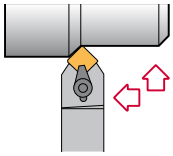

*Page* *Seite A115* KNUX 1604..

### CSBP 75º



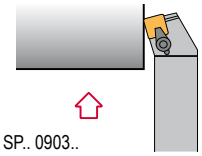
*Page* *Seite A116* SP.. 0903.. SP.. 1203.. SP.. 1904..

### CSDP 45º



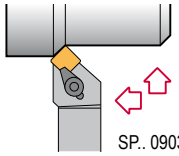
*Page* *Seite A117* SP.. 0903.. SP.. 1203..

### CSKP 75º



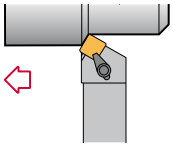
SP.. 0903.. SP.. 1203.. SP.. 1904.. *Page* *Seite A118*

### CSSP 45º



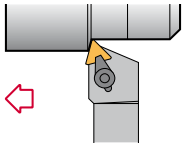
*Page* *Seite A119* SP.. 0903.. SP.. 1203.. SP.. 1904..

### CSTP 60º



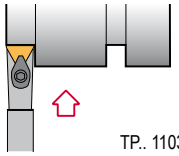
*Page* *Seite A120* SP.. 0903.. SP.. 1203..

### CTBP 75º



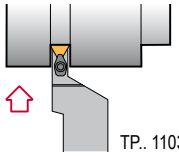
*Page* *Seite A121* TP.. 1103.. TP.. 1603..

### CTCPN 90º



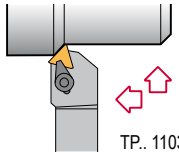
*Page* *Seite A122* TP.. 1103.. TP.. 1603.. TP.. 2204..

### CTCP 90º



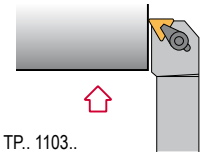
*Page* *Seite A123* TP.. 1103.. TP.. 1603.. TP.. 2204..

### CTDP 45º



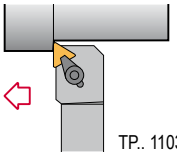
*Page* *Seite A124* TP.. 1103.. TP.. 1603.. TP.. 2204..

### CTFP 90º



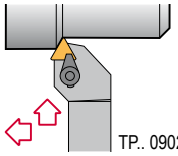
TP.. 1103.. TP.. 1603.. TP.. 2204.. *Page* *Seite A125*

### CTGP 90º



*Page* *Seite A126* TP.. 1103.. TP.. 1603.. TP.. 2204..

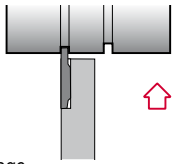
### CTTP 60º



*Page* *Seite A127* TP.. 0902.. TP.. 1103.. TP.. 1603..

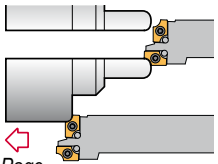
## *Center screw toolholders*
## *Klemmhalter mit Zentralschrauben-Klemmung*

### STHE



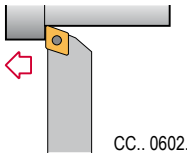
*Page* *Seite A128* GI..

### SAGD 90º



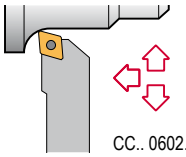
*Page* *Seite A129* ADMT.. 1503..

### SCAC 90º



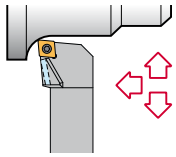
*Page* *Seite A130-131* CC.. 0602.. CC.. 09T3.. CC.. 1204..

### SCLC 95º



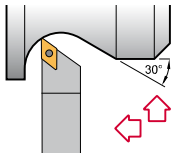
*Page* *Seite A132,134* CC.. 0602.. CC.. 09T3.. CC.. 1204..

### SCLC 95º-A



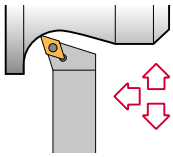
*Page* *Seite A133* CC.. 09T3..

### SDAC 90º



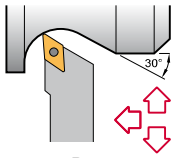

*Page* *Seite A135* DC.. 0702.. DC.. 11T3..

### SDHC 107,5º



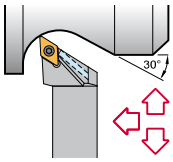
*Page* *Seite A136* DC.. 11T3..

### SDJC 93º



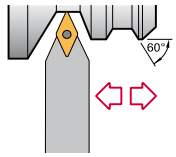

DC.. 0702.. DC.. 11T3.. *Page* *Seite A137,139*

### SDJC 93º-A




*Page* *Seite A138* DC.. 11T3..

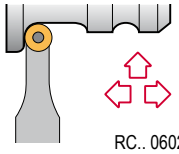
### SDNC 62º 30'

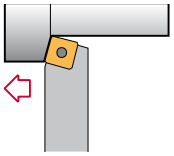


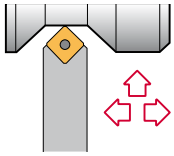

*Page* *Seite A140-141* DC.. 0702.. DC.. 11T3..

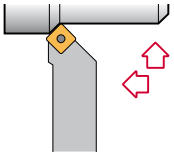
# POSITIVE TOOLHOLDERS / POSITIVE KLEMMHALTER

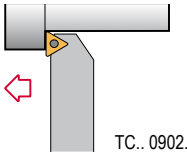
## *Center screw toolholders*
## *Klemmhalter mit Zentralschrauben-Klemmung*

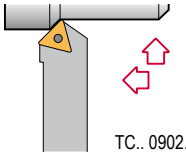
### SRDC

RC.. 0602..
*Page* ..
*Seite A142* RC.. 1204..

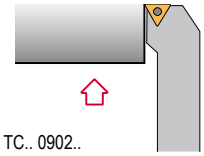
### SSBC 75º

*Page* SC.. 09T3..
*Seite A143* SC.. 1204..

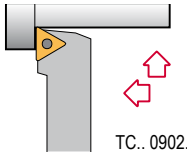
### SSDC 45º

*Page* SC.. 09T3..
*Seite A144* SC.. 1204..

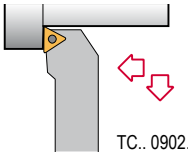
### SSSC 45º

*Page* SC.. 09T3..
*Seite A145* SC.. 1204..

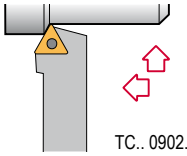
### STAC 90º

TC.. 0902..
*Page* TC.. 1102..
*Seite A146* TC.. 16T3..

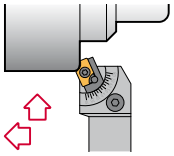
### STDC 45º

TC.. 0902..
*Page* TC.. 1102..
*Seite A147* TC.. 16T3..

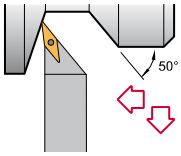
### STFC 90º

TC.. 0902..
TC.. 1102..
TC.. 16T3..
*Page*
*Seite A148*

### STGC 90º

TC.. 0902..
*Page* TC.. 1102..
*Seite A149* TC.. 16T3..

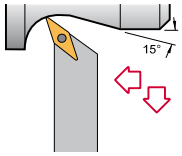
### STJC 93º

TC.. 0902..
*Page* TC.. 1102..
*Seite A150-151* TC.. 16T3..

### STTC 60º

TC.. 0902..
*Page* TC.. 1102..
*Seite A152* TC.. 16T3..

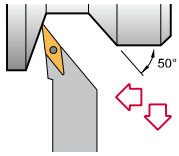
### STXC 10º-80º

*Page* ADMT 1503..
*Seite A153* TCMT 16T3..

### SVAC 90º


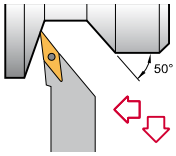
*Page* VC.. 1103..
*Seite A154* VC.. 1604..

### SVHC 107º30'


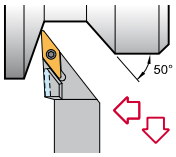
*Page* VC.. 1604..
*Seite A155* VC.. 2205..

### SVJB 93º


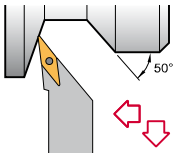
*Page*
*Seite A156* VBMT 1604..

### SVJC 93º


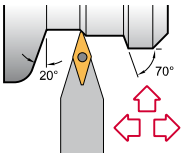
*Page* VC.. 1103..
*Seite A157,159* VC.. 1604..

### SVJC 93º-A


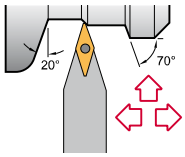
*Page* VC.. 1103..
*Seite A158* VC.. 1604..

### SVLC 95º


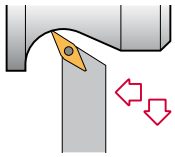
*Page*
*Seite A160* VCMT 1303..

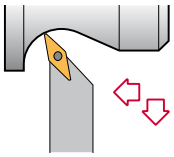
### SVVB 72º30'


*Page*
*Seite A161* VBMT 1604..

### SVVC 72º30'


*Page* VC.. 1103..
*Seite A162-163* VC.. 1604..

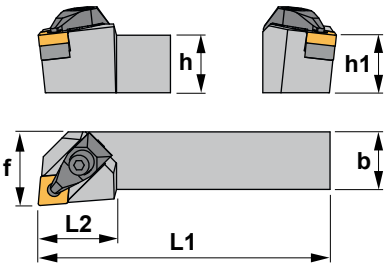
### SVXC 113º

*Page*
*Seite A164* VCMT 1303..

### SVZC 100º

*Page*
*Seite A165* VC.. 1604..

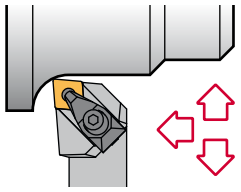


Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A132).

Axial -6,5°
Radial -6,5°




Eigenschaften:
Multifunktions-Werkzeuge mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 80°).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SCLC (Seite: A132).



# DCLN 95°-N

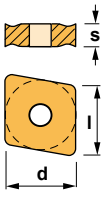
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DCLN R/L 2020 K12-N | 20 | 20 | 125 | 34 | 25 | CN.. 1204.. | 0,400 |
| DCLN R/L 2525 M12-N | 25 | 25 | 150 | 34 | 32 | CN.. 1204.. | 0,750 |
| DCLN R/L 3232 P12-N | 32 | 32 | 170 | 34 | 40 | CN.. 1204.. | 1,300 |
| DCLN R/L 3232 P19-N | 32 | 32 | 170 | 42 | 40 | CN.. 1906.. | 1,300 |
| DCLN R/L 4040 S19-N | 40 | 40 | 250 | 45 | 50 | CN.. 1906.. | 3,050 |

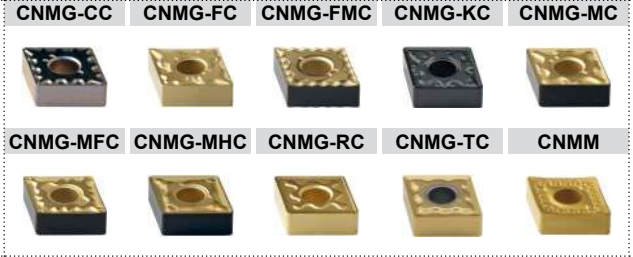
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DCLN R/L 2020 K12-N | ICSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 2525 M12-N | ICSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 3232 P12-N | ICSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 3232 P19-N | ICSN-633 | 1770 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 4040 S19-N | ICSN-633 | 1770 | 2719 | 1696 | 4295 | 5004 | 3.5 |

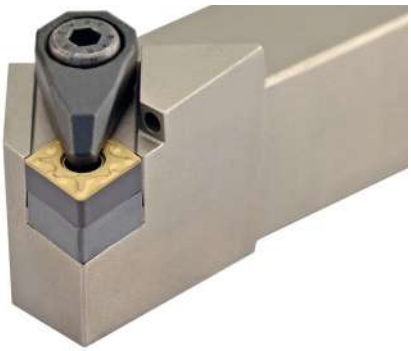
## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

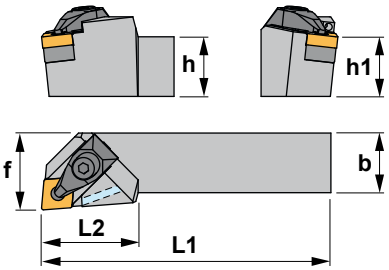


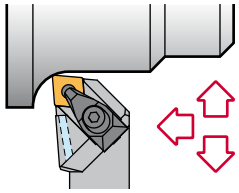


Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
For low powered machines and small pieces choose toolholder Ref. SCLC-A (Page: A133).

Axial -6,5°
Radial -6,5°




Eigenschaften:
Multifunktions-Werkzeuge mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 80°).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SCLC-A (Seite: A133).



# DCLN 95°-A

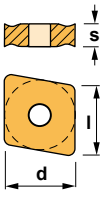
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DCLN R/L 2020 K12-A | 20 | 20 | 125 | 34 | 25 | CN.. 1204.. | 0,400 |
| DCLN R/L 2525 M12-A | 25 | 25 | 150 | 34 | 32 | CN.. 1204.. | 0,750 |
| DCLN R/L 3232 P12-A | 32 | 32 | 170 | 34 | 40 | CN.. 1204.. | 1,300 |
| DCLN R/L 3232 P16-A | 32 | 32 | 170 | 42 | 40 | CN.. 1606.. | 1,250 |

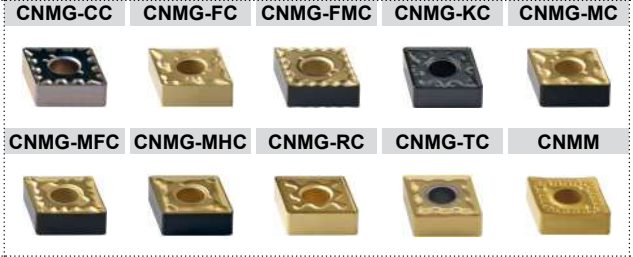
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DCLN R/L 2020 K12-A | ICSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 2525 M12-A | ICSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 3232 P12-A | ICSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DCLN R/L 3232 P16-A | ICSN-533 | 1768 | 2716 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |



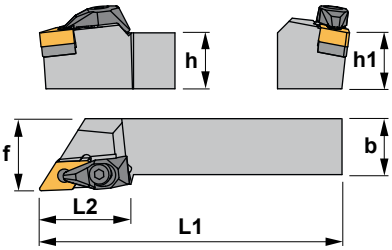


Characteristics:

Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).

For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A137).

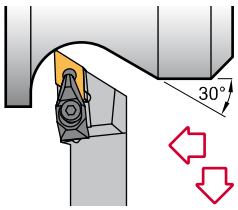
Axial 6,25º
Radial -6,75º




Eigenschaften:

Klemmhalter zum Drehen und Kopierdrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 55º).

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SDJC (Seite: A137).




# DDJN 93°-N

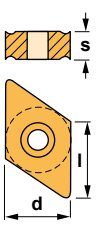
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DDJN R/L 2020 K11-N | 20 | 20 | 125 | 34 | 25 | DN.. 1104.. | 0,400 |
| DDJN R/L 2020 K15-N | 20 | 20 | 125 | 42 | 25 | DN.. 1506.. | 0,400 |
| DDJN R/L 2525 M15-N | 25 | 25 | 150 | 42 | 32 | DN.. 1506.. | 0,750 |
| DDJN R/L 3232 P15-N | 32 | 32 | 170 | 42 | 40 | DN.. 1506.. | 1,300 |

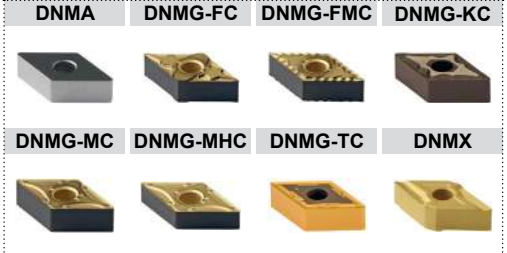
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DDJN R/L 2020 K11-N | IDSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DDJN R/L 2020 K15-N | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DDJN R/L 2525 M15-N | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DDJN R/L 3232 P15-N | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



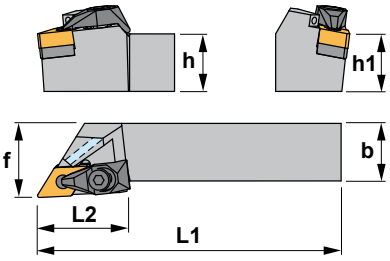


Characteristics:

Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).

For low powered machines and small pieces choose toolholder Ref. SDJC-A (Page: A138).

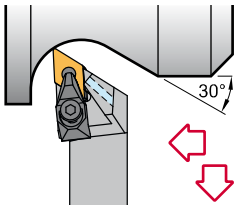
Axial 6,25º
Radial -6,75º




Eigenschaften:

Klemmhalter zum Drehen und Kopierdrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 55º).

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SDJC-A (Seite: A138).




# DDJN 93°-A

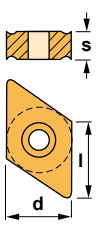
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DDJN R/L 2020 K11-A | 20 | 20 | 125 | 34 | 25 | DN.. 1104.. | 0,400 |
| DDJN R/L 2020 K15-A | 20 | 20 | 125 | 42 | 25 | DN.. 1506.. | 0,400 |
| DDJN R/L 2525 M15-A | 25 | 25 | 150 | 42 | 32 | DN.. 1506.. | 0,750 |
| DDJN R/L 3232 P15-A | 32 | 32 | 170 | 42 | 40 | DN.. 1506.. | 1,300 |

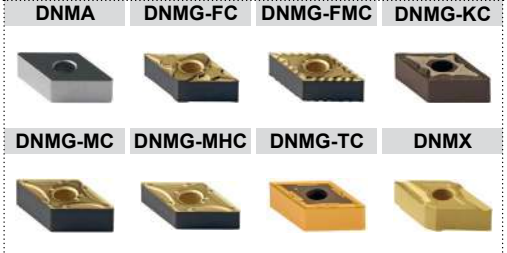
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DDJN R/L 2020 K11-A | IDSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DDJN R/L 2020 K15-A | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DDJN R/L 2525 M15-A | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DDJN R/L 3232 P15-A | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55º rhombic negative inserts. 55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

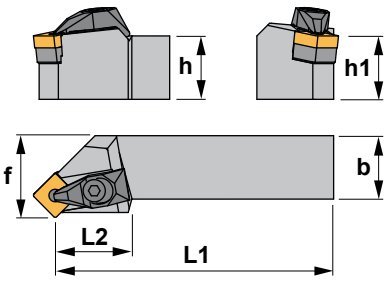


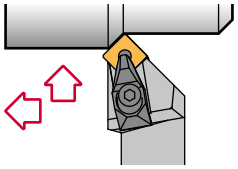


Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSSP (Page: A119) or SSSC (Page: A145).

Axial -5,75º
Radial -5,75º




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter CSSP (Seite: A119) oder SSSC (Seite: A145).



# DSSN 45°-N

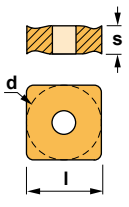
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DSSN R/L 2020 K12-N | 20 | 20 | 125 | 28 | 25 | SNM.. 1204.. | 0,400 |
| DSSN R/L 2525 M12-N | 25 | 25 | 150 | 28 | 32 | SNM.. 1204.. | 0,750 |
| DSSN R/L 3232 P19-N | 32 | 32 | 170 | 45 | 40 | SNM.. 1906.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DSSN R/L 2020 K12-N | ISSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DSSN R/L 2525 M12-N | ISSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DSSN R/L 3232 P19-N | ISSN-633 | 1770 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## SNM..

Square negative inserts. Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

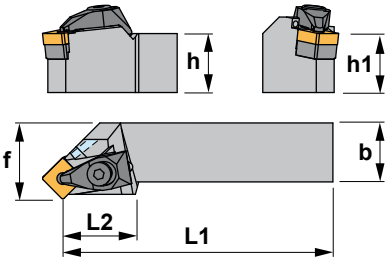



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

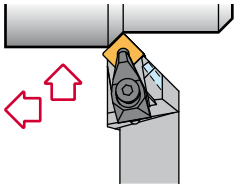


Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSSP (Page: A119) or SSSC (Page: A145).

Axial -5,75º
Radial -5,75º




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter CSSP (Seite: A119) oder SSSC (Seite: A145).



# DSSN 45°-A

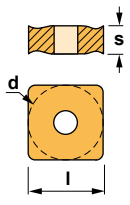
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DSSN R/L 2020 K12-A | 20 | 20 | 125 | 28 | 25 | SNM.. 1204.. | 0,400 |
| DSSN R/L 2525 M12-A | 25 | 25 | 150 | 28 | 32 | SNM.. 1204.. | 0,750 |
| DSSN R/L 3232 P19-A | 32 | 32 | 170 | 38 | 40 | SNM.. 1906.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DSSN R/L 2020 K12-A | ISSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DSSN R/L 2525 M12-A | ISSN-442 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DSSN R/L 3232 P19-A | ISSN-633 | 1770 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

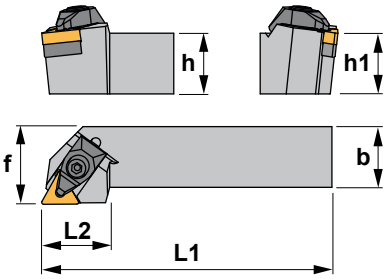



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

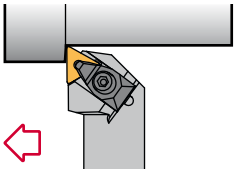


Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
For low powered machines and small pieces choose toolholder Ref. CTGP (Page: A126) or STGC (Page: A149).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Außendrehen mit dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter CTGP (Seite: A126) oder STGC (Seite: A149).



# DTGN 90°-N

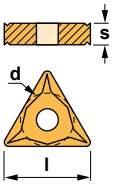
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DTGN R/L 2020 K16-N | 20 | 20 | 125 | 28 | 25 | TNM.. 1604.. | 0,400 |
| DTGN R/L 2525 M16-N | 25 | 25 | 150 | 28 | 32 | TNM.. 1604.. | 0,750 |
| DTGN R/L 2525 M22-N | 25 | 25 | 150 | 34 | 32 | TNM.. 2204.. | 0,750 |
| DTGN R/L 3232 P22-N | 32 | 32 | 170 | 34 | 40 | TNM.. 2204.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DTGN R/L 2020 K16-N | ITSN-342 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DTGN R/L 2525 M16-N | ITSN-342 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DTGN R/L 2525 M22-N | ITSN-443 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DTGN R/L 3232 P22-N | ITSN-443 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## TNM..

Triangular negative inserts. Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

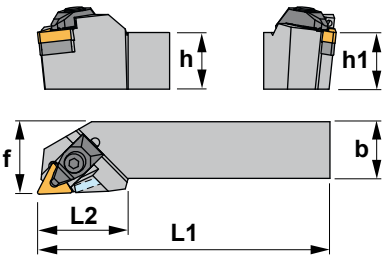




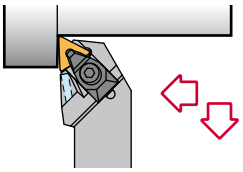



Characteristics:
Multipurpose toolholder equipped with triangular negative double-sided inserts (angle 60°).
For specific applications, roughing, semi-finishing and finishing.

Axial -6°
Radial -6°




Eigenschaften:
Multifunktions-Klemmhalter mit doppelseitigen negativen dreikantigen Wendeschneidplatten (Winkel 60°).
Für spezifische Anwendungen, Schruppen, Vorschlichten und Schlichten.



# DTJN 93°-A

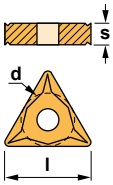
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DTJN R/L 2020 K16-A | 20 | 20 | 125 | 32 | 25 | TNM.. 1604.. | 0,400 |
| DTJN R/L 2525 M16-A | 25 | 25 | 150 | 32 | 32 | TNM.. 1604.. | 0,700 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DTJN R/L 2020 K16-A | ITSN-342 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DTJN R/L 2525 M16-A | ITSN-342 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |

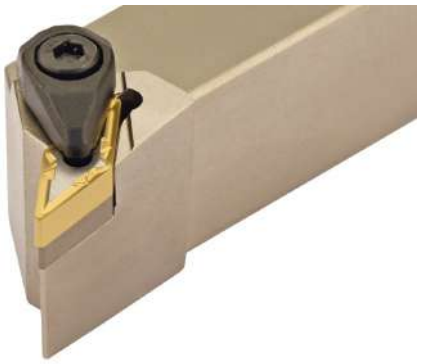
## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |

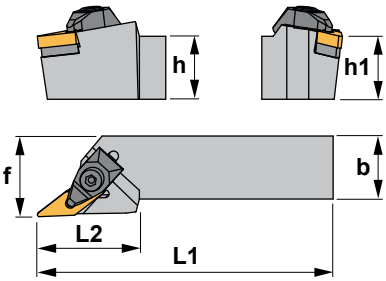



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |

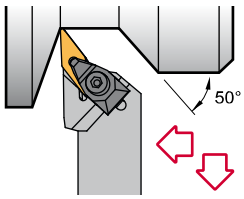


Characteristics: Toolholder for very specific operations equipped with rhombic negative inserts (angle 35º).
For low powered or poor rigid machines and small pieces, it is recommended to choose toolholder Ref. SVJC (Page: A157).

Axial -13º
Radial -4º




Eigenschaften:
Klemmhalter für sehr spezifische Anwendungen, bestückt mit rhombischen negativen Wendeschneidplatten (Winkel 35º). Für nicht stabile Maschinen, Maschinen miteiner niedrigen Leistung und für kleine Werkstücke empfehlen wir den Klemmhalter SVJC (Seite: A157).




# DVJN 93°-N

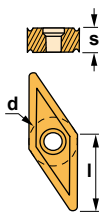
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DVJN R/L 2020 K16-N | 20 | 20 | 125 | 44 | 25 | VN.. 1604.. | 0,400 |
| DVJN R/L 2525 M16-N | 25 | 25 | 150 | 44 | 32 | VN.. 1604.. | 0,700 |
| DVJN R/L 3232 P16-N | 32 | 32 | 170 | 44 | 40 | VN.. 1604.. | 1,250 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| DVJN R/L 2020 K16-N | IVSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DVJN R/L 2525 M16-N | IVSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DVJN R/L 3232 P16-N | IVSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |

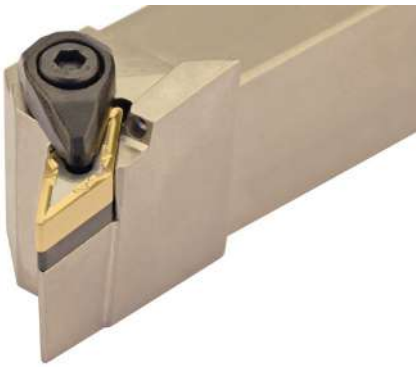
## VN..

35º rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |

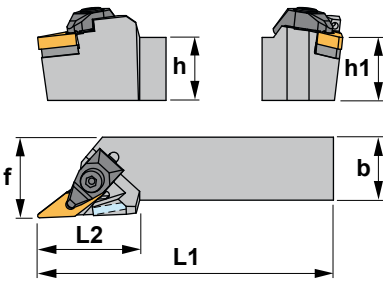



| VNGP | VNMG |
|---|---|
|  |  |
| VNMG-TC | |
|  | |

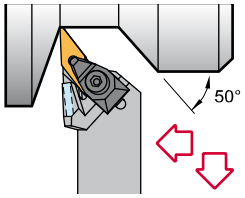


Characteristics: Toolholder for very specific operations equipped with rhombic negative inserts (angle 35°).
For low powered or poor rigid machines and small pieces, it is recommended to choose toolholder Ref. SVJC-A (Page: A158).

Axial -13°
Radial -4°




Eigenschaften:
Klemmhalter für sehr spezifische Anwendungen, bestückt mit rhombischen negativen Wendeschneidplatten (Winkel 35°). Für nicht stabile Maschinen, Maschinen miteiner niedrigen Leistung und für kleine Werkstücke empfehlen wir den Klemmhalter SVJC-A (Seite: A158).




# DVJN 93°-A

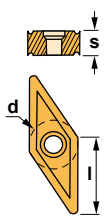
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DVJN R/L 2020 K16-A | 20 | 20 | 125 | 44 | 25 | VN.. 1604.. | 0,400 |
| DVJN R/L 2525 M16-A | 25 | 25 | 150 | 44 | 32 | VN.. 1604.. | 0,700 |
| DVJN R/L 3232 P16-A | 32 | 32 | 170 | 44 | 40 | VN.. 1604.. | 1,250 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DVJN R/L 2020 K16-A | IVSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DVJN R/L 2525 M16-A | IVSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DVJN R/L 3232 P16-A | IVSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



VNMG-TC



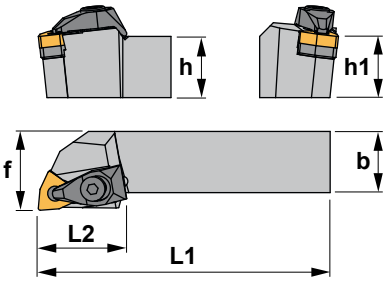


Characteristics:

Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80º).

For top clamp toolholder see Ref. MWLN (Page: A92) or MWLN-K (Page: A93).

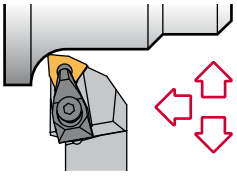
Axial -6º
Radial -6º




Eigenschaften:

Multifunktions-Klemmhalter mit doppelseitigen Trigon negativen Wendeschneidplatten (Winkel 80º).

Für Klemmhalter mit oberer Klemmung siehe MWLN (Seite: A92) oder MWLN-K (Seite: A93).



# DWLN 95°-N

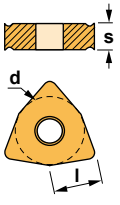
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DWLN R/L 2020 K06-N | 20 | 20 | 125 | 34 | 25 | WNMG 0604.. | 0,400 |
| DWLN R/L 2525 M06-N | 25 | 25 | 150 | 34 | 25 | WNMG 0604.. | 0,700 |
| DWLN R/L 2020 K08-N | 20 | 20 | 125 | 34 | 25 | WNMG 0804.. | 0,400 |
| DWLN R/L 2525 M08-N | 25 | 25 | 150 | 34 | 32 | WNMG 0804.. | 0,750 |
| DWLN R/L 3232 P08-N | 32 | 32 | 170 | 34 | 40 | WNMG 0804.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DWLN R/L 2020 K06-N | IWSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DWLN R/L 2525 M06-N | IWSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DWLN R/L 2020 K08-N | IWSN-433 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DWLN R/L 2525 M08-N | IWSN-433 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DWLN R/L 3232 P08-N | IWSN-433 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |




| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

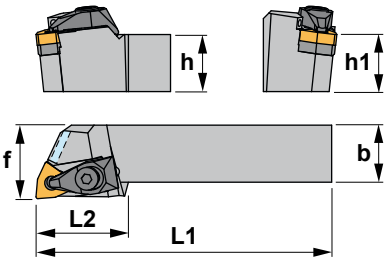


Characteristics:

Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80º).

For top clamp toolholder see Ref. MWLN (Page: A92) or MWLN-K (Page: A93).

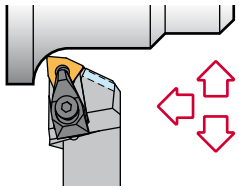
Axial -6º
Radial -6º




Eigenschaften:

Multifunktions-Klemmhalter mit doppelseitigen Trigon negativen Wendeschneidplatten (Winkel 80º).

Für Klemmhalter mit oberer Klemmung siehe MWLN (Seite: A92) oder MWLN-K (Seite: A93).



# DWLN 95°-A

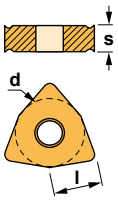
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| DWLN R/L 2020 K06-A | 20 | 20 | 125 | 32 | 25 | WNMG 0604.. | 0,400 |
| DWLN R/L 2020 K08-A | 20 | 20 | 125 | 32 | 25 | WNMG 0804.. | 0,400 |
| DWLN R/L 2525 M08-A | 25 | 25 | 150 | 32 | 32 | WNMG 0804.. | 0,700 |
| DWLN R/L 3232 P08-A | 32 | 32 | 170 | 32 | 38 | WNMG 0804.. | 1,250 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| DWLN R/L 2020 K06-A | IWSN-322 | 1764 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| DWLN R/L 2020 K08-A | IWSN-433 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DWLN R/L 2525 M08-A | IWSN-433 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| DWLN R/L 3232 P08-A | IWSN-433 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

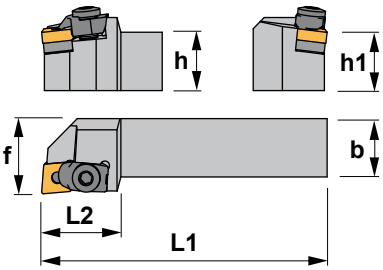



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

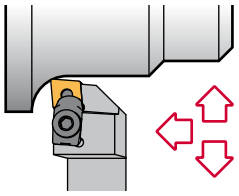


Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A132).

Axial -8º
Radial -6,5º




Eigenschaften:
Multifunktions-Klemmhalter mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 80º).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SCLC (Seite: A132).



# MCLN 95º

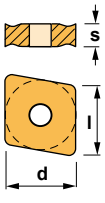
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MCLN R/L 2020 K12 | 20 | 20 | 125 | 34 | 25 | CN.. 1204.. | 0,450 |
| MCLN R/L 2525 M12 | 25 | 25 | 150 | 34 | 32 | CN.. 1204.. | 0,800 |
| MCLN R/L 3225 P12 | 32 | 25 | 170 | 34 | 32 | CN.. 1204.. | 1,200 |
| MCLN R/L 2525 M19 | 25 | 25 | 150 | 42 | 32 | CN.. 1906.. | 0,800 |
| MCLN R/L 3225 P19 | 32 | 25 | 170 | 42 | 32 | CN.. 1906.. | 1,200 |
| MCLN R/L 4040 S19 | 40 | 40 | 250 | 45 | 50 | CN.. 1906.. | 3,100 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MCLN R/L 2020 K12 | 2015 | 5005 | ICSN-432 | 1661 | 1394 | 4.0 |
| MCLN R/L 2525 M12 | 2015 | 5005 | ICSN-432 | 1661 | 1394 | 4.0 |
| MCLN R/L 3225 P12 | 2015 | 5005 | ICSN-432 | 1661 | 1394 | 4.0 |
| MCLN R/L 2525 M19 | 2024 | 5005 | 3619 | 1682 | 1296 | 4.0 |
| MCLN R/L 3225 P19 | 2024 | 5005 | 3619 | 1682 | 1296 | 4.0 |
| MCLN R/L 4040 S19 | 2024 | 5005 | 3619 | 1682 | 1296 | 4.0 |

## CN..

80° rhombic negative inserts.
80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

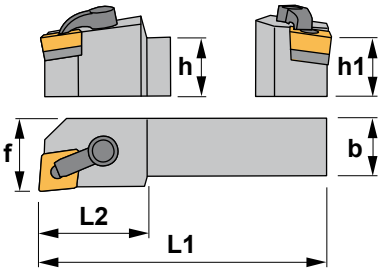




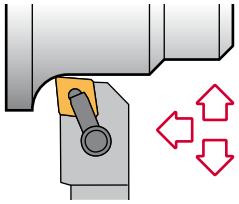



Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A132).

Axial -8º
Radial -6,25º




Eigenschaften:
Multifunktions-Klemmhalter mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 80º).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SCLC (Seite: A132).



# MCLN-K 95º

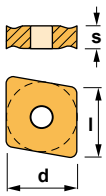
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MCLN R/L 2020 K12-K | 20 | 20 | 125 | 28 | 25 | CN.. 1204.. | 0,450 |
| MCLN R/L 2525 M12-K | 25 | 25 | 150 | 34 | 32 | CN.. 1204.. | 0,800 |
| MCLN R/L 3225 P12-K | 32 | 25 | 170 | 34 | 32 | CN.. 1204.. | 1,200 |
| MCLN R/L 2525 M19-K | 25 | 25 | 150 | 42 | 32 | CN.. 1906.. | 0,800 |
| MCLN R/L 3232 P19-K | 32 | 32 | 170 | 42 | 40 | CN.. 1906.. | 1,400 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| MCLN R/L 2020 K12-K | 2613 | 1086 | 5003 | ICSN-432 | 1656 | 5025 | 3.0 |
| MCLN R/L 2525 M12-K | 2613 | 1086 | 5003 | ICSN-432 | 1656 | 5025 | 3.0 |
| MCLN R/L 3225 P12-K | 2613 | 1086 | 5003 | ICSN-432 | 1656 | 5025 | 3.0 |
| MCLN R/L 2525 M19-K | 2621 | 1098 | 5004 | ICSN-633 | 1670 | 5004 | 3.5 |
| MCLN R/L 3232 P19-K | 2621 | 1098 | 5004 | ICSN-633 | 1670 | 5004 | 3.5 |

## CN..

80° rhombic negative inserts.
80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

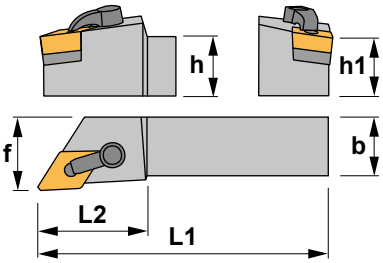



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |

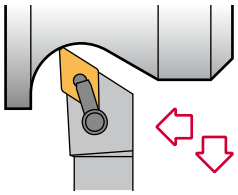


Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A137).

Axial -6º
Radial -7º




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 55º).
Für Niederleistungsmaschinen und kleine Werkstücke wählen Sie Klemmhalter SDJC (Seite: A137).



# MDJN-K 93°

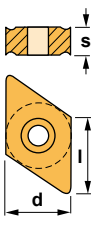
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MDJN R/L 2020 K15-K | 20 | 20 | 125 | 42 | 25 | DN.. 1506.. | 0,450 |
| MDJN R/L 2525 M15-K | 25 | 25 | 150 | 42 | 32 | DN.. 1506.. | 0,800 |
| MDJN R/L 3225 P15-K | 32 | 25 | 170 | 42 | 32 | DN.. 1506.. | 1,200 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| MDJN R/L 2020 K15-K | 2614 | 1086 | 5003 | IDSN-432 | 1666 | 5025 | 3.0 |
| MDJN R/L 2525 M15-K | 2614 | 1086 | 5003 | IDSN-432 | 1666 | 5025 | 3.0 |
| MDJN R/L 3225 P15-K | 2614 | 1086 | 5003 | IDSN-432 | 1666 | 5025 | 3.0 |

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

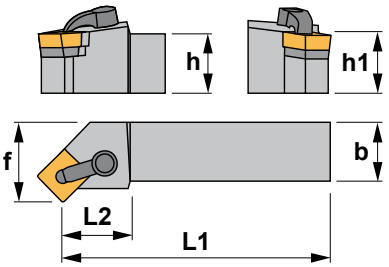



| DNMA | DNMG-FC | DNMG-FMC | DNMG-KC |
|---|---|---|---|
|  |  |  |  |
| **DNMG-MC** | **DNMG-MHC** | **DNMG-TC** | **DNMX** |
|  |  |  |  |

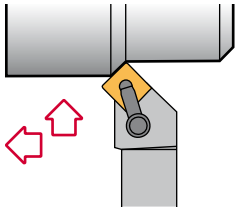


Characteristics: Toolholder for external turning and chamfering applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSSP (Page: A119) or SSSC (Page: A145).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter CSSP (Seite: A119) oder SSSC (Seite: A145).



# MSSN-K 45°

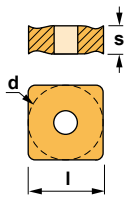
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MSSN R/L 2020 K12-K | 20 | 20 | 125 | 28 | 27 | SNM.. 1204.. | 0,450 |
| MSSN R/L 2525 M12-K | 25 | 25 | 150 | 28 | 32 | SNM.. 1204.. | 0,800 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| MSSN R/L 2020 K12-K | 2613 | 1086 | 5003 | ISSN-432 | 1656 | 5025 | 3.0 |
| MSSN R/L 2525 M12-K | 2613 | 1086 | 5003 | ISSN-432 | 1656 | 5025 | 3.0 |

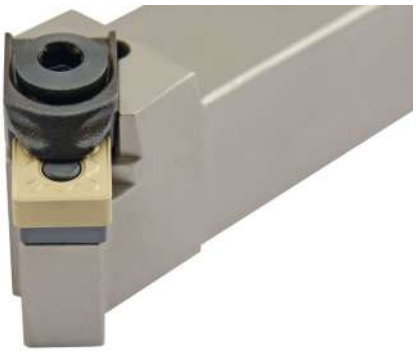
## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |

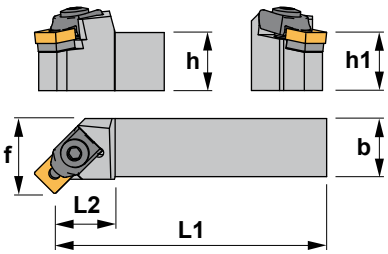



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

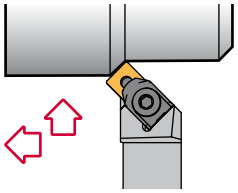


Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSSP (Page: A119) or SSSC (Page: A145).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter CSSP (Seite: A119) oder SSSC (Seite: A145).



# MSSN 45°

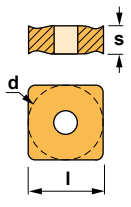
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MSSN R/L 2020 K12 | 20 | 20 | 125 | 34 | 27 | SNM.. 1204.. | 0,450 |
| MSSN R/L 2525 M12 | 25 | 25 | 150 | 34 | 32 | SNM.. 1204.. | 0,800 |
| MSSN R/L 3225 P12 | 32 | 25 | 170 | 34 | 32 | SNM.. 1204.. | 1,200 |
| MSSN R/L 2525 M19 | 25 | 25 | 150 | 42 | 32 | SNM.. 1906.. | 0,800 |
| MSSN R/L 3225 P19 | 32 | 25 | 170 | 42 | 32 | SNM.. 1906.. | 1,200 |
| MSSN R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | SNM.. 1906.. | 1,400 |
| MSSN R/L 4040 S19 | 40 | 40 | 250 | 42 | 50 | SNM.. 1906.. | 3,100 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MSSN R/L 2020 K12 | 2014 | 5005 | 3514 | 1661 | 1394 | 4.0 |
| MSSN R/L 2525 M12 | 2014 | 5005 | 3514 | 1661 | 1394 | 4.0 |
| MSSN R/L 3225 P12 | 2014 | 5005 | 3514 | 1661 | 1394 | 4.0 |
| MSSN R/L 2525 M19 | 2024 | 5005 | 3519 | 1682 | 1296 | 4.0 |
| MSSN R/L 3225 P19 | 2024 | 5005 | 3519 | 1682 | 1296 | 4.0 |
| MSSN R/L 3232 P19 | 2024 | 5005 | 3519 | 1682 | 1296 | 4.0 |
| MSSN R/L 4040 S19 | 2024 | 5005 | 3519 | 1682 | 1296 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

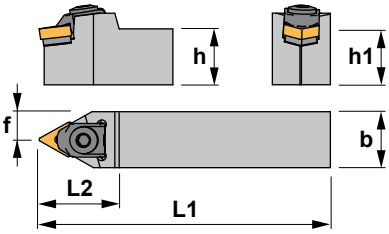



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

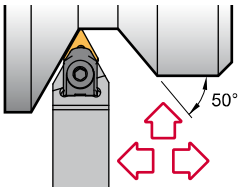


Characteristics:
Profiling toolholder equipped with triangular negative double-sided insert (angle 60º).
For general applications, roughing, semi-finishing and finishing.

Axial -8,25º
Radial -2,25º




Eigenschaften:
Klemmhalter zum Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten (Winkel 60º).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# MTEN 60°

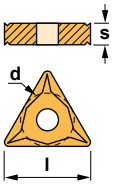
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MTEN R/L/N 2020 K16 | 20 | 20 | 125 | 34 | 10,5 | TNM.. 1604.. | 0,450 |
| MTEN R/L/N 2525 M16 | 25 | 25 | 150 | 34 | 13,0 | TNM.. 1604.. | 0,800 |
| MTEN R/L/N 3225 P16 | 32 | 25 | 170 | 34 | 13,0 | TNM.. 1604.. | 1,200 |
| MTEN R/L/N 2525 M22 | 25 | 25 | 150 | 42 | 13,0 | TNM.. 2204.. | 0,800 |
| MTEN R/L/N 3225 P22 | 32 | 25 | 170 | 42 | 13,0 | TNM.. 2204.. | 1,200 |
| MTEN R/L/N 3232 P22 | 32 | 32 | 170 | 42 | 16,5 | TNM.. 2204.. | 1,400 |
| MTEN R/L/N 4025 R22 | 40 | 25 | 200 | 42 | 13,0 | TNM.. 2204.. | 1,500 |
| MTEN R/L/N 5032 S22 | 50 | 32 | 250 | 50 | 16,5 | TNM.. 2204.. | 2,950 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MTEN R/L/N 2020 K16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTEN R/L/N 2525 M16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTEN R/L/N 3225 P16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTEN R/L/N 2525 M22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTEN R/L/N 3225 P22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTEN R/L/N 3232 P22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTEN R/L/N 4025 R22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTEN R/L/N 5032 S22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

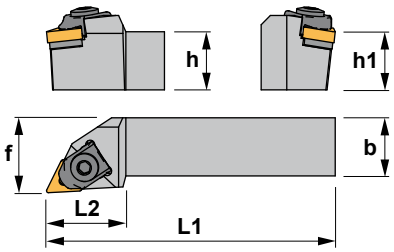




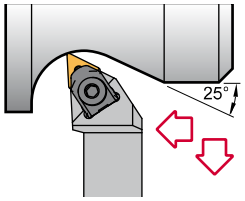



Characteristics:
Turning and profiling toolholder equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose toolholder Ref. STJC (Page: A150).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter STJC (Seite: A150).




# MTJN 93°

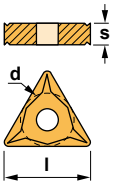
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MTJN R/L 2020 K16 | 20 | 20 | 125 | 34 | 25 | TNM.. 1604.. | 0,450 |
| MTJN R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | TNM.. 1604.. | 0,800 |
| MTJN R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | TNM.. 1604.. | 1,200 |
| MTJN R/L 2525 M22 | 25 | 25 | 150 | 38 | 32 | TNM.. 2204.. | 0,800 |
| MTJN R/L 3225 P22 | 32 | 25 | 170 | 42 | 32 | TNM.. 2204.. | 1,200 |
| MTJN R/L 3232 P22 | 32 | 32 | 170 | 42 | 40 | TNM.. 2204.. | 1,400 |
| MTJN R/L 4025 R22 | 40 | 25 | 200 | 42 | 32 | TNM.. 2204.. | 1,500 |
| MTJN R/L 5032 S22 | 50 | 32 | 250 | 42 | 40 | TNM.. 2204.. | 2,950 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MTJN R/L 2020 K16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTJN R/L 2525 M16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTJN R/L 3225 P16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTJN R/L 2525 M22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTJN R/L 3225 P22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTJN R/L 3232 P22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTJN R/L 4025 R22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTJN R/L 5032 S22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |

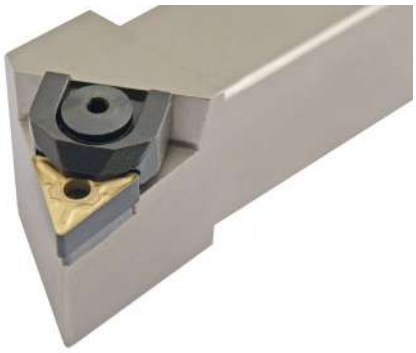
## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

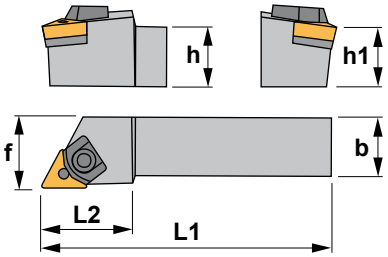



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |

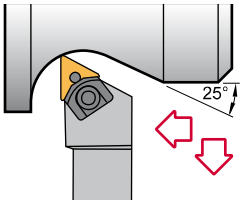


Characteristics:
Turning and profiling toolholder equipped with triangular negative double-sided insert. For low powered machines and small pieces choose toolholder Ref. STJC (Page: A150).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter STJC (Seite: A150).




# MTJN-K 93°

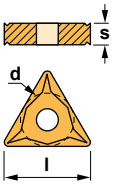
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MTJN R/L 2020 K16-K | 20 | 20 | 125 | 34 | 25 | TNM.. 1604.. | 0,450 |
| MTJN R/L 2525 M16-K | 25 | 25 | 150 | 34 | 32 | TNM.. 1604.. | 0,800 |
| MTJN R/L 2525 M22-K | 25 | 25 | 150 | 34 | 32 | TNM.. 2204.. | 0,800 |
| MTJN R/L 3225 P22-K | 32 | 25 | 170 | 34 | 32 | TNM.. 2204.. | 1,200 |
| MTJN R/L 3232 P22-K | 32 | 32 | 170 | 42 | 40 | TNM.. 2204.. | 1,400 |
| MTJN R/L 4025 R22-K | 40 | 25 | 200 | 34 | 32 | TNM.. 2204.. | 1,500 |
| MTJN R/L 5032 S22-K | 50 | 32 | 250 | 34 | 40 | TNM.. 2204.. | 2,950 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MTJN R/L 2020 K16-K | 2017 | 5025 | 3414 | 1642 | 1393 | 2.0 |
| MTJN R/L 2525 M16-K | 2017 | 5025 | 3414 | 1642 | 1393 | 2.0 |
| MTJN R/L 2525 M22-K | 2023 | 5003 | ITSN-433 | 1642 | 1393 | 3.0 |
| MTJN R/L 3225 P22-K | 2023 | 5003 | ITSN-433 | 1661 | 1394 | 3.0 |
| MTJN R/L 3232 P22-K | 2023 | 5003 | ITSN-433 | 1661 | 1394 | 3.0 |
| MTJN R/L 4025 R22-K | 2023 | 5003 | ITSN-433 | 1661 | 1394 | 3.0 |
| MTJN R/L 5032 S22-K | 2023 | 5003 | ITSN-433 | 1661 | 1394 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

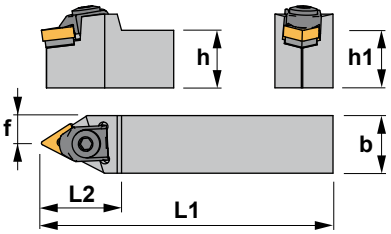



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |

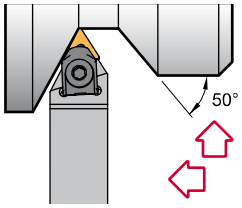


Characteristics:
Profiling toolholder equipped with triangular negative double-sided insert (angle 60º).
For general applications, roughing, semi-finishing and finishing.

Axial -8º
Radial -2,5º




Eigenschaften:
Klemmhalter zum Profildrehen mit doppelseitigen dreikantigen Wendeschneidplatten (Winkel 60º). Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# MTNN 63°

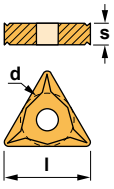
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MTNN R/L 2020 K16 | 20 | 20 | 125 | 34 | 10,0 | TNM.. 1604.. | 0,450 |
| MTNN R/L 2525 M16 | 25 | 25 | 150 | 34 | 12,5 | TNM.. 1604.. | 0,800 |
| MTNN R/L 3225 P16 | 32 | 25 | 170 | 34 | 12,5 | TNM.. 1604.. | 1,200 |
| MTNN R/L 2525 M22 | 25 | 25 | 150 | 42 | 12,5 | TNM.. 2204.. | 0,800 |
| MTNN R/L 3225 P22 | 32 | 25 | 170 | 42 | 12,5 | TNM.. 2204.. | 1,200 |
| MTNN R/L 3232 P22 | 32 | 32 | 170 | 42 | 16,0 | TNM.. 2204.. | 1,400 |
| MTNN R/L 4025 R22 | 40 | 25 | 200 | 42 | 12,5 | TNM.. 2204.. | 1,500 |
| MTNN R/L 5032 S22 | 50 | 32 | 250 | 50 | 16,0 | TNM.. 2204.. | 2,950 |

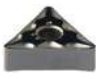
| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MTNN R/L 2020 K16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTNN R/L 2525 M16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTNN R/L 3225 P16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| MTNN R/L 2525 M22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTNN R/L 3225 P22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTNN R/L 3232 P22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTNN R/L 4025 R22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| MTNN R/L 5032 S22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

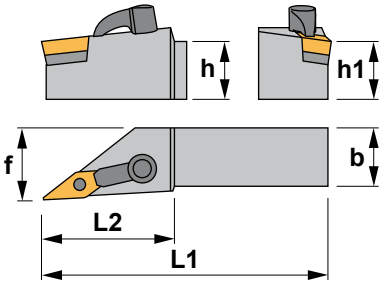



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
|  |  |  |  |  |
| **TNMG-MC** | **TNMG-MFC** | **TNMG-MHC** | **TNMG-TC** | **TNMX-R/L** |
|  |  |  |  |  |

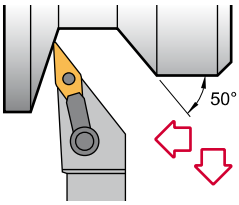


Characteristics:
External turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
For low powered machines and small pieces choose toolholder Ref. SVJC (Page: A157).

Axial -6º
Radial -6º




Eigenschaften:
Klemmhalter zum Außendrehen und Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 35º).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SVJC (Seite: A157).




# MVJN-K 93°

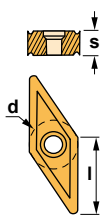
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MVJN R/L 2020 K16-K | 20 | 20 | 125 | 42 | 25 | VN.. 1604.. | 0,450 |
| MVJN R/L 2525 M16-K | 25 | 25 | 150 | 42 | 32 | VN.. 1604.. | 0,800 |
| MVJN R/L 3225 P16-K | 32 | 25 | 170 | 42 | 32 | VN.. 1604.. | 1,200 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| MVJN R/L 2020 K16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |
| MVJN R/L 2525 M16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |
| MVJN R/L 3225 P16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |

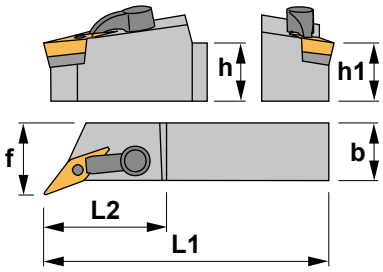



| VNGP | VNMG |
|---|---|
|  |  |
| **VNMG-TC** | |
|  | |

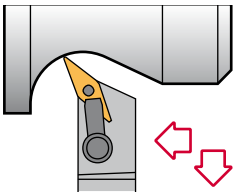


Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
For general applications, roughing, semi-finishing and finishing.

Axial -8º
Radial -10º




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 35º).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# MVQN-K 117°30’

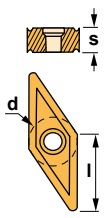
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MVQN R/L 2020 K16-K | 20 | 20 | 125 | 42 | 25 | VN.. 1604.. | 0,450 |
| MVQN R/L 2525 M16-K | 25 | 25 | 150 | 42 | 32 | VN.. 1604.. | 0,800 |
| MVQN R/L 3225 P16-K | 32 | 25 | 170 | 42 | 32 | VN.. 1604.. | 1,200 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| MVQN R/L 2020 K16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |
| MVQN R/L 2525 M16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |
| MVQN R/L 3225 P16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |

## VN..

35° rhombic negative inserts.
35° rhombische negative Wendeschneidplatten. A49

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



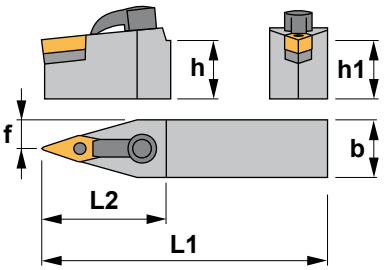
VNMG-TC



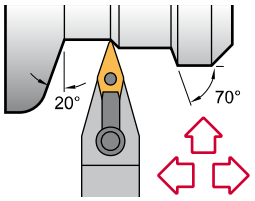


Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
For low powered machines and small pieces choose toolholder Ref. SVVC (Page: A162).

Axial 6º
Radial 0º




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (Winkel 35º).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SVVC (Seite: A162).




# MVVN-K 72°30’

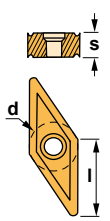
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MVVN N 2020 K16-K | 20 | 20 | 125 | 42 | 10,0 | VN.. 1604.. | 0,450 |
| MVVN N 2525 M16-K | 25 | 25 | 150 | 42 | 12,5 | VN.. 1604.. | 0,800 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| MVVN N 2020 K16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |
| MVVN N 2525 M16-K | 2616 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



VNMG-TC



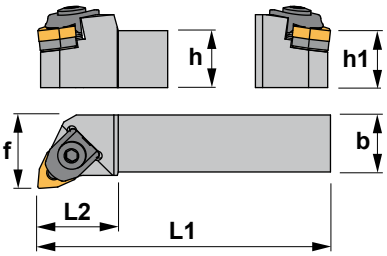


Characteristics:

Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80°).

Not suitable for cermet, ceramic or K10 and P10 grade inserts.

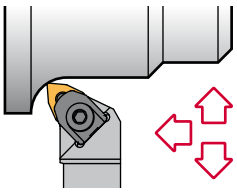
Axial -6,5°
Radial -6,5°




Eigenschaften:

Multifunktions-Klemmhalter mit doppelseitigen Trigon negativen Wendeschneidplatten (80° Winkel).

Nicht geeignet für Cermet, Keramik oder K10 und P10 Wendeschneidplatten.



# MWLN 95°

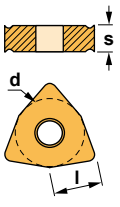
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MWLN R/L 1616 H06 | 16 | 16 | 100 | 15 | 20 | WNMG 0604.. | 0,200 |
| MWLN R/L 2020 K06 | 20 | 20 | 125 | 22 | 25 | WNMG 0604.. | 0,450 |
| MWLN R/L 2525 M06 | 25 | 25 | 150 | 28 | 32 | WNMG 0604.. | 0,800 |
| MWLN R/L 2020 K08 | 20 | 20 | 125 | 34 | 25 | WNMG 0804.. | 0,450 |
| MWLN R/L 2525 M08 | 25 | 25 | 150 | 34 | 32 | WNMG 0804.. | 0,800 |
| MWLN R/L 3225 P08 | 32 | 25 | 170 | 34 | 32 | WNMG 0804.. | 1,200 |
| MWLN R/L 3232 P08 | 32 | 32 | 170 | 34 | 40 | WNMG 0804.. | 1,400 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MWLN R/L 1616 H06 | 2006 | 5025 | 3006 | 1644 | 1393 | 2.0 |
| MWLN R/L 2020 K06 | 2006 | 5025 | 3006 | 1642 | 1393 | 2.0 |
| MWLN R/L 2525 M06 | 2006 | 5025 | 3006 | 1642 | 1393 | 2.0 |
| MWLN R/L 2020 K08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |
| MWLN R/L 2525 M08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |
| MWLN R/L 3225 P08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |
| MWLN R/L 3232 P08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

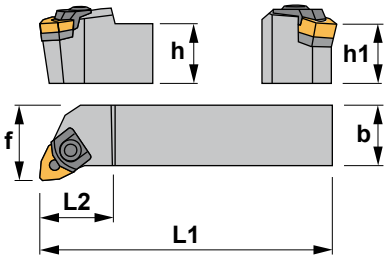



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

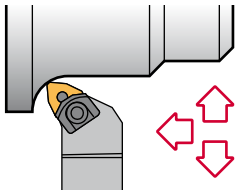


Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80º).
Especially recommended for cermet, ceramic or K10 and P10 grade inserts.

Axial -5,5º
Radial -6,5º




Eigenschaften:
Multifunktions-Klemmhalter mit doppelseitigen Trigon negativen Wendeschneidplatten (80º Winkel).
Besonders empfohlen für Cermet, Keramik oder K10 und P10 Wendeschneiplatten.



# MWLN-K 95°

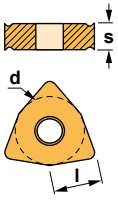
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| MWLN R/L 2020 K08-K | 20 | 20 | 125 | 34 | 25 | WNM.. 0804.. | 0,450 |
| MWLN R/L 2525 M08-K | 25 | 25 | 150 | 34 | 32 | WNM.. 0804.. | 0,800 |
| MWLN R/L 3232 P08-K | 32 | 32 | 170 | 34 | 40 | WNM.. 0804.. | 1,400 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| MWLN R/L 2020 K08-K | 2018 | 5025 | IWSN-433 | 1661 | 1394 | 2.0 |
| MWLN R/L 2525 M08-K | 2018 | 5025 | IWSN-433 | 1661 | 1394 | 2.0 |
| MWLN R/L 3232 P08-K | 2018 | 5025 | IWSN-433 | 1661 | 1394 | 2.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

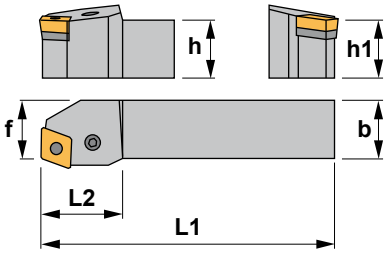



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

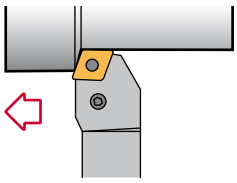


Characteristics:
Toolholder for external turning applications equipped with rhombic negative inserts (angle 80º).
For general applications, roughing, semi-finishing and finishing.

Axial -7,25º
Radial -4,25º




Eigenschaften:
Klemmhalter zum Außendrehen mit rhombischen negativen Wendeschneidplatten (80º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PCBN 75°

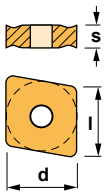
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PCBN R/L 2020 K12 | 20 | 20 | 125 | 28 | 17 | CN.. 1204.. | 0,400 |
| PCBN R/L 2525 M12 | 25 | 25 | 150 | 28 | 22 | CN.. 1204.. | 0,750 |
| PCBN R/L 3225 P12 | 32 | 25 | 170 | 34 | 22 | CN.. 1204.. | 0,750 |
| PCBN R/L 2525 M16 | 25 | 25 | 150 | 34 | 22 | CN.. 1606.. | 0,750 |
| PCBN R/L 3225 P16 | 32 | 25 | 170 | 34 | 22 | CN.. 1606.. | 1,050 |
| PCBN R/L 3232 P16 | 32 | 32 | 170 | 34 | 27 | CN.. 1606.. | 1,300 |
| PCBN R/L 3225 P19 | 32 | 25 | 170 | 38 | 22 | CN.. 1906.. | 1,050 |
| PCBN R/L 3232 P19 | 32 | 32 | 170 | 42 | 27 | CN.. 1906.. | 1,300 |
| PCBN R/L 4040 S19 | 40 | 40 | 250 | 48 | 35 | CN.. 1906.. | 3,050 |
| PCBN R/L 4040 S25 | 40 | 40 | 250 | 48 | 41 | CN.. 2509.. | 3,050 |
| PCBN R/L 5050 T25 | 50 | 50 | 300 | 50 | 51 | CN.. 2509.. | 5,800 |

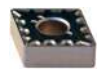
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PCBN R/L 2020 K12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCBN R/L 2525 M12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCBN R/L 3225 P12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCBN R/L 2525 M16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCBN R/L 3225 P16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCBN R/L 3232 P16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCBN R/L 3225 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCBN R/L 3232 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCBN R/L 4040 S19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCBN R/L 4040 S25 | 8025 | 1612 | 5005 | 3625 | 4125 | 0025 | 4.0 |
| PCBN R/L 5050 T25 | 8025 | 1612 | 5005 | 3625 | 4125 | 0025 | 4.0 |

## CN..

80° rhombic negative inserts.
80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |
| CN.. 2509.. | 25,80 | 9,52 | 25,40 |

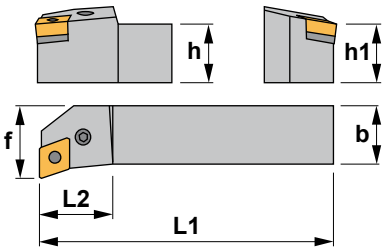



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |



Characteristics:
Toolholder for face turning applications equipped with rhombic negative inserts (angle 80°).
For general applications, roughing, semi-finishing and finishing.

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Plandrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PCFN 90°

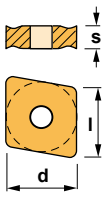
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PCFN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | CN.. 1204.. | 0,750 |
| PCFN R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | CN.. 1606.. | 0,750 |
| PCFN R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | CN.. 1606.. | 1,050 |
| PCFN R/L 3232 P16 | 32 | 32 | 170 | 34 | 40 | CN.. 1606.. | 1,300 |
| PCFN R/L 3225 P19 | 32 | 25 | 170 | 34 | 32 | CN.. 1906.. | 1,050 |
| PCFN R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | CN.. 1906.. | 1,300 |
| PCFN R/L 4040 S19 | 40 | 40 | 250 | 45 | 50 | CN.. 1906.. | 3,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PCFN R/L 2525 M12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCFN R/L 2525 M16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCFN R/L 3225 P16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCFN R/L 3232 P16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCFN R/L 3225 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCFN R/L 3232 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCFN R/L 4040 S19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

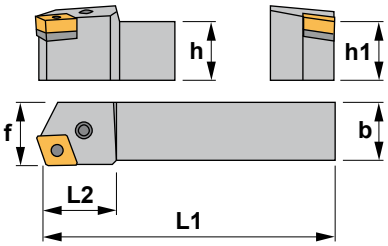



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |

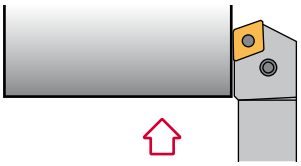


Characteristics:
Toolholder for face turning applications equipped with rhombic negative inserts (angle 80º).
For general applications, roughing, semi-finishing and finishing.

Axial -6,5º
Radial -5,5º




Eigenschaften:
Klemmhalter zum Plandrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (80º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PCKN 75°

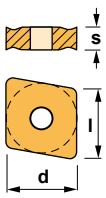
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PCKN R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | CN.. 1204.. | 0,400 |
| PCKN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | CN.. 1204.. | 0,750 |
| PCKN R/L 3225 P12 | 32 | 25 | 170 | 28 | 32 | CN.. 1204.. | 1,050 |
| PCKN R/L 3232 P19 | 32 | 32 | 170 | 34 | 40 | CN.. 1906.. | 1,300 |
| PCKN R/L 4040 S19 | 40 | 40 | 250 | 45 | 50 | CN.. 1906.. | 3,050 |
| PCKN R/L 4040 S25 | 40 | 40 | 250 | 45 | 50 | CN.. 2509.. | 3,050 |
| PCKN R/L 5050 T25 | 50 | 50 | 300 | 45 | 60 | CN.. 2509.. | 5,850 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PCKN R/L 2020 K12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCKN R/L 2525 M12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCKN R/L 3225 P12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCKN R/L 3232 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCKN R/L 4040 S19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCKN R/L 4040 S25 | 8025 | 1612 | 5005 | 3625 | 4125 | 0025 | 4.0 |
| PCKN R/L 5050 T25 | 8025 | 1612 | 5005 | 3625 | 4125 | 0025 | 4.0 |

## CN..

80° rhombic negative inserts.
80º rhombische negative WSP.
A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |
| CN.. 2509.. | 25,80 | 9,52 | 25,40 |

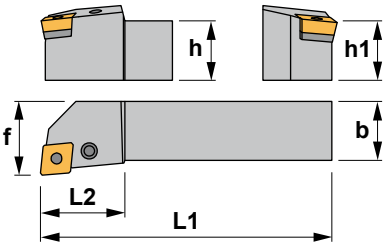



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |

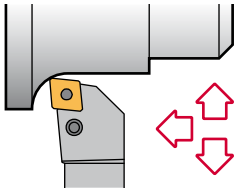


Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A132).

Axial -6,5°
Radial -6,5°




Eigenschaften:
Multifunktions-Klemmhalter mit doppelseitigen rhombischen negativen Wendeschneidplatten (80° Winkel). Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SCLC (Seite: A132).



# PCLN 95°

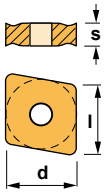
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PCLN R/L 1616 H09 | 16 | 16 | 100 | 25 | 20 | CN.. 0903.. | 0,250 |
| PCLN R/L 2020 K09 | 20 | 20 | 125 | 28 | 25 | CN.. 0903.. | 0,400 |
| PCLN R/L 2525 M09 | 25 | 25 | 150 | 28 | 32 | CN.. 0903.. | 0,750 |
| PCLN R/L 1616 H12 | 16 | 16 | 100 | 25 | 20 | CN.. 1204.. | 0,250 |
| PCLN R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | CN.. 1204.. | 0,400 |
| PCLN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | CN.. 1204.. | 0,750 |
| PCLN R/L 3225 P12 | 32 | 25 | 170 | 28 | 32 | CN.. 1204.. | 1,050 |
| PCLN R/L 3232 P12 | 32 | 32 | 170 | 28 | 40 | CN.. 1204.. | 1,300 |
| PCLN R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | CN.. 1606.. | 0,750 |
| PCLN R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | CN.. 1606.. | 1,050 |
| PCLN R/L 3232 P16 | 32 | 32 | 170 | 34 | 40 | CN.. 1606.. | 1,300 |
| PCLN R/L 4040 S16 | 40 | 40 | 250 | 45 | 50 | CN.. 1606.. | 3,050 |
| PCLN R/L 2525 M19 | 25 | 25 | 150 | 42 | 32 | CN.. 1906.. | 0,750 |
| PCLN R/L 3225 P19 | 32 | 25 | 170 | 42 | 32 | CN.. 1906.. | 1,050 |
| PCLN R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | CN.. 1906.. | 1,300 |
| PCLN R/L 4040 S19 | 40 | 40 | 250 | 45 | 50 | CN.. 1906.. | 3,050 |
| PCLN R/L 5050 T19 | 50 | 50 | 300 | 50 | 60 | CN.. 1906.. | 3,050 |
| PCLN R/L 4040 S25 | 40 | 40 | 250 | 45 | 50 | CN.. 2509.. | 3,050 |
| PCLN R/L 5050 T25 | 50 | 50 | 300 | 50 | 60 | CN.. 2509.. | 5,850 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PCLN R/L.....09 | 8009 | 1606 | 5025 | 3609 | 4109 | 0009 | 2.0 |
| PCLN R/L.....H12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCLN R/L.....12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCLN R/L.....16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCLN R/L.....19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCLN R/L.....25 | 8025 | 1612 | 5005 | 3625 | 4125 | 0025 | 4.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |
| CN.. 2509.. | 25,80 | 9,52 | 25,40 |

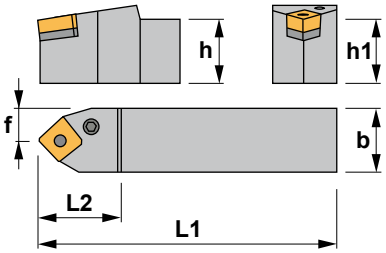



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |

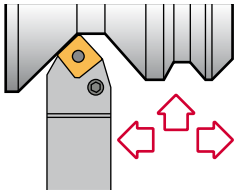


Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 80°).
For general applications, roughing, semi-finishing and finishing.

Axial -6°
Radial 0°




Eigenschaften:
Klemmhalter zum Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PCMN 50°

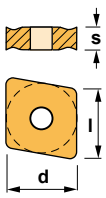
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PCMN N 2020 K12 | 20 | 20 | 125 | 34 | 10,0 | CN.. 1204.. | 0,400 |
| PCMN N 2525 M12 | 25 | 25 | 150 | 34 | 12,5 | CN.. 1204.. | 0,750 |
| PCMN N 3225 P12 | 32 | 25 | 170 | 34 | 12,5 | CN.. 1204.. | 1,050 |
| PCMN N 3232 P19 | 32 | 32 | 170 | 42 | 16,0 | CN.. 1906.. | 1,300 |
| PCMN N 4040 S19 | 40 | 40 | 250 | 48 | 20,0 | CN.. 1906.. | 3,050 |

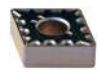
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PCMN N 2020 K12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCMN N 2525 M12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCMN N 3225 P12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCMN N 3232 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCMN N 4040 S19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

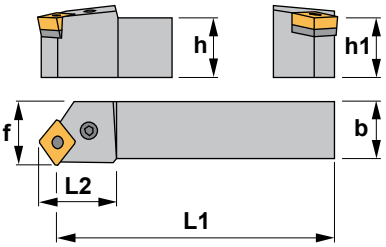



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |

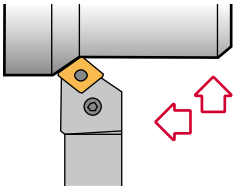


Characteristics:
Toolholder for external turning applications equipped with rhombic negative inserts (angle 80º).
For general applications, roughing, semi-finishing and finishing.

Axial -5,75º
Radial -5,75º




Eigenschaften:
Klemmhalter zum Außendrehen mit rhombischen negativen Wendeschneidplatten (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PCSN 45°

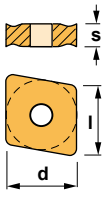
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PCSN R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | CN.. 1204.. | 0,400 |
| PCSN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | CN.. 1204.. | 0,750 |
| PCSN R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | CN.. 1606.. | 0,750 |
| PCSN R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | CN.. 1606.. | 1,050 |
| PCSN R/L 3232 P16 | 32 | 32 | 170 | 42 | 40 | CN.. 1606.. | 1,300 |
| PCSN R/L 3225 P19 | 32 | 25 | 170 | 42 | 32 | CN.. 1906.. | 1,050 |
| PCSN R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | CN.. 1906.. | 1,300 |
| PCSN R/L 4040 S19 | 40 | 40 | 250 | 42 | 50 | CN.. 1906.. | 3,050 |

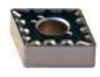
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PCSN R/L 2020 K12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCSN R/L 2525 M12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PCSN R/L 2525 M16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCSN R/L 3225 P16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCSN R/L 3232 P16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PCSN R/L 3225 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCSN R/L 3232 P19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PCSN R/L 4040 S19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |

## CN..

80° rhombic negative inserts.
80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

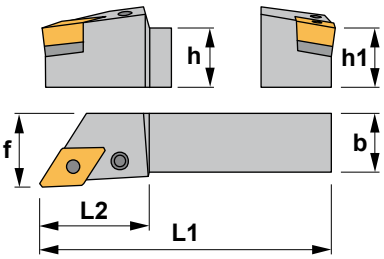



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |

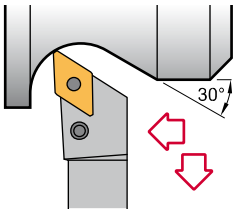


Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A137).

Axial 6,25º
Radial -6,75º




Eigenschaften:
Klemmhalter zum Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (55º Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SDJC (Seite: A137).




# PDJN 93°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PDJN R/L 1616 H11 | 16 | 16 | 100 | 25 | 20 | DN.. 1104.. | 0,250 |
| PDJN R/L 2020 K11 | 20 | 20 | 125 | 28 | 25 | DN.. 1104.. | 0,400 |
| PDJN R/L 2525 M11 | 25 | 25 | 150 | 28 | 32 | DN.. 1104.. | 0,750 |
| PDJN R/L 3225 P11 | 32 | 25 | 170 | 28 | 32 | DN.. 1104.. | 1,050 |
| PDJN R/L 2020 K15 | 20 | 20 | 125 | 34 | 25 | DN.. 1506.. | 0,400 |
| PDJN R/L 2525 M15 | 25 | 25 | 150 | 34 | 32 | DN.. 1506.. | 0,750 |
| PDJN R/L 3225 P15 | 32 | 25 | 170 | 34 | 32 | DN.. 1506.. | 1,050 |
| PDJN R/L 3232 P15 | 32 | 32 | 170 | 34 | 40 | DN.. 1506.. | 1,300 |
| PDJN R/L 4025 R15 | 40 | 25 | 200 | 34 | 32 | DN.. 1506.. | 1,850 |
| PDJN R/L 5032 S15 | 50 | 32 | 250 | 34 | 40 | DN.. 1506.. | 2,900 |

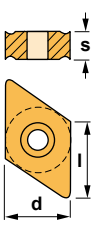
| Reference<br>Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| PDJN R/L 1616 H11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| PDJN R/L 2020 K11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| PDJN R/L 2525 M11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| PDJN R/L 3225 P11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| PDJN R/L 2020 K15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDJN R/L 2525 M15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDJN R/L 3225 P15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDJN R/L 3232 P15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDJN R/L 4025 R15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDJN R/L 5032 S15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

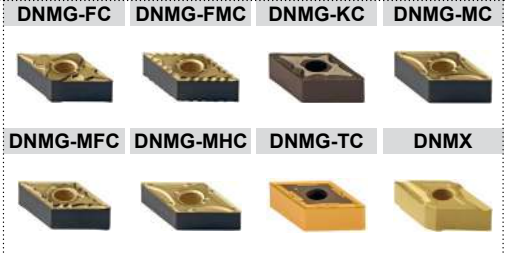
For inserts DNM.. 1504
Für Wendeschneidplatten DNM.. 1504

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

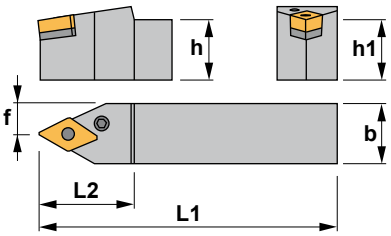


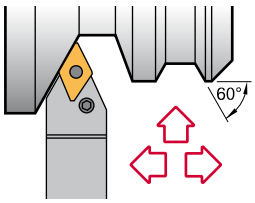


Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDNC (Page: A140).

Axial -8º
Radial -2,5º




Eigenschaften:
Klemmhalter zum Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (55° Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter SDNC (Seite: A140).




# PDNN 63°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PDNN R/L/N 2020 K15 | 20 | 20 | 125 | 34 | 10,0 | DN.. 1506.. | 0,400 |
| PDNN R/L/N 2525 M15 | 25 | 25 | 150 | 34 | 12,5 | DN.. 1506.. | 0,750 |
| PDNN R/L/N 3225 P15 | 32 | 25 | 170 | 34 | 12,5 | DN.. 1506.. | 1,050 |
| PDNN R/L/N 3232 P15 | 32 | 32 | 170 | 34 | 16,0 | DN.. 1506.. | 1,300 |
| PDNN R/L/N 4025 S15 | 40 | 25 | 250 | 34 | 12,5 | DN.. 1506.. | 1,850 |
| PDNN R/L/N 5032 S15 | 50 | 32 | 250 | 34 | 16,0 | DN.. 1506.. | 2,900 |

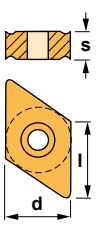
| Reference<br>Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| PDNN R/L/N 2020 K15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDNN R/L/N 2525 M15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDNN R/L/N 3225 P15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDNN R/L/N 3232 P15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDNN R/L/N 4025 S15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PDNN R/L/N 5032 S15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

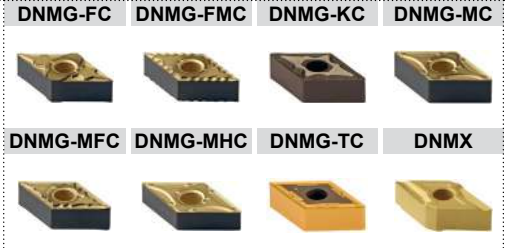
For inserts DNM.. 1504
Für Wendeschneidplatten DNM.. 1504

## DN..

55° rhombic negative inserts. 55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

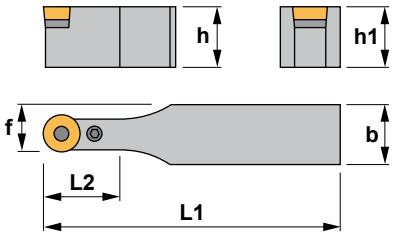


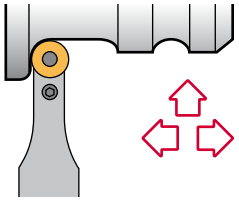


Characteristics:
Profiling toolholder equipped with round positive insert.
For screw type toolholders see Ref. SRDC (Page: A142).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Profildrehen mit runden positiven Wendeschneidplatten.
Für Klemmhalter mit Schraubenklemmung, siehe SRDC (Seite: A142).



# PRDC

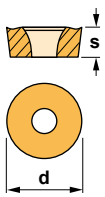
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PRDC N 2020 K10 | 20 | 20 | 125 | 22 | 15,0 | RC.. 1003M0 | 0,400 |
| PRDC N 2525 M10 | 25 | 25 | 150 | 22 | 18,5 | RC.. 1003M0 | 0,750 |
| PRDC N 3225 P10 | 32 | 25 | 170 | 22 | 18,5 | RC.. 1003M0 | 1,050 |
| PRDC N 2020 K12 | 20 | 20 | 125 | 28 | 16,0 | RC.. 1204M0 | 0,400 |
| PRDC N 2525 M12 | 25 | 25 | 150 | 28 | 18,5 | RC.. 1204M0 | 0,750 |
| PRDC N 3225 P12 | 32 | 25 | 170 | 28 | 18,5 | RC.. 1204M0 | 1,050 |
| PRDC N 3232 P12 | 32 | 32 | 170 | 28 | 22,0 | RC.. 1204M0 | 1,300 |
| PRDC N 4025 S12 | 40 | 25 | 250 | 28 | 18,5 | RC.. 1204M0 | 1,850 |
| PRDC N 3225 P16 | 32 | 25 | 170 | 34 | 20,5 | RC.. 1606M0 | 1,050 |
| PRDC N 3232 P16 | 32 | 32 | 170 | 34 | 24,0 | RC.. 1606M0 | 1,300 |
| PRDC N 3232 P20 | 32 | 32 | 170 | 42 | 26,0 | RC.. 2006M0 | 1,300 |
| PRDC N 4040 S20 | 40 | 40 | 250 | 42 | 30,0 | RC.. 2006M0 | 3,050 |
| PRDC N 4040 S25 | 40 | 40 | 250 | 45 | 32,5 | RC.. 2507M0 | 3,050 |
| PRDC N 4040 U25 | 40 | 40 | 350 | 45 | 32,5 | RC.. 2507M0 | 3,050 |
| PRDC N 5050 U25 | 50 | 50 | 350 | 45 | 37,5 | RC.. 2507M0 | 5,850 |
| PRDC N 5050 V32 | 50 | 50 | 400 | 52 | 41,0 | RC.. 3209M0 | 5,850 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PRDC N.....10 | 8110 | 1705 | 5002 | 3810 | 4110 | 0009 | 1.4 |
| PRDC N.....12 | 8112 | 1606 | 5025 | 3812 | 4110 | 0009 | 2.0 |
| PRDC N.....16 | 8116 | 1706 | 5025 | 3816 | 4116 | 0012 | 2.0 |
| PRDC N.....20 | 8120 | 1708 | 5003 | 3820 | 4115 | 0015 | 3.0 |
| PRDC N.....25 | 8125 | 1710 | 5004 | 3825 | 4119 | 0019 | 3.5 |
| PRDC N.....32 | 8132 | 1612 | 5005 | 3832 | 4125 | 0025 | 4.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 1003M0 | 3,18 | 10,00 |
| RC.. 1204M0 | 4,76 | 12,00 |
| RC.. 1606M0 | 6,35 | 16,00 |
| RC.. 2006M0 | 6,35 | 20,00 |
| RC.. 2507M0 | 7,94 | 25,00 |
| RC.. 3209M0 | 9,52 | 32,00 |




RCGT-AL



RCGT-AP



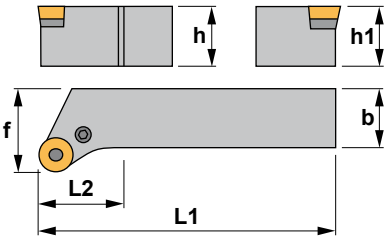
RCMT



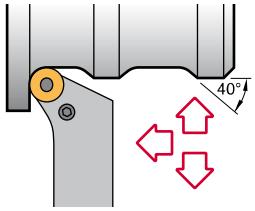


Characteristics:
Profiling multipurpose turning toolholder equipped with round positive insert.
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Profildrehen mit runden positiven Wendeschneidplatten.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# PRSC

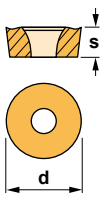
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PRSC R/L 2020 K10 | 20 | 20 | 125 | 28 | 25 | RC.. 1003M0 | 0,400 |
| PRSC R/L 2525 M10 | 25 | 25 | 150 | 28 | 32 | RC.. 1003M0 | 0,750 |
| PRSC R/L 3225 P10 | 32 | 25 | 170 | 28 | 32 | RC.. 1003M0 | 1,050 |
| PRSC R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | RC.. 1204M0 | 0,400 |
| PRSC R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | RC.. 1204M0 | 0,750 |
| PRSC R/L 3225 P12 | 32 | 25 | 170 | 28 | 32 | RC.. 1204M0 | 1,050 |
| PRSC R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | RC.. 1606M0 | 0,750 |
| PRSC R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | RC.. 1606M0 | 1,050 |
| PRSC R/L 3232 P20 | 32 | 32 | 170 | 42 | 40 | RC.. 2006M0 | 1,300 |
| PRSC R/L 4040 S20 | 40 | 40 | 250 | 48 | 50 | RC.. 2006M0 | 3,050 |
| PRSC R/L 4040 S25 | 40 | 40 | 250 | 48 | 50 | RC.. 2507M0 | 3,050 |
| PRSC R/L 5050 T32 | 50 | 50 | 300 | 50 | 63 | RC.. 3209M0 | 5,850 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PRSC R/L 2020 K10 | 8110 | 1705 | 5002 | 3810 | 4110 | 0009 | 1.4 |
| PRSC R/L 2525 M10 | 8110 | 1705 | 5002 | 3810 | 4110 | 0009 | 1.4 |
| PRSC R/L 3225 P10 | 8110 | 1705 | 5002 | 3810 | 4110 | 0009 | 1.4 |
| PRSC R/L 2020 K12 | 8112 | 1606 | 5025 | 3812 | 4110 | 0009 | 2.0 |
| PRSC R/L 2525 M12 | 8112 | 1606 | 5025 | 3812 | 4110 | 0009 | 2.0 |
| PRSC R/L 3225 P12 | 8112 | 1606 | 5025 | 3812 | 4110 | 0009 | 2.0 |
| PRSC R/L 2525 M16 | 8116 | 1706 | 5025 | 3816 | 4116 | 0012 | 2.0 |
| PRSC R/L 3225 P16 | 8116 | 1706 | 5025 | 3816 | 4116 | 0012 | 2.0 |
| PRSC R/L 3232 P20 | 8120 | 1708 | 5003 | 3820 | 4115 | 0015 | 3.0 |
| PRSC R/L 4040 S20 | 8120 | 1708 | 5003 | 3820 | 4115 | 0015 | 3.0 |
| PRSC R/L 4040 S25 | 8125 | 1710 | 5004 | 3825 | 4119 | 0019 | 3.5 |
| PRSC R/L 5050 T32 | 8132 | 1612 | 5005 | 3832 | 4125 | 0025 | 4.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 1003M0 | 3,18 | 10,00 |
| RC.. 1204M0 | 4,76 | 12,00 |
| RC.. 1606M0 | 6,35 | 16,00 |
| RC.. 2006M0 | 6,35 | 20,00 |
| RC.. 2507M0 | 7,94 | 25,00 |
| RC.. 3209M0 | 9,52 | 32,00 |




RCGT-AL



RCGT-AP



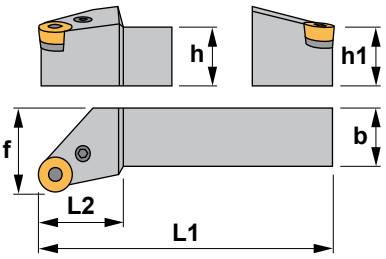
RCMT



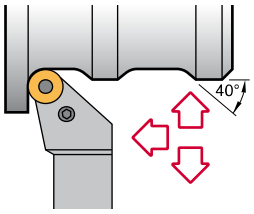


Characteristics:
Profiling multipurpose turning toolholder equipped with round negative insert.
For general applications, roughing, semi-finishing and finishing.

Axial -6°
Radial -6°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit runden negativen Wendeschneidplatten.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# PRSN

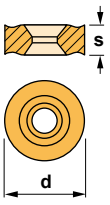
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PRSN R/L 2020 K09 | 20 | 20 | 125 | 22 | 25 | RNMG 090300 | 0,400 |
| PRSN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | RNMG 120400 | 0,750 |
| PRSN R/L 3225 P15 | 32 | 25 | 170 | 34 | 32 | RNMG 150600 | 1,050 |
| PRSN R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | RNMG 190600 | 1,300 |
| PRSN R/L 4040 S25 | 40 | 40 | 250 | 45 | 50 | RNMG 250900 | 3,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PRSN R/L 2020 K09 | 8009 | 1606 | 5025 | 3909 | 4110 | 0009 | 2.0 |
| PRSN R/L 2525 M12 | 8012 | 1608 | 5003 | 3912 | 4112 | 0012 | 3.0 |
| PRSN R/L 3225 P15 | 8015 | 1708 | 5003 | 3915 | 4115 | 0015 | 3.0 |
| PRSN R/L 3232 P19 | 8019 | 1610 | 5004 | 3919 | 4119 | 0019 | 3.5 |
| PRSN R/L 4040 S25 | 8025 | 1612 | 5005 | 3925 | 4125 | 0025 | 4.0 |

## RNMG

Round negative inserts.
Runde negative Wendeschneidplatte. A39

| Reference / Bez. | s | d |
|---|---|---|
| RNMG 090300 | 3,18 | 9,52 |
| RNMG 120400 | 4,76 | 12,70 |
| RNMG 150600 | 6,35 | 15,88 |
| RNMG 190600 | 6,35 | 19,05 |
| RNMG 250900 | 9,52 | 25,40 |



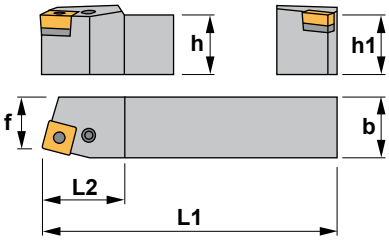

RNMG



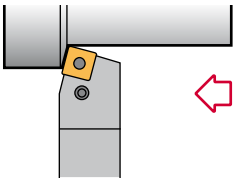


Characteristics:
Toolholder for external turning applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSBP (Page: A116) or SSBC (Page: A143).

Axial -7,25º
Radial -4,25º




Eigenschaften:
Klemmhalter zum Außendrehen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CSBP (Seite: A116) oder SSBC (Seite: A143).



# PSBN 75°

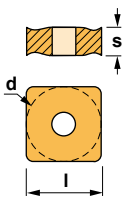
| Reference Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSBN R/L 1212 F09 | 12 | 12 | 80 | 18 | 11 | SNM.. 0903.. | 0,100 |
| PSBN R/L 1616 H09 | 16 | 16 | 100 | 22 | 13 | SNM.. 0903.. | 0,250 |
| PSBN R/L 2020 K09 | 20 | 20 | 125 | 22 | 17 | SNM.. 0903.. | 0,400 |
| PSBN R/L 2020 K12 | 20 | 20 | 125 | 28 | 17 | SNM.. 1204.. | 0,400 |
| PSBN R/L 2525 M12 | 25 | 25 | 150 | 28 | 22 | SNM.. 1204.. | 0,750 |
| PSBN R/L 3225 P12 | 32 | 25 | 170 | 28 | 22 | SNM.. 1204.. | 1,050 |
| PSBN R/L 2525 M15 | 25 | 25 | 150 | 34 | 22 | SNM.. 1506.. | 0,750 |
| PSBN R/L 3232 P15 | 32 | 32 | 170 | 34 | 27 | SNM.. 1506.. | 1,300 |
| PSBN R/L 3232 P19 | 32 | 32 | 170 | 42 | 27 | SNM.. 1906.. | 1,300 |
| PSBN R/L 4040 S19 | 40 | 40 | 250 | 48 | 35 | SNM.. 1906.. | 3,050 |
| PSBN R/L 5050 T19 | 50 | 50 | 300 | 50 | 43 | SNM.. 1906.. | 3,050 |
| PSBN R/L 4040 S25 | 40 | 40 | 250 | 48 | 35 | SNM.. 2507.. | 3,050 |
| PSBN R/L 5050 T25 | 50 | 50 | 300 | 50 | 43 | SNM.. 2507.. | 5,850 |

| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSBN R/L 1212 F09 | 8005 | 1715 | 5002 | - | - | - | 1.4 |
| PSBN R/L 1616 H09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSBN R/L 2020 K09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSBN R/L 2020 K12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSBN R/L 2525 M12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSBN R/L 3225 P12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSBN R/L 2525 M15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSBN R/L 3232 P15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSBN R/L 3232 P19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSBN R/L 4040 S19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSBN R/L 5050 T19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSBN R/L 4040 S25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |
| PSBN R/L 5050 T25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 0903.. | 9,52 | 3,18 | 9,52 |
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |

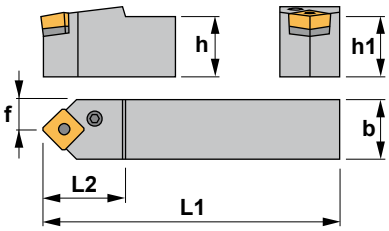



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

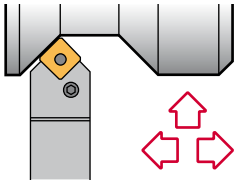


Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts. For low powered machines and small pieces choose toolholder Ref. CSDP (Page: A117) or SSSC (Page: A145).

Axial -7°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen negativen Wendeschneidplatten. Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CSDP (Seite: A117) oder SSSC (Seite: A145).



# PSDN 45°

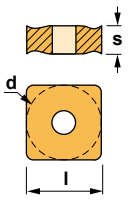
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSDN N 1010 E09 | 10 | 10 | 70 | 16 | 5,0 | SNM.. 0903.. | 0,070 |
| PSDN N 1212 F09 | 12 | 12 | 80 | 20 | 6,0 | SNM.. 0903.. | 0,100 |
| PSDN N 1616 H09 | 16 | 16 | 100 | 22 | 8,0 | SNM.. 0903.. | 0,250 |
| PSDN N 2020 K12 | 20 | 20 | 125 | 28 | 10,0 | SNM.. 1204.. | 0,400 |
| PSDN N 2525 M12 | 25 | 25 | 150 | 28 | 12,5 | SNM.. 1204.. | 0,750 |
| PSDN N 3225 P12 | 32 | 25 | 170 | 34 | 12,5 | SNM.. 1204.. | 1,050 |
| PSDN N 3232 P12 | 32 | 32 | 170 | 34 | 16,0 | SNM.. 1204.. | 1,300 |
| PSDN N 3225 P19 | 32 | 25 | 170 | 34 | 12,5 | SNM.. 1906.. | 1,050 |
| PSDN N 3232 P19 | 32 | 32 | 170 | 42 | 16,0 | SNM.. 1906.. | 1,300 |
| PSDN N 4040 S25 | 40 | 40 | 250 | 48 | 20,0 | SNM.. 2507.. | 3,050 |
| PSDN N 5050 T25 | 50 | 50 | 300 | 50 | 25,0 | SNM.. 2507.. | 5,850 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSDN N 1010 E09 | 8005 | 1715 | 5002 | - | - | - | 1.4 |
| PSDN N 1212 F09 | 8005 | 1715 | 5002 | - | - | - | 1.4 |
| PSDN N 1616 H09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSDN N 2020 K12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSDN N 2525 M12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSDN N 3225 P12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSDN N 3232 P12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSDN N 3225 P19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSDN N 3232 P19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSDN N 4040 S25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |
| PSDN N 5050 T25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 0903.. | 9,52 | 3,18 | 9,52 |
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |

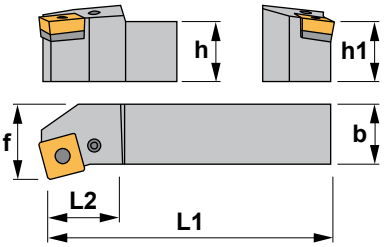



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

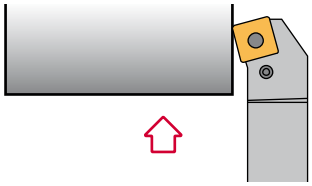


Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSKP (Page: A118).

Axial -4,25°
Radial -7,25°




Eigenschaften:
Klemmhalter zum Plandrehen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CSKP (Seite: A118).



# PSKN 75°

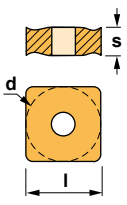
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSKN R/L 1616 H09 | 16 | 16 | 100 | 22 | 20 | SNM.. 0903.. | 0,250 |
| PSKN R/L 2020 K09 | 20 | 20 | 125 | 22 | 25 | SNM.. 0903.. | 0,400 |
| PSKN R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | SNM.. 1204.. | 0,400 |
| PSKN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | SNM.. 1204.. | 0,750 |
| PSKN R/L 3225 P12 | 32 | 25 | 170 | 34 | 32 | SNM.. 1204.. | 1,050 |
| PSKN R/L 2525 M15 | 25 | 25 | 150 | 34 | 32 | SNM.. 1506.. | 0,750 |
| PSKN R/L 3232 P15 | 32 | 32 | 170 | 42 | 40 | SNM.. 1506.. | 1,300 |
| PSKN R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | SNM.. 1906.. | 1,300 |
| PSKN R/L 4040 S19 | 40 | 40 | 250 | 45 | 50 | SNM.. 1906.. | 3,050 |
| PSKN R/L 4040 S25 | 40 | 40 | 250 | 45 | 50 | SNM.. 2507.. | 3,050 |
| PSKN R/L 5050 T25 | 50 | 50 | 300 | 50 | 60 | SNM.. 2507.. | 5,850 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSKN R/L 1616 H09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSKN R/L 2020 K09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSKN R/L 2020 K12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSKN R/L 2525 M12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSKN R/L 3225 P12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSKN R/L 2525 M15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSKN R/L 3232 P15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSKN R/L 3232 P19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSKN R/L 4040 S19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSKN R/L 4040 S25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |
| PSKN R/L 5050 T25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 0903.. | 9,52 | 3,18 | 9,52 |
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |

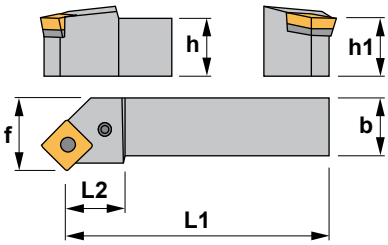



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

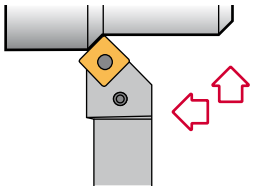


Characteristics: Toolholder for external turning and chamfering applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. CSSP (Page: A119) or SSSC (Page: A145).

Axial -5,75°
Radial -5,75°




Eigenschaften: Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CSSP (Seite: A119) oder SSSC (Seite: A145).



# PSSN 45°

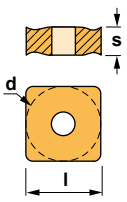
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSSN R/L 1616 H09 | 16 | 16 | 100 | 22 | 20 | SNM.. 0903.. | 0,250 |
| PSSN R/L 2020 K09 | 20 | 20 | 125 | 25 | 25 | SNM.. 0903.. | 0,400 |
| PSSN R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | SNM.. 1204.. | 0,400 |
| PSSN R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | SNM.. 1204.. | 0,750 |
| PSSN R/L 3225 P12 | 32 | 25 | 170 | 28 | 32 | SNM.. 1204.. | 1,050 |
| PSSN R/L 2525 M15 | 25 | 25 | 150 | 34 | 32 | SNM.. 1506.. | 0,750 |
| PSSN R/L 3225 P15 | 32 | 25 | 170 | 42 | 32 | SNM.. 1506.. | 1,050 |
| PSSN R/L 3232 P15 | 32 | 32 | 170 | 42 | 40 | SNM.. 1506.. | 1,300 |
| PSSN R/L 3232 P19 | 32 | 32 | 170 | 45 | 40 | SNM.. 1906.. | 1,300 |
| PSSN R/L 4040 S19 | 40 | 40 | 250 | 45 | 50 | SNM.. 1906.. | 3,050 |
| PSSN R/L 5050 T19 | 50 | 50 | 300 | 50 | 60 | SNM.. 1906.. | 5,850 |
| PSSN R/L 4040 S25 | 40 | 40 | 250 | 45 | 50 | SNM.. 2507.. | 3,050 |
| PSSN R/L 5050 T25 | 50 | 50 | 300 | 50 | 60 | SNM.. 2507.. | 5,850 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSSN R/L 1616 H09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSSN R/L 2020 K09 | 8009 | 1606 | 5025 | 3509 | 4110 | 0009 | 2.0 |
| PSSN R/L 2020 K12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSSN R/L 2525 M12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSSN R/L 3225 P12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSSN R/L 2525 M15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSSN R/L 3225 P15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSSN R/L 3232 P15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSSN R/L 3232 P19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSSN R/L 4040 S19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSSN R/L 5050 T19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSSN R/L 4040 S25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |
| PSSN R/L 5050 T25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 0903.. | 9,52 | 3,18 | 9,52 |
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |




| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

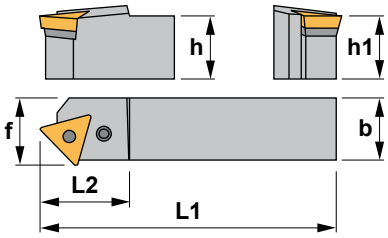


Characteristics:

Toolholder for external turning and chamfering applications equipped with triangular negative inserts.

For low powered machines and small pieces choose toolholder Ref. CTDP (Page: A124).

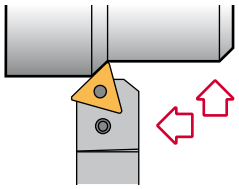
Axial -5°
Radial -5°




Eigenschaften:

Klemmhalter zum Außendrehen und Abschrägen mit dreikantigen negativen Wendeschneidplatten.

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CTDP (Seite: A124).



# PTDN 45°

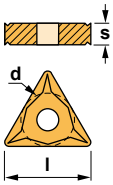
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PTDN R/L 2525 M22 | 25 | 25 | 150 | 34 | 27 | TNM.. 2204.. | 0,750 |
| PTDN R/L 3225 P22 | 32 | 25 | 170 | 34 | 27 | TNM.. 2204.. | 1,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PTDN R/L 2525 M22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTDN R/L 3225 P22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative Wendeschneidplatten. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

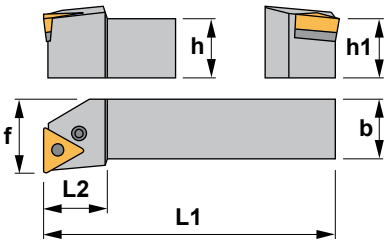



| TNMG-FMC | TNMG-KC | TNMG-MC |
|---|---|---|
|  |  |  |
| **TNMG-MFC** | **TNMG-MHC** | **TNMG-TC** |
|  |  |  |

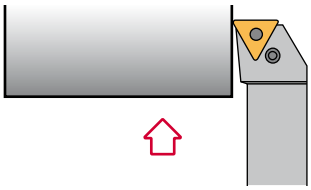


Characteristics:
Toolholder for face turning applications equipped with triangular negative inserts.
For low powered machines and small pieces choose toolholder Ref. CTFP (Page: A125) or STFC (Page: A148).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Plandrehen mit dreieckigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CTFP (Seite: A125) oder STFC (Seite: A148).



# PTFN 90°

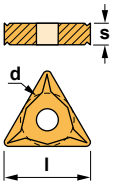
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PTFN R/L 1616 H16 | 16 | 16 | 100 | 22 | 20 | TNM.. 1604.. | 0,250 |
| PTFN R/L 2020 K16 | 20 | 20 | 125 | 22 | 25 | TNM.. 1604.. | 0,400 |
| PTFN R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | TNM.. 1604.. | 0,750 |
| PTFN R/L 3225 P16 | 32 | 25 | 170 | 28 | 32 | TNM.. 1604.. | 1,050 |
| PTFN R/L 2525 M22 | 25 | 25 | 150 | 28 | 32 | TNM.. 2204.. | 0,750 |
| PTFN R/L 3225 P22 | 32 | 25 | 170 | 28 | 32 | TNM.. 2204.. | 1,050 |
| PTFN R/L 3232 P22 | 32 | 32 | 170 | 28 | 40 | TNM.. 2204.. | 1,300 |
| PTFN R/L 3232 P27 | 32 | 32 | 170 | 42 | 40 | TNM.. 2706.. | 1,300 |
| PTFN R/L 4040 S27 | 40 | 40 | 250 | 45 | 50 | TNM.. 2706.. | 3,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PTFN R/L 1616 H16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTFN R/L 2020 K16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTFN R/L 2525 M16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTFN R/L 3225 P16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTFN R/L 2525 M22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTFN R/L 3225 P22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTFN R/L 3232 P22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTFN R/L 3232 P27 | 8015 | 1708 | 5003 | 3427 | 4115 | 0015 | 3.0 |
| PTFN R/L 4040 S27 | 8015 | 1708 | 5003 | 3427 | 4115 | 0015 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |
| TNM.. 2706.. | 27,50 | 6,35 | 15,88 |

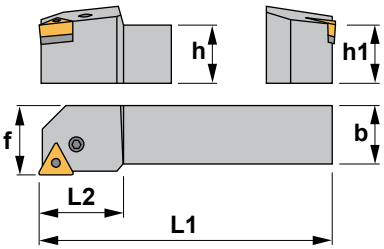




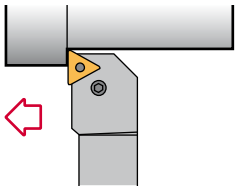



Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
For low powered machines and small pieces choose toolholder Ref. CTGP (Page: A126) or STGC (Page: A149).

Axial -6°
Radial -6°




Eigenschaften:
Klemmhalter zum Außendrehen mit dreieckigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bez. CTGP (Seite: A126) oder STGC (Seite: A149).



# PTGN 90°

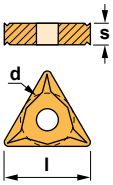
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PTGN R/L 1616 H16 | 16 | 16 | 100 | 22 | 20 | TNM.. 1604.. | 0,250 |
| PTGN R/L 2020 K16 | 20 | 20 | 125 | 22 | 25 | TNM.. 1604.. | 0,400 |
| PTGN R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | TNM.. 1604.. | 0,750 |
| PTGN R/L 3225 P16 | 32 | 25 | 170 | 28 | 32 | TNM.. 1604.. | 1,050 |
| PTGN R/L 2525 M22 | 25 | 25 | 150 | 28 | 32 | TNM.. 2204.. | 0,750 |
| PTGN R/L 3225 P22 | 32 | 25 | 170 | 28 | 32 | TNM.. 2204.. | 1,050 |
| PTGN R/L 3232 P22 | 32 | 32 | 170 | 28 | 40 | TNM.. 2204.. | 1,300 |
| PTGN R/L 4040 S22 | 40 | 40 | 250 | 45 | 50 | TNM.. 2204.. | 3,050 |
| PTGN R/L 3232 P27 | 32 | 32 | 170 | 42 | 40 | TNM.. 2706.. | 1,300 |
| PTGN R/L 4040 S27 | 40 | 40 | 250 | 45 | 50 | TNM.. 2706.. | 3,050 |
| PTGN R/L 5050 T33 | 50 | 50 | 300 | 50 | 60 | TNM.. 3307.. | 5,850 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PTGN R/L 1616 H16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTGN R/L 2020 K16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTGN R/L 2525 M16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTGN R/L 3225 P16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTGN R/L 2525 M22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTGN R/L 3225 P22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTGN R/L 3232 P22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTGN R/L 4040 S22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTGN R/L 3232 P27 | 8015 | 1708 | 5003 | 3427 | 4115 | 0015 | 3.0 |
| PTGN R/L 4040 S27 | 8015 | 1708 | 5003 | 3427 | 4115 | 0015 | 3.0 |
| PTGN R/L 5050 T33 | 8019 | 1610 | 5004 | 3433 | 4133 | 0019 | 3.5 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |
| TNM.. 2706.. | 27,50 | 6,35 | 15,88 |
| TNM.. 3307.. | 33,00 | 7,93 | 19,05 |

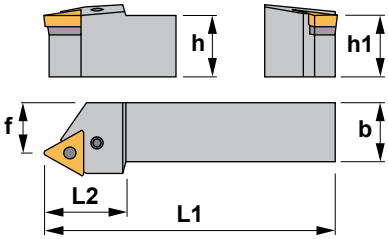



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |

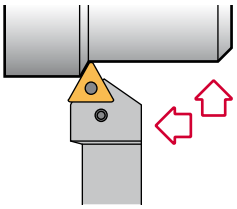


Characteristics: Toolholder for external turning and chamfering applications equipped with triangular negative inserts. For low powered machines and small pieces choose toolholder Ref. CTTP (Page: A127) or STTC (Page: A152).

Axial -8º
Radial -2,25º




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit dreieckigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Klemmhalter Bezeichnung CTTP (Seite: A127) oder STTC (Seite: A152).



# PTTN 60°

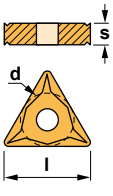
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PTTN R/L 1616 H16 | 16 | 16 | 100 | 25 | 13 | TNM.. 1604.. | 0,250 |
| PTTN R/L 2020 K16 | 20 | 20 | 125 | 28 | 17 | TNM.. 1604.. | 0,400 |
| PTTN R/L 2525 M16 | 25 | 25 | 150 | 28 | 22 | TNM.. 1604.. | 0,750 |
| PTTN R/L 2525 M22 | 25 | 25 | 150 | 34 | 22 | TNM.. 2204.. | 0,750 |
| PTTN R/L 3225 P22 | 32 | 25 | 170 | 34 | 22 | TNM.. 2204.. | 1,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PTTN R/L 1616 H16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTTN R/L 2020 K16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTTN R/L 2525 M16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| PTTN R/L 2525 M22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| PTTN R/L 3225 P22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

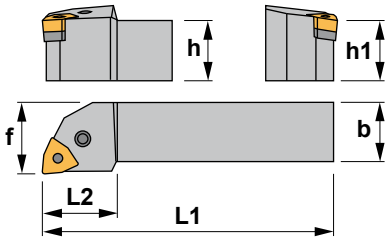



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |

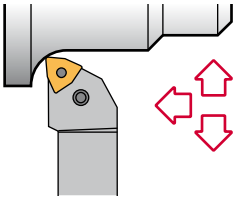


Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80°).
For top clamp toolholder see Ref. MWLN (Page: A92) or MWLN-K (Page: A93).

Axial -6°
Radial -6°




Eigenschaften:
Multifunktions-Klemmhalter mit doppelseitigen Trigon negativen Wendeschneidplatten (Winkel 80°).
Für Klemmhalter mit oberer Pratze siehe MWLN (Seite: A92) oder MWLN-K (Seite: A93).



# PWLN 95°

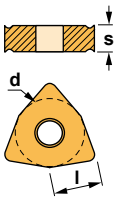
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PWLN R/L 1616 H06 | 16 | 16 | 100 | 22 | 20 | WNM.. 0604.. | 0,250 |
| PWLN R/L 2020 K06 | 20 | 20 | 125 | 22 | 25 | WNM.. 0604.. | 0,400 |
| PWLN R/L 2525 M06 | 25 | 25 | 150 | 25 | 32 | WNM.. 0604.. | 0,750 |
| PWLN R/L 2020 K08 | 20 | 20 | 125 | 28 | 25 | WNM.. 0804.. | 0,400 |
| PWLN R/L 2525 M08 | 25 | 25 | 150 | 28 | 32 | WNM.. 0804.. | 0,750 |
| PWLN R/L 3225 P08 | 32 | 25 | 170 | 34 | 32 | WNM.. 0804.. | 1,050 |
| PWLN R/L 3232 P08 | 32 | 32 | 170 | 34 | 40 | WNM.. 0804.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PWLN R/L 1616 H06 | 8009 | 1606 | 5025 | 3007 | 4109 | 0009 | 2.0 |
| PWLN R/L 2020 K06 | 8009 | 1606 | 5025 | 3007 | 4109 | 0009 | 2.0 |
| PWLN R/L 2525 M06 | 8009 | 1606 | 5025 | 3007 | 4109 | 0009 | 2.0 |
| PWLN R/L 2020 K08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| PWLN R/L 2525 M08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| PWLN R/L 3225 P08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| PWLN R/L 3232 P08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

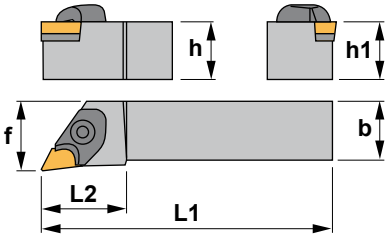



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

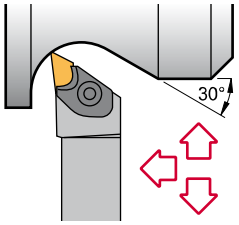


Characteristics:
Toolholder for turning and profiling operations equipped with KNUX negative insert.
For semi-finishing and finishing operations.

Axial 0°
Radial -6°




Eigenschaften:
Klemmhalter zum Plan- und Profildrehen mit negativen KNUX Wendeschneidplatten ausgerüstet, die wenig Schnittkraft erzeugen.
Zum Halbschlichten und Schlichten.




# CKJN 93°

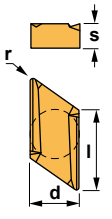
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CKJN R/L 2020 K16 | 20 | 20 | 125 | 34 | 30 | KNUX 1604.. | 0,390 |
| CKJN R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | KNUX 1604.. | 0,700 |
| CKJN R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | KNUX 1604.. | 1,000 |
| CKJN R/L 3232 P16 | 32 | 32 | 170 | 34 | 40 | KNUX 1604.. | 1,250 |
| CKJN R/L 4025 R16 | 40 | 25 | 200 | 38 | 32 | KNUX 1604.. | 1,500 |

| Reference<br>Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| CKJN R 2020 K16 | 2316 | 1614 | 5004 | 4295 | 4203 | 3226 | 4012 | 3.5 |
| CKJN R 2525 M16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| CKJN R 3225 P16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| CKJN R 3232 P16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| CKJN R 4025 R16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| CKJN L 2020 K16 | 2326 | 1614 | 5004 | 4295 | 4203 | 3236 | 4012 | 3.5 |
| CKJN L 2525 M16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |
| CKJN L 3225 P16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |
| CKJN L 3232 P16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |
| CKJN L 4025 R16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |

## KNUX

KNUX negative insert.
Negative KNUX Wendeschneidplatte. A38

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| KNUX 1604.. | 16,00 | 4,76 | 9,52 |



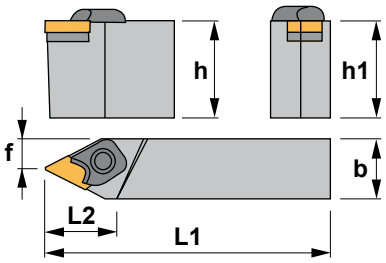

KNUX



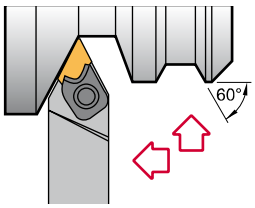


Characteristics:
Toolholder for turning and profiling operations equipped with KNUX negative insert.
For semi-finishing and finishing operations.

Axial -2,75º
Radial -5,25º




Eigenschaften:
Klemmhalter zum Plan- und Profildrehen mit negativen KNUX Wendeschneidplatten ausgerüstet, die wenig Schnittkraft erzeugen.
Zum Halbschlichten und Schlichten.




# CKNN 63º

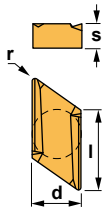
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CKNN R/L 4025 R16 | 40 | 25 | 200 | 37 | 14,3 | KNUX 1604.. | 1,500 |
| CKNN R/L 5032 S16 | 50 | 32 | 250 | 37 | 16,8 | KNUX 1604.. | 3,000 |

| Reference<br>Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| CKNN R 4025 R16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| CKNN R 5032 S16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| CKNN L 4025 R16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |
| CKNN L 5032 S16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |

## KNUX

KNUX negative insert.
Negative KNUX Wendeschneidplatte. A38

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| KNUX 1604.. | 16,00 | 4,76 | 9,52 |



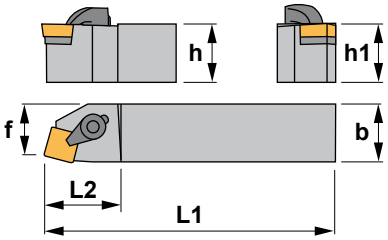

KNUX



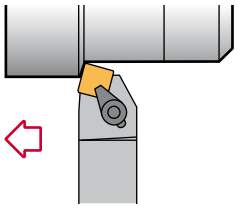


Characteristics:
Toolholder for external turning applications equipped with square positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 1,50°
Radial 5,75°




Eigenschaften:
Klemmhalter zum Außendrehen mit vierkantigen positiven Wendeschneidplatten.
Geeignet für alle Materialien. Das Werkstück muß stabil sein.



# CSBP 75°

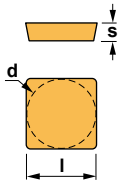
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CSBP R/L 1212 F09 | 12 | 12 | 80 | 20 | 11 | SP..0903.. | 0,070 |
| CSBP R/L 1616 H09 | 16 | 16 | 100 | 22 | 13 | SP..0903.. | 0,200 |
| CSBP R/L 2020 K09 | 20 | 20 | 125 | 22 | 17 | SP..0903.. | 0,400 |
| CSBP R/L 2020 K12 | 20 | 20 | 125 | 34 | 17 | SP..1203.. | 0,400 |
| CSBP R/L 2525 M12 | 25 | 25 | 150 | 34 | 22 | SP..1203.. | 0,700 |
| CSBP R/L 3225 P12 | 32 | 25 | 170 | 34 | 22 | SP..1203.. | 1,000 |
| CSBP R/L 3232 P19 | 32 | 32 | 170 | 42 | 27 | SP..1904.. | 1,250 |
| CSBP R/L 4040 S19 | 40 | 40 | 250 | 48 | 35 | SP..1904.. | 3,000 |
| CSBP R/L 5050 T19 | 50 | 50 | 300 | 50 | 43 | SP..1904.. | 5,650 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| CSBP R/L 1212 F09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSBP R/L 1616 H09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSBP R/L 2020 K09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSBP R/L 2020 K12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSBP R/L 2525 M12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSBP R/L 3225 P12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSBP R/L 3232 P19 | 2211 | 5004 | 3119 | 4012 | 3.5 |
| CSBP R/L 4040 S19 | 2211 | 5004 | 3119 | 4012 | 3.5 |
| CSBP R/L 5050 T19 | 2211 | 5004 | 3119 | 4012 | 3.5 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |
| SP.. 1904.. | 19,05 | 4,76 | 19,05 |




SPMR



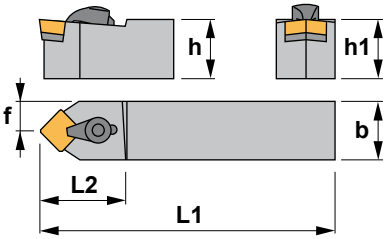
SPUN



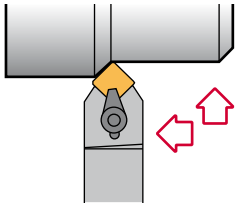


Characteristics:
Toolholder for external turning applications equipped with square positive inserts.
For interrupted cut choose toolholder Ref. PSDN (Page: A106).

Axial 4,25°
Radial 4,25°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PSDN (Seite: A106).



# CSDP 45°

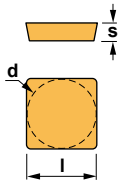
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CSDP R/L 1010 E09 | 10 | 10 | 70 | 22 | 5,6 | SP.. 0903.. | 0,030 |
| CSDP R/L 1212 F09 | 12 | 12 | 80 | 22 | 7,6 | SP.. 0903.. | 0,070 |
| CSDP R/L 1616 H09 | 16 | 16 | 100 | 22 | 11,6 | SP.. 0903.. | 0,200 |
| CSDP R/L 2020 K12 | 20 | 20 | 125 | 28 | 14,0 | SP.. 1203.. | 0,400 |
| CSDP R/L 2525 M12 | 25 | 25 | 150 | 28 | 19,0 | SP.. 1203.. | 0,700 |
| CSDP N 1010 E09 | 10 | 10 | 70 | 22 | 5,0 | SP.. 0903.. | 0,030 |
| CSDP N 1212 F09 | 12 | 12 | 80 | 22 | 6,0 | SP.. 0903.. | 0,070 |
| CSDP N 1616 H09 | 16 | 16 | 100 | 22 | 8,0 | SP.. 0903.. | 0,200 |
| CSDP N 2020 K12 | 20 | 20 | 125 | 28 | 10,0 | SP.. 1203.. | 0,400 |
| CSDP N 2525 M12 | 25 | 25 | 150 | 28 | 12,5 | SP.. 1203.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CSDP R/L 1010 E09 | 2107 | 5025 | - | - | 2.0 |
| CSDP R/L 1212 F09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSDP R/L 1616 H09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSDP R/L 2020 K12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSDP R/L 2525 M12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSDP N 1010 E09 | 2107 | 5025 | - | - | 2.0 |
| CSDP N 1212 F09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSDP N 1616 H09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSDP N 2020 K12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSDP N 2525 M12 | 2209 | 5003 | 3112 | 4002 | 3.0 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |




SPMR



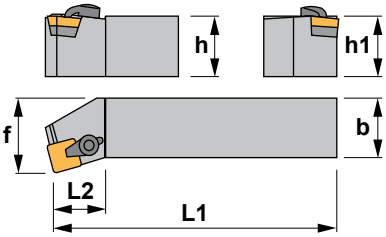
SPUN



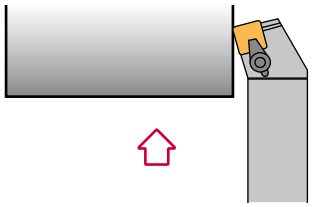


Characteristics:
Toolholder for face turning applications equipped with square positive inserts.
For interrupted cut choose toolholder Ref. PSKN (Page: A107).

Axial 5,75°
Radial 1,5°




Eigenschaften:
Klemmhalter zum Plandrehen mit vierkantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PSKN (Seite: A107).



# CSKP 75°

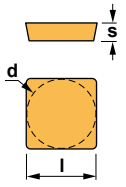
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CSKP R/L 1212 F09 | 12 | 12 | 80 | 18 | 16 | SP..0903.. | 0,070 |
| CSKP R/L 1616 H09 | 16 | 16 | 100 | 22 | 20 | SP..0903.. | 0,200 |
| CSKP R/L 2020 K09 | 20 | 20 | 125 | 25 | 25 | SP..0903.. | 0,400 |
| CSKP R/L 2020 K12 | 20 | 20 | 125 | 28 | 25 | SP..1203.. | 0,400 |
| CSKP R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | SP..1203.. | 0,700 |
| CSKP R/L 3225 P12 | 32 | 25 | 170 | 34 | 32 | SP..1203.. | 1,000 |
| CSKP R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | SP..1904.. | 1,250 |
| CSKP R/L 4040 S19 | 40 | 40 | 250 | 42 | 50 | SP..1904.. | 3,000 |
| CSKP R/L 5050 T19 | 50 | 50 | 300 | 50 | 60 | SP..1904.. | 5,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CSKP R/L 1212 F09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSKP R/L 1616 H09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSKP R/L 2020 K09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSKP R/L 2020 K12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSKP R/L 2525 M12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSKP R/L 3225 P12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSKP R/L 3232 P19 | 2211 | 5004 | 3119 | 4012 | 3.5 |
| CSKP R/L 4040 S19 | 2211 | 5004 | 3119 | 4012 | 3.5 |
| CSKP R/L 5050 T19 | 2211 | 5004 | 3119 | 4012 | 3.5 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |
| SP.. 1904.. | 19,05 | 4,76 | 19,05 |




SPMR



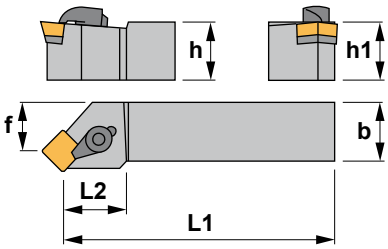
SPUN



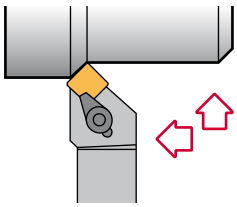


Characteristics:
Toolholder for external turning and chamfering applications equipped with square positive inserts.
For interrupted cut choose toolholder Ref. PSSN (Page: A108).

Axial 4,25°
Radial 4,25°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PSSN (Seite: A108).



# CSSP 45°

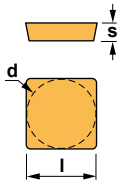
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CSSP R/L 1212 F09 | 12 | 12 | 80 | 20 | 16 | SP.. 0903.. | 0,070 |
| CSSP R/L 1616 H09 | 16 | 16 | 100 | 22 | 20 | SP.. 0903.. | 0,200 |
| CSSP R/L 2020 K12 | 20 | 20 | 125 | 25 | 25 | SP.. 1203.. | 0,400 |
| CSSP R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | SP.. 1203.. | 0,700 |
| CSSP R/L 3225 P12 | 32 | 25 | 170 | 28 | 32 | SP.. 1203.. | 1,000 |
| CSSP R/L 3232 P19 | 32 | 32 | 170 | 42 | 40 | SP.. 1904.. | 1,250 |
| CSSP R/L 4040 S19 | 40 | 40 | 250 | 42 | 50 | SP.. 1904.. | 3,000 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| CSSP R/L 1212 F09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSSP R/L 1616 H09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSSP R/L 2020 K12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSSP R/L 2525 M12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSSP R/L 3225 P12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSSP R/L 3232 P19 | 2211 | 5004 | 3119 | 4012 | 3.5 |
| CSSP R/L 4040 S19 | 2211 | 5004 | 3119 | 4012 | 3.5 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |
| SP.. 1904.. | 19,05 | 4,76 | 19,05 |




SPMR



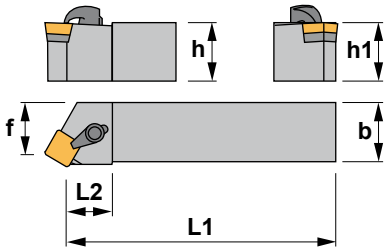
SPUN



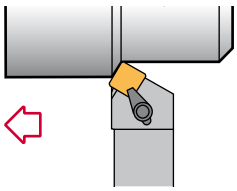


Characteristics:
Toolholder for external turning applications equipped with square positive inserts.
For interrupted cut choose toolholder Ref. PSBN (Page: A105).

Axial 3°
Radial 5,25°




Eigenschaften:
Klemmhalter zum Außendrehen mit vierkantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PSBN (Seite: A105).



# CSTP 60°

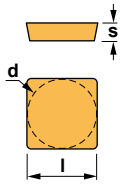
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CSTP R/L 1616 H09 | 16 | 16 | 100 | 22 | 13 | SP..0903.. | 0,200 |
| CSTP R/L 2020 K09 | 20 | 20 | 125 | 28 | 17 | SP..0903.. | 0,350 |
| CSTP R/L 2020 K12 | 20 | 20 | 125 | 28 | 17 | SP..1203.. | 0,400 |
| CSTP R/L 2525 M12 | 25 | 25 | 150 | 28 | 22 | SP..1203.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CSTP R/L 1616 H09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSTP R/L 2020 K09 | 2207 | 5025 | 3109 | 4002 | 2.0 |
| CSTP R/L 2020 K12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| CSTP R/L 2525 M12 | 2209 | 5003 | 3112 | 4002 | 3.0 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |




SPMR



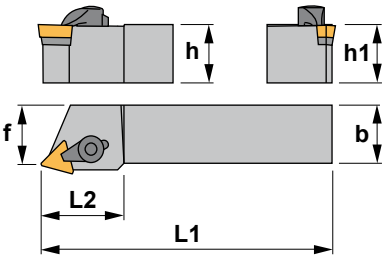
SPUN



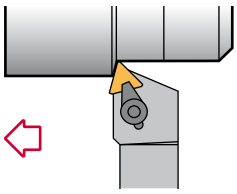


Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 1,5º
Radial 5,75º




Eigenschaften:
Klemmhalter zum Außendrehen mit dreikantigen positiven Wendeschneidplatten.
Geeignet für alle Materialien. Das Werkstück muß stabil sein.



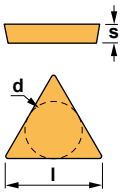
# CTBP 75º

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTBP R/L 1212 F11 | 12 | 12 | 80 | 20 | 11 | TP.. 1103.. | 0,070 |
| CTBP R/L 1616 H11 | 16 | 16 | 100 | 22 | 13 | TP.. 1103.. | 0,200 |
| CTBP R/L 2020 K16 | 20 | 20 | 125 | 28 | 17 | TP.. 1603.. | 0,400 |
| CTBP R/L 2525 M16 | 25 | 25 | 150 | 28 | 22 | TP.. 1603.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTBP R/L 1212 F11 | 2207 | 5025 | - | - | 2.0 |
| CTBP R/L 1616 H11 | 2207 | 5025 | - | - | 2.0 |
| CTBP R/L 2020 K16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTBP R/L 2525 M16 | 2209 | 5003 | 3116 | 4002 | 3.0 |

**TP..** Triangular positive inserts with 11º clearance. A47
Dreikantige positive Wendeschneidplatten mit 11º Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |

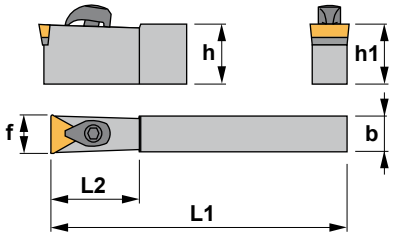



| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |

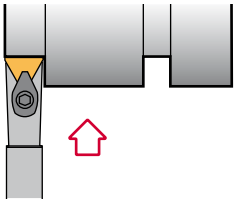


Characteristics:
Toolholder for face turning and grooving applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 6°
Radial 0°




Eigenschaften:
Klemmhalter zum Plandrehen und Einstechen mit dreikantigen positiven Wendeschneidplatten.
Geeignet für alle Materialien. Das Werkstück muß stabil sein.



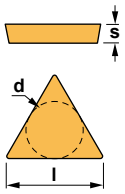
# CTCPN 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTCP N 1009 E11 | 10 | 9 | 70 | 22 | 11 | TP.. 1103.. | 0,040 |
| CTCP N 2009 K11 | 20 | 9 | 125 | 22 | 11 | TP.. 1103.. | 0,150 |
| CTCP N 2509 R11 | 25 | 9 | 200 | 22 | 11 | TP.. 1103.. | 0,350 |
| CTCP N 2513 R16 | 25 | 13 | 200 | 28 | 16 | TP.. 1603.. | 0,500 |
| CTCP N 2518 R22 | 25 | 18 | 200 | 34 | 22 | TP.. 2204.. | 0,650 |
| CTCP N 4018 R22 | 40 | 18 | 200 | 34 | 22 | TP.. 2204.. | 1,100 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTCP N 1009 E11 | 2304 | 5025 | - | - | 2.0 |
| CTCP N 2009 K11 | 2304 | 5025 | - | - | 2.0 |
| CTCP N 2509 R11 | 2304 | 5025 | - | - | 2.0 |
| CTCP N 2513 R16 | 2305 | 5003 | 3116 | 4002 | 3.0 |
| CTCP N 2518 R22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| CTCP N 4018 R22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. A47
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |

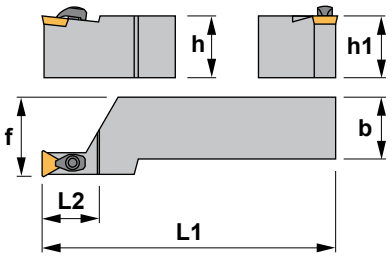



| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |

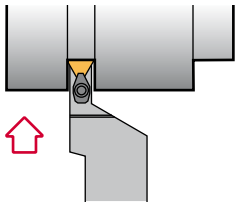


Characteristics:
Toolholder for face turning and grooving applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 6°
Radial 0°




Eigenschaften:
Klemmhalter zum Plandrehen und Einstechen mit dreikantigen positiven Wendeschneidplatten.
Geeignet für alle Materialien. Das Werkstück muß stabil sein.



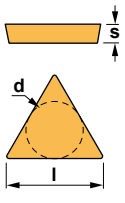
# CTCP 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTCP R/L 1212 F11 | 12 | 12 | 80 | 22 | 16 | TP.. 1103.. | 0,070 |
| CTCP R/L 1616 H11 | 16 | 16 | 100 | 22 | 20 | TP.. 1103.. | 0,200 |
| CTCP R/L 2020 K11 | 20 | 20 | 125 | 22 | 25 | TP.. 1103.. | 0,400 |
| CTCP R/L 2525 M11 | 25 | 25 | 150 | 22 | 32 | TP.. 1103.. | 0,700 |
| CTCP R/L 3225 P16 | 32 | 25 | 170 | 28 | 32 | TP.. 1603.. | 1,000 |
| CTCP R/L 3232 P16 | 32 | 32 | 170 | 28 | 40 | TP.. 1603.. | 1,250 |
| CTCP R/L 3225 P22 | 32 | 25 | 170 | 34 | 32 | TP.. 2204.. | 1,000 |
| CTCP R/L 3232 P22 | 32 | 32 | 170 | 34 | 40 | TP.. 2204.. | 1,250 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTCP R/L 1212 F11 | 2304 | 5025 | - | - | 2.0 |
| CTCP R/L 1616 H11 | 2304 | 5025 | - | - | 2.0 |
| CTCP R/L 2020 K11 | 2304 | 5025 | - | - | 2.0 |
| CTCP R/L 2525 M11 | 2304 | 5025 | - | - | 2.0 |
| CTCP R/L 3225 P16 | 2305 | 5003 | 3116 | 4002 | 3.0 |
| CTCP R/L 3232 P16 | 2305 | 5003 | 3116 | 4002 | 3.0 |
| CTCP R/L 3225 P22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| CTCP R/L 3232 P22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. A47
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |

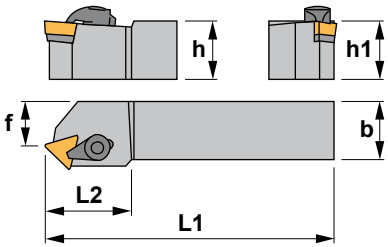




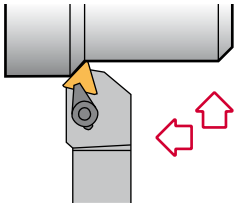



Characteristics:
Toolholder for external turning and chamfering turning applications equipped with triangular positive inserts. For interrupted cut choose toolholder Ref. PTDN (Page: A109).

Axial 4,25°
Radial 4,25°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit dreikantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PTDN (Seite: A109).



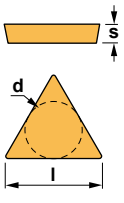
# CTDP 45°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTDP R/L 1212 F11 | 12 | 12 | 80 | 20 | 6,3 | TP.. 1103.. | 0,070 |
| CTDP R/L 1616 H11 | 16 | 16 | 100 | 22 | 10,3 | TP.. 1103.. | 0,200 |
| CTDP R/L 2020 K16 | 20 | 20 | 125 | 28 | 12,2 | TP.. 1603.. | 0,400 |
| CTDP R/L 2525 M16 | 25 | 25 | 150 | 28 | 17,2 | TP.. 1603.. | 0,700 |
| CTDP R/L 3232 P16 | 32 | 32 | 170 | 28 | 23,5 | TP.. 1603.. | 1,250 |
| CTDP R/L 3232 P22 | 32 | 32 | 170 | 34 | 20,5 | TP.. 2204.. | 1,250 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTDP R/L 1212 F11 | 2207 | 5025 | - | - | 2.0 |
| CTDP R/L 1616 H11 | 2207 | 5025 | - | - | 2.0 |
| CTDP R/L 2020 K16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTDP R/L 2525 M16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTDP R/L 3232 P16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTDP R/L 3232 P22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |

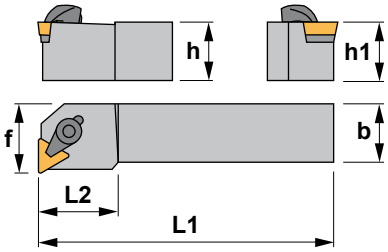



| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |

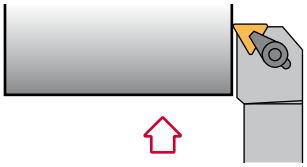


Characteristics:
Toolholder for face turning applications equipped with triangular positive inserts.
For interrupted cut choose toolholder Ref. PTFN (Page: A110).

Axial 6°
Radial 0°




Eigenschaften:
Klemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PTFN (Seite: A110).



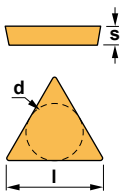
# CTFP 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTFP R/L 1010 E11 | 10 | 10 | 70 | 14 | 12 | TP.. 1103.. | 0,030 |
| CTFP R/L 1212 F11 | 12 | 12 | 80 | 20 | 16 | TP.. 1103.. | 0,070 |
| CTFP R/L 1616 H11 | 16 | 16 | 100 | 22 | 20 | TP.. 1103.. | 0,200 |
| CTFP R/L 2020 K11 | 20 | 20 | 125 | 22 | 25 | TP.. 1103.. | 0,400 |
| CTFP R/L 2020 K16 | 20 | 20 | 125 | 22 | 25 | TP.. 1603.. | 0,400 |
| CTFP R/L 2525 M16 | 25 | 25 | 150 | 25 | 32 | TP.. 1603.. | 0,700 |
| CTFP R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | TP.. 1603.. | 1,000 |
| CTFP R/L 3232 P16 | 32 | 32 | 170 | 34 | 40 | TP.. 1603.. | 1,250 |
| CTFP R/L 4040 S16 | 40 | 40 | 250 | 45 | 50 | TP.. 1603.. | 3,000 |
| CTFP R/L 5050 T16 | 50 | 50 | 300 | 50 | 60 | TP.. 1603.. | 5,650 |
| CTFP R/L 3232 P22 | 32 | 32 | 170 | 34 | 40 | TP.. 2204.. | 1,250 |
| CTFP R/L 4040 S22 | 40 | 40 | 250 | 45 | 50 | TP.. 2204.. | 3,000 |
| CTFP R/L 5050 T22 | 50 | 50 | 300 | 50 | 60 | TP.. 2204.. | 5,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTFP R/L 1010 E11 | 2000 | 5015 | - | - | 0.6 |
| CTFP R/L 1212 F11 | 2207 | 5025 | - | - | 2.0 |
| CTFP R/L 1616 H11 | 2207 | 5025 | - | - | 2.0 |
| CTFP R/L 2020 K11 | 2207 | 5025 | - | - | 2.0 |
| CTFP R/L 2020 K16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTFP R/L 2525 M16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTFP R/L 3225 P16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTFP R/L 3232 P16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTFP R/L 4040 S16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTFP R/L 5050 T16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTFP R/L 3232 P22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| CTFP R/L 4040 S22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| CTFP R/L 5050 T22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |




TPMN | TPMR | TPUN



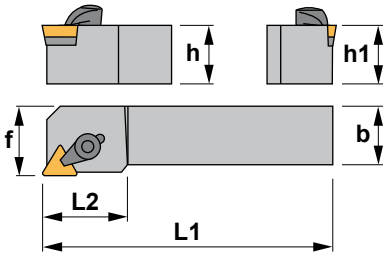
TPUX-R | TPUX-L



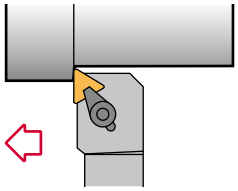


Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For interrupted cut choose toolholder Ref. PTGN (Page: A111).

Axial 0°
Radial 6°




Eigenschaften:
Klemmhalter zum Außendrehen mit dreikantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PTGN (Seite: A111).



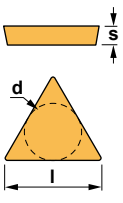
# CTGP 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTGP R/L 1010 E11 | 10 | 10 | 70 | 16 | 12 | TP.. 1103.. | 0,030 |
| CTGP R/L 1212 F11 | 12 | 12 | 80 | 18 | 16 | TP.. 1103.. | 0,070 |
| CTGP R/L 1616 H11 | 16 | 16 | 100 | 18 | 20 | TP.. 1103.. | 0,200 |
| CTGP R/L 2020 K11 | 20 | 20 | 125 | 22 | 25 | TP.. 1103.. | 0,400 |
| CTGP R/L 2020 K16 | 20 | 20 | 125 | 28 | 25 | TP.. 1603.. | 0,400 |
| CTGP R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | TP.. 1603.. | 0,700 |
| CTGP R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | TP.. 1603.. | 1,000 |
| CTGP R/L 3232 P22 | 32 | 32 | 170 | 34 | 40 | TP.. 2204.. | 1,250 |
| CTGP R/L 4040 S22 | 40 | 40 | 250 | 45 | 50 | TP.. 2204.. | 3,000 |
| CTGP R/L 5050 T22 | 50 | 50 | 300 | 50 | 60 | TP.. 2204.. | 5,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTGP R/L 1010 E11 | 2000 | 5015 | - | - | 0.6 |
| CTGP R/L 1212 F11 | 2207 | 5025 | - | - | 2.0 |
| CTGP R/L 1616 H11 | 2207 | 5025 | - | - | 2.0 |
| CTGP R/L 2020 K11 | 2207 | 5025 | - | - | 2.0 |
| CTGP R/L 2020 K16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTGP R/L 2525 M16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTGP R/L 3225 P16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTGP R/L 3232 P22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| CTGP R/L 4040 S22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| CTGP R/L 5050 T22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |

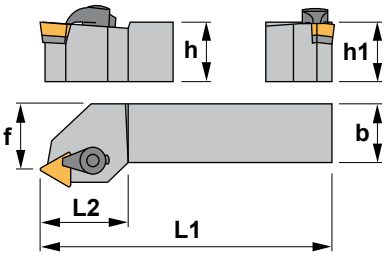



| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |

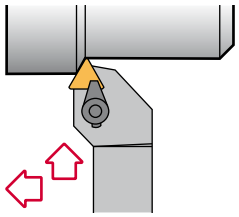


Characteristics:
Toolholder for external turning and chamfering turning applications equipped with triangular positive inserts.
For interrupted cut choose toolholder Ref. PTTN (Page: A112).

Axial 3°
Radial 5,25°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit dreikantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Klemmhalter PTTN (Seite: A112).



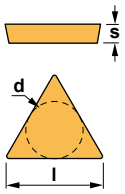
# CTTP 60°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTTP R/L 0808 D09 | 8 | 8 | 60 | 16 | 7 | TP.. 0902.. | 0,020 |
| CTTP R/L 1010 E09 | 10 | 10 | 70 | 16 | 9 | TP.. 0902.. | 0,030 |
| CTTP R/L 1010 E11 | 10 | 10 | 70 | 16 | 9 | TP.. 1103.. | 0,030 |
| CTTP R/L 1212 F11 | 12 | 12 | 80 | 20 | 11 | TP.. 1103.. | 0,070 |
| CTTP R/L 1616 H11 | 16 | 16 | 100 | 22 | 13 | TP.. 1103.. | 0,200 |
| CTTP R/L 2020 K11 | 20 | 20 | 125 | 22 | 17 | TP.. 1103.. | 0,400 |
| CTTP R/L 2020 K16 | 20 | 20 | 125 | 28 | 17 | TP.. 1603.. | 0,400 |
| CTTP R/L 2525 M16 | 25 | 25 | 150 | 28 | 22 | TP.. 1603.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| CTTP R/L 0808 D09 | 2000 | 5015 | - | - | 0.6 |
| CTTP R/L 1010 E09 | 2000 | 5015 | - | - | 0.6 |
| CTTP R/L 1010 E11 | 2000 | 5015 | - | - | 0.6 |
| CTTP R/L 1212 F11 | 2207 | 5025 | - | - | 2.0 |
| CTTP R/L 1616 H11 | 2207 | 5025 | - | - | 2.0 |
| CTTP R/L 2020 K11 | 2207 | 5025 | - | - | 2.0 |
| CTTP R/L 2020 K16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| CTTP R/L 2525 M16 | 2209 | 5003 | 3116 | 4002 | 3.0 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. A47

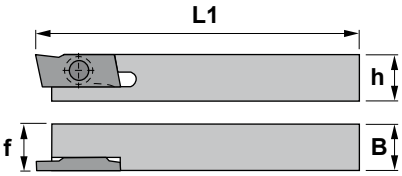
| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 0902.. | 9,62 | 2,38 | 5,55 |
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |



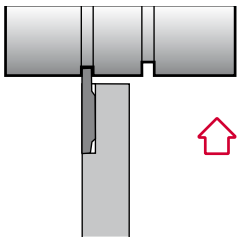

| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |



Characteristics:
Multipurpose mini-toolholders for grooving, threading and turning.
For precision turning.




Eigenschaften:
Multifunktions-Mini-Klemmhalter zum Nuteinstechen, Gewindedrehen und Drehen.
Zum Präzisionsdrehen.



# STHE

| Reference<br>Bezeichnung | h | h1 | B | L | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STHER/L0808M07 | 8 | 8 | 8 | 150 | 8 | GI.. | 0,070 |
| STHER/L1010M07 | 10 | 10 | 10 | 150 | 10 | GI.. | 0,110 |
| STHER/L1212M07 | 12 | 12 | 12 | 150 | 12 | GI.. | 0,150 |
| STHER/L1616M07 | 16 | 16 | 16 | 150 | 16 | GI.. | 0,280 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| STHER/L0808M07 | 1230 | 5508 | 1.2 |
| STHER/L1010M07 | 1230 | 5508 | 1.2 |
| STHER/L1212M07 | 1230 | 5508 | 1.2 |
| STHER/L1616M07 | 1230 | 5508 | 1.2 |

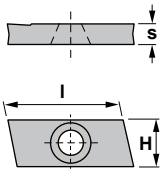
## GI

B06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| GI.. | 17,00 | 2,00 | 7,00 |

**GIGP** - Grooving and cut-off inserts
**GIGW** - Threading inserts
**GISG** - Grooving inserts
**GIST** - Turning inserts

**GIGP** - Ein- und Abstechplatten
**GIGW** - Gewindedrehplatten
**GISG** - Stechdrehplatten
**GIST** - Drehplatten




GIGP



GIGW



GISG

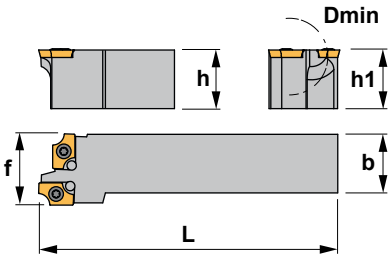


GIST

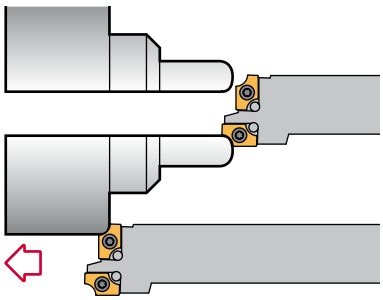




Characteristics:
Toolholder for turning convex radius on internal and external diameters in manual machines.




Eigenschaften:
Werkzeug um konvexen Radien in Innen- und Aussendurchmessern bei manuellen Maschinen zu drehen.



# SAGD 90°

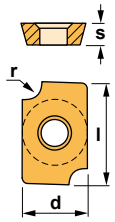
| Reference<br>Bezeichnung | h=h1 | b | L | f | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SAGD R 1616 H15 | 16 | 16 | 100 | 30 | 20 | ADMT 1503.. | 0,260 |
| SAGD R 2020 K15 | 20 | 20 | 125 | 30 | 20 | ADMT 1503.. | 0,450 |
| SAGD R 2525 M15 | 25 | 25 | 150 | 30 | 20 | ADMT 1503.. | 0,650 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SAGD R 1616 H15 | 1240 | 5515 | 3.0 |
| SAGD R 2020 K15 | 1240 | 5515 | 3.0 |
| SAGD R 2525 M15 | 1240 | 5515 | 3.0 |

## ADMT-R

Parallelogram positive inserts with 15° clearance.
Parallelogramme positive WSP mit 15° Freiwinkel. A30

| Reference / Bezeichnung | r | s | d |
|---|---|---|---|
| ADMT 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMT 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMT 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMT 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMT 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMT 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMT 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMT 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMT 1503R5.0 | 5.0 | 3,18 | 9,52 |

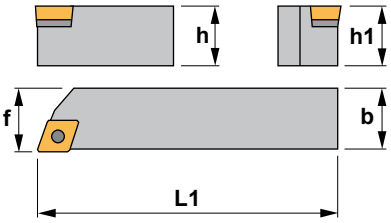



| R1.0-R | R1.5-R | R2.0-R |
|---|---|---|
|  |  |  |
| **R2.5-R** | **R3.0-R** | **R3.5-R** |
|  |  |  |
| **R4.0-R** | **R4.5-R** | **R5.0-R** |
|  |  |  |

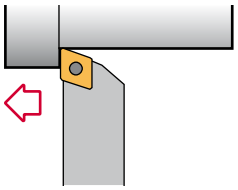


Characteristics:
Toolholder for external turning applications equipped with rhombic positive inserts (angle 80°).
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen mit rhombischen positiven Wendeschneidplatten (80° Winkel). Geeignet für alle Materialien. Das Werkstück muß stabil sein.



# SCAC 90°

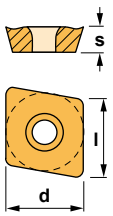
| Reference<br>Bezeichnung | h=h1 | b | L1 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| SCAC R/L 0808 D06 | 8 | 8 | 60 | 8,5 | CC.. 0602.. | 0,050 |
| SCAC R/L 1010 E06 | 10 | 10 | 70 | 10,5 | CC.. 0602.. | 0,070 |
| SCAC R/L 1212 F09 | 12 | 12 | 80 | 12,5 | CC.. 09T3.. | 0,100 |
| SCAC R/L 1616 H09 | 16 | 16 | 100 | 16,5 | CC.. 09T3.. | 0,200 |
| SCAC R/L 2020 K12 | 20 | 20 | 125 | 20,5 | CC.. 1204.. | 0,400 |
| SCAC R/L 2525 M12 | 25 | 25 | 150 | 25,5 | CC.. 1204.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SCAC R/L 0808 D06 | 1225 | 5507 | - | - | 0.9 |
| SCAC R/L 1010 E06 | 1225 | 5507 | - | - | 0.9 |
| SCAC R/L 1212 F09 | 1240 | 5515 | - | - | 3.0 |
| SCAC R/L 1616 H09 | 1240 | 5515 | - | - | 3.0 |
| SCAC R/L 2020 K12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| SCAC R/L 2525 M12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCGT-AP



CCMT



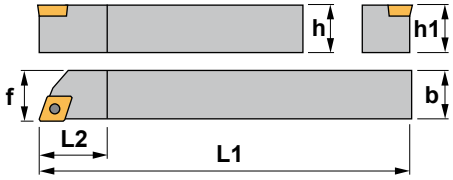
CCMW



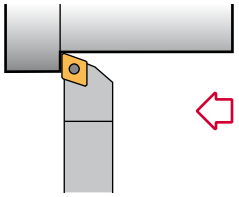


Characteristics:
Toolholder for external turning applications equipped with rhombic positive inserts (angle 80°).
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Drehen mit rhombischen positiven Wendeschneidplatten (80° Winkel). Für alle Materialien geeignet. Das Werkstück sollte stabil sein.



# SCAC 90°

Automatic lathes
Drehautomaten

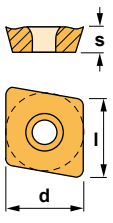
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SCAC R/L 0808 M06 | 8 | 8 | 150 | 8 | 8 | CC.. 0602.. | 0,070 |
| SCAC R/L 1010 M06 | 10 | 10 | 150 | 10 | 10 | CC.. 0602.. | 0,110 |
| SCAC R/L 1212 M06 | 12 | 12 | 150 | 12 | 12 | CC.. 0602.. | 0,150 |
| SCAC R/L 1616 M06 | 16 | 16 | 150 | 16 | 16 | CC.. 0602.. | 0,280 |
| SCAC R/L 1212 M09 | 12 | 12 | 150 | 12 | 12 | CC.. 09T3.. | 0,150 |
| SCAC R/L 1616 M09 | 16 | 16 | 150 | 16 | 16 | CC.. 09T3.. | 0,280 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SCAC R/L 0808 M06 | 1225 | 5507 | 0.9 |
| SCAC R/L 1010 M06 | 1225 | 5507 | 0.9 |
| SCAC R/L 1212 M06 | 1225 | 5507 | 0.9 |
| SCAC R/L 1616 M06 | 1225 | 5507 | 0.9 |
| SCAC R/L 1212 M09 | 1240 | 5515 | 3.0 |
| SCAC R/L 1616 M09 | 1240 | 5515 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

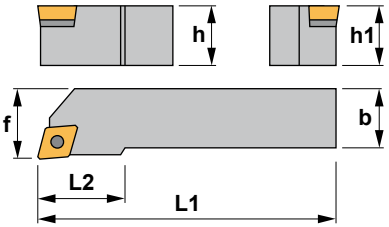




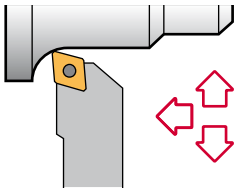



Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80°).
For toolholders with negative inserts see Ref. MCLN-K (Page: A81) or MCLN (Page: A80) or PCLN (Page: A97).

Axial 0°
Radial 0°




Eigenschaften: Multifuktions-Klemmhalter mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MCLN-K (Seite: A81) oder MCLN (Seite: A80) oder PCLN (Seite: A97).



# SCLC 95°

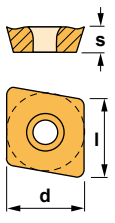
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SCLC R/L 0808 D06 | 8 | 8 | 60 | 12 | 10 | CC.. 0602.. | 0,050 |
| SCLC R/L 1010 E06 | 10 | 10 | 70 | 14 | 12 | CC.. 0602.. | 0,070 |
| SCLC R/L 1212 F09 | 12 | 12 | 80 | 16 | 16 | CC.. 09T3.. | 0,100 |
| SCLC R/L 1616 H09 | 16 | 16 | 100 | 18 | 20 | CC.. 09T3.. | 0,200 |
| SCLC R/L 2020 K09 | 20 | 20 | 125 | 22 | 25 | CC.. 09T3.. | 0,400 |
| SCLC R/L 2020 K12 | 20 | 20 | 125 | 22 | 25 | CC.. 1204.. | 0,400 |
| SCLC R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | CC.. 1204.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SCLC R/L 0808 D06 | 1225 | 5507 | - | - | 0.9 |
| SCLC R/L 1010 E06 | 1225 | 5507 | - | - | 0.9 |
| SCLC R/L 1212 F09 | 1240 | 5515 | - | - | 3.0 |
| SCLC R/L 1616 H09 | 1240 | 5515 | - | - | 3.0 |
| SCLC R/L 2020 K09 | 1240 | 5515 | - | - | 3.0 |
| SCLC R/L 2020 K12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| SCLC R/L 2525 M12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance. A30-31
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCGT-AP



CCMT



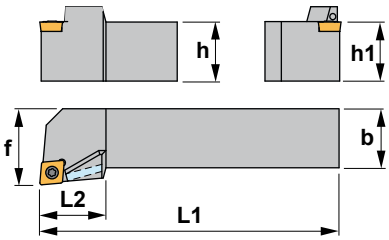
CCMW



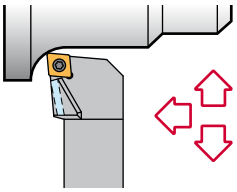


Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80°).
For toolholders with negative inserts see Ref. MCLN-K (Page: A81) or MCLN (Page: A80) or PCLN (Page: A97).

Axial 0°
Radial 0°




Eigenschaften:
Multifuktions-Klemmhalter mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MCLN-K (Seite: A81) oder MCLN (Seite: A80) oder PCLN (Seite: A97).



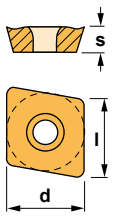
# SCLC 95°-A

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SCLC R/L 2020 K09-A | 20 | 20 | 125 | 22 | 25 | CC.. 09T3.. | 0,400 |
| SCLC R/L 2525 M09-A | 25 | 25 | 125 | 28 | 32 | CC.. 09T3.. | 0,750 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SCLC R/L 2020 K09-A | 1240 | 5515 | 3.0 |
| SCLC R/L 2525 M09-A | 1240 | 5515 | 3.0 |

**CC..** 80° rhombic positive inserts with 7° clearance. 80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

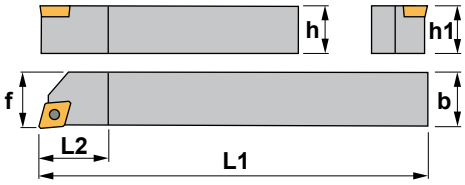



| CCGT-AL | CCGT-AP |
|---|---|
|  |  |
| **CCMT** | **CCMW** |
|  |  |

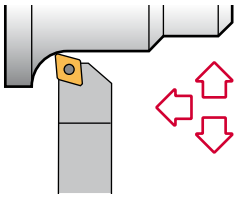


Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Drehen mit rhombischen positiven Wendeschneidplatte (80° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).



# SCLC 95°

Automatic lathes
Drehautomaten

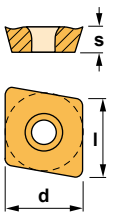
| Reference Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SCLC R/L 0808 M06 | 8 | 8 | 150 | 8 | 8 | CC.. 0602.. | 0,070 |
| SCLC R/L 1010 M06 | 10 | 10 | 150 | 10 | 10 | CC.. 0602.. | 0,110 |
| SCLC R/L 1212 M06 | 12 | 12 | 150 | 12 | 12 | CC.. 0602.. | 0,150 |
| SCLC R/L 1616 M06 | 16 | 16 | 150 | 16 | 16 | CC.. 0602.. | 0,280 |
| SCLC R/L 1212 M09 | 12 | 12 | 150 | 12 | 12 | CC.. 09T3.. | 0,150 |
| SCLC R/L 1616 M09 | 16 | 16 | 150 | 16 | 16 | CC.. 09T3.. | 0,280 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| SCLC R/L 0808 M06 | 1225 | 5507 | 0.9 |
| SCLC R/L 1010 M06 | 1225 | 5507 | 0.9 |
| SCLC R/L 1212 M06 | 1225 | 5507 | 0.9 |
| SCLC R/L 1616 M06 | 1225 | 5507 | 0.9 |
| SCLC R/L 1212 M09 | 1240 | 5515 | 3.0 |
| SCLC R/L 1616 M09 | 1240 | 5515 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |




CCGT-AL



CCGT-AP



CCMT



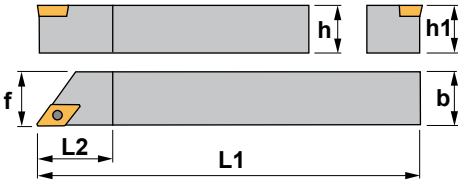
CCMW



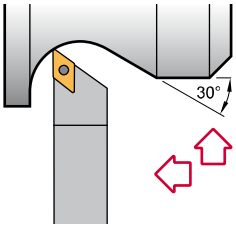


Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Drehen mit rhombischen positiven Wendeschneidplatte (55° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).




# SDAC 90°

Automatic lathes
Drehautomaten

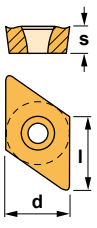
| Reference Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|
| SDAC R/L 0808 M07 | 8 | 8 | 150 | 12,7 | 8 | DC.. 0702.. | 0,070 |
| SDAC R/L 1010 M07 | 10 | 10 | 150 | 15,0 | 10 | DC.. 0702.. | 0,110 |
| SDAC R/L 1212 M07 | 12 | 12 | 150 | 15,0 | 12 | DC.. 0702.. | 0,150 |
| SDAC R/L 1616 M07 | 16 | 16 | 150 | 16,0 | 16 | DC.. 0702.. | 0,280 |
| SDAC R/L 1212 M11 | 12 | 12 | 150 | 18,0 | 12 | DC.. 11T3.. | 0,150 |
| SDAC R/L 1616 M11 | 16 | 16 | 150 | 20,0 | 16 | DC.. 11T3.. | 0,280 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| SDAC R/L 0808 M07 | 1225 | 5507 | 0.9 |
| SDAC R/L 1010 M07 | 1225 | 5507 | 0.9 |
| SDAC R/L 1212 M07 | 1225 | 5507 | 0.9 |
| SDAC R/L 1616 M07 | 1225 | 5507 | 0.9 |
| SDAC R/L 1212 M11 | 1240 | 5515 | 3.0 |
| SDAC R/L 1616 M11 | 1240 | 5515 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



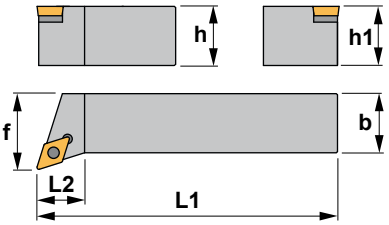
DCMW



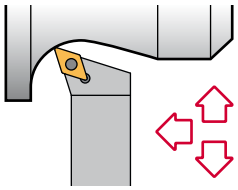


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).



# SDHC 107,5°

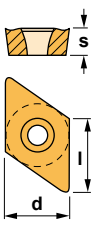
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|
| SDHC R/L 1616 H11 | 16 | 16 | 100 | 20 | 20 | DC.. 11T3.. | 0,200 |
| SDHC R/L 2020 K11 | 20 | 20 | 125 | 20 | 25 | DC.. 11T3.. | 0,400 |
| SDHC R/L 2525 M11 | 25 | 25 | 150 | 20 | 32 | DC.. 11T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SDHC R/L 1616 H11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDHC R/L 2020 K11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDHC R/L 2525 M11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

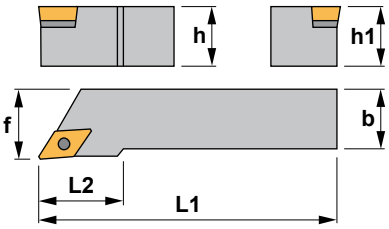



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |

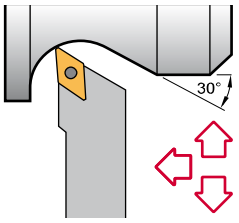


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For toolholders with negative inserts see Ref. MDJN-K (Page: A82) or PDJN (Page: A100).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MDJN-K (Seite: A82) oder PDJN (Seite: A100).




# SDJC 93°

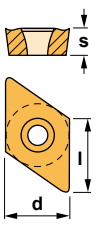
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SDJC R/L 1010 E07 | 10 | 10 | 70 | 14 | 12 | DC.. 0702.. | 0,070 |
| SDJC R/L 1212 F07 | 12 | 12 | 80 | 16 | 16 | DC.. 0702.. | 0,100 |
| SDJC R/L 1616 H07 | 16 | 16 | 100 | 16 | 20 | DC.. 0702.. | 0,150 |
| SDJC R/L 1212 F11 | 12 | 12 | 80 | 18 | 16 | DC.. 11T3.. | 0,100 |
| SDJC R/L 1616 H11 | 16 | 16 | 100 | 18 | 20 | DC.. 11T3.. | 0,200 |
| SDJC R/L 2020 K11 | 20 | 20 | 125 | 22 | 25 | DC.. 11T3.. | 0,400 |
| SDJC R/L 2525 M11 | 25 | 25 | 150 | 28 | 32 | DC.. 11T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SDJC R/L 1010 E07 | 1225 | 5507 | - | - | 0.9 |
| SDJC R/L 1212 F07 | 1225 | 5507 | - | - | 0.9 |
| SDJC R/L 1616 H07 | 1225 | 5507 | - | - | 0.9 |
| SDJC R/L 1212 F11 | 1240 | 5515 | - | - | 3.0 |
| SDJC R/L 1616 H11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDJC R/L 2020 K11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDJC R/L 2525 M11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance. A35
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



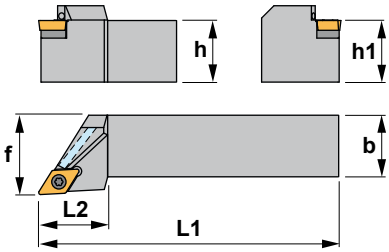
DCMW



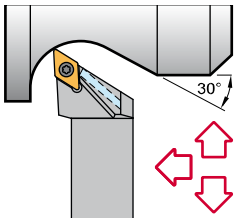


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For toolholders with negative inserts see Ref. MDJN-K (Page: A82) or PDJN (Page: A100).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MDJN-K (Seite: A82) oder PDJN (Seite: A100).




# SDJC 93°-A

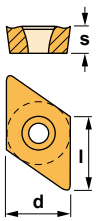
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SDJC R/L 2020 K11-A | 20 | 20 | 125 | 22 | 25 | DC.. 11T3.. | 0,400 |
| SDJC R/L 2525 M11-A | 25 | 25 | 150 | 28 | 32 | DC.. 11T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SDJC R/L 2020 K11-A | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDJC R/L 2525 M11-A | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance. A35
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

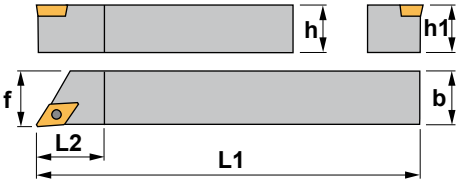



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |

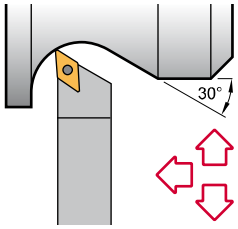


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).




# SDJC 93°

**Automatic lathes**
**Drehautomaten**

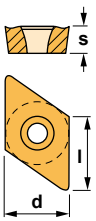
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SDJC R/L 0808 M07 | 8 | 8 | 150 | 8 | 8 | DC.. 0702.. | 0,070 |
| SDJC R/L 1010 M07 | 10 | 10 | 150 | 10 | 10 | DC.. 0702.. | 0,110 |
| SDJC R/L 1212 M07 | 12 | 12 | 150 | 12 | 12 | DC.. 0702.. | 0,150 |
| SDJC R/L 1616 M07 | 16 | 16 | 150 | 16 | 16 | DC.. 0702.. | 0,280 |
| SDJC R/L 1212 M11 | 12 | 12 | 150 | 12 | 12 | DC.. 11T3.. | 0,150 |
| SDJC R/L 1616 M11 | 16 | 16 | 150 | 16 | 16 | DC.. 11T3.. | 0,280 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SDJC R/L 0808 M07 | 1225 | 5507 | 0.9 |
| SDJC R/L 1010 M07 | 1225 | 5507 | 0.9 |
| SDJC R/L 1212 M07 | 1225 | 5507 | 0.9 |
| SDJC R/L 1616 M07 | 1225 | 5507 | 0.9 |
| SDJC R/L 1212 M11 | 1240 | 5515 | 3.0 |
| SDJC R/L 1616 M11 | 1240 | 5515 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

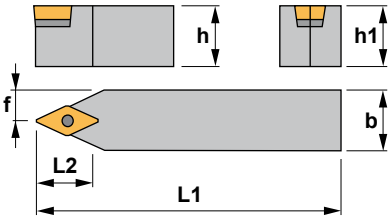



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |

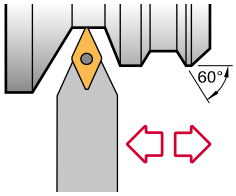


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For toolholders with negative inserts see Ref. PDNN (Page: A101).

Axial 0°
Radial 0°




Eigenschaften: Multifunktions-Klemmhalter zum Proifildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PDNN (Seite: A101).




# SDNC 62°30'

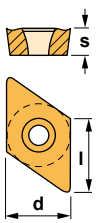
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SDNC N 0808 D07 | 8 | 8 | 60 | 16 | 4,0 | DC.. 0702.. | 0,050 |
| SDNC N 1010 E07 | 10 | 10 | 70 | 16 | 5,0 | DC.. 0702.. | 0,070 |
| SDNC N 1212 F07 | 12 | 12 | 80 | 18 | 6,0 | DC.. 0702.. | 0,100 |
| SDNC N 1616 H11 | 16 | 16 | 100 | 22 | 8,0 | DC.. 11T3.. | 0,200 |
| SDNC N 2020 K11 | 20 | 20 | 125 | 22 | 10,0 | DC.. 11T3.. | 0,400 |
| SDNC N 2525 M11 | 25 | 25 | 150 | 22 | 12,5 | DC.. 11T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SDNC N 0808 D07 | 1225 | 5507 | - | - | 0.9 |
| SDNC N 1010 E07 | 1225 | 5507 | - | - | 0.9 |
| SDNC N 1212 F07 | 1225 | 5507 | - | - | 0.9 |
| SDNC N 1616 H11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDNC N 2020 K11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| SDNC N 2525 M11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



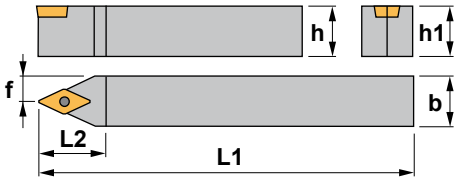
DCMW



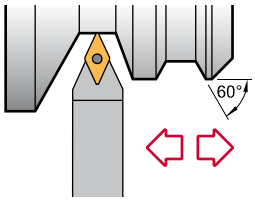


Characteristics:
Multipurpose external turning toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Drehen mit rhombischen positiven Wendeschneidplatte (55° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).




# SDNC 62°30’

**Automatic lathes**
**Drehautomaten**

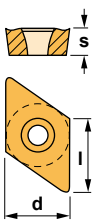
| Reference Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|
| SDNC N 1010 M07 | 10 | 10 | 150 | 15 | 5,2 | DC.. 0702.. | 0,100 |
| SDNC N 1212 M11 | 12 | 12 | 150 | 21 | 6,2 | DC.. 11T3.. | 0,140 |
| SDNC N 1616 M11 | 16 | 16 | 150 | 21 | 8,6 | DC.. 11T3.. | 0,270 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| SDNC N 1010 M07 | 1225 | 5507 | 0.9 |
| SDNC N 1212 M11 | 1240 | 5515 | 3.0 |
| SDNC N 1616 M11 | 1240 | 5515 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance. A35
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

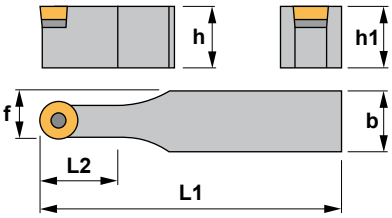



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |

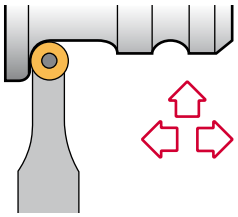


Characteristics:
Profiling toolholder equipped with round positive insert.
For lever lock toolholders see Ref. PRDC (Page: A102).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Profildrehen mit runden positiven Wendeschneidplatten.
Für Klemmhalter mit Kniehebel-Klemmung, siehe PRDC (Seite: A102).



# SRDC

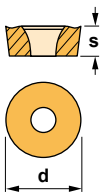
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SRDC N 1010 E06 | 10 | 10 | 70 | 10 | 8,0 | RC.. 0602M0 | 0,070 |
| SRDC N 1212 F06 | 12 | 12 | 80 | 12 | 11,0 | RC.. 0602M0 | 0,100 |
| SRDC N 1616 H06 | 16 | 16 | 100 | 16 | 13,0 | RC.. 0602M0 | 0,200 |
| SRDC N 2020 K06 | 20 | 20 | 125 | 20 | 15,0 | RC.. 0602M0 | 0,400 |
| SRDC N 2525 M06 | 25 | 25 | 150 | 25 | 17,5 | RC.. 0602M0 | 0,700 |
| SRDC N 1616 H08 | 16 | 16 | 100 | 16 | 13,0 | RC.. 0803M0 | 0,200 |
| SRDC N 2020 K08 | 20 | 20 | 125 | 20 | 15,0 | RC.. 0803M0 | 0,400 |
| SRDC N 2525 M08 | 25 | 25 | 150 | 25 | 17,5 | RC.. 0803M0 | 0,700 |
| SRDC N 2020 K10 | 20 | 20 | 125 | 22 | 15,0 | RC.. 10T3M0 | 0,400 |
| SRDC N 2525 M10 | 25 | 25 | 150 | 22 | 17,5 | RC.. 10T3M0 | 0,700 |
| SRDC N 2020 K12 | 20 | 20 | 125 | 28 | 16,0 | RC.. 1204M0 | 0,400 |
| SRDC N 2525 M12 | 25 | 25 | 150 | 28 | 18,5 | RC.. 1204M0 | 0,700 |
| SRDC N 3225 P12 | 32 | 25 | 170 | 28 | 18,5 | RC.. 1204M0 | 0,900 |
| SRDC N 3232 P12 | 32 | 32 | 170 | 28 | 22,0 | RC.. 1204M0 | 1,200 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SRDC N.....06 | 1225 | 5507 | - | - | 0.9 |
| SRDC N.....08 | 1230 | 5508 | - | - | 1.2 |
| SRDC N.....10 | 1335 | 5516 | 3811 | 1750 | 3.0 |
| SRDC N.....12 | 1335 | 5516 | 3814 | 1750 | 3.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 0602M0 | 2,38 | 6,00 |
| RC.. 0803M0 | 3,18 | 8,00 |
| RC.. 10T3M0 | 3,97 | 10,00 |
| RC.. 1204M0 | 4,76 | 12,00 |




RCGT-AL



RCGT-AP



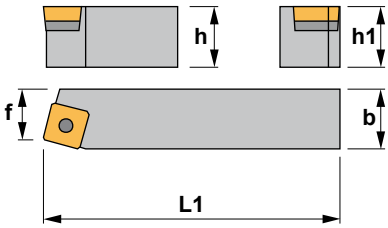
RCMT



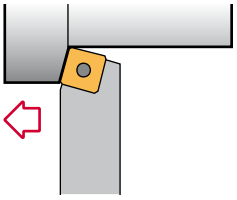


Characteristics:
Toolholder for external turning applications equipped with square positive inserts.
For toolholders with negative inserts see Ref. PSBN (Page: A105).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen mit vierkantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PSBN (Seite: A105).



# SSBC 75°

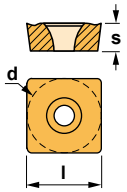
| Reference<br>Bezeichnung | h=h1 | b | L1 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| SSBC R/L 1212 F09 | 12 | 12 | 80 | 11 | SC.. 09T3.. | 0,100 |
| SSBC R/L 1616 H09 | 16 | 16 | 100 | 13 | SC.. 09T3.. | 0,200 |
| SSBC R/L 2020 K12 | 20 | 20 | 125 | 17 | SC.. 1204.. | 0,400 |
| SSBC R/L 2525 M12 | 25 | 25 | 150 | 22 | SC.. 1204.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SSBC R/L 1212 F09 | 1240 | 5515 | - | - | 3.0 |
| SSBC R/L 1616 H09 | 1240 | 5515 | - | - | 3.0 |
| SSBC R/L 2020 K12 | 1540 | 5517 | 3514 | 1760 | 3.0 |
| SSBC R/L 2525 M12 | 1540 | 5517 | 3514 | 1760 | 3.0 |

## SC..

Square positive inserts with 7° clearance.
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel. A40

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

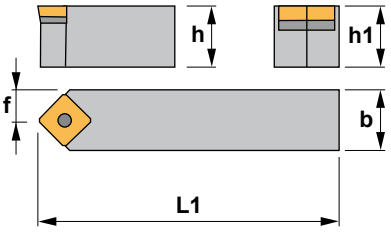



| SCGT-AL | SCMT |
|---|---|
|  |  |
| **SCMT-39** | **SCMW** |
|  |  |

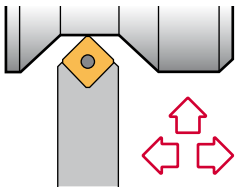


Characteristics:
Toolholder for external turning and chamfering applications equipped with square positive inserts.
For toolholders with negative inserts see Ref. PSDN (Page: A106).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PSDN (Seite: A106).



# SSDC 45°

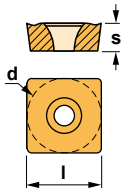
| Reference<br>Bezeichnung | h=h1 | b | L1 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| SSDC N 1212 F09 | 12 | 12 | 80 | 6,0 | SC.. 09T3.. | 0,100 |
| SSDC N 1616 H09 | 16 | 16 | 100 | 8,0 | SC.. 09T3.. | 0,200 |
| SSDC N 2020 K12 | 20 | 20 | 125 | 10,0 | SC.. 1204.. | 0,400 |
| SSDC N 2525 M12 | 25 | 25 | 150 | 12,5 | SC.. 1204.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SSDC N 1212 F09 | 1240 | 5515 | - | - | 3.0 |
| SSDC N 1616 H09 | 1240 | 5515 | - | - | 3.0 |
| SSDC N 2020 K12 | 1540 | 5517 | 3514 | 1760 | 3.0 |
| SSDC N 2525 M12 | 1540 | 5517 | 3514 | 1760 | 3.0 |

## SC..

Square positive inserts with 7° clearance.
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel. A40

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

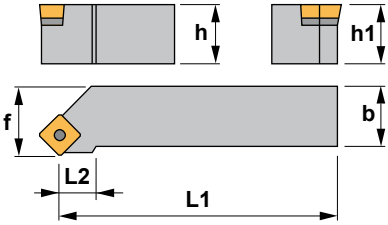



| SCGT-AL | SCMT |
|---|---|
|  |  |
| **SCMT-39** | **SCMW** |
|  |  |

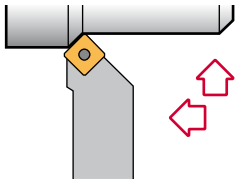


Characteristics:
Toolholder for external turning and chamfering applications equipped with square positive inserts.
For toolholders with negative inserts see Ref. PSSN (Page: A108).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit vierkantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PSSN (Seite: A108).



# SSSC 45°

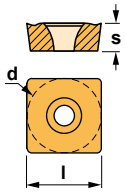
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SSSC R/L 1212 F09 | 12 | 12 | 80 | 20 | 16 | SC.. 09T3.. | 0,100 |
| SSSC R/L 1616 H09 | 16 | 16 | 100 | 22 | 20 | SC.. 09T3.. | 0,200 |
| SSSC R/L 2020 K12 | 20 | 20 | 125 | 25 | 25 | SC.. 1204.. | 0,400 |
| SSSC R/L 2525 M12 | 25 | 25 | 150 | 28 | 32 | SC.. 1204.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SSSC R/L 1212 F09 | 1240 | 5515 | - | - | 3.0 |
| SSSC R/L 1616 H09 | 1240 | 5515 | - | - | 3.0 |
| SSSC R/L 2020 K12 | 1540 | 5517 | 3514 | 1760 | 3.0 |
| SSSC R/L 2525 M12 | 1540 | 5517 | 3514 | 1760 | 3.0 |

## SC..

Square positive inserts with 7° clearance.
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel. A40

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

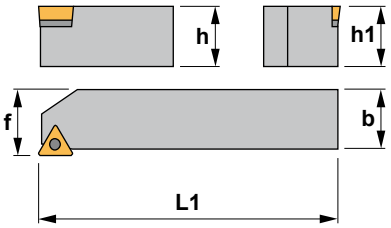



| SCGT-AL | SCMT |
|---|---|
|  |  |
| **SCMT-39** | **SCMW** |
|  |  |

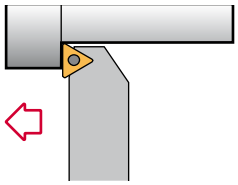


Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen mit dreikantigen positiven Wendeschneidplatten.
Geeignet für alle Materialien. Das Werkstück muß stabil sein.



# STAC 90°

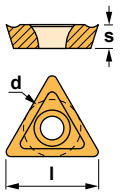
| Reference<br>Bezeichnung | h=h1 | b | L1 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| STAC R/L 0808 D09 | 8 | 8 | 60 | 8,5 | TC.. 0902.. | 0,050 |
| STAC R/L 1010 E09 | 10 | 10 | 70 | 10,5 | TC.. 0902.. | 0,070 |
| STAC R/L 1212 F11 | 12 | 12 | 80 | 12,5 | TC.. 1102.. | 0,100 |
| STAC R/L 1616 H11 | 16 | 16 | 100 | 16,5 | TC.. 1102.. | 0,200 |
| STAC R/L 1616 H16 | 16 | 16 | 100 | 16,5 | TC.. 16T3.. | 0,200 |
| STAC R/L 2020 K16 | 20 | 20 | 125 | 20,5 | TC.. 16T3.. | 0,400 |
| STAC R/L 2525 M16 | 25 | 25 | 150 | 25,5 | TC.. 16T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| STAC R/L 0808 D09 | 1222 | 5506 | - | - | 0.6 |
| STAC R/L 1010 E09 | 1222 | 5506 | - | - | 0.6 |
| STAC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| STAC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| STAC R/L 1616 H16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STAC R/L 2020 K16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STAC R/L 2525 M16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



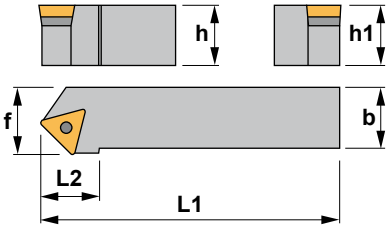
TCMW



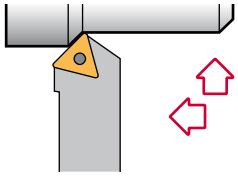


Characteristics:
Toolholder for external turning and chamfering applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. PTDN (Page: A109).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit dreikantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PTDN (Seite: A109).



# STDC 45°

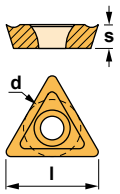
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STDC R/L 0808 D09 | 8 | 8 | 60 | 12 | 10 | TC.. 0902.. | 0,050 |
| STDC R/L 1010 E09 | 10 | 10 | 70 | 14 | 11 | TC.. 0902.. | 0,070 |
| STDC R/L 1212 F11 | 12 | 12 | 80 | 16 | 13 | TC.. 1102.. | 0,100 |
| STDC R/L 1616 H11 | 16 | 16 | 100 | 18 | 17 | TC.. 1102.. | 0,200 |
| STDC R/L 1212 F16 | 12 | 12 | 80 | 18 | 17 | TC.. 16T3.. | 0,100 |
| STDC R/L 1616 H16 | 16 | 16 | 100 | 18 | 17 | TC.. 16T3.. | 0,200 |
| STDC R/L 2020 K16 | 20 | 20 | 125 | 22 | 22 | TC.. 16T3.. | 0,400 |
| STDC R/L 2525 M16 | 25 | 25 | 150 | 28 | 27 | TC.. 16T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| STDC R/L 0808 D09 | 1222 | 5506 | - | - | 0.6 |
| STDC R/L 1010 E09 | 1222 | 5506 | - | - | 0.6 |
| STDC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| STDC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| STDC R/L 1212 F16 | 1240 | 5515 | - | - | 3.0 |
| STDC R/L 1616 H16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STDC R/L 2020 K16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STDC R/L 2525 M16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



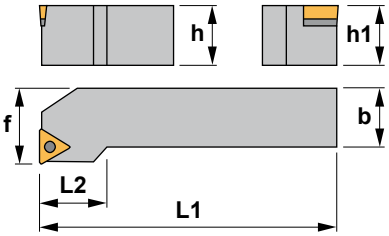
TCMW



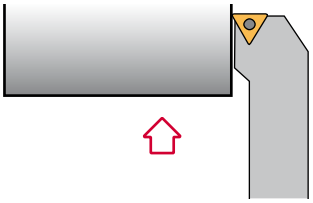


Characteristics:
Toolholder for face turning applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. PTFN (Page: A110).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PTFN (Seite: A110).



# STFC 90°

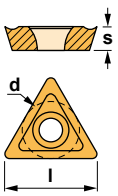
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STFC R/L 0808 D09 | 8 | 8 | 60 | 12 | 10 | TC.. 0902.. | 0,050 |
| STFC R/L 1010 E09 | 10 | 10 | 70 | 14 | 12 | TC.. 0902.. | 0,070 |
| STFC R/L 1212 F11 | 12 | 12 | 80 | 16 | 16 | TC.. 1102.. | 0,100 |
| STFC R/L 1616 H11 | 16 | 16 | 100 | 18 | 20 | TC.. 1102.. | 0,200 |
| STFC R/L 1212 F16 | 12 | 12 | 80 | 16 | 16 | TC.. 16T3.. | 0,100 |
| STFC R/L 1616 H16 | 16 | 16 | 100 | 22 | 20 | TC.. 16T3.. | 0,200 |
| STFC R/L 2020 K16 | 20 | 20 | 125 | 22 | 25 | TC.. 16T3.. | 0,400 |
| STFC R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | TC.. 16T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| STFC R/L 0808 D09 | 1222 | 5506 | - | - | 0.6 |
| STFC R/L 1010 E09 | 1222 | 5506 | - | - | 0.6 |
| STFC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| STFC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| STFC R/L 1212 F16 | 1240 | 5515 | - | - | 3.0 |
| STFC R/L 1616 H16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STFC R/L 2020 K16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STFC R/L 2525 M16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



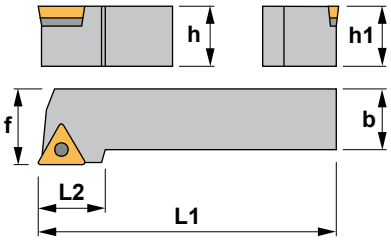
TCMW



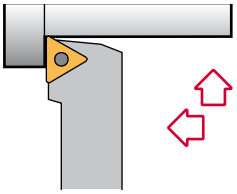


Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. PTGN (Page: A111).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen mit dreikantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PTGN (Seite: A111).



# STGC 90°

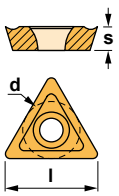
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STGC R/L 0808 D09 | 8 | 8 | 60 | 12 | 10 | TC.. 0902.. | 0,050 |
| STGC R/L 1010 E09 | 10 | 10 | 70 | 14 | 12 | TC.. 0902.. | 0,070 |
| STGC R/L 1212 F11 | 12 | 12 | 80 | 16 | 16 | TC.. 1102.. | 0,100 |
| STGC R/L 1616 H11 | 16 | 16 | 100 | 18 | 20 | TC.. 1102.. | 0,200 |
| STGC R/L 1212 F16 | 12 | 12 | 80 | 18 | 16 | TC.. 16T3.. | 0,100 |
| STGC R/L 1616 H16 | 16 | 16 | 100 | 18 | 20 | TC.. 16T3.. | 0,200 |
| STGC R/L 2020 K16 | 20 | 20 | 125 | 22 | 25 | TC.. 16T3.. | 0,400 |
| STGC R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | TC.. 16T3.. | 0,700 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| STGC R/L 0808 D09 | 1222 | 5506 | - | - | 0.6 |
| STGC R/L 1010 E09 | 1222 | 5506 | - | - | 0.6 |
| STGC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| STGC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| STGC R/L 1212 F16 | 1240 | 5515 | - | - | 3.0 |
| STGC R/L 1616 H16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STGC R/L 2020 K16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STGC R/L 2525 M16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



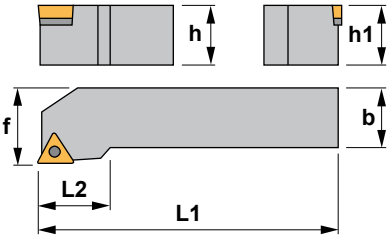
TCMW



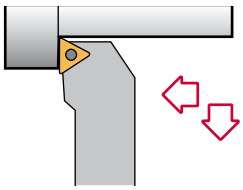


Characteristics:
Toolholder for external and face turning applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. MTJN (Page: A86) or MTJN-K (Page: A87).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außen- und Plandrehen mit dreikantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MTJN (Seite: A86) oder MTJN-K (Seite: A87).



# STJC 93°

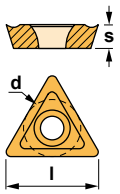
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STJC R/L 0808 D09 | 8 | 8 | 60 | 12 | 10 | TC.. 0902.. | 0,050 |
| STJC R/L 1010 E09 | 10 | 10 | 70 | 14 | 12 | TC.. 0902.. | 0,070 |
| STJC R/L 1212 F11 | 12 | 12 | 80 | 16 | 16 | TC.. 1102.. | 0,100 |
| STJC R/L 1616 H11 | 16 | 16 | 100 | 18 | 20 | TC.. 1102.. | 0,200 |
| STJC R/L 1212 F16 | 12 | 12 | 80 | 18 | 16 | TC.. 16T3.. | 0,100 |
| STJC R/L 1616 H16 | 16 | 16 | 100 | 18 | 20 | TC.. 16T3.. | 0,200 |
| STJC R/L 2020 K16 | 20 | 20 | 125 | 22 | 25 | TC.. 16T3.. | 0,400 |
| STJC R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | TC.. 16T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| STJC R/L 0808 D09 | 1222 | 5506 | - | - | 0.6 |
| STJC R/L 1010 E09 | 1222 | 5506 | - | - | 0.6 |
| STJC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| STJC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| STJC R/L 1212 F16 | 1240 | 5515 | - | - | 3.0 |
| STJC R/L 1616 H16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STJC R/L 2020 K16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STJC R/L 2525 M16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



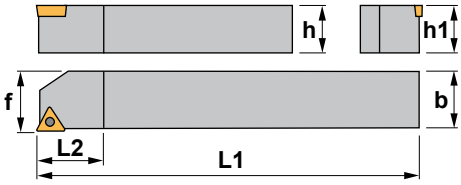
TCMW



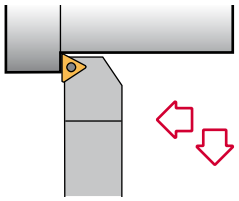


Characteristics:
Toolholder for external and face turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Drehen und Plandrehen mit dreikantigen positiven Wendeschneidplatten.
Für alle Materialien geeignet.
Das Werkstück sollte stabil sein.



# STJC 93°

**Automatic lathes**
**Drehautomaten**

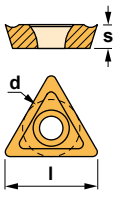
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|
| STJC R/L 1010 M11 | 10 | 10 | 150 | 16 | 10 | TC.. 1102.. | 0,110 |
| STJC R/L 1212 M11 | 12 | 12 | 150 | 16 | 12 | TC.. 1102.. | 0,150 |
| STJC R/L 1616 M11 | 16 | 16 | 150 | 16 | 16 | TC.. 1102.. | 0,280 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| STJC R/L 1010 M11 | 1225 | 5507 | 0.9 |
| STJC R/L 1212 M11 | 1225 | 5507 | 0.9 |
| STJC R/L 1616 M11 | 1225 | 5507 | 0.9 |

## TC..

Triangular positive inserts with 7° clearance. A44
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |




TCGT-AL



TCMT



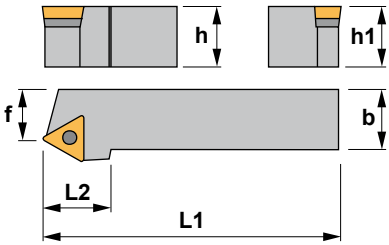
TCMW



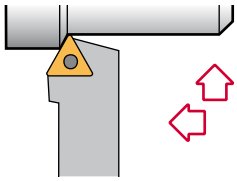


Characteristics:
Toolholder for external turning and chamfering applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. PTTN (Page: A112).

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit dreikantigen positiven Wendeschneidplatten.
Für Klemmhalter mit negativen Wendeschneidplatten, siehe PTTN (Seite: A112).



# STTC 60°

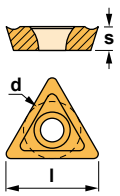
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STTC R/L 0808 D09 | 8 | 8 | 60 | 12 | 7 | TC.. 0902.. | 0,050 |
| STTC R/L 1010 E09 | 10 | 10 | 70 | 14 | 9 | TC.. 0902.. | 0,070 |
| STTC R/L 1212 F11 | 12 | 12 | 80 | 16 | 11 | TC.. 1102.. | 0,100 |
| STTC R/L 1616 H11 | 16 | 16 | 100 | 18 | 13 | TC.. 1102.. | 0,200 |
| STTC R/L 1212 F16 | 12 | 12 | 80 | 18 | 11 | TC.. 16T3.. | 0,100 |
| STTC R/L 1616 H16 | 16 | 16 | 100 | 18 | 13 | TC.. 16T3.. | 0,200 |
| STTC R/L 2020 K16 | 20 | 20 | 125 | 22 | 17 | TC.. 16T3.. | 0,400 |
| STTC R/L 2525 M16 | 25 | 25 | 150 | 28 | 22 | TC.. 16T3.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| STTC R/L 0808 D09 | 1222 | 5506 | - | - | 0.6 |
| STTC R/L 1010 E09 | 1222 | 5506 | - | - | 0.6 |
| STTC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| STTC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| STTC R/L 1212 F16 | 1240 | 5515 | - | - | 3.0 |
| STTC R/L 1616 H16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STTC R/L 2020 K16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| STTC R/L 2525 M16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



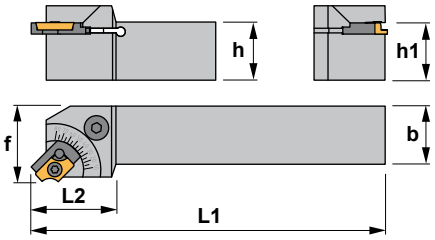
TCMW



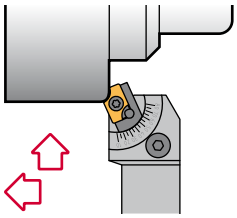


Characteristics:
Toolholder equipped with parallelogram and triangular positive inserts.
For chamfering applications.

Axial 0°
Radial 0°




Eigenschaften:
Klemmhalter zum Abschrägen mit parallelogramme und dreikantigen positiven Wendeschneidplatten.



# STXC 10°- 80°

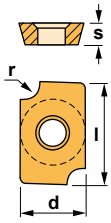
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STXC R 2020 K16 | 20 | 20 | 125 | 27 | 25 | ADMT 1503.. / TCMT 16T3.. | 0,620 |
| STXC R 2525 M16 | 25 | 25 | 150 | 27 | 32 | ADMT 1503.. / TCMT 16T3.. | 0,790 |

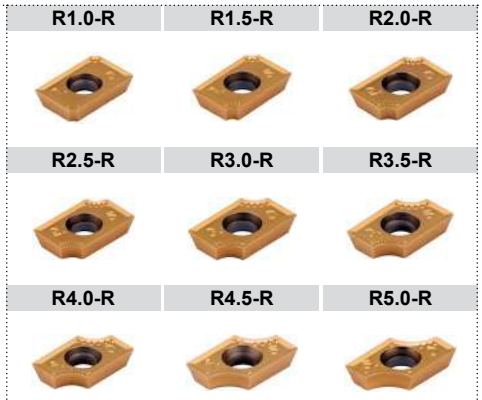
| Reference<br>Bezeichnung | | | | | | | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|---|
| STXC R 2020 K16 | 1240 | 5515 | 1496 | 5004 | 6925 | 6926 | 3.0 | 3.5 |
| STXC R 2525 M16 | 1240 | 5515 | 1496 | 5004 | 6925 | 6926 | 3.0 | 3.5 |

## ADMT-R

Parallelogram positive inserts with 15° clearance.
Parallelogramme positive WSP mit 15° Freiwinkel. A30

| Reference / Bezeichnung | r | s | d |
|---|---|---|---|
| ADMT 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMT 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMT 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMT 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMT 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMT 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMT 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMT 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMT 1503R5.0 | 5.0 | 3,18 | 9,52 |

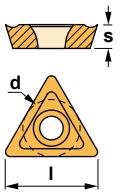



## TCMT

Triangular positive insert with 7° clearance.
Dreikantige positive Wendeschneidplatte mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TCMT 16T3.. | 16,50 | 3,97 | 9,52 |

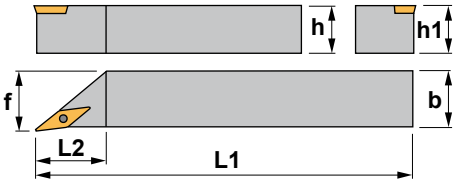




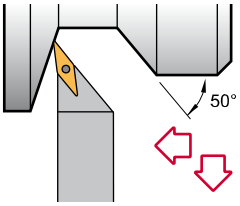



Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).




# SVAC 90°

**Automatic lathes**
**Drehautomaten**

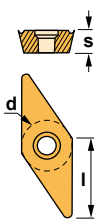
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVAC R/L 0808 M11 | 8 | 8 | 150 | 26 | 8 | VC.. 1103.. | 0,070 |
| SVAC R/L 1010 M11 | 10 | 10 | 150 | 26 | 10 | VC.. 1103.. | 0,100 |
| SVAC R/L 1212 M11 | 12 | 12 | 150 | 26 | 12 | VC.. 1103.. | 0,140 |
| SVAC R/L 1616 M11 | 16 | 16 | 150 | 26 | 16 | VC.. 1103.. | 0,270 |
| SVAC R/L 1212 M16 | 12 | 12 | 150 | 40 | 12 | VC.. 1604.. | 0,140 |
| SVAC R/L 1616 M16 | 16 | 16 | 150 | 40 | 16 | VC.. 1604.. | 0,270 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SVAC R/L 0808 M11 | 1225 | 5507 | 0.9 |
| SVAC R/L 1010 M11 | 1225 | 5507 | 0.9 |
| SVAC R/L 1212 M11 | 1225 | 5507 | 0.9 |
| SVAC R/L 1616 M11 | 1225 | 5507 | 0.9 |
| SVAC R/L 1212 M16 | 1240 | 5515 | 3.0 |
| SVAC R/L 1616 M16 | 1240 | 5515 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance.
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




**VCGT-AL**

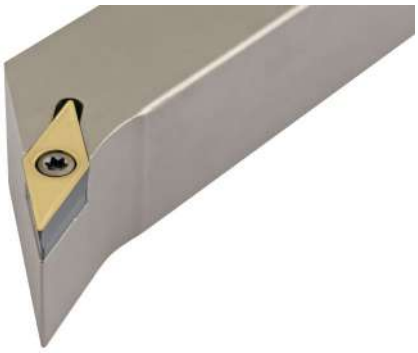


**VCGT-AP**



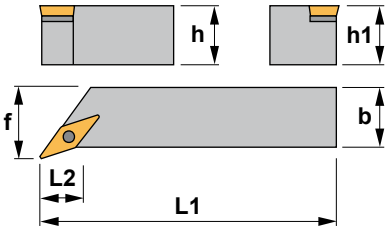
**VCMT**



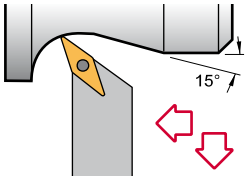


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



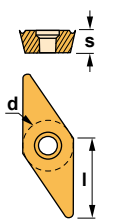

# SVHC 107°30’

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVHC R/L 2020 K16 | 20 | 20 | 125 | 28 | 25 | VC.. 1604.. | 0,400 |
| SVHC R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | VC.. 1604.. | 0,700 |
| SVHC R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | VC.. 1604.. | 0,900 |
| SVHC R/L 2525 M22 | 25 | 25 | 150 | 28 | 32 | VC.. 2205.. | 0,700 |
| SVHC R/L 3225 P22 | 32 | 25 | 170 | 34 | 32 | VC.. 2205.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVHC R/L 2020 K16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVHC R/L 2525 M16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVHC R/L 3225 P16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVHC R/L 2525 M22 | 1540 | 5520 | 3722 | 1760 | 3.0 |
| SVHC R/L 3225 P22 | 1540 | 5520 | 3722 | 1760 | 3.0 |

**VC..** 35° rhombic positive inserts with 7° clearance. A48
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |
| VC.. 2205.. | 22,10 | 5,56 | 12,70 |

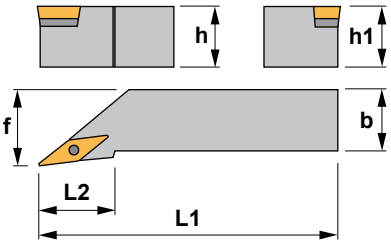



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

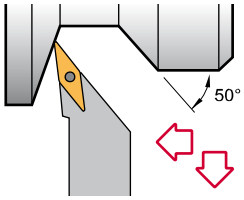


Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5° positive insert (angle 35°).
For toolholders with negative inserts see Ref. MVJN-K (Page: A89).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit 5° rhombischen positiven Wendeschneidplatten (35° Winkel) .
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MVJN-K (Seite: A89).




# SVJB 93°

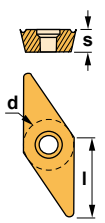
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVJB R/L 2020 K16 | 20 | 20 | 125 | 34 | 25 | VBMT 1604.. | 0,400 |
| SVJB R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | VBMT 1604.. | 0,700 |
| SVJB R/L 3225 P16 | 32 | 25 | 170 | 38 | 32 | VBMT 1604.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVJB R/L 2020 K16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVJB R/L 2525 M16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVJB R/L 3225 P16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance.
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



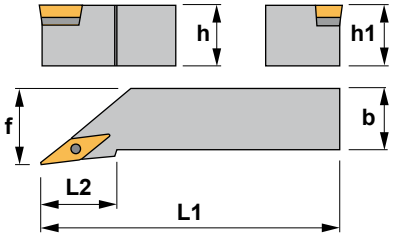

VBMT



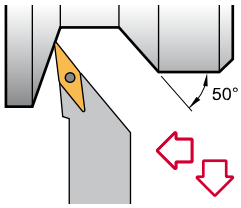


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For toolholders with negative inserts see Ref. MVJN-K (Page: A89).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel). Für Klemmhalter mit negativen Wendeschneidplatten, siehe MVJN-K (Seite: A89).



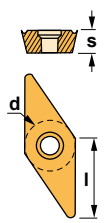

# SVJC 93°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVJC R/L 1212 F11 | 12 | 12 | 80 | 20 | 16 | VC.. 1103.. | 0,100 |
| SVJC R/L 1616 H11 | 16 | 16 | 100 | 25 | 20 | VC.. 1103.. | 0,200 |
| SVJC R/L 2020 K11 | 20 | 20 | 125 | 28 | 25 | VC.. 1103.. | 0,400 |
| SVJC R/L 2525 M11 | 25 | 25 | 150 | 28 | 32 | VC.. 1103.. | 0,700 |
| SVJC R/L 2020 K16 | 20 | 20 | 125 | 34 | 25 | VC.. 1604.. | 0,400 |
| SVJC R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | VC.. 1604.. | 0,700 |
| SVJC R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | VC.. 1604.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVJC R/L 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| SVJC R/L 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| SVJC R/L 2020 K11 | 1225 | 5507 | - | - | 0.9 |
| SVJC R/L 2525 M11 | 1225 | 5507 | - | - | 0.9 |
| SVJC R/L 2020 K16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVJC R/L 2525 M16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVJC R/L 3225 P16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

**VC..** 35° rhombic positive inserts with 7° clearance. 35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




VCGT-AL



VCGT-AP



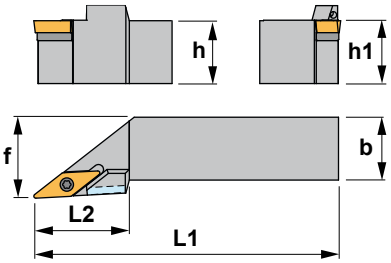
VCMT



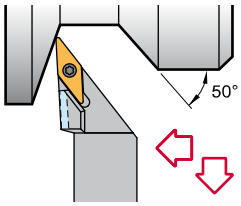


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For toolholders with negative inserts see Ref. MVJN-K (Page: A89).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel). Für Klemmhalter mit negativen Wendeschneidplatten, siehe MVJN-K (Seite: A89).



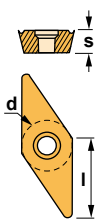

# SVJC 93°-A

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVJC R/L 2020 K11-A | 20 | 20 | 125 | 28 | 25 | VC.. 1103.. | 0,400 |
| SVJC R/L 2020 K16-A | 20 | 20 | 125 | 34 | 25 | VC.. 1604.. | 0,400 |
| SVJC R/L 2525 M16-A | 25 | 25 | 150 | 34 | 32 | VC.. 1604.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVJC R/L 2020 K11-A | 1225 | 5507 | - | - | 0.9 |
| SVJC R/L 2020 K16-A | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVJC R/L 2525 M16-A | 1335 | 5516 | 3718 | 1750 | 3.0 |

**VC..** 35° rhombic positive inserts with 7° clearance. A48
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

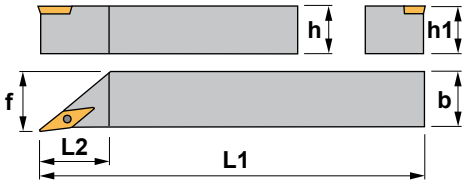



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

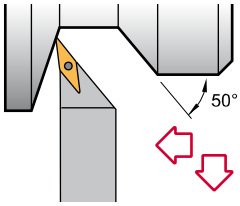


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).




# SVJC 93°

**Automatic lathes**
**Drehautomaten**

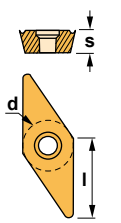
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVJC R/L 0808 M11 | 8 | 8 | 150 | 26 | 8 | VC.. 1103.. | 0,070 |
| SVJC R/L 1010 M11 | 10 | 10 | 150 | 26 | 10 | VC.. 1103.. | 0,100 |
| SVJC R/L 1212 M11 | 12 | 12 | 150 | 26 | 12 | VC.. 1103.. | 0,140 |
| SVJC R/L 1616 M11 | 16 | 16 | 150 | 26 | 16 | VC.. 1103.. | 0,270 |
| SVJC R/L 1212 M16 | 12 | 12 | 150 | 40 | 12 | VC.. 1604.. | 0,140 |
| SVJC R/L 1616 M16 | 16 | 16 | 150 | 40 | 16 | VC.. 1604.. | 0,270 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SVJC R/L 0808 M11 | 1225 | 5507 | 0.9 |
| SVJC R/L 1010 M11 | 1225 | 5507 | 0.9 |
| SVJC R/L 1212 M11 | 1225 | 5507 | 0.9 |
| SVJC R/L 1616 M11 | 1225 | 5507 | 0.9 |
| SVJC R/L 1212 M16 | 1240 | 5515 | 3.0 |
| SVJC R/L 1616 M16 | 1240 | 5515 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance. A48
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

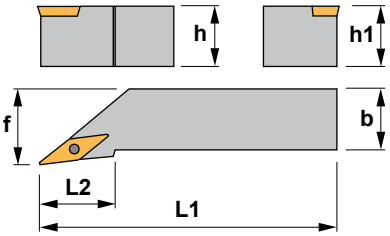



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

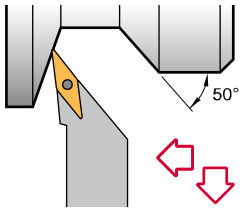


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit positiven rhombischen Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# SVLC 95°

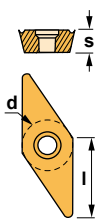
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVLC R/L 1212 G13 | 12 | 12 | 90 | 25 | 16 | VCMT 1303.. | 0,100 |
| SVLC R/L 1616 H13 | 16 | 16 | 100 | 25 | 20 | VCMT 1303.. | 0,200 |
| SVLC R/L 2020 K13 | 20 | 20 | 125 | 28 | 25 | VCMT 1303.. | 0,400 |
| SVLC R/L 2525 M13 | 25 | 25 | 150 | 28 | 32 | VCMT 1303.. | 0,700 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SVLC R/L 1212 G13 | 1230 | 5508 | 1.2 |
| SVLC R/L 1616 H13 | 1230 | 5508 | 1.2 |
| SVLC R/L 2020 K13 | 1230 | 5508 | 1.2 |
| SVLC R/L 2525 M13 | 1230 | 5508 | 1.2 |

## VCMT

35° rhombic positive insert with 7° clearance. A48
35° rhombische positive Wendeschneidplatte mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VCMT 1303.. | 13,00 | 3,18 | 8,00 |



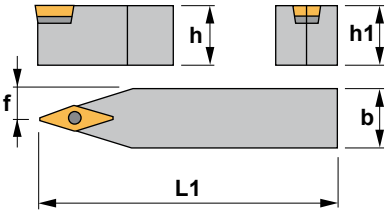

VCMT



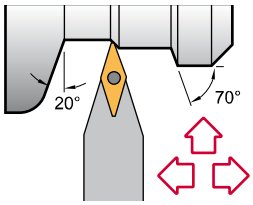


Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5° positive insert (angle 35°).
For toolholders with negative inserts see Ref. MVVN-K (Page: A91).

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit 5° rhombischen positiven Wendeschneidplatten (35° Winkel). Für Klemmhalter mit negativen Wendeschneidplatten, siehe MVVN-K (Seite: A91).




# SVVB 72°30’

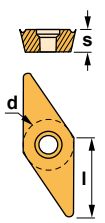
| Reference<br>Bezeichnung | h=h1 | b | L1 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| SVVB N 2020 K16 | 20 | 20 | 125 | 10,6 | VBMT 1604.. | 0,400 |
| SVVB N 2525 M16 | 25 | 25 | 150 | 13,1 | VBMT 1604.. | 0,700 |
| SVVB N 3225 P16 | 32 | 25 | 170 | 13,1 | VBMT 1604.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVVB N 2020 K16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVVB N 2525 M16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVVB N 3225 P16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance. A48
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



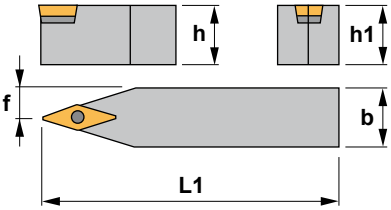

VBMT



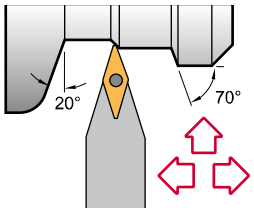


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35º).
For toolholders with negative inserts see Ref. MVVN-K (Page: A91).

Axial 0º
Radial 0º




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35º Winkel).
Für Klemmhalter mit negativen Wendeschneidplatten, siehe MVVN-K (Seite: A91).




# SVVC 72°30’

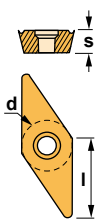
| Reference<br>Bezeichnung | h=h1 | b | L1 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| SVVC N 1212 F11 | 12 | 12 | 80 | 6,6 | VC.. 1103.. | 0,100 |
| SVVC N 1616 H11 | 16 | 16 | 100 | 8,6 | VC.. 1103.. | 0,200 |
| SVVC N 2020 K11 | 20 | 20 | 125 | 10,6 | VC.. 1103.. | 0,400 |
| SVVC N 2020 K16 | 20 | 20 | 125 | 10,6 | VC.. 1604.. | 0,400 |
| SVVC N 2525 M16 | 25 | 25 | 150 | 13,1 | VC.. 1604.. | 0,700 |
| SVVC N 3225 P16 | 32 | 25 | 170 | 13,1 | VC.. 1604.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVVC N 1212 F11 | 1225 | 5507 | - | - | 0.9 |
| SVVC N 1616 H11 | 1225 | 5507 | - | - | 0.9 |
| SVVC N 2020 K11 | 1225 | 5507 | - | - | 0.9 |
| SVVC N 2020 K16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVVC N 2525 M16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVVC N 3225 P16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35º rhombic positive inserts with 7º clearance.
35º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

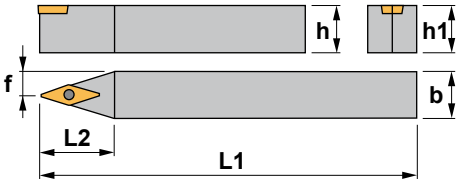



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

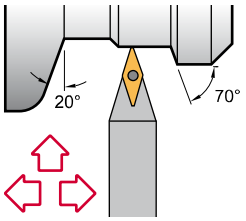


Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5° positive insert (angle 35°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit 5° rhombischen positiven Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen geeignet (Schlichten, Medium und Schruppen).




# SVVC 72°30’

**Automatic lathes**
**Drehautomaten**

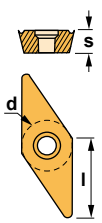
| Reference Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVVC N 0808 M11 | 8 | 8 | 150 | 21 | 4,3 | VC.. 1103.. | 0,070 |
| SVVC N 1010 M11 | 10 | 10 | 150 | 21 | 5,3 | VC.. 1103.. | 0,100 |
| SVVC N 1212 M11 | 12 | 12 | 150 | 21 | 6,3 | VC.. 1103.. | 0,140 |
| SVVC N 1616 M11 | 16 | 16 | 150 | 21 | 8,3 | VC.. 1103.. | 0,260 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| SVVC N 0808 M11 | 1225 | 5507 | 0.9 |
| SVVC N 1010 M11 | 1225 | 5507 | 0.9 |
| SVVC N 1212 M11 | 1225 | 5507 | 0.9 |
| SVVC N 1616 M11 | 1225 | 5507 | 0.9 |

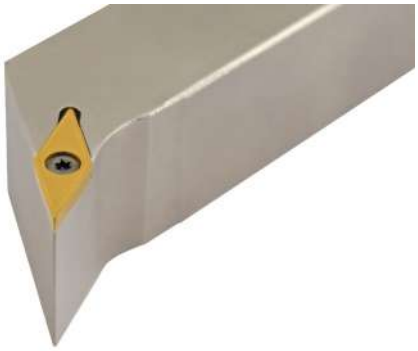
## VC..

35° rhombic positive inserts with 7° clearance.
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |

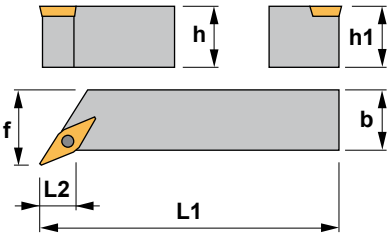



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

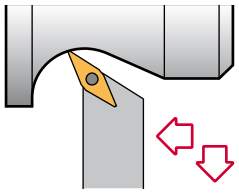


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# SVXC 113°

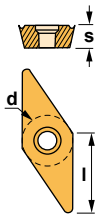
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVXC R/L 1212 G13 | 12 | 12 | 90 | 11,5 | 16 | VCMT 1303.. | 0,100 |
| SVXC R/L 1616 H13 | 16 | 16 | 100 | 13,8 | 20 | VCMT 1303.. | 0,200 |
| SVXC R/L 2020 K13 | 20 | 20 | 125 | 28,0 | 25 | VCMT 1303.. | 0,400 |
| SVXC R/L 2525 M13 | 25 | 25 | 150 | 28,0 | 32 | VCMT 1303.. | 0,700 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| SVXC R/L 1212 G13 | 1230 | 5508 | 1.2 |
| SVXC R/L 1616 H13 | 1230 | 5508 | 1.2 |
| SVXC R/L 2020 K13 | 1230 | 5508 | 1.2 |
| SVXC R/L 2525 M13 | 1230 | 5508 | 1.2 |

## VCMT

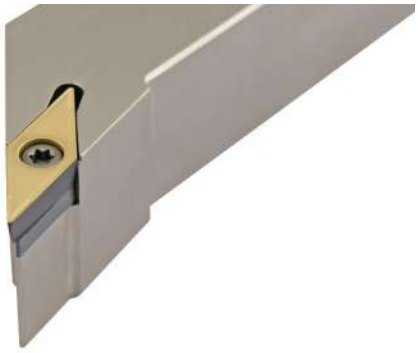
35° rhombic positive insert with 7° clearance.
35° rhombische positive Wendeschneidplatte mit 7° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VCMT 1303.. | 13,00 | 3,18 | 8,00 |



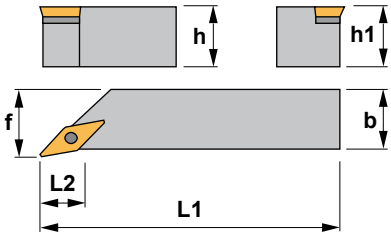

VCMT



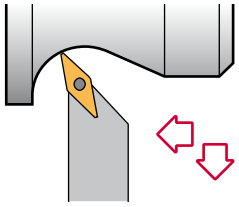


Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, semi-finishing and finishing.

Axial 0°
Radial 0°




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



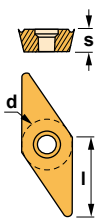
# SVZC 100°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| SVZC R/L 2020 K16 | 20 | 20 | 125 | 28 | 25 | VC.. 1604.. | 0,400 |
| SVZC R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | VC.. 1604.. | 0,700 |
| SVZC R/L 3225 P16 | 32 | 25 | 170 | 34 | 32 | VC.. 1604.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| SVZC R/L 2020 K16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVZC R/L 2525 M16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| SVZC R/L 3225 P16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

**VC..** 35° rhombic positive inserts with 7° clearance. A48
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

A

## Nominal cutting speed and feed values for toolholders

| Material P | HB | Condition | Cutting speed m/min. PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.3-0.6-1.2 | | 0.1-0.3 | 0.1-0.4-0.8 | 0.1-0.4-0.8 | 0.2-0.5-1.2 | |
| Unalloyed steel | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 150 115 80<br>145 105 70<br>115 90 65 | | 350 280<br>270 230<br>240 190 | 480 345 250<br>440 315 230<br>385 275 200 | 440 300 205<br>400 275 190<br>350 240 165 | 330 230 110<br>300 210 150<br>260 185 130 | 1900<br>2100<br>2250 |
| Low alloyed steel | 180<br>275<br>300<br>350 | Annealed<br>Hardened<br>Hardened<br>Hardened | 90 70 45<br>65 45 30<br>60 40 25<br>50 35 20 | | 300 260<br>220 140<br>230 180<br>220 140 | 380 265 195<br>260 180 130<br>240 165 120<br>210 145 105 | 320 220 170<br>215 150 115<br>200 135 105<br>170 120 90 | 200 140 100<br>140 100 70<br>125 90 60<br>110 75 55 | 2100<br>2600<br>2700<br>2850 |
| High alloyed steel | 200<br>325 | Annealed<br>Hardened | 80 60 45<br>40 25 20 | | 200 160<br>200 160 | 350 230 170<br>170 110 | 280 185 135<br>120 80 60 | 175 115 80<br>85 55 40 | 2600<br>3900 |
| Stainless steel | 200 | Martensitic / ferritic | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Steel castings | 180<br>200<br>225 | Unalloyed<br>Low alloyed<br>High alloyed | 60 50 35<br>50 45 30<br>40 30 20 | | 300 260<br>230 180<br>220 140 | 260 185 145<br>230 160 120<br>190 130 95 | 230 160 120<br>190 125 85<br>170 115 80 | 135 105 75<br>120 90 60<br>95 70 55 | 2000<br>2500<br>2700 |

| Material M | HB | Condition | Cutting speed m/min. PM25 | NC25 | TN15 | TN20 | TN30 | TN35 | TS15 | TS20 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.1-0.3 | 0.1-0.3 | 0.1-0.4-0.8 | | 0.2-0.4-0.6 | 0.2-0.4-0.6 | 0.1-0.3 | | |
| Stainless steel annealed | 180 | Austenitic Ni > 8%, Cr 12-25% austenitic/ ferritic, austenitic/ ferritic, low S | | 240 200<br>160 130<br>160 130 | 180 150 120<br>180 150 120<br>180 150 120 | | 190 160 130<br>190 160 100<br>140 110 | 190 160 130<br>190 160 130<br>160 130 100 | 240 200<br>160 130<br>160 130 | 120 180<br>130 220<br>120 180 | 2450 |

| Material K | HB | Condition | Cutting speed m/min. KM15 | NC25 | TN15 | TN20 | TK15 | ZR10 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | |
| Hardened steel | 350<br>250 | Hardened steel<br>Manganese steel 12% | 27 16 10<br>65 40 16 | | 175 145 100<br>120 85 50 | | 180 150 110<br>120 90 60 | | 4500<br>3600 |
| Malleable cast iron | 130<br>230 | Ferritic<br>Pearlitic | 105 75 45<br>80 60 30 | | 225 150 90<br>155 95 55 | | 250 180 100<br>160 100 60 | | 1100<br>1100 |
| Cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | 135 95 60<br>95 65 40 | 300 200<br>250 180 | 165 110 70<br>120 90 55 | | 180 120 80<br>140 105 60 | | 1100<br>1500 |
| Nodular SG iron | 160<br>250 | Ferritic<br>Pearlitic | 115 80 45<br>80 50 30 | 250 180<br>180 120 | | | 220 180 100<br>150 100 50 | | 1100<br>1800 |
| Chilled cast iron | 400 | | 17 11 | | | | 17 11 | | 3000 |

| Material N | HB | Condition | Cutting speed m/min. KM15 | TK15 | NC25 | TN15 | TN20 | ZR10 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | |
| Aluminium alloys | 60<br>100 | Non heat treatable<br>Heat treatable | 1750 1280 800<br>510 370 250 | | | | | 1750 1280 800<br>510 370 250 | 500<br>800 |
| Aluminium alloys (cast) | 75<br>90 | Non heat treatable<br>Heat treatable | 460 285 175<br>300 180 110 | | | | | 460 285 175<br>300 180 110 | 750<br>900 |
| Bronze-brass alloys | 110<br>90<br>100 | Lead alloys, Pb>1%<br>Brass and bronze<br>Inc. electrolytic copper | 610 430 295<br>310 250 195<br>225 160 115 | | | | | 610 430 295<br>310 250 195<br>225 160 115 | 700<br>750<br>1750 |
| Other materials | | Hard plastics<br>Fibre<br>Hard rubber | 380 240<br>190 120<br>225 160 | | | | | 380 240<br>190 120<br>225 160 | |

| Material S | HB | Condition | Cutting speed m/min. KM15 | NC25 | TN15 | TN15 | TS20 | ZR10 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | | 0.2-0.5-1.0 | |
| Heat-resistant alloys | | Fe-base<br>Nickel or cobalt base<br>Nickel or cobalt base<br>Nickel or cobalt base | | | | | 80 120<br>60 100<br>35 90<br>30 50 | | |
| Titanium alloys | | Titanium | | | | | 70 120 | | |

## *Nennschnittgeschwindigkeit und Vorschub-Werte für Klemmhalter*

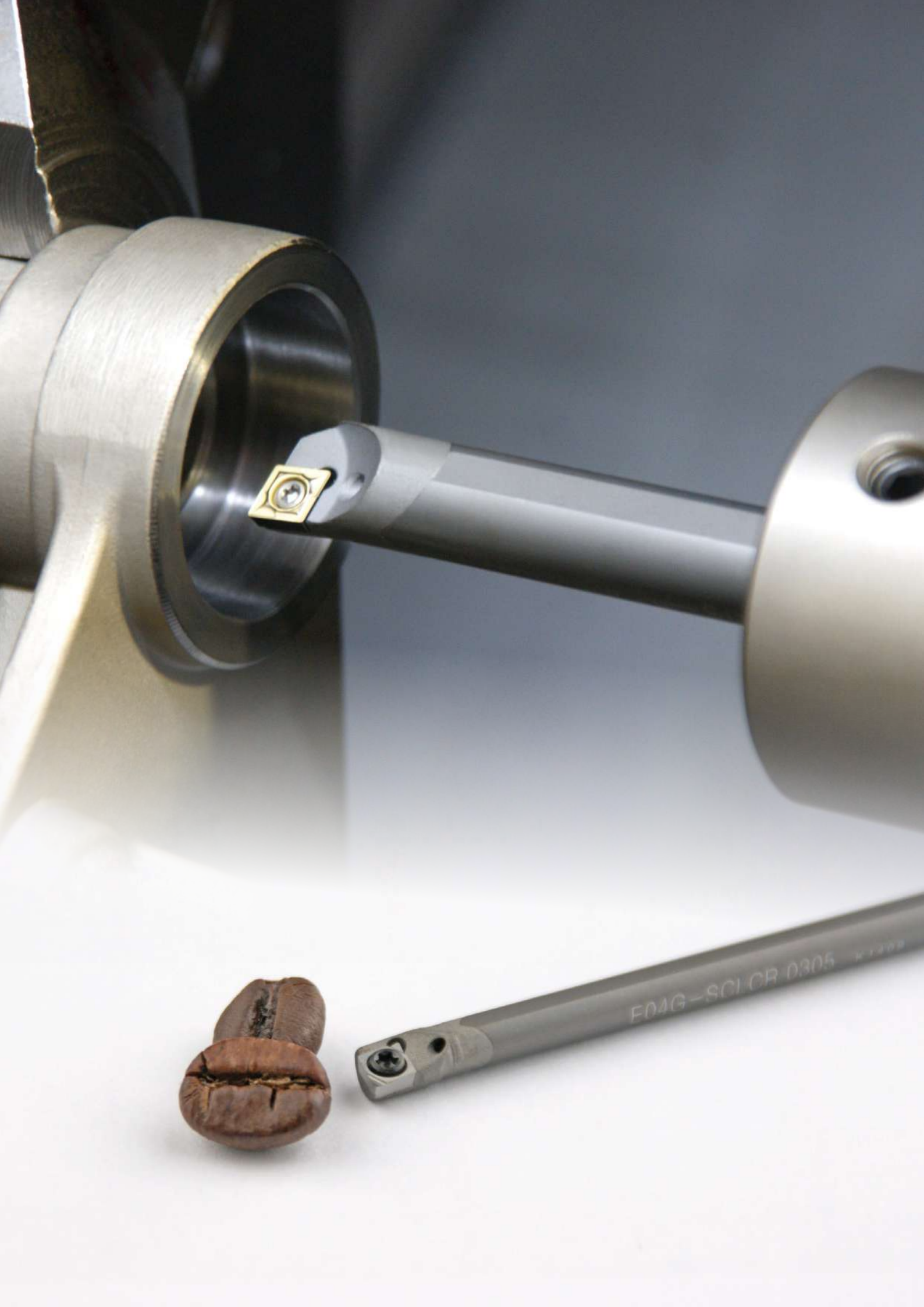
| Materialien P | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.3-0.6-1.2 | | 0.1-0.3 | 0.1-0.4-0.8 | 0.1-0.4-0.8 | 0.2-0.5-1.2 | |
| Unlegierter Stahl | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 150 115 80<br>145 105 70<br>115 90 65 | | 350 280<br>270 230<br>240 190 | 480 345 250<br>440 315 230<br>385 275 200 | 440 300 205<br>400 275 190<br>350 240 165 | 330 230 110<br>300 210 150<br>260 185 130 | 1900<br>2100<br>2250 |
| Niedriglegierter Stahl | 180<br>275<br>300<br>350 | Geglüht<br>Vergütet<br>Vergütet<br>Vergütet | 90 70 45<br>65 45 30<br>60 40 25<br>50 35 20 | | 300 260<br>220 140<br>230 180<br>220 140 | 380 265 195<br>260 180 130<br>240 165 120<br>210 145 105 | 320 220 170<br>215 150 115<br>200 135 105<br>170 120 90 | 200 140 100<br>140 100 70<br>125 90 60<br>110 75 55 | 2100<br>2600<br>2700<br>2850 |
| Hochlegierter Stahl | 200<br>325 | Geglüht<br>Vergütet | 80 60 45<br>40 25 20 | | 200 160<br>200 160 | 350 230 170<br>170 110 | 280 185 135<br>120 80 60 | 175 115 80<br>85 55 40 | 2600<br>3900 |
| Rostfreier Stahl | 200 | Martensitisch/<br>Ferritisch | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Stahlguß | 180<br>200<br>225 | Unlegiert<br>Niedriglegiert<br>Hochlegiert | 60 50 35<br>50 45 30<br>40 30 20 | | 300 260<br>230 180<br>220 140 | 260 185 145<br>230 160 120<br>190 130 95 | 230 160 120<br>190 125 85<br>170 115 80 | 135 105 75<br>120 90 60<br>95 70 55 | 2000<br>2500<br>2700 |

| Materialien M | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. PM25 | NC25 | TN15 | TN20 | TN30 | TN35 | TS15 | TS20 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.1-0.3 | 0.1-0.3 | 0.1-0.4-0.8 | | 0.2-0.4-0.6 | 0.2-0.4-0.6 | 0.1-0.3 | | |
| Rostfreier Stahl, geglüht | 180 | Austenitisch Ni > 8%, Cr 12-25% Austenitisch/ Ferritisch, Austenitisch/ Ferritisch, niedriger S-Anteil | | 240 200<br>160 130<br>160 130 | 180 150 120<br>180 150 120<br>180 150 120 | | 190 160 130<br>190 160 100<br>140 110 | 190 160 130<br>190 160 130<br>160 130 100 | 240 200<br>160 130<br>160 130 | 120 180<br>130 220<br>120 180 | 2450 |

| Materialien K | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. KM15 | NC25 | TN15 | TN20 | TK15 | ZR10 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | |
| Gehärteter Stahl | 350<br>250 | Vergüteter Stahl<br>Mangan-Stahl 12% | 27 16 10<br>65 40 16 | | 175 145 100<br>120 85 50 | | 180 150 110<br>120 90 60 | | 4500<br>3600 |
| Temperguß | 130<br>230 | Ferritisch<br>Perlitisch | 105 75 45<br>80 60 30 | | 225 150 90<br>155 95 55 | | 250 180 100<br>160 100 60 | | 1100<br>1100 |
| Guß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 135 95 60<br>95 65 40 | 300 200<br>250 180 | 165 110 70<br>120 90 55 | | 180 120 80<br>140 105 60 | | 1100<br>1500 |
| SG-Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | 115 80 45<br>80 50 30 | 250 180<br>180 120 | | | 220 180 100<br>150 100 50 | | 1100<br>1800 |
| Kaltverfestigender Guß | 400 | | 17 11 | | | | 17 11 | | 3000 |

| Materialien N | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. KM15 | TK15 | NC25 | TN15 | TN20 | ZR10 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | |
| Aluminium-Legierungen | 60<br>100 | Nicht warmbehandelbar<br>Warmbehandelbar | 1750 1280 800<br>510 370 250 | | | | | 1750 1280 800<br>510 370 250 | 500<br>800 |
| Gegossene Aluminium-Legierungen | 75<br>90 | Nicht warmbehandelbar<br>Warmbehandelbar | 460 285 175<br>300 180 110 | | | | | 460 285 175<br>300 180 110 | 750<br>900 |
| Bronze- und Messinglegierungen | 110<br><br>90<br>100 | Bleilegierungen, Pb>1%<br>Messing, Bronze<br>Elektrolytkupfer | 610 430 295<br>310 250 195<br>225 160 115 | | | | | 610 430 295<br>310 250 195<br>225 160 115 | 700<br>750<br>1750 |
| Andere Materialien | | Hartkunststoff<br>Faser<br>Hartgummi | 380 240<br>190 120<br>225 160 | | | | | 380 240<br>190 120<br>225 160 | |

| Materialien S | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. KM15 | NC25 | TN15 | TS15 | TS20 | ZR10 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | | 0.2-0.5-1.0 | |
| Warmfeste Legierungen | | Fe-Basis<br>Nickel- und Kobalthaltig<br>Nickel- und Kobalthaltig<br>Nickel- und Kobalthaltig | | | | | 80 120<br>60 100<br>35 90<br>30 50 | | |
| Titan-Legierungen | | Titan | | | | | 70 120 | | |


E04G-SCLCR 0305



# BORING BARS
# BOHRSTANGEN

Clamping systems
Klemmsysteme — A170

Code system (ISO)
Kodifizierung (ISO) — A171

Applications index
Anwendungen — A172-174

Dimple lock boring bars
Bohrstangen mit Dimple Lock-Klemmung — A176-177

Wedge clamp boring bars / Double lock boring bars
Bohrstangen mit Pratzen-Klemmung / Bohrstangen mit Doppel-Klemmung — A178-186

Lever lock boring bars
Bohrstangen mit Kniehebel-Klemmung — A187-199

Top clamp boring bars
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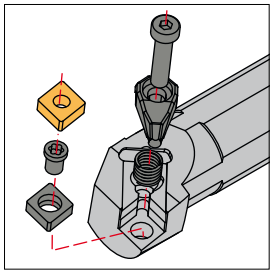
Bohrstangen mit Zentralschrauben-Klemmung — A204-236

Anti-vibration tools
Schwingungsgedämpfte Bohrstangen — A237-246

Cutting data
Schnittdaten — A247-248

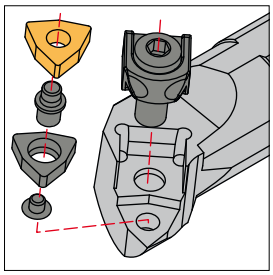


### *(D) Dimple lock*

The “D” clamping system avoids insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.

Das “D”-Klemmsystem vermeidet die Bewegung der Wendeschneidplatte bei hohem Vorschub oder bei stark unterbrochener Bearbeitung dank der genauen Positionierung, die die Wendeschneidplatte sicher befestigt.



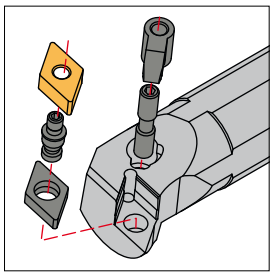


### *(M) Wedge clamp*
### *(M) Pratzen-Klemmung*

Negative inserts require good clamping force for heavy duty work, for this purpose we have designed our “M” system, one of the strongest and safest available.

Die negativen Wendeplatten für sehr schwere Zerspanungsarbeiten benötigen eine gute Klemmung, dafür bieten wir unser “M” Klemmsystem, das eines der stärksten und sichersten ist.



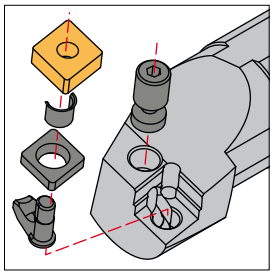


### *(M-K) Double lock*
### *(M-K) Doppel-Klemmung*

The double lock system offers good rigidity in negative inserts clamping. It is the first choice for center hole negative ceramic and cermet inserts.

Das doppelte Klemmsystem bietet eine gute Unbeweglichkeit bei der Klemmung von negativen Wendeschneidplatten. Es ist die erste Wahl für negative Keramik-Wendeschneidplatten mit zentralem Loch und auch für Cermet-Wendeschneidplatten.



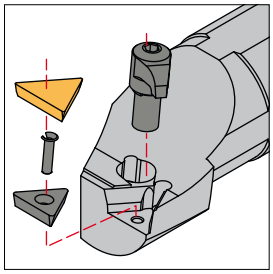


### *(P) Lever lock*
### *(P) Kniehebel-Klemmung*

The classic lever lock system allows a wide range of applications. It is the first choice for general purpose turning toolholders.

Das klassische Hebel-System erlaubt eine breite Reihe von Anwendungen. Es ist die erste Wahl für allgemeine Drehoperationen



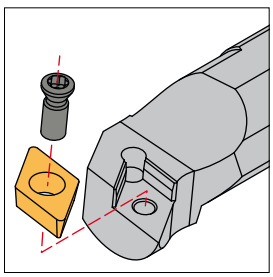


### *(C) Top clamp*
### *(C) Obere Klemmung*

The classic positive insert clamping system is designed to hold flat positive inserts, both with additional or sintered chipbreaker.

Dieses klassische Klemmsystem von positiven Wendeplatten erlaubt die Verwendung von allen Wendeplatten dieses Typs, in üblicher Sinterausführung sowohl als auch mit Spanbrecher.





### *(S) Center screw*
### *(S) Zentralschrauben-Klemmung*

Since the advent of the TORX screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.

Seit der Einführung der Torx-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch zu klemmen. Unser Programm bietet alle Klemmöglichkeiten mit Schraube.



# Code system / Kodifizierung (ISO)

| S | 25 | T | S | D | U | C | R | 11 | - | EX |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 |

## 1 Type of bar / Schaft-Ausführung

| | | | |
|---|---|---|---|
| A | Steel shank with internal coolant. Bohrstange aus Stahl mit Kühlmittelzufuhr. | | |
| E | Anti-vibration shank (carbide) with internal coolant. Schwingungsgedämpfte Bohrstange (Hartmetall) mit Kühlmittelzufuhr. | | |
| S | Steel shank Bohrstange aus Stahl | | |

## 2

Bar diameter, mm.
Schaft-Durchmesser mm.

Ø

## 3 Bar length, mm / Werkzeuglänge, mm

L1

| | | | |
|---|---|---|---|
| H | 100 | T | 300 |
| J | 110 | U | 350 |
| K | 125 | V | 400 |
| L | 140 | W | 450 |
| M | 150 | Y | 600 |
| Q | 180 | X | Special Sonder |
| R | 200 | | |
| S | 250 | | |

## 4 Clamping method of insert / Klemmsystem

C D M P S

## 5 Insert shape / Wendeschneidplatten-Form

| | | | |
|---|---|---|---|
| 80° C | 55° D | 75° E | 55° K |
| S | T | 35° V | 80° W |

## 6 Holder style / Einstellwinkel

| | | |
|---|---|---|
| 90° F | 93° J | 75° K |
| 95° 95° L | 107° 30' Q | 45° S |
| 93° U | 93° U-EX | |

## 7 Clearance angle of insert / Wendeschneidplatten-Freiwinkel

| | | | |
|---|---|---|---|
| 5° B | 7° C | 0° N | 11° P |

## 8 Hand / Bearbeitungsrichtung

L R N

## 9 Cutting edge length, mm / Schneidkantenlänge, mm.

C,D,E,V L | K L | S L | T L | W L

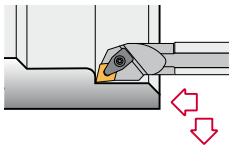
## 10

Manufacturer's option.
Herstellerwahl.

# NEGATIVE BORING BARS / NEGATIVE BOHRSTANGEN

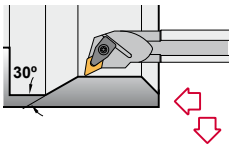
## *Dimple lock boring bars*
## *Bohrstangen mit Dimple Lock-Klemmung*

### DCLN 95º-N



*Page* *Seite A176* CN.. 1204..

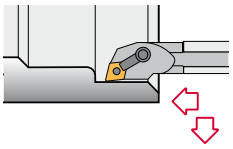
### DDUN 93º-N




*Page* *Seite A177* DN.. 1506..

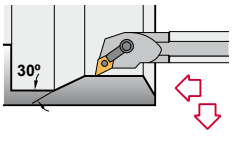
## *Wedge clamp / Double lock boring bars*
## *Bohrstangen mit Pratzen- und Doppel-Klemmung*

### MCLN-K 95º



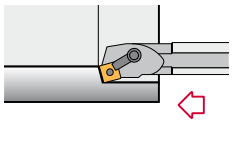
*Page* *Seite A178* CN.. 1204..

### MDUN-K 93º



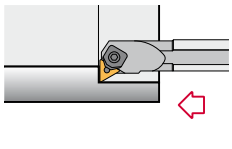

*Page* *Seite A179* DN.. 1506..

### MSKN-K 75º



*Page* *Seite A180* SNM.. 1204..

### MTFN 90º



*Page* *Seite A181* TNM.. 1604.. TNM.. 2204..

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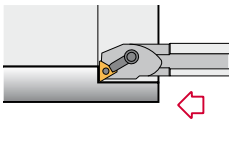
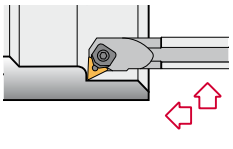


*Page* *Seite A182* TNM.. 1604.. TNM.. 2204..

### MTUN 93º



*Page* *Seite A183* TNM.. 1604.. TNM.. 2204..

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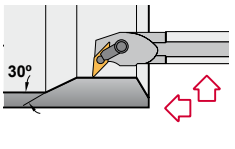


*Page* *Seite A184* VN.. 1604..

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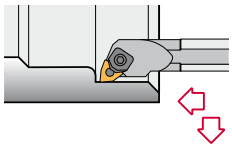
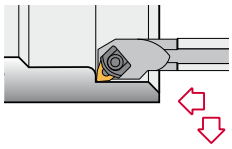


*Page* *Seite A185* WNM.. 0604.. WNM.. 0804..

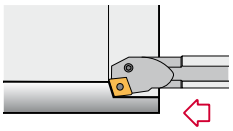
### MWLN-K 95º



*Page* *Seite A186* WNMG 0804..

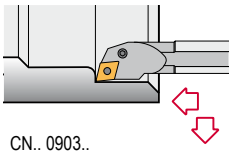
## *Lever lock boring bars*
## *Bohrstangen mit Kniehebel-Klemmung*

### PCKN 75º



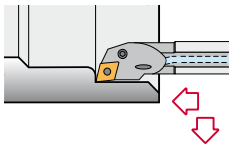
CN.. 1204..
CN.. 1606..
CN.. 1906..
*Page* *Seite A187*

### PCLN 95º



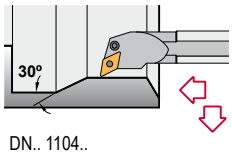
CN.. 0903..
..
CN.. 1906..
*Page* *Seite A188*

### A-PCLN 95º



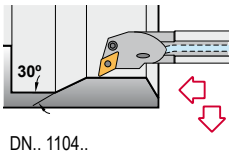
*Page* *Seite A189* CN.. 0903.. CN.. 1204..

### PDUN 93º



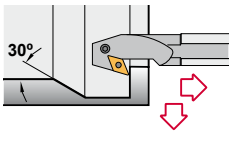

DN.. 1104..
DN.. 1504..
DN.. 1506..
*Page* *Seite A190*

### A-PDUN 93º



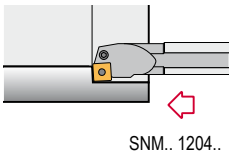

DN.. 1104..
DN.. 1504..
DN.. 1506..
*Page* *Seite A191*

### PDUN 93º-EX



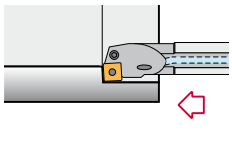

*Page* *Seite A192* DN.. 1504.. DN.. 1506..

### PSKN 75º



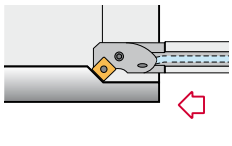
SNM.. 1204..
*Page* *Seite A193* SNM.. 1506.. SNM.. 1906..

### A-PSKN 75º



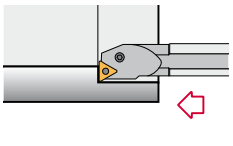
*Page* *Seite A194* SNM.. 1204..

### A-PSSN 45º



*Page* *Seite A195* SNM.. 1204..

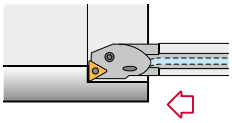
### PTFN 90º



*Page* *Seite A196* TNM.. 1604.. TNM.. 2204..

## *Lever lock boring bars*
## *Bohrstangen mit Kniehebel-Klemmung*

### A-PTFN 90º



*Page* TNM.. 1604..
*Seite A197* TNM.. 2204..

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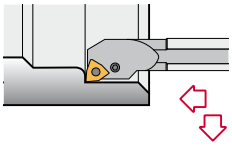
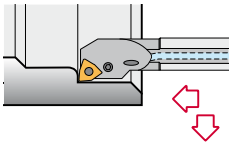


*Page* WNM.. 0604..
*Seite A198* WNM.. 0804..

### A-PWLN 95º

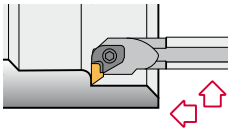


*Page* WNM.. 0604..
*Seite A199* WNM.. 0804..

# POSITIVE BORING BARS / POSITIVE BOHRSTANGEN

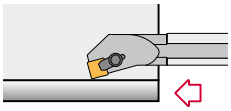
## *Top clamp boring bars*
## *Bohrstangen mit oberer Klemmung*

### CKUN 93º



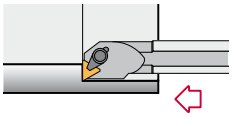
*Page* KNUX 1604..
*Seite A200*

### CSKP 75º



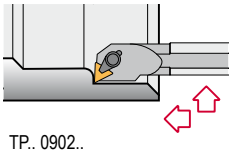
SP.. 0903..
*Page* SP.. 1203..
*Seite A201* SP.. 1904..

### CTFP 90º



TP.. 0902..
*Page* ..
*Seite A202* TP.. 2204..

### CTUP 93º



TP.. 0902..
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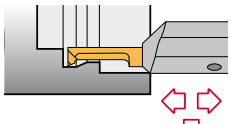
TP.. 2204..
*Page*
*Seite A203*

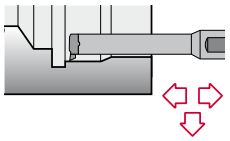
## *Center screw boring bars*
## *Bohrstangen mit Zentralschrauben-Klemmung*

### 00.30



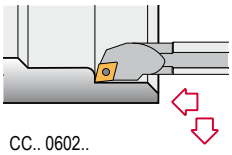
*Page* CTI 04..
*Seite A204* CTI 06..

### 608.00



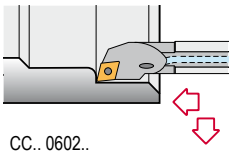
R/LS 08..
*Page* ..
*Seite A206* R/LS 16..

### SCLC 95º



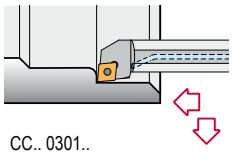
CC.. 0602..
CC.. 09T3..
CC.. 1204..
*Page*
*Seite A207*

### A-SCLC 95º



CC.. 0602..
CC.. 09T3..
CC.. 1204..
*Page*
*Seite A208*

### E-SCLC 95º



CC.. 0301..
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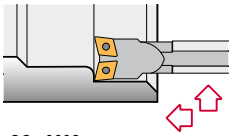
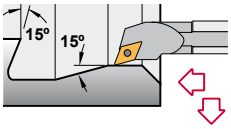
CC.. 09T3..
*Page*
*Seite A210*

### SCLCN 95º



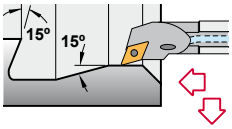
CC.. 0602..
CC.. 09T3..
CC.. 1204..
*Page*
*Seite A212*

### SDQC 107º30'



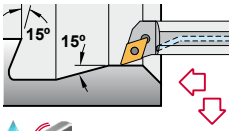

*Page* DC.. 0702..
*Seite A213* DC.. 11T3..

### A-SDQC 107º30'




*Page* DC.. 0702..
*Seite A214* DC.. 11T3..

### E-SDQC 107º30'




*Page* DC.. 0702..
*Seite A216* DC.. 11T3..

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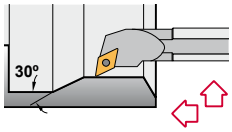


*Page* DC.. 0702..
*Seite A217* DC.. 11T3..

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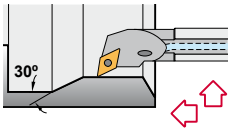


*Page* DC.. 0702..
*Seite A218* DC.. 11T3..

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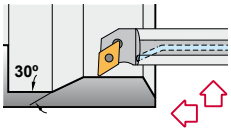
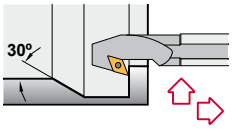



*Page* DC.. 0702..
*Seite A220* DC.. 11T3..

### SDUC 93º-EX




*Page* DC.. 0702..
*Seite A221* DC.. 11T3..

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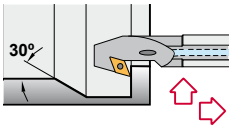
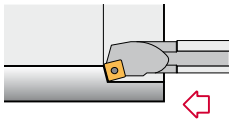



*Page* DC.. 0702..
*Seite A222* DC.. 11T3..

### SSKC 75º

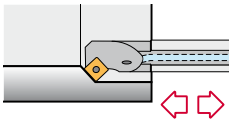


*Page* SC.. 09T3..
*Seite A223* SC.. 1204..

# POSITIVE BORING BARS / POSITIVE BOHRSTANGEN

## *Center screw boring bars*
## *Bohrstangen mit Zentralschrauben-Klemmung*

### A-SSSC 45º



*Page* SC.. 09T3..
*Seite A224*

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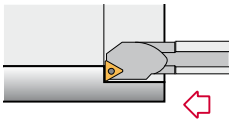
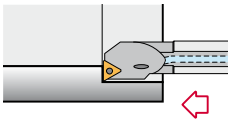


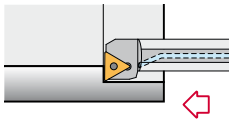
TC.. 0902..
*Page* TC.. 1102..
*Seite A225* TC.. 16T3..

### A-STFC 90º



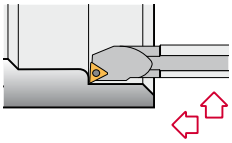
TC.. 0902..
*Page* TC.. 1102..
*Seite A226* TC.. 16T3..

### E-STFC 90º



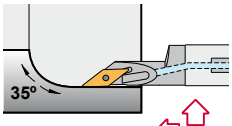
*Page* TC.. 1102..
*Seite A228*

### STUC 93º



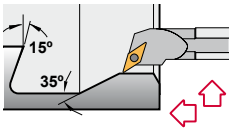
*Page* TC.. 1102..
*Seite A229* TC.. 16T3..

### A-SVJC 93º



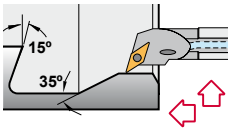

VC.. 1103..
VC.. 1604.. *Page Seite A230*

### SVQC 107º30'



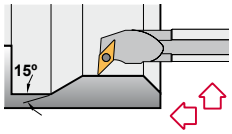

VC.. 1103..
VC.. 1303..
VC.. 1604.. *Page Seite A232*

### A-SVQC 107º30'



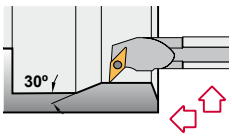

*Page* VC.. 1103..
*Seite A233* VC.. 1604..

### SVUB 93º



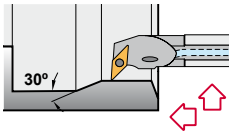

*Page*
*Seite A234* VBMT 1604..

### SVUC 93º




*Page* VC.. 1103..
*Seite A235* VC.. 1604..

### A-SVUC 93º




*Page* VC.. 1103..
*Seite A236* VC.. 1604..

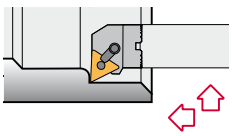
## *Anti-vibration tools*
## *Schwingungsgedämpfte Bohrstangen*

### J..



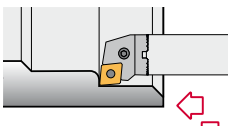
*Page*
*Seite A237*

### MTUN 93º



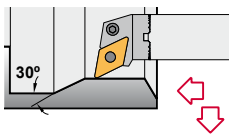
*Page* TNM.. 1604..
*Seite A238* TNM.. 2204..

### PCLN 95º



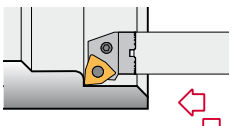
*Page* CN.. 1204..
*Seite A239* CN.. 1606..

### PDUN 93º



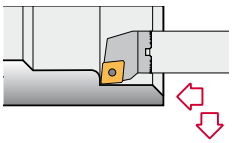

*Page* DN.. 1504..
*Seite A240* DN.. 1506..

### PWLN 95º



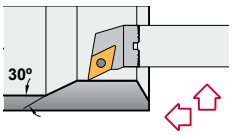
*Page*
*Seite A241* WNM.. 0804..

### SCLC 95º



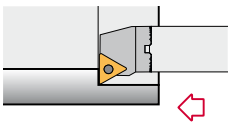
*Page* CC.. 09T3..
*Seite A242* CC.. 1204..

### SDUC 93º



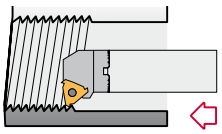

*Page*
*Seite A243* DC.. 11T3..

### STFC 90º



*Page* TC.. 16T3..
*Seite A244*

### SXFN 90º



*Page* 16 NR/L..
*Seite A245* 22 NR/L..

### J..-A..



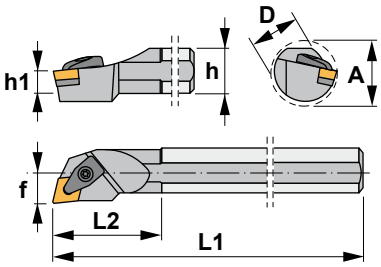
*Page*
*Seite A246*



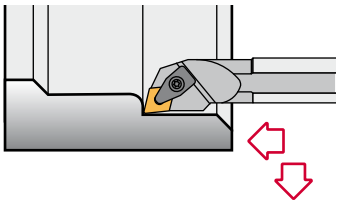


Characteristics:
Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80º).
For low powered machines and small pieces choose boring bars Ref. SCLC (Page: A207).

Axial -5º
Radial -13.5º




Eigenschaften:
Bohrstange zum Innendrehen mit rhombischen negativen Wendeschneidplatten (80º Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen Bez. SCLC (Seite: A207).



# DCLN 95°-N

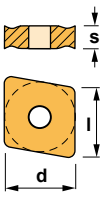
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T DCLN R/L 12-N | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | CN.. 1204.. | 0,700 |
| S32U DCLN R/L 12-N | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | CN.. 1204.. | 2,050 |
| S40V DCLN R/L 12-N | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CN.. 1204.. | 3,750 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S25T DCLN R/L 12-N | ICSN-422 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| S32U DCLN R/L 12-N | ICSN-422 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| S40V DCLN R/L 12-N | ICSN-422 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |




| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |

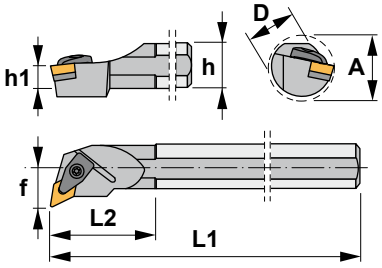


Characteristics:

Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55°).

For low powered machines and small pieces choose boring bars Ref. SDUC (Page: A217).

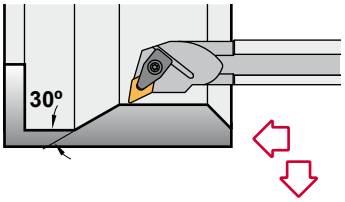
Axial -6°
Radial -14°




Eigenschaften:

Bohrstange zum Innen- und Profildrehen mit rhombischen negativen Wendeschneidplatten (55° Winkel).

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SDUC (Seite: A217).




# DDUN 93°-N

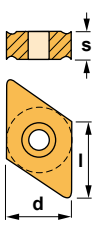
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32U DDUN R/L 15-N | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | DN.. 1506.. | 2,050 |
| S40V DDUN R/L 15-N | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | DN.. 1506.. | 3,750 |

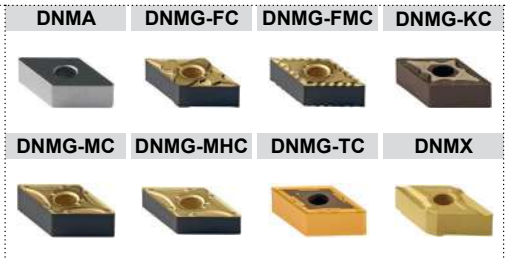
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S32U DDUN R/L 15-N | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| S40V DDUN R/L 15-N | IDSN-432 | 1766 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

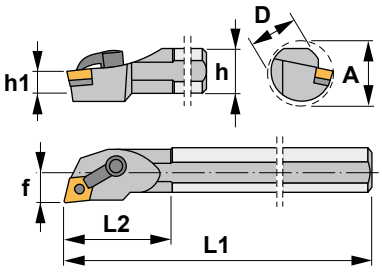


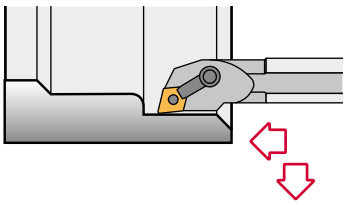


Characteristics:
Multipurpose boring bar equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose boring bars Ref. SCLC (Page: A207).

Axial -5º
Radial -13.5º




Eigenschaften:
Multifunktions-Bohrstange mit doppelseitigen rhombischen negativen Wendeschneidplatten (80° Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SCLC (Seite: A207).



# MCLN-K 95°

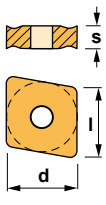
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MCLN R/L 12-K | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | CN.. 1204.. | 0,700 |
| S32U MCLN R/L 12-K | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | CN.. 1204.. | 2,050 |
| S40V MCLN R/L 12-K | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CN.. 1204.. | 3,750 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S25T MCLN R/L 12-K | 2613 | 1186 | 5003 | - | 1686 | 5025 | 3.0 |
| S32U MCLN R/L 12-K | 2613 | 1086 | 5003 | ICSN-432 | 1656 | 5025 | 3.0 |
| S40V MCLN R/L 12-K | 2613 | 1086 | 5003 | ICSN-432 | 1656 | 5025 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |

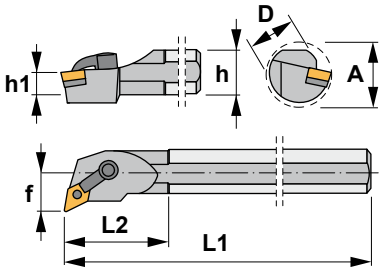



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |

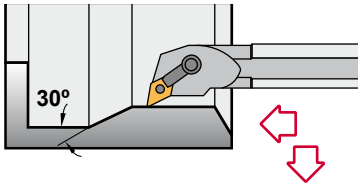


Characteristics:
Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose boring bars Ref. SDUC (Page: A217).

Axial -6º
Radial -12º




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (55º Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SDUC (Seite: A217).




# MDUN-K 93°

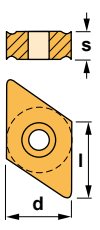
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MDUN R/L 15-K | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | DN.. 1506.. | 0,700 |
| S32U MDUN R/L 15-K | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | DN.. 1506.. | 2,050 |
| S40V MDUN R/L 15-K | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | DN.. 1506.. | 3,750 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S25T MDUN R/L 15-K | 2614 | 1186 | 5003 | - | 1686 | 5025 | 3.0 |
| S32U MDUN R/L 15-K | 2614 | 1086 | 5003 | IDSN-432 | 1666 | 5025 | 3.0 |
| S40V MDUN R/L 15-K | 2614 | 1086 | 5003 | IDSN-432 | 1666 | 5025 | 3.0 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

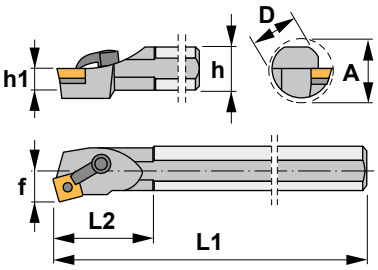



| DNMA | DNMG-FC | DNMG-FMC | DNMG-KC |
|---|---|---|---|
|  |  |  |  |
| **DNMG-MC** | **DNMG-MHC** | **DNMG-TC** | **DNMX** |
|  |  |  |  |

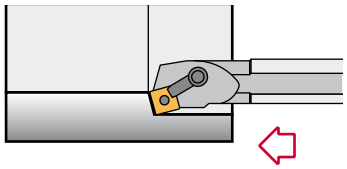


Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For low powered machines and small pieces choose boring bars Ref. CSKP (Page: A201) or SSKC (Page: A223).

Axial -3.25°
Radial -11°




Eigenschaften:
Bohrstange zum Innendrehen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CSKP (Seite: A201) oder SSKC (Seite: A223).



# MSKN-K 75°

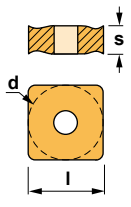
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32U MSKN R/L 12-K | 32 | 33 | 15,0 | 350 | 45 | 22 | 39 | SNM.. 1204.. | 2,050 |
| S40V MSKN R/L 12-K | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | SNM.. 1204.. | 3,750 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S32U MSKN R/L 12-K | 2613 | 1086 | 5003 | ISSN-432 | 1656 | 5025 | 3.0 |
| S40V MSKN R/L 12-K | 2613 | 1086 | 5003 | ISSN-432 | 1656 | 5025 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |

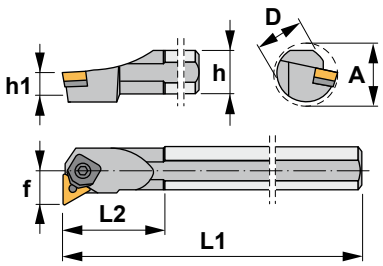



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

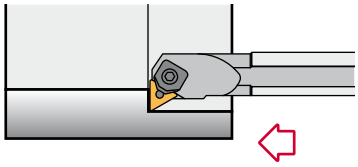


Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. CTFP (Page: A202) or STFC (page: A225).

Axial -6°
Radial -12°




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CTFP (Seite: A202) oder STFC (Seite: A225).



# MTFN 90°

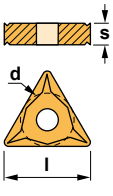
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MTFN R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 34 | TNM.. 1604.. | 0,700 |
| S32U MTFN R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TNM.. 1604.. | 2,050 |
| S40V MTFN R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 1604.. | 3,750 |
| S50W MTFN R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TNM.. 1604.. | 6,500 |
| S60Y MTFN R/L 16 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | TNM.. 1604.. | 12,600 |
| S40V MTFN R/L 22 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 2204.. | 3,750 |
| S50W MTFN R/L 22 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TNM.. 2204.. | 6,500 |
| S60Y MTFN R/L 22 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | TNM.. 2204.. | 12,600 |

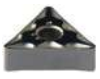
| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| S25T MTFN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1813 | 4.0 |
| S32U MTFN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S40V MTFN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S50W MTFN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S60Y MTFN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S40V MTFN R/L 22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| S50W MTFN R/L 22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| S60Y MTFN R/L 22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

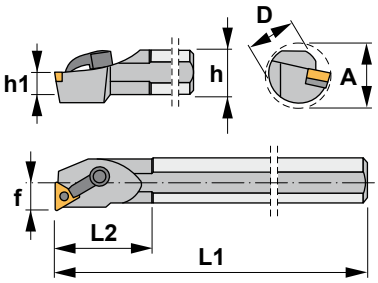



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
|  |  |  |  |  |
| **TNMG-MC** | **TNMG-MFC** | **TNMG-MHC** | **TNMG-TC** | **TNMX-R/L** |
|  |  |  |  |  |

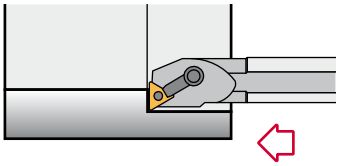


Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. CTFP (Page: A202) or STFC (Page: A225).

Axial -6°
Radial -11°




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CTFP (Seite: A202) oder STFC (Seite: A225).



# MTFN-K 90°

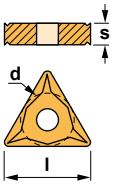
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MTFN R/L 16-K | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | TNM.. 1604.. | 0,700 |
| S32U MTFN R/L 16-K | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TNM.. 1604.. | 2,050 |
| S40V MTFN R/L 16-K | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 1604.. | 3,750 |

| Reference<br>Bezeichnung | | | 1 | | | 2 | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|---|
| S25T MTFN R/L 16-K | 2613 | 1086 | 5003 | ITSN-322 | 1665 | 5002 | 3.0 | 1.4 |
| S32U MTFN R/L 16-K | 2613 | 1086 | 5003 | ITSN-322 | 1665 | 5002 | 3.0 | 1.4 |
| S40V MTFN R/L 16-K | 2613 | 1086 | 5003 | ITSN-322 | 1665 | 5002 | 3.0 | 1.4 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

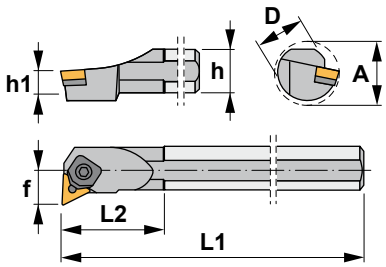



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |

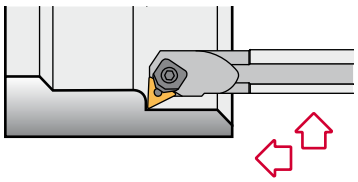


Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. CTUP (Page: A203) or STUC (Page: A229).

Axial -6°
Radial -11°




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CTUP (Seite: A203) oder STUC (Seite: A229).



# MTUN 93°

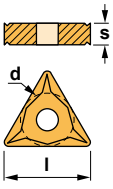
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MTUN R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 34 | TNM.. 1604.. | 0,700 |
| S32U MTUN R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TNM.. 1604.. | 2,050 |
| S40V MTUN R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 1604.. | 3,750 |
| S50W MTUN R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TNM.. 1604.. | 6,500 |
| S40V MTUN R/L 22 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 2204.. | 3,750 |
| S50W MTUN R/L 22 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TNM.. 2204.. | 6,500 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| S25T MTUN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1813 | 4.0 |
| S32U MTUN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S40V MTUN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S50W MTUN R/L 16 | 2014 | 5005 | 3414 | 1644 | 1393 | 4.0 |
| S40V MTUN R/L 22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| S50W MTUN R/L 22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |





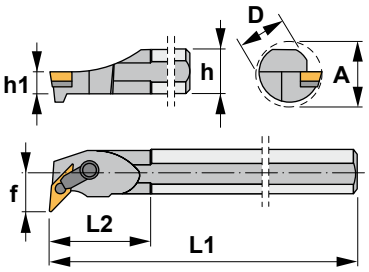



Characteristics:

Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 35º).

For low powered machines and small pieces choose boring bars Ref. SVUC (Page: A235).

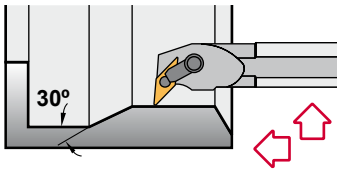
Axial -5º
Radial -15º




Eigenschaften:

Bohrstange zum Innen- und Profildrehen mit doppelseitigen rhombischen negativen Wendeschneidplatten (35º Winkel).

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SVUC (Seite: A235).




# MVUN-K 93°

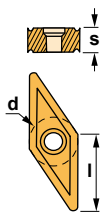
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MVUN R/L 16-K | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | VN.. 1604.. | 0,700 |
| S32U MVUN R/L 16-K | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | VN.. 1604.. | 2,050 |
| S40V MVUN R/L 16-K | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | VN.. 1604.. | 3,750 |

| Reference<br>Bezeichnung | | | 1 | | | 2 | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|---|
| S25T MVUN R/L 16-K | 2614 | 1186 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 | 1.4 |
| S32U MVUN R/L 16-K | 2614 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 | 1.4 |
| S40V MVUN R/L 16-K | 2614 | 1086 | 5003 | IVSN-322 | 1665 | 5002 | 3.0 | 1.4 |

## VN..

35º rhombic negative inserts.
35° rhombische negative Wendeschneidplatten. A49

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



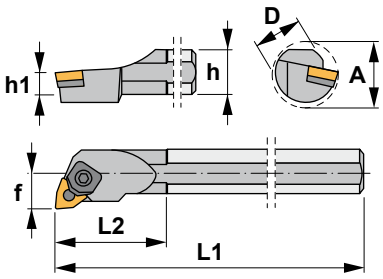
VNMG-TC



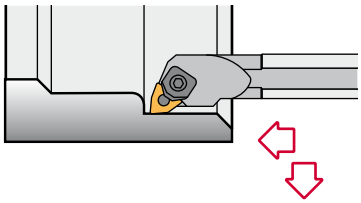


Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80°).
Not suitable for cermet, ceramic or K10, P10 grade inserts.

Axial -5°
Radial -11.5°




Eigenschaften:
Multifunktions-Bohrstange mit doppelseitigen negativen Trigon Wendeschneidplatten (80° Winkel).
Nicht geeignet für Cermet, Keramik oder K10 und P10 Wendeschneidplatten.



# MWLN 95°

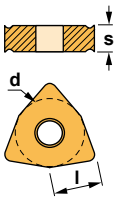
| Reference Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S20S MWLN R/L 06 | 20 | 18 | 9,0 | 250 | 35 | 13 | 27 | WNM.. 0604.. | 0,550 |
| S25T MWLN R/L 06 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | WNM.. 0604.. | 0,700 |
| S32U MWLN R/L 06 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | WNM.. 0604.. | 2,050 |
| S25T MWLN R/L 08 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | WNM.. 0804.. | 0,700 |
| S32U MWLN R/L 08 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | WNM.. 0804.. | 2,050 |
| S40V MWLN R/L 08 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | WNM.. 0804.. | 3,750 |
| S50W MWLN R/L 08 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | WNM.. 0804.. | 6,500 |
| S60Y MWLN R/L 08 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | WNM.. 0804.. | 12,600 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| S20S MWLN R/L 06 | 2006 | 5025 | - | 1643 | 1813 | 2.0 |
| S25T MWLN R/L 06 | 2006 | 5025 | 3006 | 1644 | 1813 | 2.0 |
| S32U MWLN R/L 06 | 2006 | 5025 | 3006 | 1644 | 1813 | 2.0 |
| S25T MWLN R/L 08 | 2011 | 5005 | - | 1647 | 1814 | 4.0 |
| S32U MWLN R/L 08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |
| S40V MWLN R/L 08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |
| S50W MWLN R/L 08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |
| S60Y MWLN R/L 08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

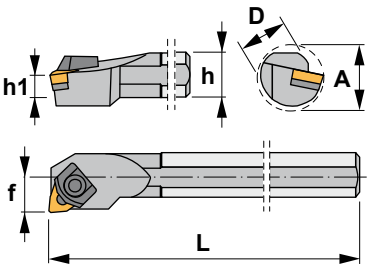




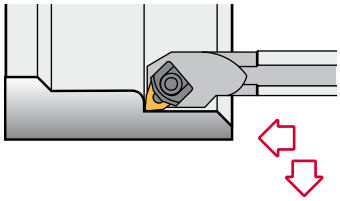



Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80º).
Especially recommended for cermet, ceramic or K10, P10 grade inserts.

Axial -5º
Radial -11.5º




Eigenschaften:
Multifunktions-Bohrstange mit doppelseitigen negativen Trigon Wendeschneidplatten (80º Winkel).
Besonders geeignet für Cermet, Keramik oder K10 und P10 Wendeschneidplatten.



# MWLN-K 95°

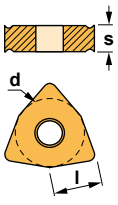
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T MWLN R/L 08-K | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | WNMG 0804.. | 0,700 |
| S32U MWLN R/L 08-K | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | WNMG 0804.. | 2,050 |
| S40V MWLN R/L 08-K | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | WNMG 0804.. | 3,750 |
| S50W MWLN R/L 08-K | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | WNMG 0804.. | 6,500 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| S25T MWLN R/L 08-K | 2018 | - | 1647 | 5025 | 1814 | 2.0 |
| S32U MWLN R/L 08-K | 2018 | IWSN-433 | 1661 | 5025 | 1814 | 2.0 |
| S40V MWLN R/L 08-K | 2018 | IWSN-433 | 1661 | 5025 | 1814 | 2.0 |
| S50W MWLN R/L 08-K | 2018 | IWSN-433 | 1661 | 5025 | 1814 | 2.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |




| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

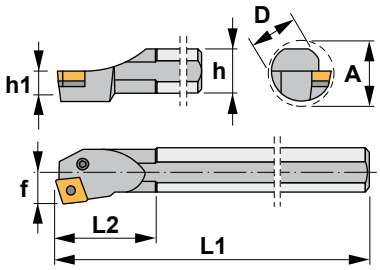


Characteristics:

Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80°).

For general applications, roughing, semi-finishing and finishing.

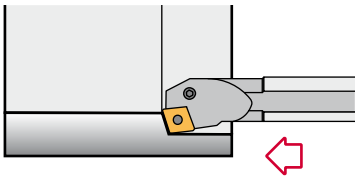
Axial -3°
Radial -11.5°




Eigenschaften:

Bohrstange zum Innendrehen mit rhombischen negativen Wendeschneidplatten (80° Winkel).

Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PCKN 75°

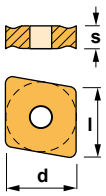
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T PCKN R/L 12 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | CN.. 1204.. | 0,700 |
| S32U PCKN R/L 12 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | CN.. 1204.. | 2,050 |
| S40V PCKN R/L 12 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CN.. 1204.. | 3,750 |
| S50W PCKN R/L 12 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CN.. 1204.. | 6,500 |
| S60Y PCKN R/L 12 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | CN.. 1204.. | 12,600 |
| S40V PCKN R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CN.. 1606.. | 3,750 |
| S50W PCKN R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CN.. 1606.. | 6,500 |
| S60Y PCKN R/L 16 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | CN.. 1606.. | 12,600 |
| S50W PCKN R/L 19 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CN.. 1906.. | 6,500 |
| S60Y PCKN R/L 19 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | CN.. 1906.. | 12,600 |

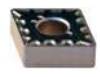
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| S25T PCKN R/L 12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| S32U PCKN R/L 12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S40V PCKN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S50W PCKN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S60Y PCKN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S40V PCKN R/L 16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| S50W PCKN R/L 16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| S60Y PCKN R/L 16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| S50W PCKN R/L 19 | 8219 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| S60Y PCKN R/L 19 | 8219 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |




| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |

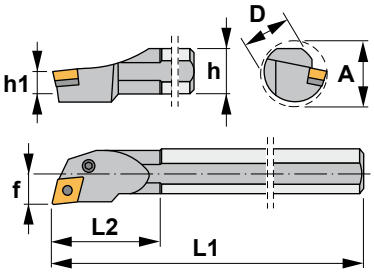


Characteristics:

Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80º).

For low powered machines and small pieces choose boring bars Ref. SCLC (Page: A207).

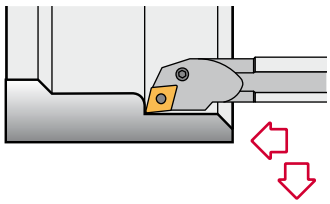
Axial -5º
Radial -13.5º




Eigenschaften:

Bohrstange zum Innendrehen mit rhombischen negativen Wendeschneidplatten (80º Winkel).

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SCLC (Seite: A207).



# PCLN 95°

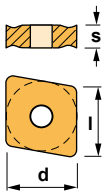
| Reference Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16R PCLN R/L 09 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | CN.. 0903.. | 0,300 |
| S20S PCLN R/L 09 | 20 | 18 | 9,0 | 250 | 35 | 13 | 25 | CN.. 0903.. | 0,550 |
| S25T PCLN R/L 09 | 25 | 23 | 11,5 | 300 | 40 | 17 | 32 | CN.. 0903.. | 0,700 |
| S25T PCLN R/L 12 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | CN.. 1204.. | 0,700 |
| S32U PCLN R/L 12 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | CN.. 1204.. | 2,050 |
| S40V PCLN R/L 12 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CN.. 1204.. | 3,750 |
| S50W PCLN R/L 12 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CN.. 1204.. | 6,500 |
| S60Y PCLN R/L 12 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | CN.. 1204.. | 12,600 |
| S40V PCLN R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CN.. 1606.. | 3,750 |
| S50W PCLN R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CN.. 1606.. | 6,500 |
| S60Y PCLN R/L 16 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | CN.. 1606.. | 12,600 |
| S50W PCLN R/L 19 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CN.. 1906.. | 6,500 |
| S60Y PCLN R/L 19 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | CN.. 1906.. | 12,600 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S16R PCLN R/L 09 | 8005 | 1605 | 5002 | - | - | - | 1.4 |
| S20S PCLN R/L 09 | 8005 | 1605 | 5002 | - | - | - | 1.4 |
| S25T PCLN R/L 09 | 8009 | 1626 | 5025 | 3609 | 4109 | 0009 | 2.0 |
| S25T PCLN R/L 12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| S32U PCLN R/L 12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S40V PCLN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S50W PCLN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S60Y PCLN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| S40V PCLN R/L 16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| S50W PCLN R/L 16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| S60Y PCLN R/L 16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| S50W PCLN R/L 19 | 8219 | 1610 | 5004 | 3619 | 4129 | 0019 | 3.5 |
| S60Y PCLN R/L 19 | 8219 | 1610 | 5004 | 3619 | 4129 | 0019 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |




CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC



CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM



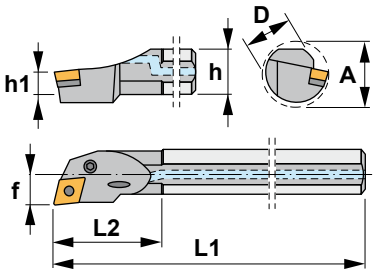


Characteristics:

Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80º).

For low powered machines and small pieces choose boring bars Ref. A-SCLC (Page: A208).

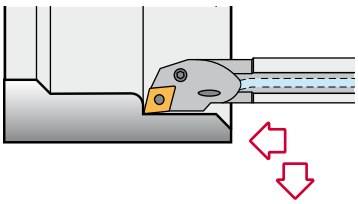
Axial -5º
Radial -13.5º




Eigenschaften:

Bohrstange zum Innendrehen mit rhombischen negativen Wendeschneidplatten (80º Winkel).

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen A-SCLC (Seite: A208).



# A-PCLN 95°

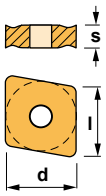
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A16M PCLN R/L 09 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | CN.. 0903.. | 0,200 |
| A20Q PCLN R/L 09 | 20 | 18 | 9,0 | 180 | 35 | 13 | 25 | CN.. 0903.. | 0,400 |
| A25R PCLN R/L 12 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | CN.. 1204.. | 0,700 |
| A32S PCLN R/L 12 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | CN.. 1204.. | 1,400 |
| A40T PCLN R/L 12 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | CN.. 1204.. | 2,650 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A16M PCLN R/L 09 | 8005 | 1605 | 5002 | - | - | - | 1.4 |
| A20Q PCLN R/L 09 | 8005 | 1605 | 5002 | - | - | - | 1.4 |
| A25R PCLN R/L 12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| A32S PCLN R/L 12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| A40T PCLN R/L 12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |




| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |

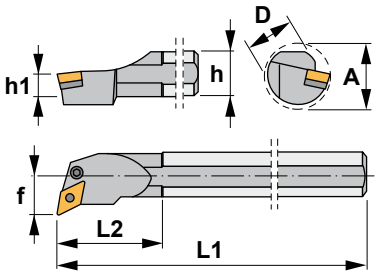


Characteristics:

Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º).

For low powered machines and small pieces choose boring bars Ref. SDUC (Page: A217).

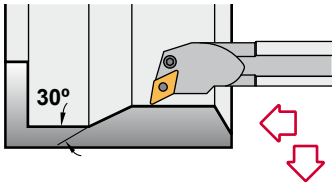
Axial -6º
Radial -14º




Eigenschaften:

Bohrstange zum Innen- und Profildrehen mit rhombischen negativen Wendeschneidplatten (55º Winkel) .

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SDUC (Seite: A217).




# PDUN 93°

| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S20S PDUN R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 20 | DN.. 1104.. | 0,550 |
| S25T PDUN R/L 11 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | DN.. 1104.. | 0,700 |
| S32U PDUN R/L 11 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | DN.. 1104.. | 2,050 |
| S32U PDUN R/L 15 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | DN.. 1506.. | 2,050 |
| S40V PDUN R/L 15 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | DN.. 1506.. | 3,750 |
| S50W PDUN R/L 15 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | DN.. 1506.. | 6,500 |
| S60Y PDUN R/L 15 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | DN.. 1506.. | 12,600 |

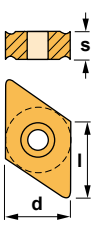
| Reference<br>Bezeichnung |  |  |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|---|---|
| S20S PDUN R/L 11 | 8216 | 1605 | 5002 | - | - | - | - | - | 1.4 |
| S25T PDUN R/L 11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| S32U PDUN R/L 11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| S32U PDUN R/L 15 | 8415 | 1648 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| S40V PDUN R/L 15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| S50W PDUN R/L 15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| S60Y PDUN R/L 15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

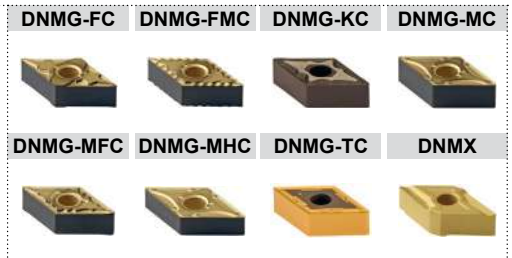
For DNM.. 1504.. inserts
Für Wendeschneidplatten DNM.. 1504..

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



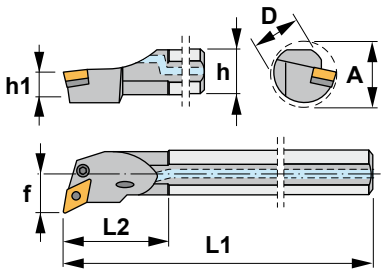


Characteristics:

Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55°).

For low powered machines and small pieces choose boring bars Ref. A-SDUC (Page: A218).

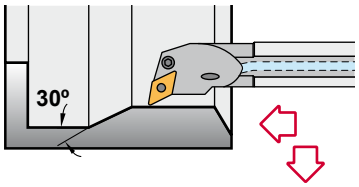
Axial -6°
Radial -14°




Eigenschaften:

Bohrstange zum Innen- und Profildrehen mit rhombischen negativen Wendeschneidplatten (55° Winkel) .

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen A-SDUC (Seite: A218).




# A-PDUN 93°

| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A25R PDUN R/L 11 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | DN.. 1104.. | 0,700 |
| A32S PDUN R/L 15 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | DN.. 1506.. | 1,400 |
| A40T PDUN R/L 15 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | DN.. 1506.. | 2,650 |

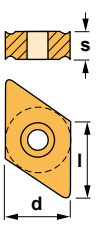
| Reference<br>Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| A25R PDUN R/L 11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| A32S PDUN R/L 15 | 8415 | 1648 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| A40T PDUN R/L 15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

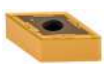
For DNM.. 1504.. inserts
Für Wendeschneidplatten DNM.. 1504..

## DN..

55° rhombic negative inserts. A36-37
55° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |




| DNMG-FC | DNMG-FMC | DNMG-KC | DNMG-MC |
|---|---|---|---|
|  |  |  |  |
| **DNMG-MFC** | **DNMG-MHC** | **DNMG-TC** | **DNMX** |
|  |  |  |  |

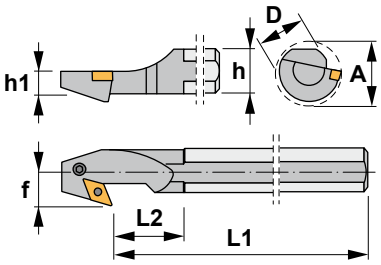


Characteristics:

Backwards boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º).

For low powered machines and small pieces choose boring bars Ref. SDUC-EX (Page: A221).

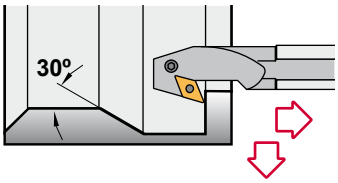
Axial -6º
Radial -14º




Eigenschaften:

Rückwärts-Bohrstange zum Innen- und Profildrehen mit rhombischen negativen Wendeschneidplatten (55º Winkel) .

Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen SDUC-EX (Seite: A221).




# PDUN 93°-EX

| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32U PDUN R/L 15-EX | 32 | 30 | 15,0 | 350 | 50 | 22 | 39 | DN.. 1506.. | 2,050 |
| S40V PDUN R/L 15-EX | 40 | 37 | 18,5 | 400 | 60 | 27 | 48 | DN.. 1506.. | 3,750 |
| S50W PDUN R/L 15-EX | 50 | 47 | 23,5 | 450 | 65 | 35 | 61 | DN.. 1506.. | 6,500 |

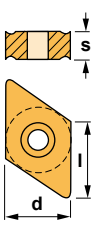
| Reference<br>Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| S32U PDUN R/L 15-EX | 8415 | 1648 | 5003 | - | - | - | - | - | 3.0 |
| S40V PDUN R/L 15-EX | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| S50W PDUN R/L 15-EX | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

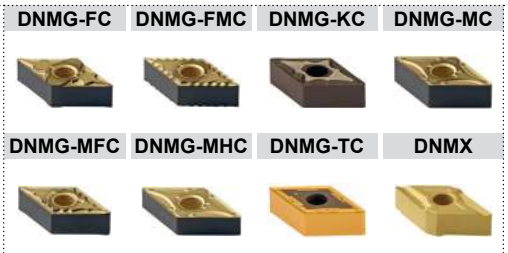
For DNM.. 1504.. inserts
Für Wendeschneidplatten DNM.. 1504..

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten.
A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

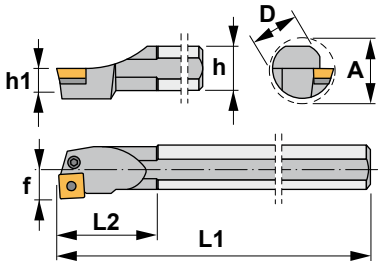


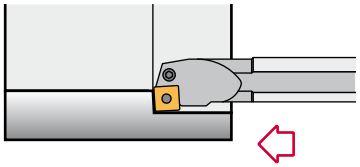


Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For low powered machines and small pieces choose boring bars Ref. CSKP (Page: A201) or SSKC (Page: A223).

Axial -3°
Radial -11°




Eigenschaften:
Bohrstange zum Innendrehen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CSKP (Seite: A201) oder SSKC (Seite: A223).



# PSKN 75°

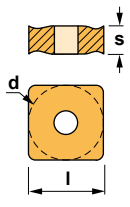
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T PSKN R/L 12 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | SNM.. 1204.. | 0,700 |
| S32U PSKN R/L 12 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | SNM.. 1204.. | 2,050 |
| S40V PSKN R/L 12 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | SNM.. 1204.. | 3,750 |
| S40V PSKN R/L 15 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | SNM.. 1506.. | 3,750 |
| S50W PSKN R/L 15 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | SNM.. 1506.. | 6,500 |
| S50W PSKN R/L 19 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | SNM.. 1906.. | 6,500 |
| S60Y PSKN R/L 19 | 60 | 57 | 28,5 | 600 | 75 | 43 | 80 | SNM.. 1906.. | 12,600 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S25T PSKN R/L 12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| S32U PSKN R/L 12 | 8312 | 1648 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| S40V PSKN R/L 12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| S40V PSKN R/L 15 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| S50W PSKN R/L 15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| S50W PSKN R/L 19 | 8219 | 1710 | 5004 | 3519 | 4129 | 0019 | 3.5 |
| S60Y PSKN R/L 19 | 8219 | 1710 | 5004 | 3519 | 4129 | 0019 | 3.5 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

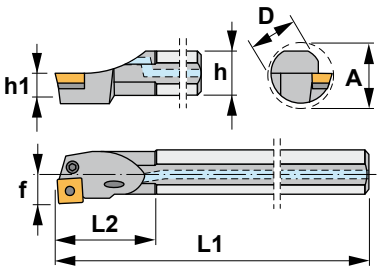



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

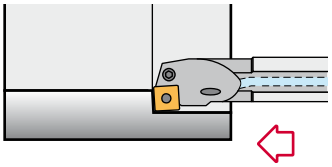


Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For low powered machines and small pieces choose boring bars Ref. CSKP (Page: A201) or SSKC (Page: A223).

Axial -3°
Radial -11°




Eigenschaften:
Bohrstange zum Innendrehen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CSKP (Seite: A201) oder SSKC (Seite: A223).



# A-PSKN 75°

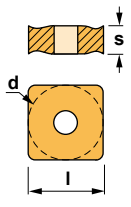
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A25R PSKN R/L 12 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | SNM.. 1204.. | 0,700 |
| A32S PSKN R/L 12 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | SNM.. 1204.. | 1,400 |
| A40T PSKN R/L 12 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | SNM.. 1204.. | 2,650 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A25R PSKN R/L 12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| A32S PSKN R/L 12 | 8312 | 1648 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| A40T PSKN R/L 12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |

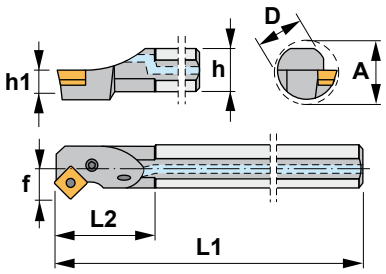



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

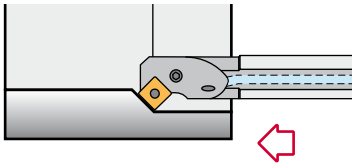


Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For low powered machines and small pieces choose boring bars Ref. A-SSSC (Page: A224).

Axial -3°
Radial -11°




Eigenschaften:
Bohrstange zum Innendrehen mit vierkantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen A-SSSC (Seite: A224).



# A-PSSN 45°

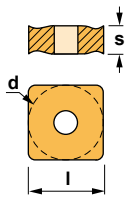
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A25R PSSN R/L 12 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | SNM.. 1204.. | 0,700 |
| A32S PSSN R/L 12 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | SNM.. 1204.. | 2,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A25R PSSN R/L 12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| A32S PSSN R/L 12 | 8312 | 1648 | 5003 | 3512 | 4112 | 0012 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |

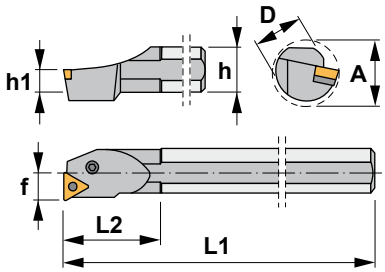



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |

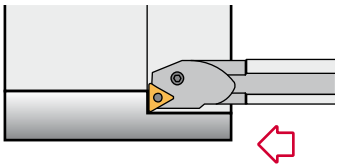


Characteristics:
Boring bar for internal turning applications equipped with triangular negative inserts.
For low powered machines and small pieces choose boring bars Ref. CTFP (Page: A202) or STFC (Page: A225).

Axial -6°
Radial -11°




Eigenschaften:
Bohrstange zum Innendrehen mit dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CTFP (Seite: A202) oder STFC (Seite: A225).



# PTFN 90°

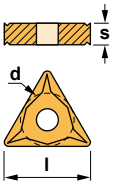
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T PTFN R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | TNM.. 1604.. | 0,700 |
| S32U PTFN R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TNM.. 1604.. | 2,050 |
| S40V PTFN R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 1604.. | 3,750 |
| S50W PTFN R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TNM.. 1604.. | 6,500 |
| S40V PTFN R/L 22 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TNM.. 2204.. | 3,750 |
| S50W PTFN R/L 22 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TNM.. 2204.. | 6,500 |

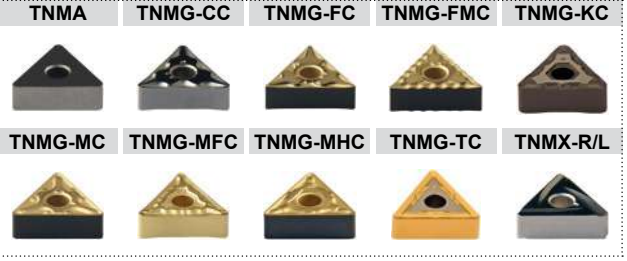
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S25T PTFN R/L 16 | 8216 | 1605 | 5002 | - | - | - | 1.4 |
| S32U PTFN R/L 16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| S40V PTFN R/L 16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| S50W PTFN R/L 16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| S40V PTFN R/L 22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |
| S50W PTFN R/L 22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

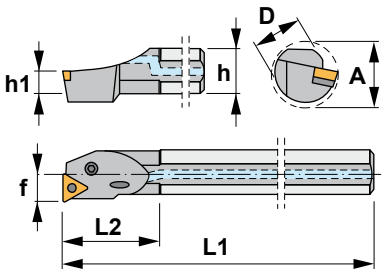


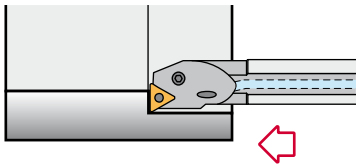


Characteristics:
Boring bar for internal turning applications equipped with triangular negative inserts.
For low powered machines and small pieces choose boring bars Ref. CTFP (Page: A202) or A-STFC (Page: A226).

Axial -6°
Radial -11°




Eigenschaften:
Bohrstange zum Innendrehen mit dreikantigen negativen Wendeschneidplatten.
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen CTFP (Seite: A202) oder A-STFC (Seite: A226).



# A-PTFN 90°

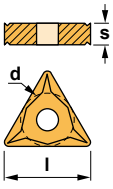
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A25R PTFN R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | TNM.. 1604.. | 0,700 |
| A32S PTFN R/L 16 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | TNM.. 1604.. | 1,400 |
| A40T PTFN R/L 22 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | TNM.. 2204.. | 2,650 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A25R PTFN R/L 16 | 8216 | 1605 | 5002 | - | - | - | 1.4 |
| A32S PTFN R/L 16 | 8009 | 1606 | 5025 | 3416 | 4109 | 0009 | 2.0 |
| A40T PTFN R/L 22 | 8012 | 1608 | 5003 | 3422 | 4112 | 0012 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |




| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
|  |  |  |  |  |
| **TNMG-MC** | **TNMG-MFC** | **TNMG-MHC** | **TNMG-TC** | **TNMX-R/L** |
|  |  |  |  |  |

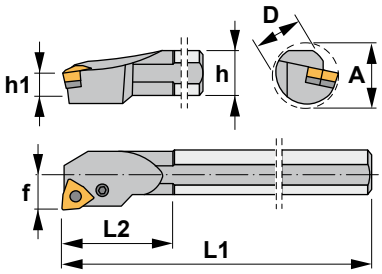


Characteristics:

Boring bar for internal turning applications equipped with trigon negative inserts (angle 80º).

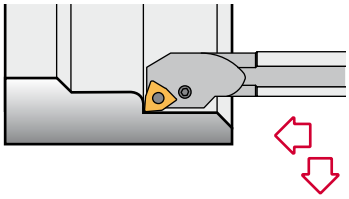
For general applications, roughing, semi-finishing and finishing.

Axial -6º
Radial -13.5º




Eigenschaften:

Bohrstangen zum Innendrehen mit negativen Trigon Wendeschneidplatten (80º Winkel). Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PWLN 95°

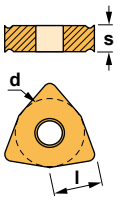
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16R PWLN R/L 06 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | WNM.. 0604.. | 0,300 |
| S20S PWLN R/L 06 | 20 | 18 | 9,0 | 250 | 35 | 13 | 27 | WNM.. 0604.. | 0,550 |
| S25T PWLN R/L 06 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | WNM.. 0604.. | 0,700 |
| S25T PWLN R/L 08 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | WNM.. 0804.. | 0,700 |
| S32U PWLN R/L 08 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | WNM.. 0804.. | 2,050 |
| S40V PWLN R/L 08 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | WNM.. 0804.. | 3,750 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S16R PWLN R/L 06 | 8216 | 1605 | 5002 | - | - | - | 1.4 |
| S20S PWLN R/L 06 | 8216 | 1605 | 5002 | - | - | - | 1.4 |
| S25T PWLN R/L 06 | 8009 | 1606 | 5025 | 3007 | 4109 | 0009 | 2.0 |
| S25T PWLN R/L 08 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| S32U PWLN R/L 08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| S40V PWLN R/L 08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

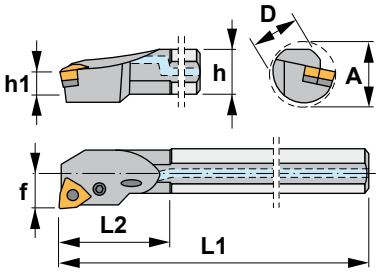



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

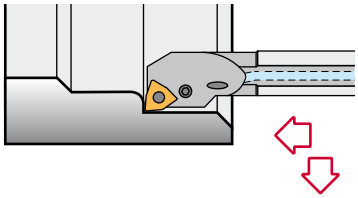


Characteristics:
Boring bar for internal turning applications equipped with trigon negative inserts (angle 80°).
For general applications, roughing, semi-finishing and finishing.

Axial -6°
Radial -13.5°




Eigenschaften:
Bohrstangen zum Innendrehen mit negativen Trigon Wendeschneidplatten (80° Winkel). Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# A-PWLN 95°

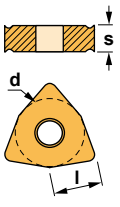
| Reference Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A16M PWLN R/L 06 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | WNM.. 0604.. | 0,200 |
| A20Q PWLN R/L 06 | 20 | 18 | 9,0 | 180 | 35 | 13 | 27 | WNM.. 0604.. | 0,400 |
| A25R PWLN R/L 06 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | WNM.. 0604.. | 0,700 |
| A32S PWLN R/L 06 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | WNM.. 0604.. | 1,400 |
| A25R PWLN R/L 08 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | WNM.. 0804.. | 0,700 |
| A32S PWLN R/L 08 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | WNM.. 0804.. | 1,400 |
| A40T PWLN R/L 08 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | WNM.. 0804.. | 2,650 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A16M PWLN R/L 06 | 8216 | 1605 | 5002 | - | - | - | 1.4 |
| A20Q PWLN R/L 06 | 8216 | 1605 | 5002 | - | - | - | 1.4 |
| A25R PWLN R/L 06 | 8009 | 1606 | 5025 | 3007 | 4109 | 0009 | 2.0 |
| A32S PWLN R/L 06 | 8009 | 1606 | 5025 | 3007 | 4109 | 0009 | 2.0 |
| A25R PWLN R/L 08 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| A32S PWLN R/L 08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| A40T PWLN R/L 08 | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

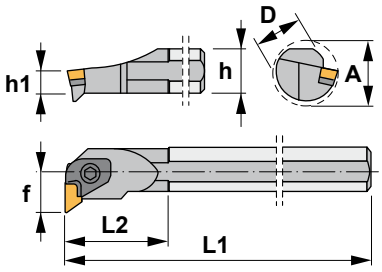



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

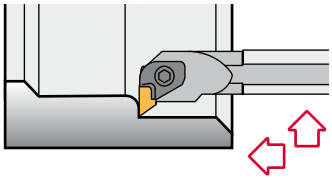


Characteristics:
Boring bar for internal turning and profiling operations equipped with KNUX negative insert.
For semi-finishing and finishing operations.

Axial -6°
Radial -10°




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit negativen KNUX Wendeschneidplatten.
Zum Vorschlichten und Schlichten.



# CKUN 93°

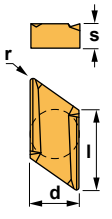
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T CKUN R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 20,5 | 37 | KNUX 1604.. | 0,700 |
| S32U CKUN R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22,0 | 39 | KNUX 1604.. | 2,050 |
| S40V CKUN R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27,0 | 48 | KNUX 1604.. | 3,750 |
| S50W CKUN R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35,0 | 61 | KNUX 1604.. | 6,500 |

| Reference<br>Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| S25T CKUN L 16 | 2316 | 1614 | 5004 | 4295 | 4201 | - | - | 3.5 |
| S32U CKUN L 16 | 2316 | 1614 | 5004 | 4295 | 4202 | 3226 | 4012 | 3.5 |
| S40V CKUN L 16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| S50W CKUN L 16 | 2316 | 1614 | 5004 | 4295 | 4204 | 3226 | 4012 | 3.5 |
| S25T CKUN R 16 | 2326 | 1614 | 5004 | 4295 | 4201 | - | - | 3.5 |
| S32U CKUN R 16 | 2326 | 1614 | 5004 | 4295 | 4202 | 3236 | 4012 | 3.5 |
| S40V CKUN R 16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |
| S50W CKUN R 16 | 2326 | 1614 | 5004 | 4295 | 4204 | 3236 | 4012 | 3.5 |

## KNUX

KNUX negative insert.
KNUX negative Wendeschneidplatte. A38

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| KNUX 1604.. | 16,00 | 4,76 | 9,52 |



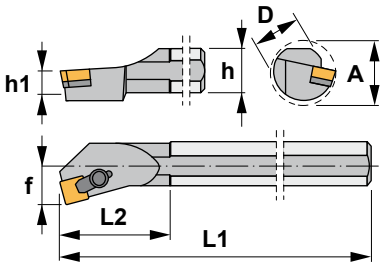

KNUX



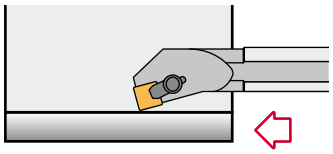


Characteristics:
Boring bar for internal turning applications equipped with square positive inserts.
For interrupted cut choose boring bars Ref. PSKN (Page: A193).

Axial 6.5º
Radial -1.25º




Eigenschaften:
Bohrstange zum Innendrehen mit vierkantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Bohrstangen PSKN (Seite: A193).



# CSKP 75°

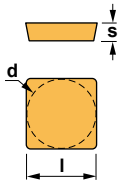
| Reference Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16R CSKP R/L 09 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | SP.. 0903.. | 0,300 |
| S20S CSKP R/L 09 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | SP.. 0903.. | 0,550 |
| S25T CSKP R/L 12 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | SP.. 1203.. | 1,050 |
| S32U CSKP R/L 12 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | SP.. 1203.. | 2,050 |
| S40V CSKP R/L 12 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | SP.. 1203.. | 3,750 |
| S50W CSKP R/L 12 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | SP.. 1203.. | 6,500 |
| S50W CSKP R/L 19 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | SP.. 1904.. | 6,500 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S16R CSKP R/L 09 | 2107 | 5025 | - | - | 2.0 |
| S20S CSKP R/L 09 | 2107 | 5025 | - | - | 2.0 |
| S25T CSKP R/L 12 | 2109 | 5003 | - | - | 3.0 |
| S32U CSKP R/L 12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| S40V CSKP R/L 12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| S50W CSKP R/L 12 | 2209 | 5003 | 3112 | 4002 | 3.0 |
| S50W CSKP R/L 19 | 2211 | 5004 | 3119 | 4012 | 3.5 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |
| SP.. 1904.. | 19,05 | 4,76 | 19,05 |

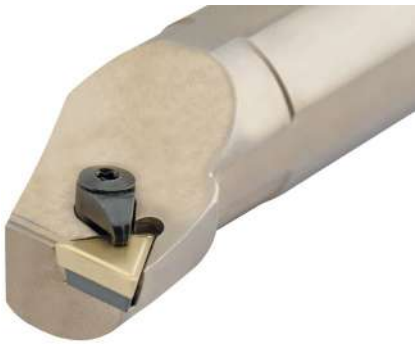



SPMR



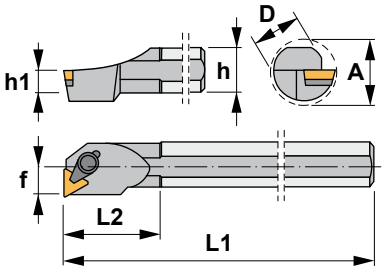
SPUN



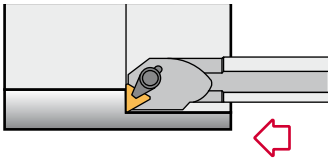


Characteristics:
Boring bar for internal turning applications equipped with triangular positive inserts.
For interrupted cut choose boring bars Ref. MTFN (Page: A181) or PTFN (Page: A196).

Axial 6°
Radial 0°




Eigenschaften:
Bohrstange zum Innendrehen mit dreikantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Bohrstangen MTFN (Seite: A181) oder PTFN (Seite: A196).



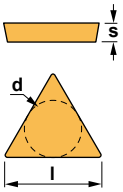
# CTFP 90°

| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S10M CTFP R/L 09 | 10 | 9 | 4,5 | 150 | 22 | 7 | 13 | TP.. 0902.. | 0,060 |
| S12M CTFP R/L 09 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TP.. 0902.. | 0,150 |
| S12M CTFP R/L 11 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TP.. 1103.. | 0,150 |
| S16R CTFP R/L 11 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | TP.. 1103.. | 0,300 |
| S20S CTFP R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TP.. 1103.. | 0,550 |
| S16R CTFP R/L 16 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | TP.. 1603.. | 0,300 |
| S20S CTFP R/L 16 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TP.. 1603.. | 0,550 |
| S25T CTFP R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | TP.. 1603.. | 0,700 |
| S32U CTFP R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TP.. 1603.. | 2,050 |
| S40V CTFP R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TP.. 1603.. | 3,750 |
| S50W CTFP R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TP.. 1603.. | 6,500 |
| S40V CTFP R/L 22 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TP.. 2204.. | 3,750 |
| S50W CTFP R/L 22 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TP.. 2204.. | 6,500 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| S10M CTFP R/L 09 | 2000 | 5015 | - | - | 0.6 |
| S12M CTFP R/L 09 | 2000 | 5015 | - | - | 0.6 |
| S12M CTFP R/L 11 | 2304 | 5025 | - | - | 2.0 |
| S16R CTFP R/L 11 | 2107 | 5025 | - | - | 2.0 |
| S20S CTFP R/L 11 | 2107 | 5025 | - | - | 2.0 |
| S16R CTFP R/L 16 | 2119 | 5003 | - | - | 3.0 |
| S20S CTFP R/L 16 | 2119 | 5003 | - | - | 3.0 |
| S25T CTFP R/L 16 | 2109 | 5003 | - | - | 3.0 |
| S32U CTFP R/L 16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| S40V CTFP R/L 16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| S50W CTFP R/L 16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| S40V CTFP R/L 22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| S50W CTFP R/L 22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 0902.. | 9,62 | 2,38 | 5,55 |
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |

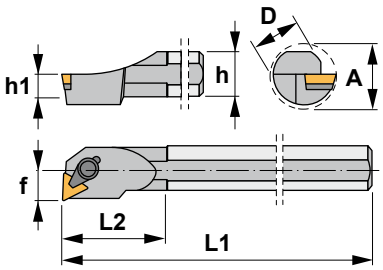



| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |

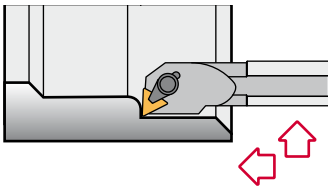


Characteristics:
Boring bar for internal turning applications equipped with triangular positive inserts.
For interrupted cut choose boring bars Ref. MTUN (Page: A183).

Axial 0°
Radial -6°




Eigenschaften:
Bohrstange zum Innendrehen mit dreikantigen positiven Wendeschneidplatten.
Für unterbrochenen Schnitt wählen Sie Bohrstangen MTUN (Seite: A183).



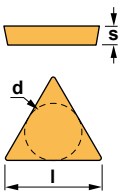
# CTUP 93°

| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S10M CTUP R/L 09 | 10 | 9 | 4,5 | 150 | 22 | 7 | 13 | TP.. 0902.. | 0,060 |
| S12M CTUP R/L 09 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TP.. 0902.. | 0,150 |
| S12M CTUP R/L 11 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TP.. 1103.. | 0,150 |
| S16R CTUP R/L 11 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | TP.. 1103.. | 0,300 |
| S20S CTUP R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TP.. 1103.. | 0,550 |
| S16R CTUP R/L 16 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | TP.. 1603.. | 0,300 |
| S20S CTUP R/L 16 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TP.. 1603.. | 0,550 |
| S25T CTUP R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | TP.. 1603.. | 0,700 |
| S32U CTUP R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TP.. 1603.. | 2,050 |
| S40V CTUP R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TP.. 1603.. | 3,750 |
| S50W CTUP R/L 16 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TP.. 1603.. | 6,500 |
| S40V CTUP R/L 22 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TP.. 2204.. | 3,750 |
| S50W CTUP R/L 22 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | TP.. 2204.. | 6,500 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| S10M CTUP R/L 09 | 2000 | 5015 | - | - | 0.6 |
| S12M CTUP R/L 09 | 2000 | 5015 | - | - | 0.6 |
| S12M CTUP R/L 11 | 2304 | 5025 | - | - | 2.0 |
| S16R CTUP R/L 11 | 2107 | 5025 | - | - | 2.0 |
| S20S CTUP R/L 11 | 2107 | 5025 | - | - | 2.0 |
| S16R CTUP R/L 16 | 2119 | 5003 | - | - | 3.0 |
| S20S CTUP R/L 16 | 2119 | 5003 | - | - | 3.0 |
| S25T CTUP R/L 16 | 2109 | 5003 | - | - | 3.0 |
| S32U CTUP R/L 16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| S40V CTUP R/L 16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| S50W CTUP R/L 16 | 2209 | 5003 | 3116 | 4002 | 3.0 |
| S40V CTUP R/L 22 | 2211 | 5004 | 3122 | 4012 | 3.5 |
| S50W CTUP R/L 22 | 2211 | 5004 | 3122 | 4012 | 3.5 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. A47

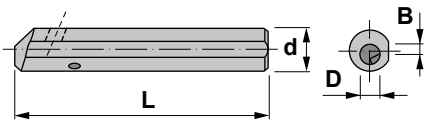
| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 0902.. | 9,62 | 2,38 | 5,55 |
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |



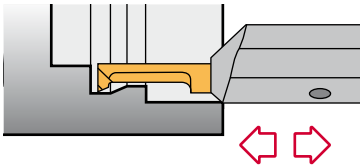

| TPMN | TPMR | TPUN |
|---|---|---|
|  |  |  |
| **TPUX-R** | **TPUX-L** | |
|  |  | |



Characteristics:
Multipurpose boring bar for grooving, threading and turning.
For smaller diameters from 4,2 mm.




Eigenschaften:
Multifunktions-Bohrstange zum Stechen, Gewindedrehen und Drehen.
Für kleinere Durchmesser ab 4,2 mm.



# 00.30

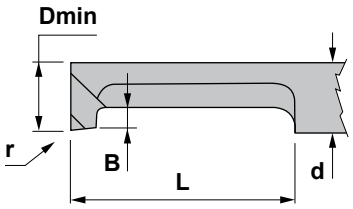
| Reference<br>Bezeichnung | L | d | B | D | Tool size<br>Werkzeug | Kg |
|---|---|---|---|---|---|---|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 / 4,2 | CTI 04.. | 0,070 |
| 00.30.16.06 | 120 | 16 | 2,80 | 8,2 | CTI 06.. | 0,150 |

| Reference<br>Bezeichnung |  |  | Nm |
|---|---|---|---|
| 00.30.12.04 | 1505 | 5025 | 2.0 |
| 00.30.16.06 | 1506 | 5003 | 3.0 |



Characteristics:
Turning tool.

Eigenschaften:
Drehwerkzeuge.



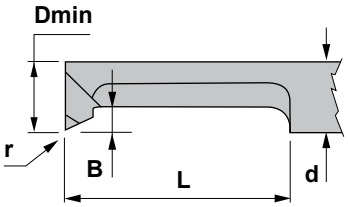

## AR

| Reference Bezeichnung | L | d | B | Dmin | r |
|---|---|---|---|---|---|
| CTI 0402 AR | 15 | 4 | 0,8 | 4,2 | 0,2 |
| CTI 0602 AR | 20 | 6 | 1,8 | 6,2 | 0,2 |



Characteristics:
Copying tool.

Eigenschaften:
Kopierwerkzeuge.



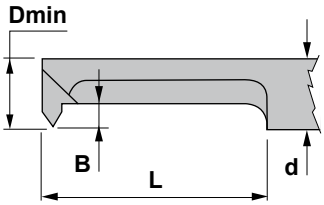

## BR

| Reference Bezeichnung | L | d | B | Dmin | r |
|---|---|---|---|---|---|
| CTI 0402 BR | 15 | 4 | 0,8 | 4,2 | 0,2 |
| CTI 0602 BR | 20 | 6 | 1,8 | 6,2 | 0,2 |



Characteristics:
Threading tool.

Eigenschaften:
Gewindewerkzeuge.



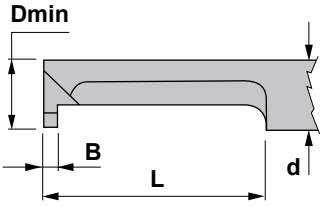

## CR

| Reference Bezeichnung | L | d | B | Dmin |
|---|---|---|---|---|
| CTI 0400 CR | 15 | 4 | 0,8 | M5 |
| CTI 0600 CR | 20 | 6 | 1,8 | M8 |



Characteristics:
Grooving tool.

Eigenschaften:
Stechwerkzeuge.



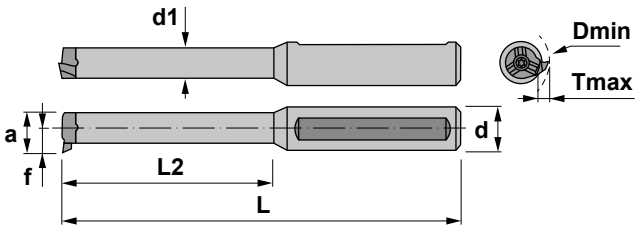

## DR

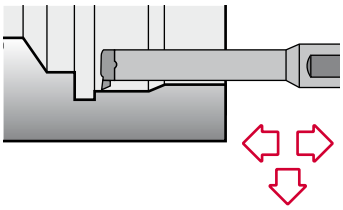
| Reference Bezeichnung | L | d | B | Dmin |
|---|---|---|---|---|
| CTI 0410 DR | 15 | 4 | 1,0 | 4,2 |
| CTI 0615 DR | 20 | 6 | 1,8 | 6,2 |



Characteristics: Multipurpose boring bar for grooving, threading and turning.
For smaller diameters from 8 mm.

Eigenschaften: Multifunktions-Bohrstange zum Stechen, Gewindedrehen und Drehen.
Für kleinere Durchmesser ab 8 mm.



# 608.00

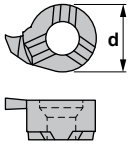
| Reference Bezeichnung | Dmin | d | d1 | L | L2 | a | f | Tmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 608.0012.2 HM | 8 | 12 | 6 | 90 | 30 | 7,8 | 4,8 | 1,0 | R/LS08 | 0,090 |
| 611.0012.2 HM | 11 | 12 | 8 | 110 | 42 | 10,7 | 6,7 | 2,3 | R/LS11 | 0,090 |
| 614.0012.2 HM | 14 | 12 | 11 | 110 | 45 | 13,8 | 9,0 | 4,0 | R/LS14 | 0,130 |
| 616.0012.2 HM | 16 | 12 | 11 | 130 | 56 | 15,7 | 10,2 | 4,3 | R/LS16 | 0,265 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 608.0012.2 HM | 1226 | 5508 | 1.2 |
| 611.0012.2 HM | 1535 | 5510 | 2.0 |
| 614.0012.2 HM | 1244 | 5515 | 3.0 |
| 616.0012.2 HM | 1255 | 5520 | 4.0 |

## R/LS..

B11-15

| Reference / Bez. | d |
|---|---|
| R/LS.. 08.. | 6,0 |
| R/LS.. 11.. | 8,0 |
| R/LS.. 14.. | 9,0 |
| R/LS.. 16.. | 11,0 |




R/LS



Insert for turning
WSP zum Drehen

R/LS



Insert for grooving with radius
WSP zum Vollradius-Stechen

R/LS



Insert for threading
WSP zum Gewindedrehen

R/LS

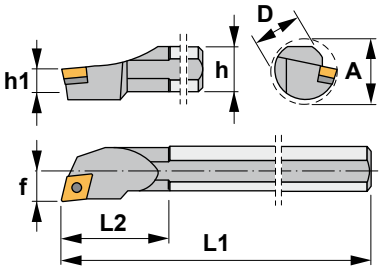


Insert for grooving
WSP zum Stechen

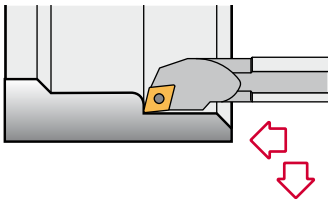


Characteristics:
Multipurpose boring bar equipped with rhombic positive insert (angle 80°).
For boring bars with negative inserts see Ref. MCLN-K (Page: A178) or PCLN (Page: A188).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Für Bohrstangen mit negativen Wendeschneidplatten siehe MCLN-K (Seite: A178) oder PCLN (Seite: A188).



# SCLC 95°

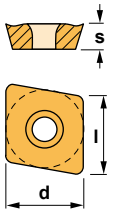
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S08K SCLC R/L 06 | 8 | 7 | 3,5 | 125 | 16 | 5 | 11 | CC.. 0602.. | 0,040 |
| S10M SCLC R/L 06 | 10 | 9 | 4,5 | 150 | 22 | 7 | 13 | CC.. 0602.. | 0,060 |
| S12M SCLC R/L 06 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | CC.. 0602.. | 0,150 |
| S12M SCLC R/L 09 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | CC.. 09T3.. | 0,150 |
| S12Q SCLC R/L 09 | 12 | 11 | 5,5 | 180 | 25 | 9 | 16 | CC.. 09T3.. | 0,150 |
| S16R SCLC R/L 09 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | CC.. 09T3.. | 0,300 |
| S20S SCLC R/L 09 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | CC.. 09T3.. | 0,550 |
| S25T SCLC R/L 09 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | CC.. 09T3.. | 0,550 |
| S20S SCLC R/L 12 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | CC.. 1204.. | 0,550 |
| S25T SCLC R/L 12 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | CC.. 1204.. | 0,700 |
| S32U SCLC R/L 12 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | CC.. 1204.. | 2,050 |
| S40V SCLC R/L 12 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | CC.. 1204.. | 3,750 |
| S50W SCLC R/L 12 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | CC.. 1204.. | 6,500 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S08K SCLC R/L 06 | 1425 | 5507 | - | - | 0.9 |
| S10M SCLC R/L 06 | 1425 | 5507 | - | - | 0.9 |
| S12M SCLC R/L 06 | 1425 | 5507 | - | - | 0.9 |
| S12M SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| S12Q SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| S16R SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| S20S SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| S25T SCLC R/L 09 | 1240 | 5515 | - | - | 3.0 |
| S20S SCLC R/L 12 | 1250 | 5520 | - | - | 4.0 |
| S25T SCLC R/L 12 | 1250 | 5520 | - | - | 4.0 |
| S32U SCLC R/L 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| S40V SCLC R/L 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| S50W SCLC R/L 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCGT-AP



CCMT



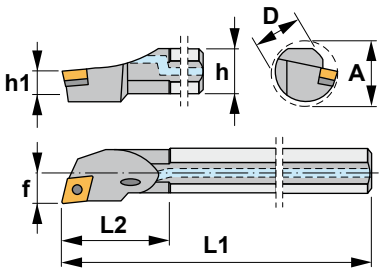
CCMW



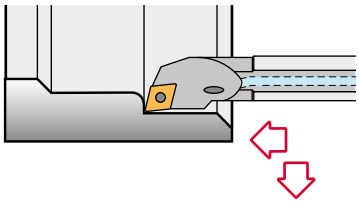


Characteristics:
Multipurpose boring bar equipped with rhombic positive insert (angle 80°).
For boring bars with negative inserts see Ref. MCLN-K (Page: A178) or A-PCLN (Page: A189).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Für Bohrstangen mit negativen Wendeschneidplatten siehe MCLN-K (Seite: A178) oder A-PCLN (Seite: A189).



# A-SCLC 95°

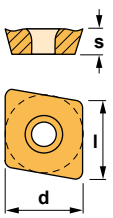
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A08F SCLC R/L 06 | 8 | 7 | 3,5 | 80 | 20 | 5 | 11 | CC.. 0602.. | 0,030 |
| A10H SCLC R/L 06 | 10 | 9 | 4,5 | 100 | 20 | 7 | 13 | CC.. 0602.. | 0,040 |
| A12K SCLC R/L 06 | 12 | 11 | 5,5 | 125 | 25 | 9 | 16 | CC.. 0602.. | 0,100 |
| A16M SCLC R/L 09 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | CC.. 09T3.. | 0,200 |
| A20Q SCLC R/L 09 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | CC.. 09T3.. | 0,400 |
| A25R SCLC R/L 09 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | CC.. 09T3.. | 0,700 |
| A32S SCLC R/L 12 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | CC.. 1204.. | 1,400 |
| A40T SCLC R/L 12 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | CC.. 1204.. | 2,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A08F SCLC R/L 06 | 1425 | 5507 | - | - | 0.9 |
| A10H SCLC R/L 06 | 1425 | 5507 | - | - | 0.9 |
| A12K SCLC R/L 06 | 1425 | 5507 | - | - | 0.9 |
| A16M SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| A20Q SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| A25R SCLC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| A32S SCLC R/L 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| A40T SCLC R/L 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCGT-AP



CCMT



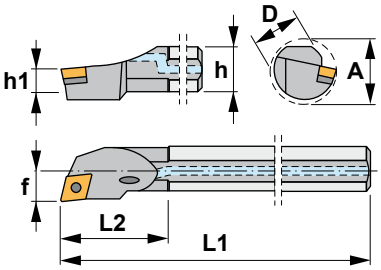
CCMW



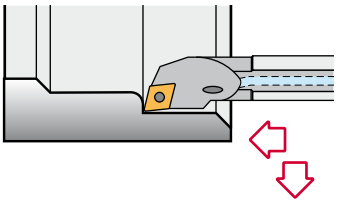


Characteristics:
Set of multipurpose boring bars equipped with rhombic positive insert (angle 80°). For boring bars with negative inserts see Ref. A-PCLN (Page: A189).

Axial 0°
Radial -6°




Eigenschaften: Multifunktions-Bohrstangen-Satz mit rhombischen positiven Wendeschneidplatten (80° Winkel). Für Bohrstangen mit negativen Wendeschneidplatten siehe A-PCLN (Seite: A189).



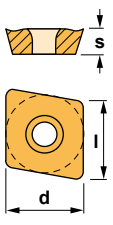
# SET SCLC 95°

| Reference<br>Bezeichnung | D | d | L1 | L2 | f | A | h | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A0608H SCLC R/L 06 | 8 | 6 | 100 | 25 | 4 | 10 | 7 | CC.. 0602.. | 0,400 |
| A0810J SCLC R/L 06 | 10 | 8 | 110 | 32 | 6 | 12 | 9 | CC.. 0602.. | |
| A1012K SCLC R/L 06 | 12 | 10 | 125 | 38 | 7 | 14 | 11 | CC.. 0602.. | |
| A1216M SCLC R/L 06 | 16 | 12 | 150 | 50 | 9 | 18 | 15 | CC.. 0602.. | |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A0608H SCLC R/L 06 | 1425 | 5507 | 0.9 |
| A0810J SCLC R/L 06 | 1425 | 5507 | 0.9 |
| A1012K SCLC R/L 06 | 1225 | 5507 | 0.9 |
| A1216M SCLC R/L 06 | 1225 | 5507 | 0.9 |

**CC..** 80° rhombic positive inserts with 7° clearance. 80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |




CCGT-AL



CCGT-AP



CCMT



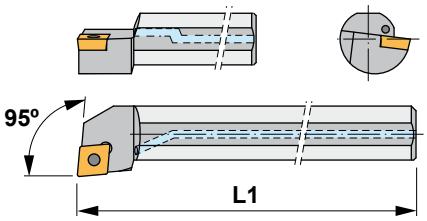
CCMW



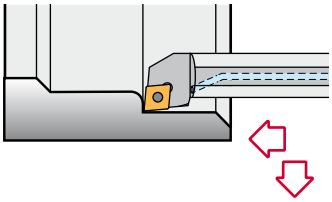


Characteristics:
Carbide boring bar equipped with rhombic positive insert (angle 80°).
Range starting at Ø4 mm and minimum bore diameter of 5 mm.

Axial 0°
Radial -6°




Eigenschaften:
Hartmetall-Bohrstange mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Das Sortiment fängt ab Ø4 mm an, für eine 5 mm Mindestborung.



# E-SCLC 95°

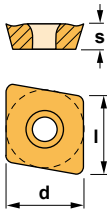
| Reference<br>Bezeichnung | L1 Total length (mm)<br>L1 Gesamtlänge (mm) | Ø min. (mm) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|
| E04G SCLCR 0305 | 90 | 5 | CC.. 0301.. | 0,035 |
| E05H SCLCR 0306 | 100 | 6 | CC.. 0301.. | 0,040 |
| E06J SCLCR 0307 | 110 | 7 | CC.. 0301.. | 0,050 |
| E07K SCLCR 0408 | 125 | 8 | CC.. 0401.. | 0,070 |
| E08K SCLCL 06 | 125 | 11 | CC.. 0602.. | 0,085 |
| E08K SCLCR 06 | 125 | 11 | CC.. 0602.. | 0,085 |
| E10M SCLCL 06 | 150 | 14 | CC.. 0602.. | 0,160 |
| E10M SCLCR 06 | 150 | 14 | CC.. 0602.. | 0,160 |
| E12Q SCLCL 06 | 180 | 17 | CC.. 0602.. | 0,270 |
| E12Q SCLCR 06 | 180 | 17 | CC.. 0602.. | 0,270 |
| E16R SCLCL 09 | 200 | 21 | CC.. 09T3.. | 0,520 |
| E16R SCLCR 09 | 200 | 21 | CC.. 09T3.. | 0,520 |
| E20S SCLCL 09 | 250 | 25 | CC.. 09T3.. | 0,990 |
| E20S SCLCR 09 | 250 | 25 | CC.. 09T3.. | 0,990 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| E04G SCLCR 0305 | 1415 | 5506 | 0.6 |
| E05H SCLCR 0306 | 1415 | 5506 | 0.6 |
| E06J SCLCR 0307 | 1415 | 5506 | 0.6 |
| E07K SCLCR 0408 | 1420 | 5506 | 0.6 |
| E08K SCLCL 06 | 1425 | 5507 | 0.9 |
| E08K SCLCR 06 | 1425 | 5507 | 0.9 |
| E10M SCLCL 06 | 1425 | 5507 | 0.9 |
| E10M SCLCR 06 | 1425 | 5507 | 0.9 |
| E12Q SCLCL 06 | 1425 | 5507 | 0.9 |
| E12Q SCLCR 06 | 1425 | 5507 | 0.9 |
| E16R SCLCL 09 | 1440 | 5515 | 3.0 |
| E16R SCLCR 09 | 1440 | 5515 | 3.0 |
| E20S SCLCL 09 | 1440 | 5515 | 3.0 |
| E20S SCLCR 09 | 1440 | 5515 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive WSP mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0301.. | 3,60 | 1,39 | 3,50 |
| CC.. 0401.. | 4,40 | 1,79 | 4,30 |
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |




CCET



CCGT-AL



CCGT-AP



CCMT



CCMW





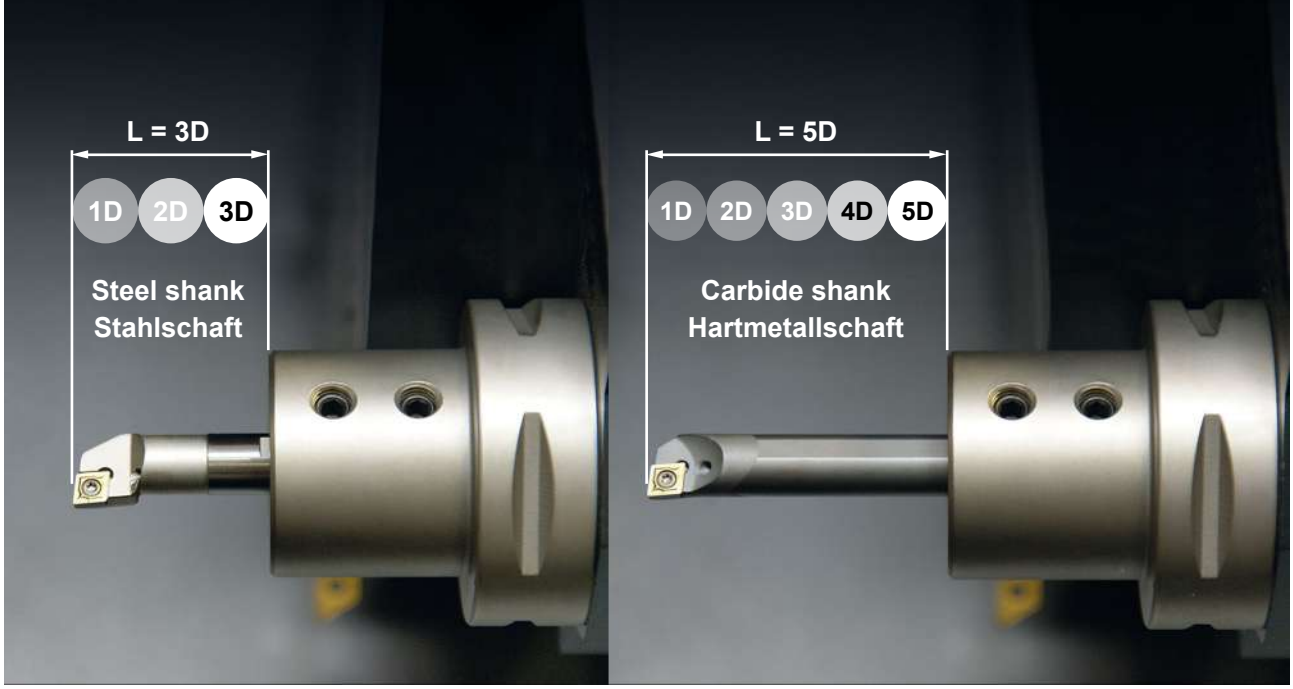
# E-SCLC 95°

## Features

- Better rigidity than steel bars.
- Excellent cutting performance in a wide range of boring sizes even at vibration cutting condition.
- Longer tool life and excellent surface finish.
- Range starting at Ø 4 mm. and minimum bore diameter of 5 mm.

## Besonderheiten

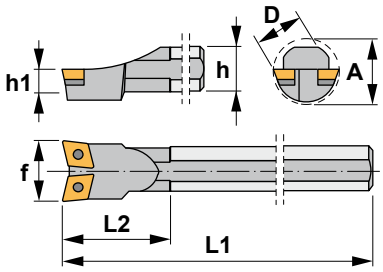
- Bessere Festigkeit als die Stahl-Bohrstangen.
- Hervorragende Schnittleistung in einer breiten Palette von Bohrdurchmessern, auch bei schwingenden Schnittbedingungen.
- Längere Standzeiten und ausgezeichnete Oberflächengüte.
- Die Auswahl beginnt mit Ø 4 mm und minimum Bohrdurchmesser 5 mm.



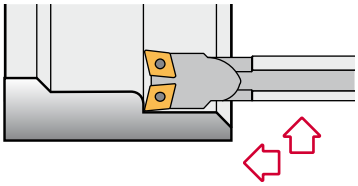


Characteristics:
Multipurpose internal and external boring bar equipped with rhombic positive insert (angle 80°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial -9°




Eigenschaften:
Multifunktions-Bohrstange zum Innen- und Außendrehen mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# SCLCN 95°

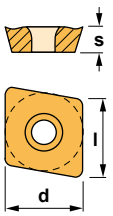
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S12M SCLC N 06 | 12 | 11 | 5,5 | 150 | 25 | 18 | 20 | CC.. 0602.. | 0,150 |
| S16R SCLC N 06 | 16 | 15 | 7,5 | 200 | 30 | 22 | 25 | CC.. 0602.. | 0,300 |
| S20S SCLC N 06 | 20 | 18 | 9,0 | 250 | 35 | 26 | 30 | CC.. 0602.. | 0,550 |
| S25T SCLC N 09 | 25 | 23 | 11,5 | 300 | 40 | 34 | 40 | CC.. 09T3.. | 0,700 |
| S32U SCLC N 12 | 32 | 30 | 15,0 | 350 | 45 | 44 | 50 | CC.. 1204.. | 2,050 |
| S40V SCLC N 12 | 40 | 37 | 18,5 | 400 | 50 | 54 | 60 | CC.. 1204.. | 3,750 |
| S50W SCLC N 12 | 50 | 47 | 23,5 | 450 | 60 | 62 | 68 | CC.. 1204.. | 6,500 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S12M SCLC N 06 | 1425 | 5507 | - | - | 0.9 |
| S16R SCLC N 06 | 1225 | 5507 | - | - | 0.9 |
| S20S SCLC N 06 | 1225 | 5507 | - | - | 0.9 |
| S25T SCLC N 09 | 1440 | 5515 | - | - | 3.0 |
| S32U SCLC N 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| S40V SCLC N 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| S50W SCLC N 12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCGT-AP



CCMT



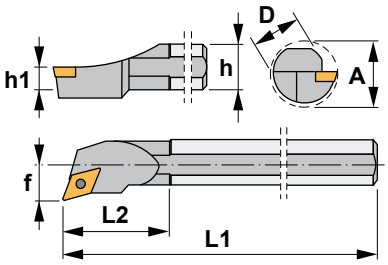
CCMW



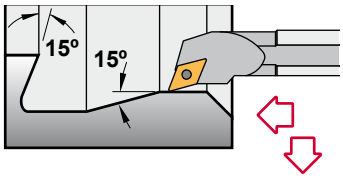


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# SDQC 107°30’

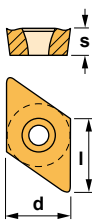
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S10M SDQC R/L 07 | 10 | 9 | 4,5 | 150 | 22 | 7 | 13 | DC.. 0702.. | 0,060 |
| S12M SDQC R/L 07 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | DC.. 0702.. | 0,150 |
| S16R SDQC R/L 07 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | DC.. 0702.. | 0,300 |
| S20S SDQC R/L 07 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | DC.. 0702.. | 0,550 |
| S20S SDQC R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | DC.. 11T3.. | 0,550 |
| S25T SDQC R/L 11 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | DC.. 11T3.. | 0,700 |
| S32U SDQC R/L 11 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | DC.. 11T3.. | 2,050 |
| S40V SDQC R/L 11 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | DC.. 11T3.. | 3,750 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S10M SDQC R/L 07 | 1425 | 5507 | - | - | 0.9 |
| S12M SDQC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S16R SDQC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S20S SDQC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S20S SDQC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| S25T SDQC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| S32U SDQC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| S40V SDQC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

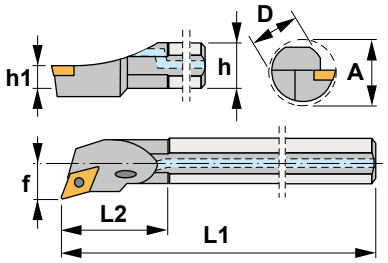



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |

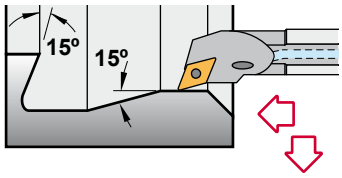


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55º).
For general applications, roughing, semi-finishing and finishing.

Axial 0º
Radial -6º




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# A-SDQC 107°30’

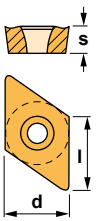
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A12K SDQC R/L 07 | 12 | 11 | 5,5 | 125 | 25 | 9 | 16 | DC.. 0702.. | 0,100 |
| A16M SDQC R/L 07 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | DC.. 0702.. | 0,200 |
| A20Q SDQC R/L 11 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | DC.. 11T3.. | 0,400 |
| A25R SDQC R/L 11 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | DC.. 11T3.. | 0,700 |
| A32S SDQC R/L 11 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | DC.. 11T3.. | 1,400 |
| A40T SDQC R/L 11 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | DC.. 11T3.. | 2,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A12K SDQC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| A16M SDQC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| A20Q SDQC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| A25R SDQC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| A32S SDQC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| A40T SDQC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55º rhombic positive inserts with 7º clearance.
55º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



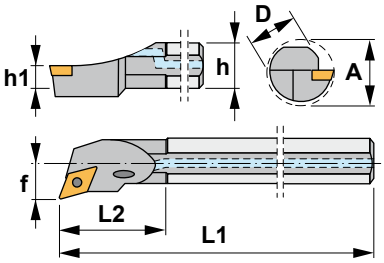
DCMW



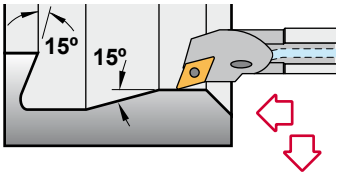


Characteristics:
Set of multipurpose profiling boring bars equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstangen-Satz zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# SET SDQC 107°30'

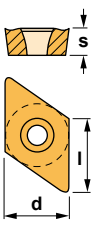
| Reference<br>Bezeichnung | D | d | L1 | L2 | f | A | h | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A0810J SDQC R/L 07 | 10 | 8 | 110 | 32 | 7 | 12,5 | 9 | DC.. 0702.. | 0,350 |
| A1012K SDQC R/L 07 | 12 | 10 | 125 | 38 | 9 | 15,5 | 11 | DC.. 0702.. | |
| A1216M SDQC R/L 07 | 16 | 12 | 150 | 50 | 11 | 19,5 | 15 | DC.. 0702.. | |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A0810J SDQC R/L 07 | 1225 | 5507 | 0.9 |
| A1012K SDQC R/L 07 | 1225 | 5507 | 0.9 |
| A1216M SDQC R/L 07 | 1225 | 5507 | 0.9 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |




DCGT-AL



DCGT-AP



DCMT



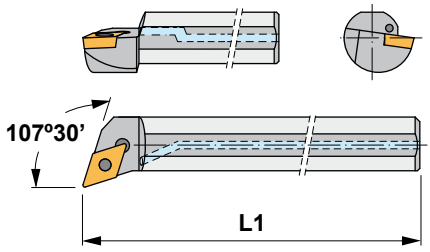
DCMW



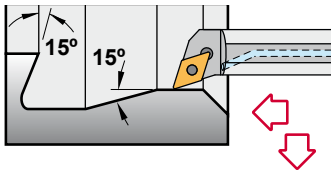


Characteristics:
Carbide boring bar equipped with rhombic positive insert (angle 55º).
Range starting at Ø10 mm and minimum bore diameter of 14 mm.

Axial 0º
Radial -6º




Eigenschaften:
Hartmetall-Bohrstange mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Das Sortiment fängt ab Ø10 mm an, für eine 14 mm Mindestbohrung.




# E-SDQC 107°30'

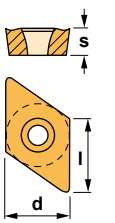
| Reference<br>Bezeichnung | L1 Total length (mm)<br>L1 Gesamtlänge (mm) | Ø min. (mm) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|
| E10M SDQCL 07 | 150 | 14 | DC.. 0702.. | 0,165 |
| E10M SDQCR 07 | 150 | 14 | DC.. 0702.. | 0,165 |
| E12Q SDQCL 07 | 180 | 17 | DC.. 0702.. | 0,270 |
| E12Q SDQCR 07 | 180 | 17 | DC.. 0702.. | 0,270 |
| E16R SDQCL 07 | 200 | 21 | DC.. 0702.. | 0,520 |
| E16R SDQCR 07 | 200 | 21 | DC.. 0702.. | 0,520 |
| E20S SDQCR 07 | 250 | 25 | DC.. 0702.. | 0,800 |
| E25T SDQCR 11 | 300 | 25 | DC.. 11T3.. | 1,000 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| E10M SDQCL 07 | 1425 | 5507 | 0.9 |
| E10M SDQCR 07 | 1425 | 5507 | 0.9 |
| E12Q SDQCL 07 | 1225 | 5507 | 0.9 |
| E12Q SDQCR 07 | 1225 | 5507 | 0.9 |
| E16R SDQCL 07 | 1225 | 5507 | 0.9 |
| E16R SDQCR 07 | 1225 | 5507 | 0.9 |
| E20S SDQCR 07 | 1225 | 5507 | 0.9 |
| E25T SDQCR 11 | 1240 | 5515 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



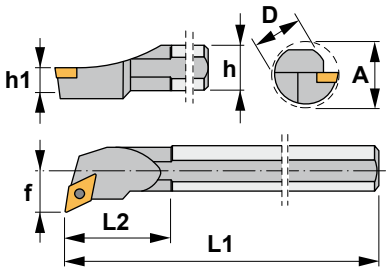
DCMW



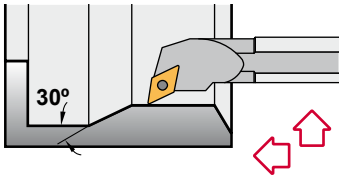


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).
For boring bars with negative inserts see Ref. MDUN-K (Page: A179) or PDUN (Page: A190).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel). Für Bohrstangen mit negativen Wendeschneidplatten siehe MDUN-K (Seite: A179) oder PDUN (Seite: A190).




# SDUC 93°

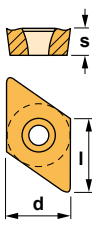
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S10M SDUC R/L 07 | 10 | 9 | 4,5 | 150 | 22 | 7 | 13 | DC.. 0702.. | 0,060 |
| S12M SDUC R/L 07 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | DC.. 0702.. | 0,150 |
| S12Q SDUC R/L 07 | 12 | 11 | 5,5 | 180 | 25 | 9 | 16 | DC.. 0702.. | 0,150 |
| S16R SDUC R/L 07 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | DC.. 0702.. | 0,300 |
| S20S SDUC R/L 07 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | DC.. 0702.. | 0,550 |
| S20S SDUC R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | DC.. 11T3.. | 0,550 |
| S25T SDUC R/L 11 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | DC.. 11T3.. | 0,700 |
| S32U SDUC R/L 11 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | DC.. 11T3.. | 2,050 |
| S40V SDUC R/L 11 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | DC.. 11T3.. | 3,750 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S10M SDUC R/L 07 | 1425 | 5507 | - | - | 0.9 |
| S12M SDUC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S12Q SDUC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S16R SDUC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S20S SDUC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| S20S SDUC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| S25T SDUC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| S32U SDUC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| S40V SDUC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



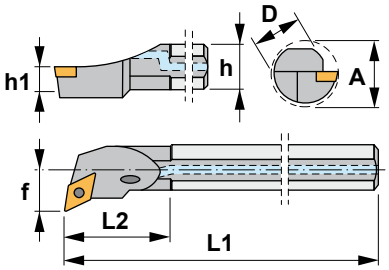
DCMW



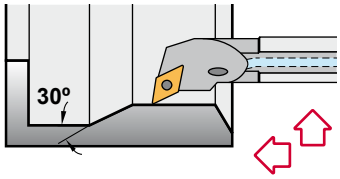


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).
For boring bars with negative inserts see Ref. MDUN-K (Page: A179) or A-PDUN (Page: A191).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel). Für Bohrstangen mit negativen Wendeschneiplatten siehe MDUN-K (Seite: A179) oder A-PDUN (Seite: A191).




# A-SDUC 93°

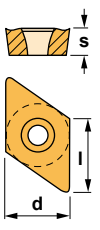
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A12K SDUC R/L 07 | 12 | 11 | 5,5 | 125 | 25 | 9 | 16 | DC.. 0702.. | 0,100 |
| A16M SDUC R/L 07 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | DC.. 0702.. | 0,200 |
| A20Q SDUC R/L 11 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | DC.. 11T3.. | 0,400 |
| A25R SDUC R/L 11 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | DC.. 11T3.. | 0,700 |
| A32S SDUC R/L 11 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | DC.. 11T3.. | 1,400 |
| A40T SDUC R/L 11 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | DC.. 11T3.. | 2,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A12K SDUC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| A16M SDUC R/L 07 | 1225 | 5507 | - | - | 0.9 |
| A20Q SDUC R/L 11 | 1440 | 5515 | - | - | 3.0 |
| A25R SDUC R/L 11 | 1240 | 5515 | - | - | 3.0 |
| A32S SDUC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| A40T SDUC R/L 11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



DCMW



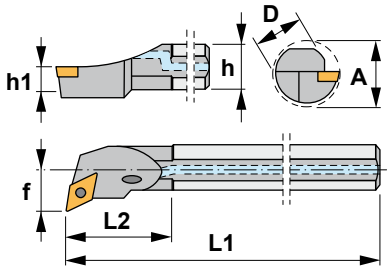


Characteristics:

Set of multipurpose profiling boring bars equipped with rhombic positive insert (angle 55°).

For boring bars with negative inserts see Ref. A-PDUN (Page: A191).

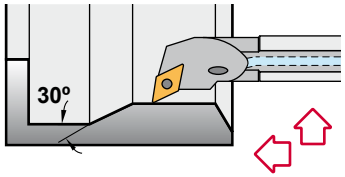
Axial 0°
Radial -6°




Eigenschaften:

Multifunktions-Bohrstangen-Satz zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).

Für Bohrstangen mit negativen Wendeschneidplatten siehe A-PDUN (Seite: A191).




# SET SDUC 93°

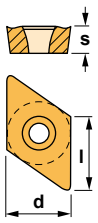
| Reference<br>Bezeichnung | D | d | L1 | L2 | f | A | h | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A0810J SDUC R/L 07 | 10 | 8 | 110 | 32 | 7 | 12,5 | 9 | DC.. 0702.. | 0,350 |
| A1012K SDUC R/L 07 | 12 | 10 | 125 | 38 | 9 | 15,5 | 11 | DC.. 0702.. | |
| A1216M SDUC R/L 07 | 16 | 12 | 150 | 50 | 11 | 19,5 | 15 | DC.. 0702.. | |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A0810J SDUC R/L 07 | 1225 | 5507 | 0.9 |
| A1012K SDUC R/L 07 | 1225 | 5507 | 0.9 |
| A1216M SDUC R/L 07 | 1225 | 5507 | 0.9 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |

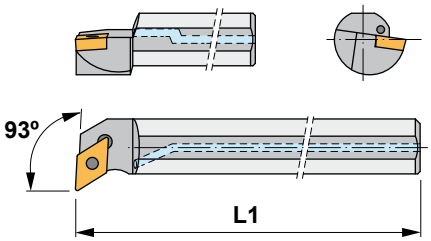



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |

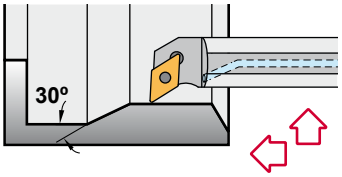


Characteristics:
Carbide boring bar equipped with rhombic positive insert (angle 55°).
Range starting at Ø10 mm and minimum bore diameter of 14 mm.

Axial 0°
Radial -6°




Eigenschaften:
Hartmetall-Bohrstange mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Das Sortiment fängt ab Ø10 mm an, für eine 14 mm Mindestbohrung.




# E-SDUC 93°

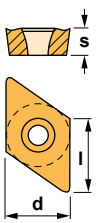
| Reference<br>Bezeichnung | L1 Total length (mm)<br>L1 Gesamtlänge (mm) | Ø min. (mm) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|
| E10M SDUCL 07 | 150 | 14 | DC.. 0702.. | 0,165 |
| E10M SDUCR 07 | 150 | 14 | DC.. 0702.. | 0,165 |
| E12Q SDUCL 07 | 180 | 17 | DC.. 0702.. | 0,265 |
| E12Q SDUCR 07 | 180 | 17 | DC.. 0702.. | 0,265 |
| E16R SDUCL 07 | 200 | 21 | DC.. 0702.. | 0,525 |
| E16R SDUCR 07 | 200 | 21 | DC.. 0702.. | 0,525 |
| E20S SDUCL 11 | 250 | 25 | DC.. 11T3.. | 1,000 |
| E20S SDUCR 11 | 250 | 25 | DC.. 11T3.. | 1,000 |
| E25T SDUCR 11 | 300 | 32 | DC.. 11T3.. | 1,250 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| E10M SDUCL 07 | 1425 | 5507 | 0.9 |
| E10M SDUCR 07 | 1425 | 5507 | 0.9 |
| E12Q SDUCL 07 | 1225 | 5507 | 0.9 |
| E12Q SDUCR 07 | 1225 | 5507 | 0.9 |
| E16R SDUCL 07 | 1225 | 5507 | 0.9 |
| E16R SDUCR 07 | 1225 | 5507 | 0.9 |
| E20S SDUCL 11 | 1240 | 5515 | 3.0 |
| E20S SDUCR 11 | 1240 | 5515 | 3.0 |
| E25T SDUCR 11 | 1240 | 5515 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



DCMW



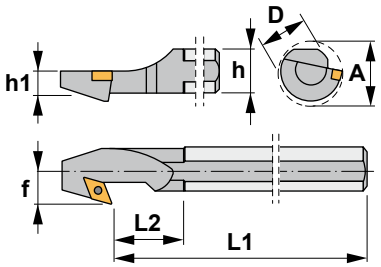


Characteristics:

Backwards multipurpose profiling boring bar equipped with rhombic positive insert (angle 55º).

For boring bars with negative inserts see Ref. PDUN-EX (Page: A192).

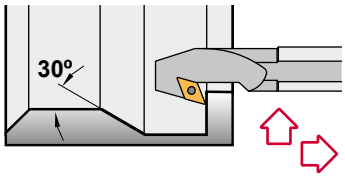
Axial 0º
Radial -6º




Eigenschaften:

Rückwärts-Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55º Winkel).

Für Bohrstangen mit negativen Wendeschneidplatten siehe PDUN-EX (Seite: A192).




# SDUC 93°-EX

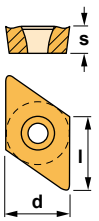
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S12M SDUC R/L 07-EX | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | DC.. 0702.. | 0,150 |
| S16R SDUC R/L 07-EX | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | DC.. 0702.. | 0,300 |
| S20S SDUC R/L 07-EX | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | DC.. 0702.. | 0,550 |
| S20S SDUC R/L 11-EX | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | DC.. 11T3.. | 0,550 |
| S25T SDUC R/L 11-EX | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | DC.. 11T3.. | 0,700 |
| S32U SDUC R/L 11-EX | 32 | 30 | 15,0 | 350 | 50 | 22 | 39 | DC.. 11T3.. | 2,050 |
| S40V SDUC R/L 11-EX | 40 | 37 | 18,5 | 400 | 60 | 27 | 48 | DC.. 11T3.. | 3,750 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S12M SDUC R/L 07-EX | 1225 | 5507 | - | - | 0.9 |
| S16R SDUC R/L 07-EX | 1225 | 5507 | - | - | 0.9 |
| S20S SDUC R/L 07-EX | 1225 | 5507 | - | - | 0.9 |
| S20S SDUC R/L 11-EX | 1240 | 5515 | - | - | 3.0 |
| S25T SDUC R/L 11-EX | 1240 | 5515 | - | - | 3.0 |
| S32U SDUC R/L 11-EX | 1335 | 5516 | 3714 | 1750 | 3.0 |
| S40V SDUC R/L 11-EX | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55º rhombic positive inserts with 7º clearance.
55º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



DCMW



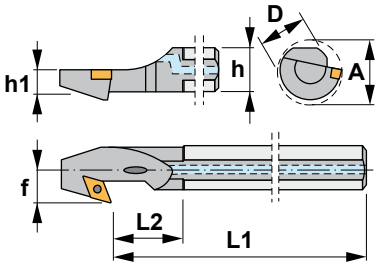


Characteristics:

Backwards multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).

For boring bars with negative inserts see Ref. PDUN-EX (Page: A192).

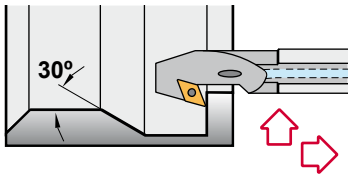
Axial 0°
Radial -6°




Eigenschaften:

Rückwärts-Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).

Für Bohrstangen mit negativen Wendeschneidplatten siehe PDUN-EX (Seite: A192).




# A-SDUC 93°-EX

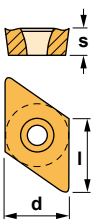
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A12K SDUC R/L 07-EX | 12 | 11 | 5,5 | 125 | 25 | 9 | 16 | DC.. 0702.. | 0,100 |
| A16M SDUC R/L 07-EX | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | DC.. 0702.. | 0,200 |
| A20Q SDUC R/L 11-EX | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | DC.. 11T3.. | 0,400 |
| A25R SDUC R/L 11-EX | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | DC.. 11T3.. | 0,700 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A12K SDUC R/L 07-EX | 1225 | 5507 | 0.9 |
| A16M SDUC R/L 07-EX | 1225 | 5507 | 0.9 |
| A20Q SDUC R7L 11-EX | 1240 | 5515 | 3.0 |
| A25R SDUC R/L 11-EX | 1240 | 5515 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



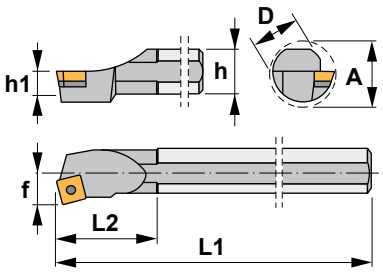
DCMW



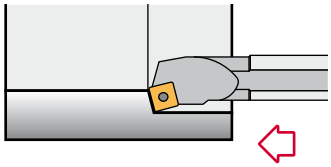


Characteristics:
Multipurpose boring bar equipped with square positive insert.
For boring bars with negative inserts see Ref. MSKN-K (Page: A180) or PSKN (Page: A193).

Axial 0°
Radial -8°




Eigenschaften:
Multifunktions-Bohrstange mit vierkantigen positiven Wendeschneidplatten.
Für Bohrstangen mit negativen Wendeschneidplatten siehe MSKN-K (Seite: A180) oder PSKN (Seite: A193).



# SSKC 75°

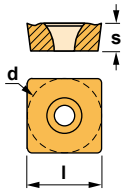
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16R SSKC R/L 09 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | SC.. 09T3.. | 0,300 |
| S20S SSKC R/L 09 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | SC.. 09T3.. | 0,550 |
| S25T SSKC R/L 09 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | SC.. 09T3.. | 0,700 |
| S32U SSKC R/L 12 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | SC.. 1204.. | 2,050 |
| S40V SSKC R/L 12 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | SC.. 1204.. | 3,750 |
| S50W SSKC R/L 12 | 50 | 47 | 23,5 | 450 | 60 | 35 | 61 | SC.. 1204.. | 6,500 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S16R SSKC R/L 09 | 1440 | 5515 | - | - | 3.0 |
| S20S SSKC R/L 09 | 1240 | 5515 | - | - | 3.0 |
| S25T SSKC R/L 09 | 1240 | 5515 | - | - | 3.0 |
| S32U SSKC R/L 12 | 1540 | 5517 | 3514 | 1760 | 3.0 |
| S40V SSKC R/L 12 | 1540 | 5517 | 3514 | 1760 | 3.0 |
| S50W SSKC R/L 12 | 1540 | 5517 | 3514 | 1760 | 3.0 |

## SC..

Square positive inserts with 7° clearance.
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel. A40

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

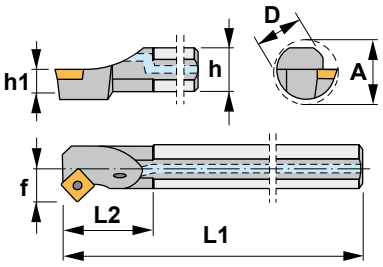



| SCGT-AL | SCMT |
|---|---|
|  |  |
| **SCMT-39** | **SCMW** |
|  |  |

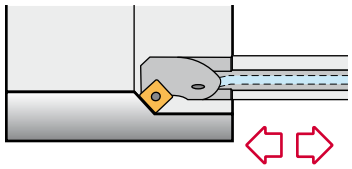


Characteristics:
Multipurpose boring bar equipped with square positive insert.
For boring bars with negative inserts see Ref. A-PSSN (Page: A195).

Axial 0°
Radial -8°




Eigenschaften:
Multifunktions-Bohrstange mit vierkantigen positiven Wendeschneidplatten.
Für Bohrstangen mit negativen Wendeschneidplatten siehe A-PSSN (Seite: A195).



# A-SSSC 45°

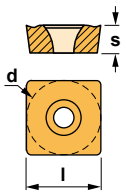
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A16M SSSC R/L 09 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | SC.. 09T3.. | 0,300 |
| A20Q SSSC R/L 09 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | SC.. 09T3.. | 0,550 |
| A25R SSSC R/L 09 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | SC.. 09T3.. | 0,700 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A16M SSSC R/L 09 | 1440 | 5515 | 3.0 |
| A20Q SSSC R/L 09 | 1440 | 5515 | 3.0 |
| A25R SSSC R/L 09 | 1240 | 5515 | 3.0 |

## SC..

Square positive inserts with 7° clearance. A40
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |




SCGT-AL



SCMT



SCMT-39



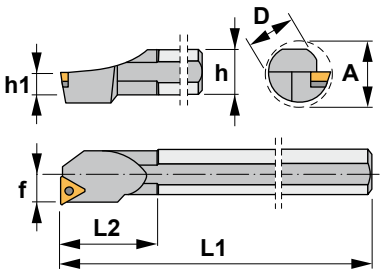
SCMW



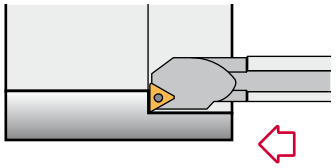


Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
For boring bars with negative inserts see Ref. MTFN (Page: A181), MTFN-K (Page: A182) or PTFN (Page: A196).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange mit dreikantigen positiven Wendeschneidplatten.
Für Bohrstangen mit negativen Wendeschneidplatten siehe MTFN (Seite: A181), MTFN-K (Seite: A182) oder PTFN (Seite: A196).



# STFC 90°

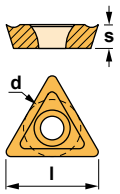
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S10M STFC R/L 09 | 10 | 9 | 4,5 | 150 | 22 | 7 | 13 | TC.. 0902.. | 0,060 |
| S12M STFC R/L 09 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TC.. 0902.. | 0,150 |
| S12M STFC R/L 11 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TC.. 1102.. | 0,150 |
| S12Q STFC R/L 11 | 12 | 11 | 5,5 | 180 | 25 | 9 | 16 | TC.. 1102.. | 0,050 |
| S16R STFC R/L 11 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | TC.. 1102.. | 0,300 |
| S20S STFC R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TC.. 1102.. | 0,550 |
| S20S STFC R/L 16 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TC.. 16T3.. | 0,550 |
| S25T STFC R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | TC.. 16T3.. | 0,700 |
| S32U STFC R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TC.. 16T3.. | 2,050 |
| S40V STFC R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | TC.. 16T3.. | 3,750 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| S10M STFC R/L 09 | 1222 | 5506 | - | - | 0.6 |
| S12M STFC R/L 09 | 1222 | 5506 | - | - | 0.6 |
| S12M STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S12Q STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S16R STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S20S STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S20S STFC R/L 16 | 1240 | 5515 | - | - | 3.0 |
| S25T STFC R/L 16 | 1240 | 5515 | - | - | 3.0 |
| S32U STFC R/L 16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| S40V STFC R/L 16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



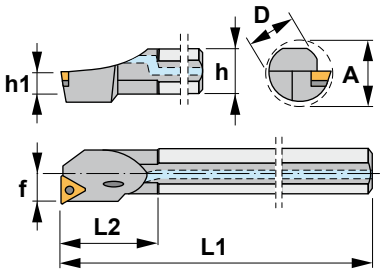
TCMW



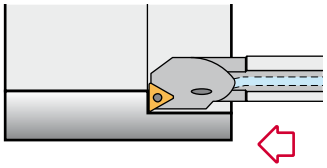


Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
For boring bars with negative inserts see Ref. MTFN (Page: A181), MTFN-K (Page: A182) or A-PTFN (Page: A197).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange mit dreikantigen positiven Wendeschneidplatten.
Für Bohrstangen mit negativen Wendeschneidplatten siehe MTFN (Seite: A181), MTFN-K (Seite: A182) oder A-PTFN (Seite: A197).



# A-STFC 90°

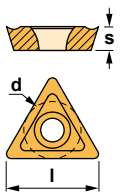
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A10H STFC R/L 09 | 10 | 9 | 4,5 | 100 | 20 | 7 | 13 | TC.. 0902.. | 0,040 |
| A12K STFC R/L 11 | 12 | 11 | 5,5 | 125 | 25 | 9 | 16 | TC.. 1102.. | 0,100 |
| A16M STFC R/L 11 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | TC.. 1102.. | 0,200 |
| A20Q STFC R/L 11 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | TC.. 1102.. | 0,400 |
| A25R STFC R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | TC.. 16T3.. | 0,700 |
| A32S STFC R/L 16 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | TC.. 16T3.. | 1,400 |
| A40T STFC R/L 16 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | TC.. 16T3.. | 2,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A10H STFC R/L 09 | 1222 | 5506 | - | - | 0.6 |
| A12K STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A16M STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A20Q STFC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A25R STFC R/L 16 | 1240 | 5515 | - | - | 3.0 |
| A32S STFC R/L 16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| A40T STFC R/L 16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



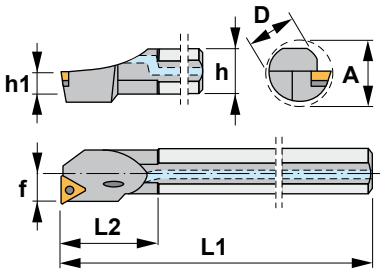
TCMW



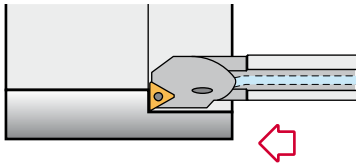


Characteristics:
Set of multipurpose boring bars equipped with triangular positive insert.
For boring bars with negative inserts see Ref. A-PTFN (Page: A197).

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstangen-Satz mit dreikantigen positiven Wendeschneidplatten. Für Bohrstangen mit negativen Wendeschneidplatten siehe A-PTFN (Seite: A197).



# SET STFC 90°

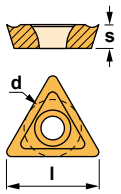
| Reference<br>Bezeichnung | D | d | L1 | L2 | f | A | h | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A0810J STFC R/L 11 | 10 | 8 | 110 | 32 | 7 | 12,5 | 9 | TC.. 1102.. | 0,350 |
| A1012K STFC R/L 11 | 12 | 10 | 125 | 38 | 9 | 15,5 | 11 | TC.. 1102.. | |
| A1216M STFC R/L 11 | 16 | 12 | 150 | 50 | 11 | 19,5 | 15 | TC.. 1102.. | |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A0810J STFC R/L 11 | 1425 | 5507 | 0.9 |
| A1012K STFC R/L 11 | 1225 | 5507 | 0.9 |
| A1216M STFC R/L 11 | 1225 | 5507 | 0.9 |

## TC..

Triangular positive inserts with 7° clearance. A44
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |




TCGT-AL



TCMT



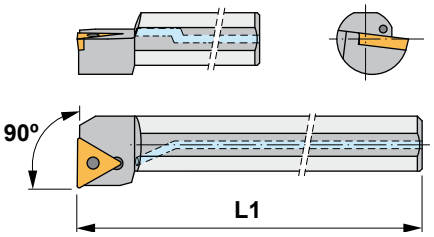
TCMW



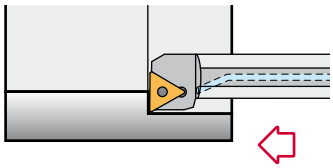


Characteristics:
Carbide boring bar equipped with triangular positive insert.
Range starting at Ø12 mm and minimum bore diameter of 17 mm.

Axial 0°
Radial -6°




Eigenschaften:
Hartmetall-Bohrstange mit dreikantigen positiven Wendeschneidplatten.
Das Sortiment fängt ab Ø12 mm an, für eine 17 mm Mindestbohrung.



## E-STFC 90°

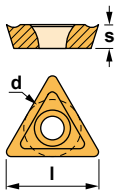
| Reference<br>Bezeichnung | L1 Total length (mm)<br>L1 Gesamtlänge (mm) | Ø min. (mm) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|
| E12Q STFCL 11 | 180 | 17 | TC.. 1102.. | 0,270 |
| E12Q STFCR 11 | 180 | 17 | TC.. 1102.. | 0,270 |
| E16R STFCL 11 | 200 | 21 | TC.. 1102.. | 0,510 |
| E16R STFCR 11 | 200 | 21 | TC.. 1102.. | 0,510 |
| E20S STFCL 11 | 250 | 25 | TC.. 1102.. | 1,000 |
| E20S STFCR 11 | 250 | 25 | TC.. 1102.. | 1,000 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| E12Q STFCL 11 | 1225 | 5507 | 0.9 |
| E12Q STFCR 11 | 1225 | 5507 | 0.9 |
| E16R STFCL 11 | 1225 | 5507 | 0.9 |
| E16R STFCR 11 | 1225 | 5507 | 0.9 |
| E20S STFCL 11 | 1225 | 5507 | 0.9 |
| E20S STFCR 11 | 1225 | 5507 | 0.9 |

### TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |




TCGT-AL



TCMT



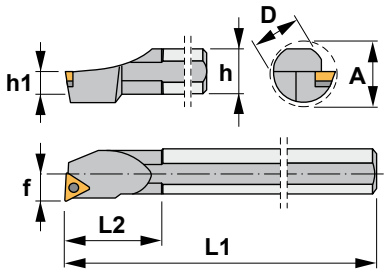
TCMW



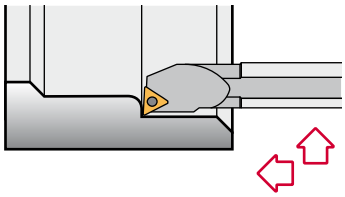


Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
For boring bars with negative inserts see Ref. MTUN (Page: A183).

Axial 0°
Radial -4°




Eigenschaften:
Multifunktions-Bohrstange mit dreikantigen positiven Wendeschneidplatten.
Für Bohrstangen mit negativen Wendeschneidplatten siehe MTUN (Seite: A183).



# STUC 93°

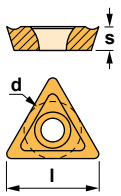
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S12M STUC R/L 11 | 12 | 11 | 5,5 | 150 | 25 | 9 | 16 | TC.. 1102.. | 0,150 |
| S16R STUC R/L 16 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | TC.. 16T3.. | 0,300 |
| S20S STUC R/L 16 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | TC.. 16T3.. | 0,550 |
| S25T STUC R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | TC.. 16T3.. | 0,700 |
| S32U STUC R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | TC.. 16T3.. | 2,050 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S12M STUC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S16R STUC R/L 16 | 1240 | 5515 | - | - | 3.0 |
| S20S STUC R/L 16 | 1240 | 5515 | - | - | 3.0 |
| S25T STUC R/L 16 | 1240 | 5515 | - | - | 3.0 |
| S32U STUC R/L 16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance. A44
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



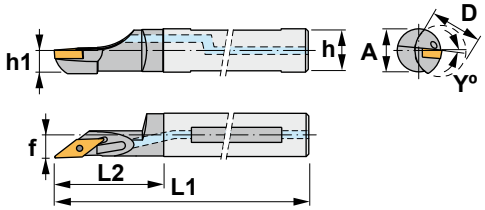
TCMW



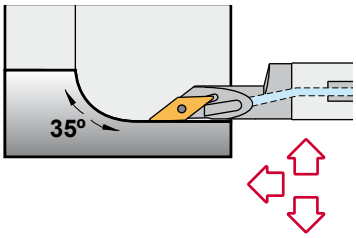


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º). For general applications, roughing, semi-finishing and finishing.

Axial 0º
Radial -6º




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# A-SVJC 93°

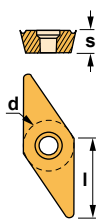
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Yº | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| A16M SVJC R/L 11 | 16 | 15 | 7,5 | 150 | 30 | 2 | 22 | 22 | VC.. 1103.. | 0,190 |
| A20Q SVJC R/L 11 | 20 | 18 | 9,0 | 180 | 35 | 2 | 25 | 25 | VC.. 1103.. | 0,350 |
| A25R SVJC R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 2 | 28 | 28 | VC.. 1604.. | 0,590 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| A16M SVJC R/L 11 | 1225 | 5507 | 0.9 |
| A20Q SVJC R/L 11 | 1225 | 5507 | 0.9 |
| A25R SVJC R/L 16 | 1240 | 5515 | 3.0 |

## VC..

35º rhombic positive inserts with 7º clearance.
Rhombische positive WSP (35º Winkel) mit Freiwinkel 7º. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




VCGT-AL



VCGT-AP

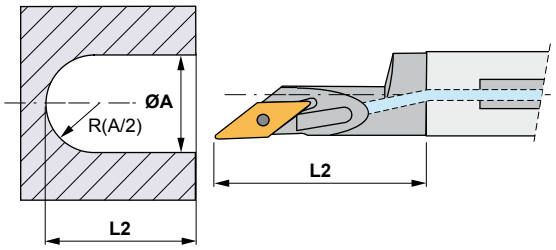


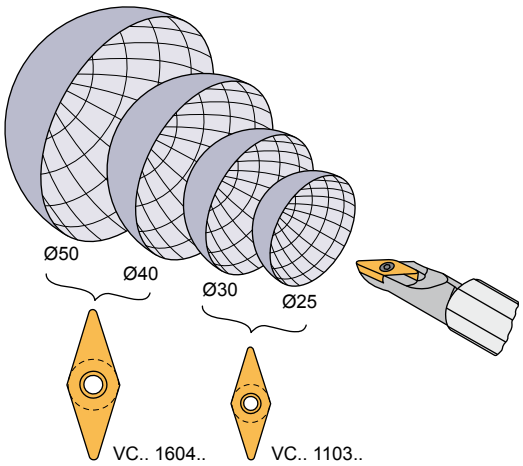
VCMT



# Application of A-SVJC 93º
# Anwendung von A-SVJC 93º

## Application range / Anwendungsbereich



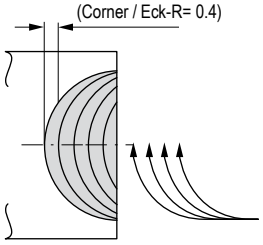




## Machining method / Bearbeitungsmethode

### Case with no existing hole / Ohne vorgebohrte Bohrung

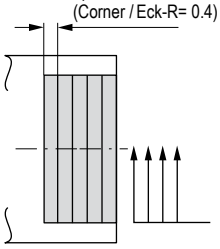
**Spherical machining**
**Kugelförmige Bearbeitung**

ap=0.5 mm
(Corner / Eck-R= 0.4)



**Internal facing**
**Innen-Plandrehen**

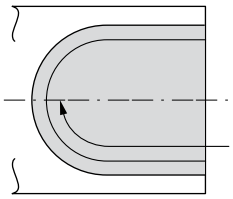
ap=0.5 mm
(Corner / Eck-R= 0.4)



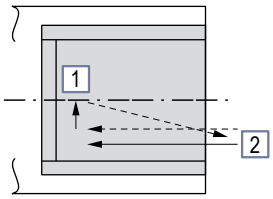
*Note: Feed rate shall be under 0.05 mm/rev at internal facing.
*Bemerkung: Vorschub muß bei Innen-Plandrehen unter 0.05 mm/U sein.

### Finishing / Schlichten

**Spherical machining**
**Kugelförmige Bearbeitung**



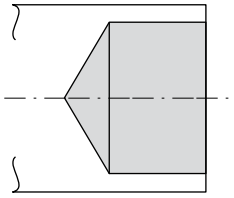
**Internal facing**
**Innen-Plandrehen**



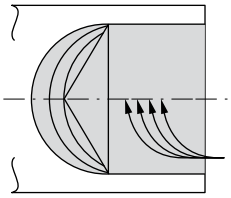

*Machining process / *Bearbeitungsvorgang
1 Finish the internal face first / Zuerst Bohrungsgrund schlichten.
2 Next, finish the internal diameter / Anschließend Bohrungsdurchmesser schlichten.

### Case with drilled hole / Mit vorgebohrte Bohrung

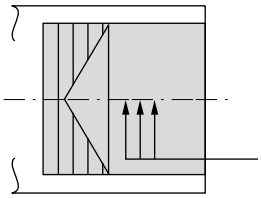
**Drilled hole / Vorgebohrte Bohrung**



**Spherical machining / Kugelförmige Bearbeitung**

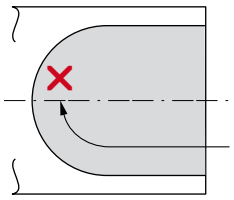


**Internal facing / Innen-Plandrehen**

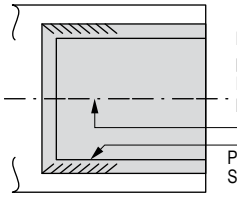


*Note: Feed rate shall be under 0.05 mm/rev at internal facing.
*Bemerkung: Vorschub muß bei Innen-Plandrehen unter 0.05 mm/U sein.

## Caution / Vorsicht

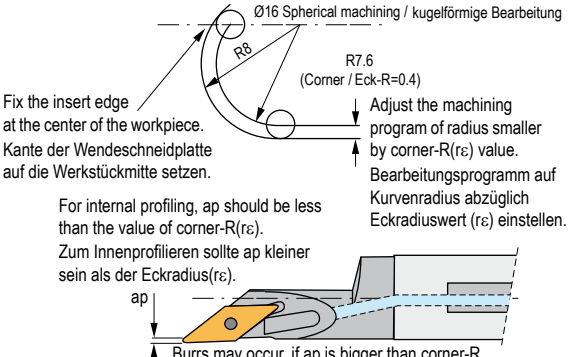


When machining past the center of the workpiece, insert breakage may occur.
Bei Bearbeitung über die Mitte des Werkstücks hinaus kann die Wendeschneidplatte brechen.



Machining of this kind is possible, but the oblique part may be scratched by chips.
Eine solche Bearbeitung ist zwar möglich, jedoch kann Spanschlag die Oberfläche aufrauen.

Poor finish
Schlechte Oberfläche



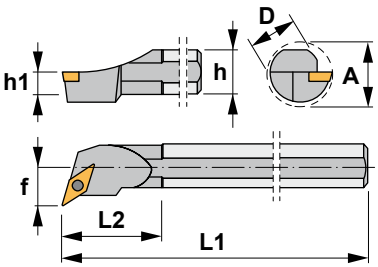


Characteristics:

Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35°).

For general applications, roughing, semi-finishing and finishing.

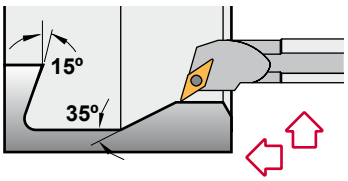
Axial 0°
Radial -6°




Eigenschaften:

Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel).

Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# SVQC 107°30’

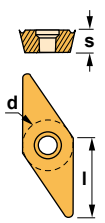
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16R SVQC R/L 11 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | VC.. 1103.. | 0,300 |
| S20S SVQC R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | VC.. 1103.. | 0,550 |
| S16R SVQC R/L 13 | 16 | 15 | 7,5 | 200 | 30 | 13 | 22 | VC.. 1303.. | 0,300 |
| S20S SVQC R/L 13 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | VC.. 1303.. | 0,550 |
| S25T SVQC R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | VC.. 1604.. | 0,700 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S16R SVQC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S20S SVQC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S16R SVQC R/L 13 | 1230 | 5508 | - | - | 1.2 |
| S20S SVQC R/L 13 | 1230 | 5508 | - | - | 1.2 |
| S25T SVQC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance.
Rhombische positive WSP (35° Winkel) mit Freiwinkel 7°. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1303.. | 13,00 | 3,18 | 7,94 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




VCGT-AL



VCGT-AP



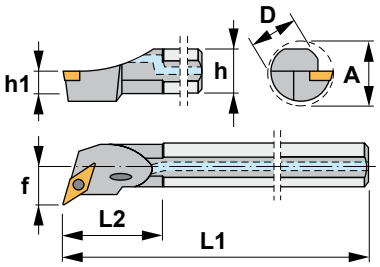
VCMT



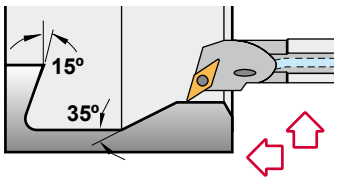


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial -6°




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.




# A-SVQC 107°30'

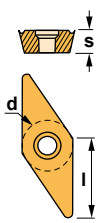
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A16M SVQC R/L 11 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | VC.. 1103.. | 0,200 |
| A20Q SVQC R/L 11 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | VC.. 1103.. | 0,400 |
| A25R SVQC R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | VC.. 1604.. | 0,700 |
| A32S SVQC R/L 16 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | VC.. 1604.. | 1,400 |
| A40T SVQC R/L 16 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | VC.. 1604.. | 2,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A16M SVQC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A20Q SVQC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A25R SVQC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| A32S SVQC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| A40T SVQC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance. A48
Rhombische positive WSP (35° Winkel) mit Freiwinkel 7°.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

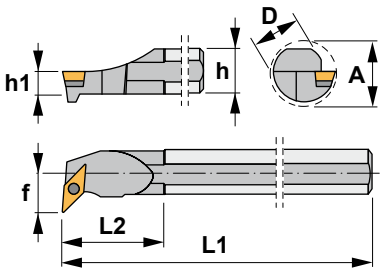



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |

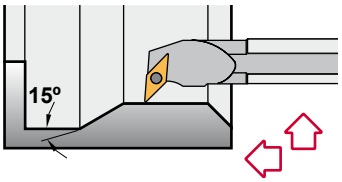


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º).
For boring bars with negative inserts see Ref. MVUN-K (Page: A184).

Axial 0º
Radial -5º




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel) . Für Bohrstangen mit negativen Wendeschneidplatten siehe MVUN-K (Seite: A184).




# SVUB 93°

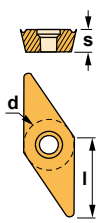
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S25T SVUB R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | VBMT 1604.. | 0,700 |
| S32U SVUB R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | VBMT 1604.. | 2,050 |
| S40V SVUB R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | VBMT 1604.. | 3,750 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S25T SVUB R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| S32U SVUB R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| S40V SVUB R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance.
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



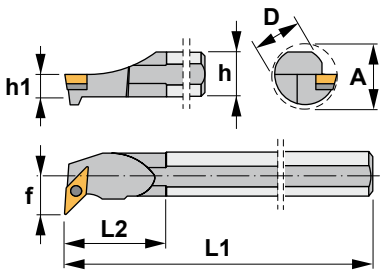

VBMT



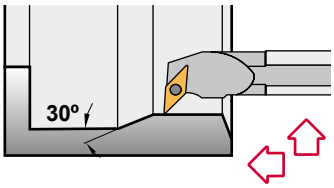


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35°).
For boring bars with negative inserts see Ref. MVUN-K (Page: A184).

Axial 0°
Radial -5°




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel) . Für Bohrstangen mit negativen Wendeschneidplatten siehe MVUN-K (Seite: A184).




# SVUC 93°

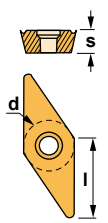
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16R SVUC R/L 11 | 16 | 15 | 7,5 | 200 | 30 | 11 | 20 | VC.. 1103.. | 0,300 |
| S20S SVUC R/L 11 | 20 | 18 | 9,0 | 250 | 35 | 13 | 24 | VC.. 1103.. | 0,550 |
| S25T SVUC R/L 16 | 25 | 23 | 11,5 | 300 | 40 | 17 | 31 | VC.. 1604.. | 0,700 |
| S32U SVUC R/L 16 | 32 | 30 | 15,0 | 350 | 45 | 22 | 39 | VC.. 1604.. | 2,050 |
| S40V SVUC R/L 16 | 40 | 37 | 18,5 | 400 | 50 | 27 | 48 | VC.. 1604.. | 3,750 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| S16R SVUC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S20S SVUC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| S25T SVUC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| S32U SVUC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| S40V SVUC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance.
Rhombische positive WSP (35° Winkel) mit Freiwinkel 7°. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




VCGT-AL



VCGT-AP



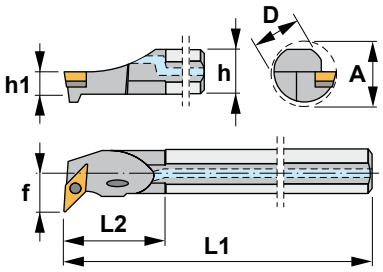
VCMT



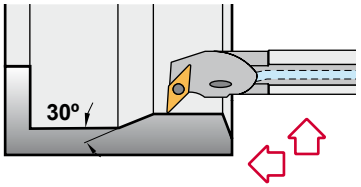


Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35°).
For boring bars with negative inserts see Ref. MVUN-K (Page: A184).

Axial 0°
Radial -5°




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit rhombischen positiven Wendeschneidplatten (35° Winkel). Für Bohrstangen mit negativen Wendeschneidplatten siehe MVUN-K (Seite: A184).




# A-SVUC 93°

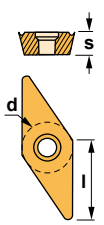
| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A16M SVUC R/L 11 | 16 | 15 | 7,5 | 150 | 30 | 11 | 20 | VC.. 1103.. | 0,200 |
| A20Q SVUC R/L 11 | 20 | 18 | 9,0 | 180 | 35 | 13 | 24 | VC.. 1103.. | 0,400 |
| A25R SVUC R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 17 | 31 | VC.. 1604.. | 0,700 |
| A32S SVUC R/L 16 | 32 | 30 | 15,0 | 250 | 45 | 22 | 39 | VC.. 1604.. | 1,400 |
| A40T SVUC R/L 16 | 40 | 37 | 18,5 | 300 | 50 | 27 | 48 | VC.. 1604.. | 2,650 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A16M SVUC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A20Q SVUC R/L 11 | 1225 | 5507 | - | - | 0.9 |
| A25R SVUC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| A32S SVUC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| A40T SVUC R/L 16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance.
Rhombische positive WSP (35° Winkel) mit Freiwinkel 7°. A48

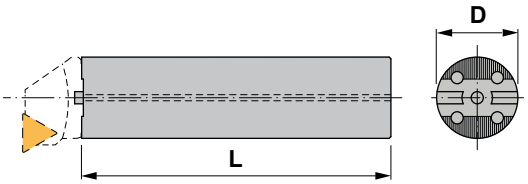
| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |



Characteristics:
Anti-vibration shank with internal coolant.
Max. cutting depth: 7 x Diameter




Eigenschaften:
Schwingungsgedämpfter Schaft mit Innenkühlung.
Maximale Schnittiefe: 7 x Durchmesser

## J..

| Reference Bezeichnung | | D | L | Thread Gewinde | Kg |
|---|---|---|---|---|---|
| J25/300 | 25 | 25 | 300 | 1/4 GAS | 1,200 |
| J32/350 | 32 | 32 | 350 | 3/8 GAS | 2,200 |
| J40/400 | 40 | 40 | 400 | 1/2 GAS | 4,000 |
| J50/550 | 50 | 50 | 550 | 1/2 GAS | 8,500 |
| J60/650 | 60 | 60 | 650 | 3/4 GAS | 14,400 |
| J80/1000 | 60 | 80 | 1000 | 3/4 GAS | 39,500 |
| J100/1200 | 60 | 100 | 1200 | 3/4 GAS | 74,000 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| J25/300 | 1924 | 5025 | 2.0 |
| J32/350 | 1925 | 5003 | 3.0 |
| J40/400 | 1926 | 5004 | 3.5 |
| J50/550 | 1928 | 5005 | 4.0 |
| J60/650 | 1928 | 5005 | 4.0 |
| J80/1000 | 1928 | 5005 | 4.0 |
| J100/1200 | 1928 | 5005 | 4.0 |



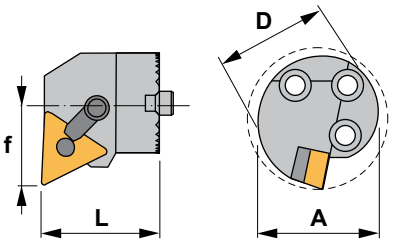
| MTUN 93°-N | PCLN 95°-N | PDUN 93°-N | PWLN 95°-N |
|---|---|---|---|
|  |  |  |  |
| **SCLC 95°-N** | **SDUC 93°-N** | **STFC 90°-N** | **SXFN 90°-N** |
|  |  |  |  |



Characteristics:

Internal turning and profiling boring head equipped with triangular negative double-sided insert.

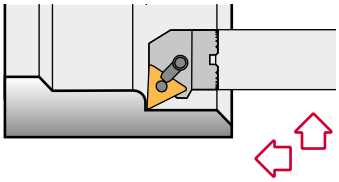
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:

Bohrkopf zum Innen- und Profildrehen mit doppelseitigen dreikantigen negativen Wendeschneidplatten.

Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# MTUN 93°-N

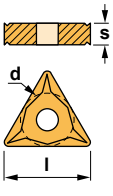
| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A32X MTUN R/L 16-N | 32 | 30 | 22 | 40 | TNM.. 1604.. | 0,150 |
| A40X MTUN R/L 16-N | 40 | 30 | 27 | 50 | TNM.. 1604.. | 0,300 |
| A50X MTUN R/L 16-N | 50 | 30 | 35 | 63 | TNM.. 1604.. | 0,650 |
| A50X MTUN R/L 22-N | 50 | 40 | 35 | 63 | TNM.. 2204.. | 0,650 |
| A60X MTUN R/L 22-N | 60 | 40 | 43 | 80 | TNM.. 2204.. | 0,850 |

| Reference<br>Bezeichnung | | | 1 | | | | | 2 | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|---|---|---|
| A32X MTUN R/L 16-N | 2613 | - | 5003 | ITSN-322 | 1086 | 1665 | - | 5002 | 3.0 | 1.4 |
| A40X MTUN R/L 16-N | 2613 | - | 5003 | ITSN-322 | 1086 | 1665 | - | 5002 | 3.0 | 1.4 |
| A50X MTUN R/L 16-N | 2613 | - | 5003 | ITSN-322 | 1086 | 1665 | - | 5002 | 3.0 | 1.4 |
| A50X MTUN R/L 22-N | - | 2024 | 5005 | ITSN-433 | 1394 | - | 1661 | - | 4.0 | - |
| A60X MTUN R/L 22-N | - | 2024 | 5005 | ITSN-433 | 1394 | - | 1661 | - | 4.0 | - |

## TNM..

Triangular negative inserts. Dreikantige negative WSP. A45-46

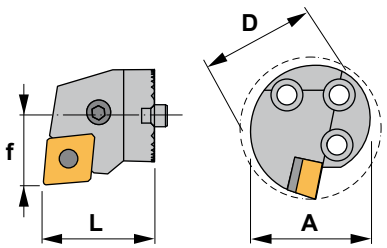
| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |



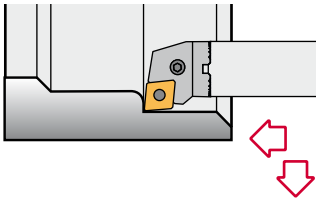

| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |



Characteristics:
Boring head for internal turning applications equipped with rhombic negative inserts (angle 80º). For low powered machines and small pieces choose boring bars Ref. A-SCLC (Page: A208).




Eigenschaften:
Bohrkopf zum Innendrehen mit rhombischen negativen Wendeschneidplatten (80° Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen A-SCLC (Seite: A208).



# PCLN 95°-N

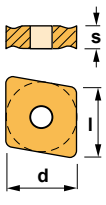
| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A25X PCLN R/L 12-N | 25 | 25 | 17 | 32 | CN.. 1204.. | 0,050 |
| A32X PCLN R/L 12-N | 32 | 30 | 22 | 40 | CN.. 1204.. | 0,150 |
| A40X PCLN R/L 12-N | 40 | 30 | 27 | 50 | CN.. 1204.. | 0,300 |
| A50X PCLN R/L 12-N | 50 | 30 | 35 | 63 | CN.. 1204.. | 0,600 |
| A50X PCLN R/L 16-N | 50 | 40 | 35 | 63 | CN.. 1606.. | 0,600 |
| A60X PCLN R/L 16-N | 60 | 40 | 43 | 80 | CN.. 1606.. | 0,800 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A25X PCLN R/L 12-N | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| A32X PCLN R/L 12-N | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| A40X PCLN R/L 12-N | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| A50X PCLN R/L 12-N | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| A50X PCLN R/L 16-N | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| A60X PCLN R/L 16-N | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |




CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC

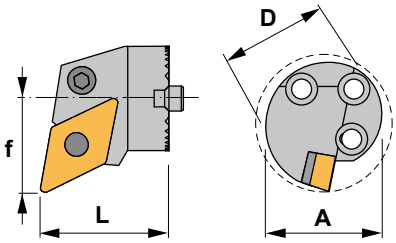


CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM

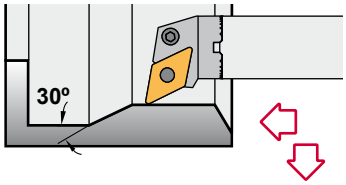




Characteristics:
Boring head for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º). For low powered machines and small pieces choose boring bars Ref. A-SDUC (Page: A218).




Eigenschaften:
Bohrkopf zum Innen- und Profildrehen mit rhombischen negativen Wendeschneidplatten (55° Winkel).
Für Niederleistungsmaschinen und kleine Werkstücke, wählen Sie Bohrstangen A-SDUC (Seite: A218).




# PDUN 93°-N

| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A32X PDUN R/L 15-N | 32 | 30 | 22 | 40 | DN.. 1506.. | 0,150 |
| A40X PDUN R/L 15-N | 40 | 30 | 27 | 50 | DN.. 1506.. | 0,300 |
| A50X PDUN R/L 15-N | 50 | 40 | 35 | 63 | DN.. 1506.. | 0,600 |
| A60X PDUN R/L 15-N | 60 | 40 | 43 | 80 | DN.. 1506.. | 0,800 |

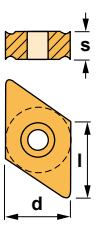
| Reference<br>Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| A32X PDUN R/L 15-N | 8415 | 1648 | 5003 | 3715 | 4112 | 0012 | 3725 4135 | 3.0 |
| A40X PDUN R/L 15-N | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 4135 | 3.0 |
| A50X PDUN R/L 15-N | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 4135 | 3.0 |
| A60X PDUN R/L 15-N | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 4135 | 3.0 |

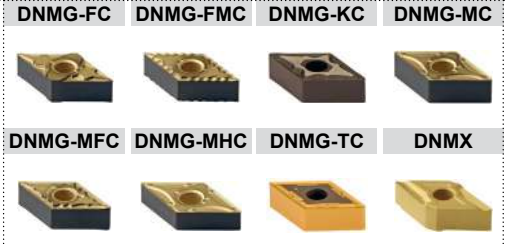
For DNM.. 1504.. inserts
Für Wendeschneidplatten DNM.. 1504..

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

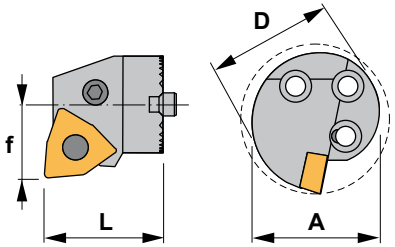
| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



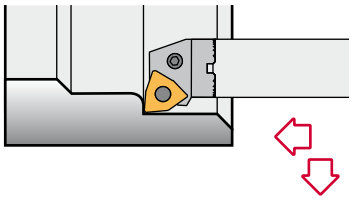





Characteristics:
Boring head for internal turning applications equipped with trigon negative inserts (angle 80°). For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Bohrkopf zum Innendrehen mit negativen Trigon Wendeschneidplatten (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# PWLN 95°-N

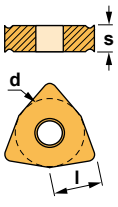
| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A32X PWLN R/L 08-N | 32 | 30 | 22 | 40 | WNM.. 0804.. | 0,150 |
| A40X PWLN R/L 08-N | 40 | 30 | 27 | 50 | WNM.. 0804.. | 0,300 |
| A50X PWLN R/L 08-N | 50 | 40 | 35 | 63 | WNM.. 0804.. | 0,600 |
| A60X PWLN R/L 08-N | 60 | 40 | 43 | 80 | WNM.. 0804.. | 0,800 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| A32X PWLN R/L 08-N | 8312 | 1648 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| A40X PWLN R/L 08-N | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| A50X PWLN R/L 08-N | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |
| A60X PWLN R/L 08-N | 8012 | 1608 | 5003 | 3008 | 4112 | 0012 | 3.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

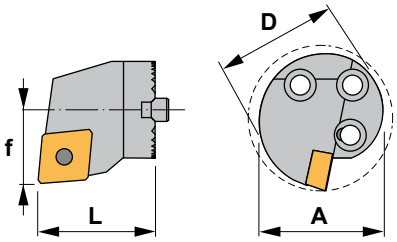
| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |



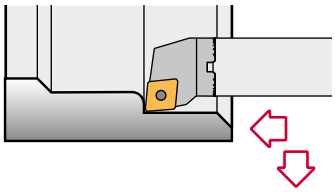

| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |



Characteristics:
Multipurpose boring head equipped with rhombic positive insert (angle 80°).
For boring bars with negative inserts see Ref. A-PCLN (Page: A189).




Eigenschaften:
Multifunktions-Bohrkopf mit rhombischen positiven Wendeschneidplatten (80° Winkel).
Für Bohrstangen mit negativen Wendeschneidplatten, siehe A-PCLN (Seite: A189).



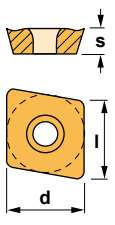
# SCLC 95°-N

| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A25X SCLC R/L 09-N | 25 | 25 | 17 | 32 | CC.. 09T3.. | 0,070 |
| A32X SCLC R/L 12-N | 32 | 30 | 22 | 40 | CC.. 1204.. | 0,150 |
| A40X SCLC R/L 12-N | 40 | 30 | 27 | 50 | CC.. 1204.. | 0,250 |
| A50X SCLC R/L 12-N | 50 | 40 | 35 | 63 | CC.. 1204.. | 0,650 |
| A60X SCLC R/L 12-N | 60 | 40 | 43 | 80 | CC.. 1204.. | 0,850 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A25X SCLC R/L 09-N | 1440 | 5515 | - | - | 3.0 |
| A32X SCLC R/L 12-N | 1540 | 5517 | 3614 | 1760 | 3.0 |
| A40X SCLC R/L 12-N | 1540 | 5517 | 3614 | 1760 | 3.0 |
| A50X SCLC R/L 12-N | 1540 | 5517 | 3614 | 1760 | 3.0 |
| A60X SCLC R/L 12-N | 1540 | 5517 | 3614 | 1760 | 3.0 |

**CC..** 80° rhombic positive inserts with 7° clearance. 80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL | CCGT-AP

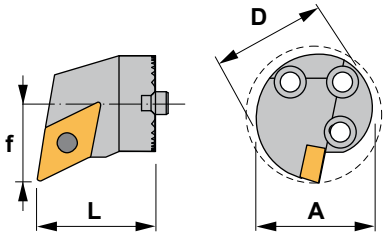



CCMT | CCMW

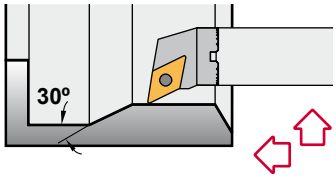





Characteristics:
Multipurpose profiling boring head equipped with rhombic positive insert (angle 55°).
For boring bars with negative inserts see Ref. A-PDUN (Page: A191).




Eigenschaften:
Multifunktions-Bohrkopf zum Profildrehen mit rhombischen positiven Wendeschneidplatten (55° Winkel).
Für Bohrstangen mit negativen Wendeschneidplatten siehe A-PDUN (Seite: A191).




# SDUC 93°-N

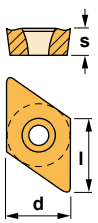
| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A25X SDUC R/L 11-N | 25 | 25 | 17 | 32 | DC.. 11T3.. | 0,070 |
| A32X SDUC R/L 11-N | 32 | 30 | 22 | 40 | DC.. 11T3.. | 0,150 |
| A40X SDUC R/L 11-N | 40 | 30 | 27 | 50 | DC.. 11T3.. | 0,250 |
| A50X SDUC R/L 11-N | 50 | 40 | 35 | 63 | DC.. 11T3.. | 0,650 |
| A60X SDUC R/L 11-N | 60 | 40 | 43 | 80 | DC.. 11T3.. | 0,850 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A25X SDUC R/L 11-N | 1240 | 5515 | - | - | 3.0 |
| A32X SDUC R/L 11-N | 1335 | 5516 | 3714 | 1750 | 3.0 |
| A40X SDUC R/L 11-N | 1335 | 5516 | 3714 | 1750 | 3.0 |
| A50X SDUC R/L 11-N | 1335 | 5516 | 3714 | 1750 | 3.0 |
| A60X SDUC R/L 11-N | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT

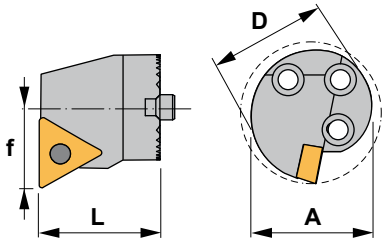


DCMW

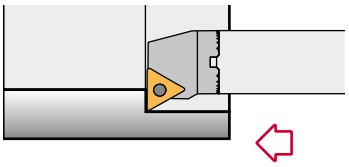




Characteristics:
Multipurpose boring head equipped with triangular positive insert.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Bohrkopf mit dreikantigen positiven Wendeschneidplatten.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten.



# STFC 90°-N

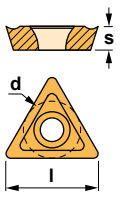
| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A25X STFC R/L 16-N | 25 | 25 | 17 | 32 | TC.. 16T3.. | 0,070 |
| A32X STFC R/L 16-N | 32 | 30 | 22 | 40 | TC.. 16T3.. | 0,150 |
| A40X STFC R/L 16-N | 40 | 30 | 27 | 50 | TC.. 16T3.. | 0,250 |
| A50X STFC R/L 16-N | 50 | 40 | 35 | 63 | TC.. 16T3.. | 0,650 |
| A60X STFC R/L 16-N | 60 | 40 | 43 | 80 | TC.. 16T3.. | 0,850 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| A25X STFC R/L 16-N | 1240 | 5515 | - | - | 3.0 |
| A32X STFC R/L 16-N | 1335 | 5516 | 3414 | 1750 | 3.0 |
| A40X STFC R/L 16-N | 1335 | 5516 | 3414 | 1750 | 3.0 |
| A50X STFC R/L 16-N | 1335 | 5516 | 3414 | 1750 | 3.0 |
| A60X STFC R/L 16-N | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT

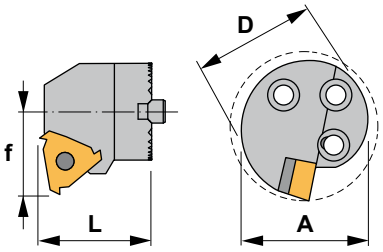


TCMW

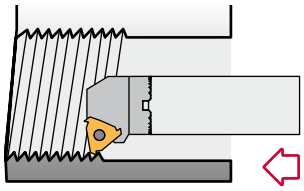




Characteristics:
Boring head for internal threading equipped with triangular negative insert.




Eigenschaften:
Multifunktions-Bohrkopf zum Gewindedrehen mit dreikantigen negativen Wendeschneidplatten.



# SXFN 90°-N

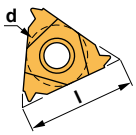
| Reference<br>Bezeichnung | D | L | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| A25X SXFN R/L 16-N | 25 | 25 | 16,30 | 32 | 16 NR/L.. | 0,070 |
| A32X SXFN R/L 16-N | 32 | 30 | 19,60 | 40 | 16 NR/L.. | 0,150 |
| A32X SXFN R/L 22-N | 32 | 32 | 21,50 | 40 | 22 NR/L.. | 0,150 |
| A40X SXFN R/L 22-N | 40 | 32 | 25,80 | 50 | 22 NR/L.. | 0,250 |
| A50X SXFN R/L 22-N | 50 | 40 | 31,40 | 63 | 22 NR/L.. | 0,650 |
| A60X SXFN R/L 22-N | 60 | 40 | 36,40 | 80 | 22 NR/L.. | 0,850 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| A25X SXFN R/L 16-N | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| A32X SXFN R/L 16-N | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| A32X SXFN R/L 22-N | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| A40X SXFN R/L 22-N | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| A50X SXFN R/L 22-N | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| A60X SXFN R/L 22-N | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |

## N R/L

Triangular negative inserts for internal threading. C04, C06-07, C09-10
Dreikantige negative WSP zum Innen-Gewindedrehen.

| Reference / Bez. | l | d |
|---|---|---|
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |




N R/L

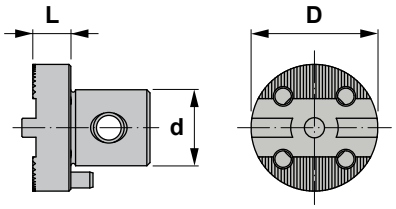


N R/L TD





Characteristics:
Adaptor for anti-vibration shank with internal coolant.
To adapt the new boring heads to the old model of anti-vibration shanks.




Eigenschaften:
Adapter für schwingungsgedämpfte Schäfte mit Innenkühlung.
Um die neue Bohrköpfe an das alte Modell der schwingungsgedämpften Schäfte zu montieren.

## J..-A..

| Reference Bezeichnung | D | L | d | Kg |
|---|---|---|---|---|
| J25-A25 | 25 | 10 | 15 | 0,060 |
| J32-A32 | 32 | 10 | 20 | 0,100 |
| J40-A40 | 40 | 12 | 24 | 0,180 |
| J50-A50 | 54 | 16 | 28 | 0,350 |
| J60-A60 | 60 | 16 | 28 | 0,460 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| J25-A25 | 1924 | 5025 | 2.0 |
| J32-A32 | 1925 | 5003 | 3.0 |
| J40-A40 | 1926 | 5004 | 3.5 |
| J50-A50 | 1928 | 5005 | 4.0 |
| J60-A60 | 1928 | 5005 | 4.0 |



| MTUN 93°-N | PCLN 95°-N | PDUN 93°-N | PWLN 95°-N |
|---|---|---|---|
|  |  |  |  |
| **SCLC 95°-N** | **SDUC 93°-N** | **STFC 90°-N** | **SXFN 90°-N** |
|  |  |  |  |

## *Nominal cutting speed and feed values for boring bars*

| Material P | HB | Condition | Cutting speed m/min. PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.3-0.6-1.2 | | 0.1-0.3 | 0.1-0.4-0.8 | 0.1-0.4-0.8 | 0.2-0.5-1.2 | |
| Unalloyed steel | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 150 115 80<br>145 105 70<br>115 90 65 | | 350 280<br>270 230<br>240 190 | 480 345 250<br>440 315 230<br>385 275 200 | 440 300 205<br>400 275 190<br>350 240 165 | 330 230 110<br>300 210 150<br>260 185 130 | 1900<br>2100<br>2250 |
| Low alloyed steel | 180<br>275<br>300<br>350 | Annealed<br>Hardened<br>Hardened<br>Hardened | 90 70 45<br>65 45 30<br>60 40 25<br>50 35 20 | | 300 260<br>220 140<br>230 180<br>220 140 | 380 265 195<br>260 180 130<br>240 165 120<br>210 145 105 | 320 220 170<br>215 150 115<br>200 135 105<br>170 120 90 | 200 140 100<br>140 100 70<br>125 90 60<br>110 75 55 | 2100<br>2600<br>2700<br>2850 |
| High alloyed steel | 200<br>325 | Annealed<br>Hardened | 80 60 45<br>40 25 20 | | 200 160<br>200 160 | 350 230 170<br>170 110 | 280 185 135<br>120 80 60 | 175 115 80<br>85 55 40 | 2600<br>3900 |
| Stainless steel | 200 | Martensitic / ferritic | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Steel castings | 180<br>200<br>225 | Unalloyed<br>Low alloyed<br>High alloyed | 60 50 35<br>50 45 30<br>40 30 20 | | 300 260<br>230 180<br>220 140 | 260 185 145<br>230 160 120<br>190 130 95 | 230 160 120<br>190 125 85<br>170 115 80 | 135 105 75<br>120 90 60<br>95 70 55 | 2000<br>2500<br>2700 |

| Material M | HB | Condition | Cutting speed m/min. PM25 | NC25 | TN15 | TN20 | TN30 | TN35 | TS15 | TS20 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.1-0.3 | 0.1-0.3 | 0.1-0.4-0.8 | | 0.2-0.4-0.6 | 0.2-0.4-0.6 | 0.1-0.3 | | |
| Stainless steel annealed | 180 | Austenitic Ni > 8%, Cr 12-25% austenitic/ ferritic, austenitic/ ferritic, low S | | 240 200<br>160 130<br>160 130 | 180 150 120<br>180 150 120<br>180 150 120 | | 190 160 130<br>190 160 100<br>140 110 | 190 160 130<br>190 160 130<br>160 130 100 | 240 200<br>160 130<br>160 130 | 120 180<br>130 220<br>120 180 | 2450 |

| Material K | HB | Condition | Cutting speed m/min. KM15 | NC25 | TN15 | TN20 | TK15 | ZR10 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | |
| Hardened steel | 350<br>250 | Hardened steel<br>Manganese steel 12% | 27 16 10<br>65 40 16 | | 175 145 100<br>120 85 50 | | 180 150 110<br>120 90 60 | | 4500<br>3600 |
| Malleable cast iron | 130<br>230 | Ferritic<br>Pearlitic | 105 75 45<br>80 60 30 | | 225 150 90<br>155 95 55 | | 250 180 100<br>160 100 60 | | 1100<br>1100 |
| Cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | 135 95 60<br>95 65 40 | 300 200<br>250 180 | 165 110 70<br>120 90 55 | | 180 120 80<br>140 105 60 | | 1100<br>1500 |
| Nodular SG iron | 160<br>250 | Ferritic<br>Pearlitic | 115 80 45<br>80 50 30 | 250 180<br>180 120 | | | 220 180 100<br>150 100 50 | | 1100<br>1800 |
| Chilled cast iron | 400 | | 17 11 | | | | 17 11 | | 3000 |

| Material N | HB | Condition | Cutting speed m/min. KM15 | TK15 | NC25 | TN15 | TN20 | ZR10 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | |
| Aluminium alloys | 60<br>100 | Non heat treatable<br>Heat treatable | 1750 1280 800<br>510 370 250 | | | | | 1750 1280 800<br>510 370 250 | 500<br>800 |
| Aluminium alloys (cast) | 75<br>90 | Non heat treatable<br>Heat treatable | 460 285 175<br>300 180 110 | | | | | 460 285 175<br>300 180 110 | 750<br>900 |
| Bronze-brass alloys | 110<br>90<br>100 | Lead alloys, Pb>1%<br>Brass and bronze<br>Inc. electrolytic copper | 610 430 295<br>310 250 195<br>225 160 115 | | | | | 610 430 295<br>310 250 195<br>225 160 115 | 700<br>750<br>1750 |
| Other materials | | Hard plastics<br>Fibre<br>Hard rubber | 380 240<br>190 120<br>225 160 | | | | | 380 240<br>190 120<br>225 160 | |

| Material S | HB | Condition | Cutting speed m/min. KM15 | NC25 | TN15 | TS15 | TS20 | ZR10 | Specific cutting force Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | | 0.2-0.5-1.0 | |
| Heat-resistant alloys | | Fe-base<br>Nickel or cobalt base<br>Nickel or cobalt base<br>Nickel or cobalt base | | | | | 80 120<br>60 100<br>35 90<br>30 50 | | |
| Titanium alloys | | Titanium | | | | | 70 120 | | |

A

## Nennschnittgeschwindigkeit und Vorschub-Werte für Bohrstangen

| Materialien P | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. PM25 | PM40 | NC25 | TN15 | TN20 | TN30 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.3-0.6-1.2 | | 0.1-0.3 | 0.1-0.4-0.8 | 0.1-0.4-0.8 | 0.2-0.5-1.2 | |
| Unlegierter Stahl | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 150 115 80<br>145 105 70<br>115 90 65 | | 350 280<br>270 230<br>240 190 | 480 345 250<br>440 315 230<br>385 275 200 | 440 300 205<br>400 275 190<br>350 240 165 | 330 230 110<br>300 210 150<br>260 185 130 | 1900<br>2100<br>2250 |
| Niedriglegierter Stahl | 180<br>275<br>300<br>350 | Geglüht<br>Vergütet<br>Vergütet<br>Vergütet | 90 70 45<br>65 45 30<br>60 40 25<br>50 35 20 | | 300 260<br>220 140<br>230 180<br>220 140 | 380 265 195<br>260 180 130<br>240 165 120<br>210 145 105 | 320 220 170<br>215 150 115<br>200 135 105<br>170 120 90 | 200 140 100<br>140 100 70<br>125 90 60<br>110 75 55 | 2100<br>2600<br>2700<br>2850 |
| Hochlegierter Stahl | 200<br>325 | Geglüht<br>Vergütet | 80 60 45<br>40 25 20 | | 200 160<br>200 160 | 350 230 170<br>170 110 | 280 185 135<br>120 80 60 | 175 115 80<br>85 55 40 | 2600<br>3900 |
| Rostfreier Stahl | 200 | Martensitisch/<br>Ferritisch | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Stahlguß | 180<br>200<br>225 | Unlegiert<br>Niedriglegiert<br>Hochlegiert | 60 50 35<br>50 45 30<br>40 30 20 | | 300 260<br>230 180<br>220 140 | 260 185 145<br>230 160 120<br>190 130 95 | 230 160 120<br>190 125 85<br>170 115 80 | 135 105 75<br>120 90 60<br>95 70 55 | 2000<br>2500<br>2700 |

| Materialien M | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. PM25 | NC25 | TN15 | TN20 | TN30 | TN35 | TS15 | TS20 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.1-0.3 | 0.1-0.3 | 0.1-0.4-0.8 | | 0.2-0.4-0.6 | 0.2-0.4-0.6 | 0.1-0.3 | | |
| Rostfreier Stahl, geglüht | 180 | Austenitisch Ni > 8%, Cr 12-25% Austenitisch/ Ferritisch, Austenitisch/ Ferritisch, niedriger S-Anteil | | 240 200<br>160 130<br>160 130 | 180 150 120<br>180 150 120<br>180 150 120 | | 190 160 130<br>190 160 100<br>140 110 | 190 160 130<br>190 160 130<br>160 130 100 | 240 200<br>160 130<br>160 130 | 120 180<br>130 220<br>120 180 | 2450 |

| Materialien K | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. KM15 | NC25 | TN15 | TN20 | TK15 | ZR10 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | |
| Gehärteter Stahl | 350<br>250 | Vergüteter Stahl<br>Mangan-Stahl 12% | 27 16 10<br>65 40 16 | | 175 145 100<br>120 85 50 | | 180 150 110<br>120 90 60 | | 4500<br>3600 |
| Temperguß | 130<br>230 | Ferritisch<br>Perlitisch | 105 75 45<br>80 60 30 | | 225 150 90<br>155 95 55 | | 250 180 100<br>160 100 60 | | 1100<br>1100 |
| Guß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 135 95 60<br>95 65 40 | 300 200<br>250 180 | 165 110 70<br>120 90 55 | | 180 120 80<br>140 105 60 | | 1100<br>1500 |
| SG-Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | 115 80 45<br>80 50 30 | 250 180<br>180 120 | | | 220 180 100<br>150 100 50 | | 1100<br>1800 |
| Kaltverfestigender Guß | 400 | | 17 11 | | | | 17 11 | | 3000 |

| Materialien N | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. KM15 | TK15 | NC25 | TN15 | TN20 | ZR10 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | |
| Aluminium-Legierungen | 60<br>100 | Nicht warmbehandelbar<br>Warmbehandelbar | 1750 1280 800<br>510 370 250 | | | | | 1750 1280 800<br>510 370 250 | 500<br>800 |
| Gegossene Aluminium-Legierungen | 75<br>90 | Nicht warmbehandelbar<br>Warmbehandelbar | 460 285 175<br>300 180 110 | | | | | 460 285 175<br>300 180 110 | 750<br>900 |
| Bronze- und Messinglegierungen | 110<br><br>90<br>100 | Bleilegierungen, Pb>1%<br>Messing, Bronze<br>Elektrolytkupfer | 610 430 295<br>310 250 195<br>225 160 115 | | | | | 610 430 295<br>310 250 195<br>225 160 115 | 700<br>750<br>1750 |
| Andere Materialien | | Hartkunststoff<br>Faser<br>Hartgummi | 380 240<br>190 120<br>225 160 | | | | | 380 240<br>190 120<br>225 160 | |

| Materialien S | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. KM15 | NC25 | TN15 | TS15 | TS20 | ZR10 | Spezifische Schnittkraft Kc 0,4 |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | | | 0.2-0.5-1.0 | |
| Warmfeste Legierungen | | Fe-Basis<br>Nickel- und Kobalthaltig<br>Nickel- und Kobalthaltig<br>Nickel- und Kobalthaltig | | | | | 80 120<br>60 100<br>35 90<br>30 50 | | |
| Titan-Legierungen | | Titan | | | | | 70 120 | | |



# CARTRIDGES
# KURZKLEMMHALTER

Technical information A250-251
Technische Auskünfte

Code system (ISO) A252
Kodifizierung (ISO)

Applications index A253
Anwendungen

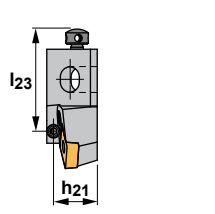
Lever lock cartridges A254-258
Kurzklemmhalter mit Kniehebel

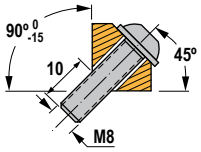
Top clamp cartridges A259-262
Kurzklemmhalter mit oberer Pratze

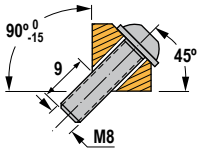
Center screw cartridges A263-267
Kurzklemmhalter mit Zentralschraube

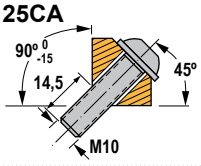
## *Assembly dimensions*
## *Einbauabmessungen*

| Cartridge size<br>Abmessungen des Kurzklemmhalters | Cartridge code<br>Bezeichnung | Dimensions / Abmessungen, mm | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $K_r$ | $b_c$ | $h_1$ | $h_{21}$ | $l_8$ | $l_{21}$ | $l_{22}$ | $l_{23}$ | $D_{m1}$ min | $D_{m2}$ min | R max | ch max |
| **12CA** | PSKN R/L 12CA-12 | 75° | 14,0 | 12 | 16,0 | 35,0 | 36,5 | 56,5 | 52,0 | 50 | - | 5,0 | 0,4 |
| | PSSN R/L 12CA-12 | 45° | 14,0 | 12 | 16,0 | 27,0 | 32,0 | 52,0 | 40,5 | 50 | - | 5,0 | 0,4 |
| | PTFN R/L 12CA-16 | 90° | 14,0 | 12 | 16,0 | 35,0 | 33,0 | 53,0 | 49,0 | 50 | - | 5,0 | 0,4 |
| | PTGN R/L 12CA-16 | 90° | 14,0 | 12 | 16,0 | 35,0 | 30,5 | 50,5 | 45,0 | 50 | 75 | 5,0 | 0,4 |
| | PTSN R/L 12CA-16 | 45° | 14,0 | 12 | 16,0 | 27,0 | 33,5 | 53,5 | 49,0 | 50 | - | 5,0 | 0,4 |
| | PTTN R/L 12CA-16 | 60° | 14,0 | 12 | 16,0 | 35,0 | 30,5 | 50,5 | 49,0 | 50 | 75 | 5,0 | 0,4 |
| | PTWN R/L 12CA-16 | 60° | 14,0 | 12 | 16,0 | 27,0 | 30,5 | 50,5 | 46,0 | 50 | - | 5,0 | 0,4 |
| **16CA** | PCFN R/L 16CA-12 | 90° | 17,5 | 16 | 20,5 | 38,0 | 34,0 | 59,0 | 55,0 | 55 | - | 6,0 | 0,4 |
| | PCLN R/L 16CA-12 | 95° | 17,5 | 16 | 20,5 | 38,0 | 32,0 | 57,0 | 54,0 | 55 | 75 | 6,0 | 0,4 |
| | PSKN R/L 16CA-12 | 75° | 17,5 | 16 | 20,5 | 38,0 | 38,5 | 63,5 | 55,0 | 55 | - | 6,0 | 0,4 |
| | PSRN R/L 16CA-12 | 75° | 19,0 | 16 | 20,5 | 38,0 | 27,5 | 52,5 | 51,0 | 60 | 75 | 6,0 | 0,4 |
| | PSSN R/L 16CA-12 | 45° | 17,0 | 16 | 20,5 | 28,0 | 31,5 | 56,5 | 41,0 | 55 | 75 | 6,0 | 0,4 |
| | PTFN R/L 16CA-16 | 90° | 17,5 | 16 | 21,5 | 38,0 | 35,0 | 60,0 | 54,0 | 55 | - | 6,0 | 0,4 |
| | PTGN R/L 16CA-16 | 90° | 18,5 | 16 | 20,5 | 38,0 | 32,0 | 57,0 | 55,0 | 60 | 75 | 6,0 | 0,4 |
| | PTSN R/L 16CA-16 | 45° | 17,0 | 16 | 20,5 | 28,0 | 32,5 | 57,5 | 54,0 | 55 | - | 6,0 | 0,4 |
| | PTTN R/L 16CA-16 | 60° | 15,3 | 16 | 20,5 | 25,0 | 36,0 | 61,0 | 54,0 | 55 | 75 | 6,0 | 0,4 |
| | PTWN R/L 16CA-16 | 60° | 19,5 | 16 | 21,0 | 28,0 | 36,0 | 61,0 | 54,0 | 55 | 75 | 6,0 | 0,4 |
| **20CA** | PCFN R/L 20CA-12 | 90° | 16,0 | 20 | 26,0 | 40,0 | - | - | 61,0 | - | - | 6,0 | 0,4 |
| | PCLN R/L 20CA-12 | 95° | 15,6 | 20 | 25,0 | 40,0 | - | - | 61,0 | - | - | 6,0 | 0,4 |
| | PSKN R/L 20CA-12 | 75° | 16,5 | 20 | 26,0 | 40,0 | 41,0 | 71,0 | 64,0 | - | - | 6,0 | 0,4 |
| | PSRN R/L 20CA-12 | 75° | 21,5 | 20 | 25,0 | 40,0 | 33,0 | 63,0 | 68,0 | - | 90 | 6,0 | 0,4 |
| | PSSN R/L 20CA-12 | 45° | 18,2 | 20 | 27,0 | 30,0 | 35,0 | 65,0 | 60,0 | 70 | - | 6,0 | 0,4 |
| | PTFN R/L 20CA-22 | 90° | 15,5 | 20 | 27,0 | 40,0 | 37,0 | 67,0 | 61,0 | 70 | - | 6,0 | 0,4 |
| | PTGN R/L 20CA-22 | 90° | 16,0 | 20 | 25,0 | 40,0 | 32,5 | 62,5 | 56,7 | 70 | 90 | 6,0 | 0,4 |
| | PTSN R/L 20CA-22 | 45° | 15,5 | 20 | 25,0 | 30,0 | 37,0 | 67,0 | 62,0 | 70 | - | 6,0 | 0,4 |
| | PTTN R/L 20CA-22 | 60° | 18,1 | 20 | 26,0 | 22,5 | - | - | 61,5 | - | - | 6,0 | 0,4 |
| | PTWN R/L 20CA-22 | 60° | 17,4 | 20 | 26,0 | 29,6 | - | - | 61,0 | - | - | 6,0 | 0,4 |
| **25CA** | PCFN R/L 25CA-16 | 90° | 24,0 | 25 | 32,9 | 50,0 | - | - | 88,5 | - | - | 8,0 | 0,7 |
| | PCLN R/L 25CA-16 | 95° | 24,6 | 25 | 32,9 | 50,0 | 41,5 | 91,5 | 90,6 | 100 | 115 | 8,0 | 0,7 |
| | PSKN R/L 25CA-15 | 75° | 24,0 | 25 | 31,9 | 49,0 | - | - | 93,5 | - | - | 8,0 | 0,7 |
| | PTFN R/L 25CA-22 | 90° | 21,5 | 25 | 32,9 | 50,0 | - | - | 88,5 | - | - | 8,0 | 0,7 |
| | PTSN R/L 25CA-22 | 45° | 23,7 | 25 | 32,9 | 39,0 | - | - | 72,8 | - | - | 8,0 | 0,7 |







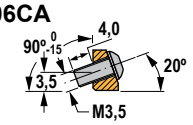
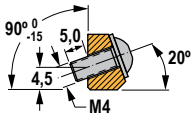
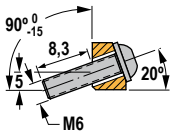
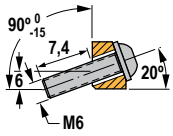
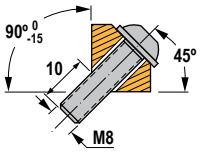
Axial adjustment = ±1 mm
Radial adjustment = +0,5 mm

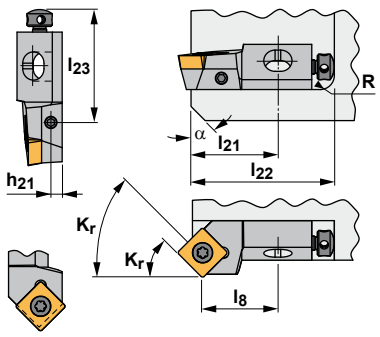
Axiale Anpassung = ±1 mm
Radiale Anpassung = +0,5 mm

Axial adjustment = +0,5 mm
Radial adjustment = ±1 mm

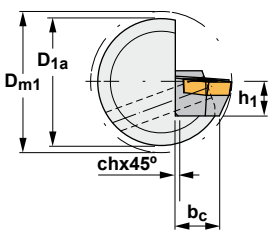
Axiale Anpassung = +0,5 mm
Radiale Anpassung = ±1 mm

## *Assembly dimensions*
## *Einbaubamessungen*

| Cartridge size<br>Abmessungen des Kurzklemmhalters | Cartridge code<br>Bezeichnung | Dimensions / Abmessungen, mm | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $K_r$ | $b_c$ | $h_1$ | $h_{21}$ | $l_8$ | $l_{21}$ | $l_{22}$ | $l_{23}$ | $D_{m1}$ min | $D_{m2}$ min | R max | ch max |
| **06CA** | SCFC R/L 06CA-06 | 90° | 7,2 | 6 | 2,1 | 13 | 12,0 | 24,0 | 18,0 | 20 | 31 | 2,5 | 0,3 |
|  | SCLC R/L 06CA-06 | 95° | 7,8 | 6 | 2,1 | 13 | 12,0 | 24,0 | 18,0 | 20 | 31 | 2,5 | 0,3 |
| **08CA** | SCFC R/L 08CA-06 | 90° | 6,0 | 8 | 2,2 | 15 | 13,5 | 30,5 | 24,2 | 25 | 38 | 1,5 | 0,3 |
| | SCLC R/L 08CA-06 | 95° | 5,8 | 8 | 2,9 | 15 | 13,5 | 30,5 | 24,2 | 25 | 38 | 2,5 | 0,3 |
| | STFC R/L 08CA-09 | 90° | 6,5 | 8 | 2,2 | 15 | 13,5 | 30,5 | 24,2 | 25 | 38 | 2,5 | 0,3 |
|  | STFC R/L 08CA-11 | 90° | 6,8 | 8 | 2,9 | 15 | 13,5 | 30,5 | 24,2 | 25 | 38 | 2,5 | 0,3 |
| | STSC R/L 08CA-09 | 45° | 6,0 | 8 | 2,5 | 11 | 13,5 | 30,5 | 21,5 | 25 | 38 | 2,5 | 0,3 |
| | STSC R/L 08CA-11 | 45° | 5,8 | 8 | 2,9 | 10 | 13,5 | 30,5 | 21,5 | 25 | 38 | 2,5 | 0,3 |
| | STTC R/L 08CA-09 | 60° | 6,0 | 8 | 2,5 | 15 | 12,2 | 29,2 | 21,5 | 25 | 37 | 2,5 | 0,3 |
| | STTC R/L 08CA-11 | 60° | 6,6 | 8 | 2,9 | 9,6 | 13,5 | 30,5 | 22,4 | 25 | 38 | 2,5 | 0,3 |
| | STWC R/L 08CA-11 | 60° | 5,8 | 8 | 2,9 | 9,8 | 13,5 | 30,5 | 23,9 | 25 | 38 | 2,5 | 0,3 |
| **10CA** | SCFC R/L 10CA-09 | 90° | 9,0 | 10 | 3,0 | 30 | 27,5 | 47,5 | 39,5 | 40 | 55 | 2,5 | 0,3 |
| | SCLC R/L 10CA-09 | 95° | 10,0 | 10 | 3,0 | 30 | 28,5 | 48,5 | 39,0 | 40 | 55 | 4,0 | 0,4 |
| | SSKC R/L 10CA-09 | 75° | 9,8 | 10 | 3,0 | 30 | 28,5 | 48,5 | 39,0 | 40 | 55 | 4,0 | 0,4 |
|  | SSSC R/L 10CA-09 | 45° | 10,0 | 10 | 3,0 | 30 | 28,5 | 48,5 | 37,5 | 40 | 55 | 4,0 | 0,4 |
| | STFC R/L 10CA-11 | 90° | 10,6 | 10 | 3,0 | 30 | 27,5 | 47,5 | 39,5 | 40 | 55 | 4,0 | 0,4 |
| | STGC R/L 10CA-11 | 90° | 9,0 | 10 | 3,0 | 30 | 26,5 | 46,5 | 39,5 | 40 | 55 | 4,0 | 0,4 |
| | STSC R/L 10CA-11 | 45° | 9,0 | 10 | 3,0 | 24 | 29,0 | 49,0 | 39,5 | 40 | 55 | 4,0 | 0,4 |
| | STTC R/L 10CA-11 | 60° | 9,0 | 10 | 3,0 | 30 | 28,0 | 48,0 | 39,5 | 40 | 55 | 4,0 | 0,4 |
| | STWC R/L 10CA-11 | 60° | 10,6 | 10 | 3,0 | 24 | 27,0 | 47,0 | 39,5 | 40 | 55 | 4,0 | 0,4 |
| **12CA** | SCFC R/L 12CA-12 | 90° | 14,0 | 12 | 5,0 | 35 | 28,5 | 48,5 | 40,0 | 50 | 75 | 5,0 | 0,4 |
| | SCLC R/L 12CA-12 | 95° | 15,8 | 12 | 5,0 | 35 | 28,5 | 48,5 | 40,0 | 50 | 75 | 5,0 | 0,4 |
| | SSKC R/L 12CA-12 | 75° | 13,5 | 12 | 5,0 | 35 | 36,0 | 56,0 | 40,0 | 50 | 75 | 5,0 | 0,4 |
|  | SSSC R/L 12CA-12 | 45° | 13,0 | 12 | 5,0 | 27 | 31,5 | 51,5 | 39,0 | 50 | 75 | 5,0 | 0,4 |
| | STFC R/L 12CA-16 | 90° | 13,0 | 12 | 5,0 | 35 | 33,2 | 53,2 | 40,0 | 50 | 75 | 5,0 | 0,4 |
| | STGC R/L 12CA-16 | 90° | 15,0 | 12 | 5,0 | 35 | 31,0 | 51,0 | 40,0 | 50 | 75 | 5,0 | 0,4 |
| | STSC R/L 12CA-16 | 45° | 13,0 | 12 | 5,0 | 27 | 35,0 | 55,0 | 43,0 | 50 | 75 | 5,0 | 0,4 |
| | STTC R/L 12CA-16 | 60° | 13,0 | 12 | 5,0 | 35 | 33,0 | 53,0 | 40,0 | 50 | 75 | 5,0 | 0,4 |
| | STWC R/L 12CA-16 | 60° | 13,0 | 12 | 5,0 | 27 | 32,0 | 52,0 | 40,0 | 50 | 75 | 5,0 | 0,4 |
| **16CA** | SSKC R/L 16CA-12 | 75° | 16,5 | 16 | 5,0 | 38 | 34,0 | 60,0 | 49,0 | 55 | - | 6,0 | 0,4 |
| | SSSC R/L 16CA-12 | 45° | | 16 | 5,0 | 28 | 36,0 | 61,0 | 42,0 | 55 | 75 | 6,0 | 0,4 |
|  | STFC R/L 16CA-16 | 90° | 17,0 | 16 | 5,0 | 38 | 36,0 | 61,0 | 52,0 | 55 | - | 5,0 | 0,4 |
| | STGC R/L 16CA-16 | 90° | 18,5 | 16 | 5,0 | 38 | 32,0 | 57,0 | 48,0 | 60 | 75 | 6,0 | 0,4 |
| | STSC R/L 16CA-16 | 45° | 16,5 | 16 | 5,0 | 28 | 35,5 | 60,5 | 48,0 | 55 | - | 6,0 | 0,4 |
| | STTC R/L 16CA-16 | 60° | 17,5 | 16 | 5,0 | 38 | 35,5 | 60,5 | 48,0 | 60 | 75 | 6,0 | 0,4 |
| | STWC R/L 16CA-16 | 60° | 16,5 | 16 | 5,0 | 28 | 32,5 | 57,5 | 46,0 | 55 | - | 6,0 | 0,4 |

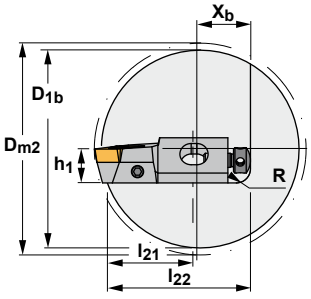



**Axial assembling**
**Axial-Einbau**




Axial adjustment = ±1 mm
Radial adjustment = +0,5 mm
Axiale Anpassung = ±1 mm
Radiale Anpassung = +0,5 mm

**Radial assembling**
**Radial-Einbau**

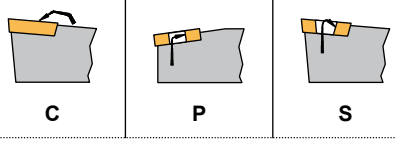



Axial adjustment = +0,5 mm
Radial adjustment = ±1 mm
Axiale Anpassung = +0,5 mm
Radiale Anpassung = ±1 mm

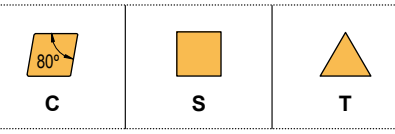
# Code system / Kodifizierung (ISO)

| P | C | L | N | R | 16 | CA | - | 12 |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 |

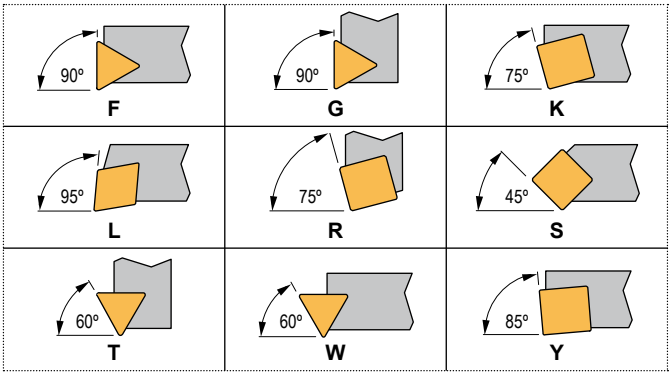
## 1 Clamping method of insert / Klemmsystem



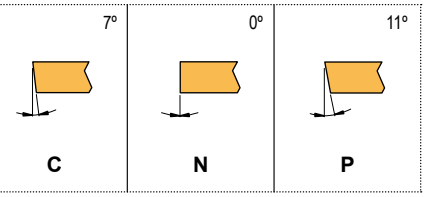

## 2 Insert shape / Wendeschneidplatten-Form



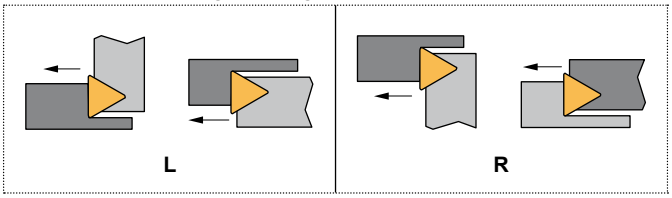

## 3 Holder style / Einstellwinkel



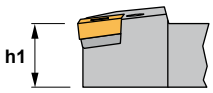

## 4 Clearance angle of insert / Wendeschneidplatten-Freiwinkel




## 5 Hand / Bearbeitungsrichtung

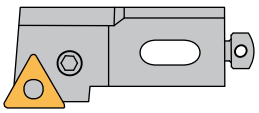



## 6 Cutting edge height / Schneidkantenhöhe



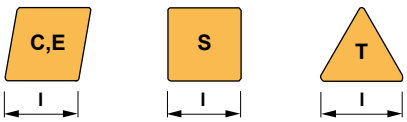

| h1 | | |
|---|---|---|
| 6 | 8 | 10 |
| 12 | 16 | 20 |
| 25 | | |

## 7 Cartridge code / Kurzklemmhalter Kode



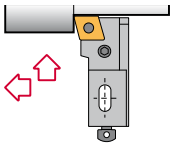

| C | A |
|---|---|
| C (Cartridge)<br>C (Kurzklemmhalter) | A (ISO5611) |

## 8 Cutting edge length / Schneidkantenlänge



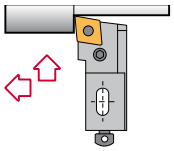
## *Lever lock cartridges*
## *Kurzklemmhalter mit Kniehebel*

### PCFN 90º



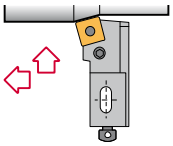
*Page* CN.. 1204..
*Seite A254* CN.. 1606..

### PCLN 95º



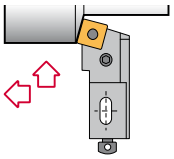
*Page* CN.. 1204..
*Seite A254* CN.. 1606..

### PSKN 75º



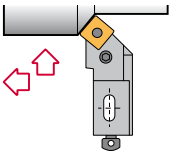
*Page* SNM.. 1204..
*Seite A255* SNM.. 1506..

### PSRN 75º



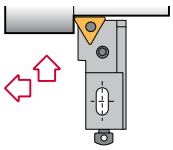
*Page*
*Seite A255* SNM.. 1204..

### PSSN 45º



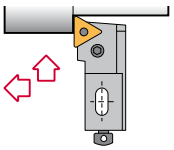
*Page*
*Seite A256* SNM.. 1204..

### PTFN 90º



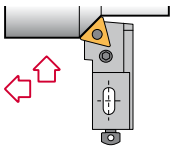
*Page* TNM.. 1604..
*Seite A256* TNM.. 2204..

### PTGN 90º



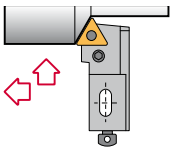
*Page* TNM.. 1604..
*Seite A257* TNM.. 2204..

### PTSN 45º



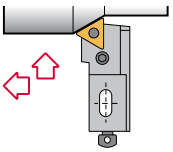
*Page* TNM.. 1604..
*Seite A257* TNM.. 2204..

### PTTN 60º



*Page* TNM.. 1604..
*Seite A258* TNM.. 2204..

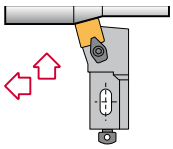
### PTWN 30º



*Page* TNM.. 1604..
*Seite A258* TNM.. 2204..

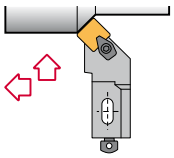
## *Top clamp cartridges*
## *Kurzklemmhalter mit oberer Pratze*

### CSKP 75º



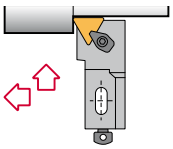
*Page* SP.. 0903..
*Seite A259* SP.. 1203..

### CSSP 45º



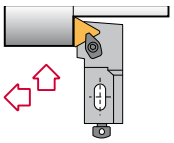
*Page* SP.. 0903..
*Seite A259* SP.. 1203..

### CTFP 90º



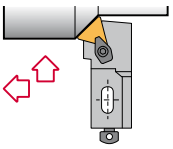
*Page* TP.. 1103..
*Seite A260* TP.. 1603..

### CTGP 90º



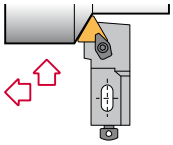
*Page* TP.. 1103..
*Seite A260* TP.. 1603..

### CTSP 45º



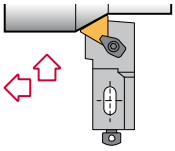
*Page* TP.. 1103..
*Seite A261* TP.. 1603..

### CTTP 60º



*Page* TP.. 1103..
*Seite A261* TP.. 1603..

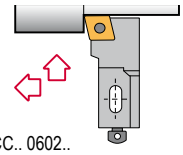
### CTWP 30º



*Page* TP.. 1103..
*Seite A262* TP.. 1603..

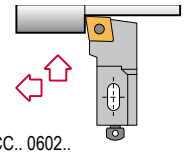
## *Center screw cartridges*
## *Kurzklemmhalter mit Zentralschraube*

### SCFC 90º



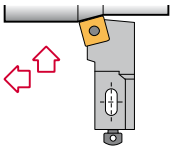
CC.. 0602..
CC.. 09T3.. *Page*
CC.. 1204.. *Seite A263*

### SCLC 95º



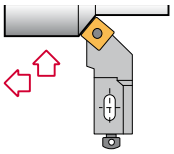
CC.. 0602..
CC.. 09T3.. *Page*
CC.. 1204.. *Seite A263*

### SSKC 75º



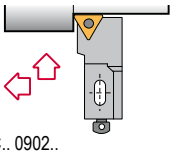
*Page* SC.. 09T3..
*Seite A264* SC.. 1204..

### SSSC 45º



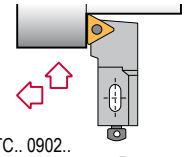
*Page* SC.. 09T3..
*Seite A264* SC.. 1204..

### STFC 90º



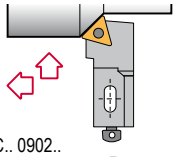
TC.. 0902..
TC.. 1102.. *Page*
TC.. 16T3.. *Seite A265*

### STGC 90º



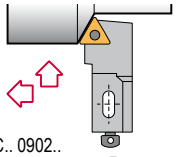
TC.. 0902..
TC.. 1102.. *Page*
TC.. 16T3.. *Seite A265*

### STSC 45º



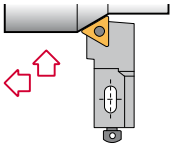
TC.. 0902..
TC.. 1102.. *Page*
TC.. 16T3.. *Seite A266*

### STTC 60º



TC.. 0902..
TC.. 1102.. *Page*
TC.. 16T3.. *Seite A266*

### STWC 60º

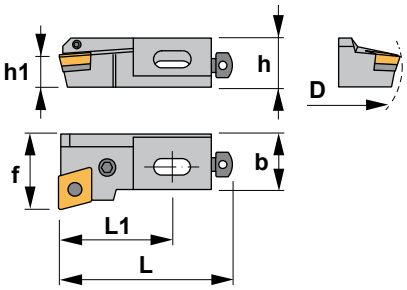


TC.. 1102.. *Page*
TC.. 16T3.. *Seite A267*



Characteristics:
Cartridge equipped with rhombic negative inserts (angle 80°) and strong cutting edges.
Axial -6°
Radial -8°

Eigenschaften:
Kurzklemmhalter mit rhombischen negativen Wendeschneidplatten (80° Winkel) mit verstärkten Schnittkanten.




# PCFN 90°

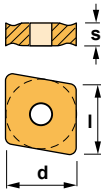
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PCFN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | CNM.. 1204.. | 0,140 |
| PCFN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | CNM.. 1204.. | 0,170 |
| PCFN R/L 25CA-16 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | CNM.. 1606.. | 0,380 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PCFN R/L 16CA-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 1406 | 1505 | 0012 | 5025 | 2808 | 1808 | 5005 | 3.0 |
| PCFN R/L 20CA-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |
| PCFN R/L 25CA-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 1408 | 1508 | 0015 | 5004 | 2810 | 1810 | 5006 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |




CNMG-CC | CNMG-FC | CNMG-MC | CNMG-MHC | CNMG-RC

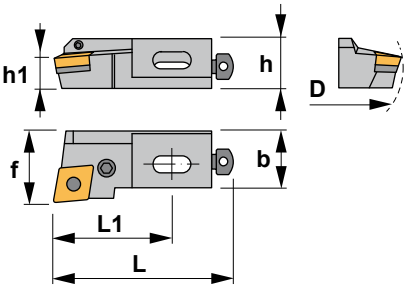


More inserts / Andere Wendeschneidplatten: CNGP, CNMA, CNMG-KC, CNMG-FMC, CNMG-MFC, CNMG-TC, CNMM.



Characteristics:
Cartridge equipped with rhombic negative double-sided insert (angle 80°) with strong cutting edge.
Axial -6°
Radial -6°

Eigenschaften:
Kurzklemmhalter mit rhombischen negativen doppelseitigen Wendeschneidplatten (80° Winkel) mit verstärkten Schnittkanten.




# PCLN 95°

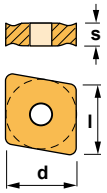
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PCLN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | CNM.. 1204.. | 0,135 |
| PCLN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | CNM.. 1204.. | 0,160 |
| PCLN R/L 25CA-16 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | CNM.. 1606.. | 0,375 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PCLN R/L 16CA-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 1406 | 1505 | 0012 | 5025 | 2808 | 1808 | 5005 | 3.0 |
| PCLN R/L 20CA-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |
| PCLN R/L 25CA-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 1408 | 1508 | 0015 | 5004 | 2810 | 1810 | 5006 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |




CNMG-CC | CNMG-FC | CNMG-MC | CNMG-MHC | CNMG-RC

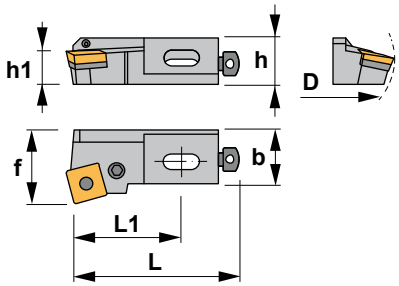


More inserts / Andere Wendeschneidplatten: CNGP, CNMA, CNMG-KC, CNMG-FMC, CNMG-MFC, CNMG-TC, CNMM.



Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -4°
Radial -4°

Eigenschaften:
Kurzklemmhalter mit vierkantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.




# PSKN 75°

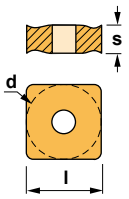
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSKN R/L 12CA-12 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | SNM.. 1204.. | 0,080 |
| PSKN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | SNM.. 1204.. | 0,135 |
| PSKN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | SNM.. 1204.. | 0,180 |
| PSKN R/L 25CA-15 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | SNM.. 1506.. | 0,400 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSKN R/L 12CA-12 | 8212 | 1626 | 5025 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 2.0 |
| PSKN R/L 16CA-12 | 8312 | 1648 | 5003 | 3512 | 4112 | 1406 | 1505 | 0012 | 5025 | 2808 | 1808 | 5005 | 3.0 |
| PSKN R/L 20CA-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |
| PSKN R/L 25CA-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 1408 | 1508 | 0015 | 5004 | 2810 | 1810 | 5006 | 3.0 |

## SNM..

Square negative inserts. Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |




SNMG-KC | SNMG-FMC | SNMG-MHC



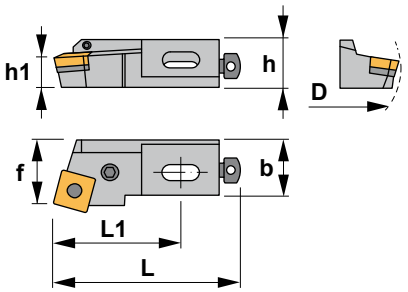
SNMG-RC | SNMG-TC





Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -11,25°
Radial -3,25°

Eigenschaften:
Kurzklemmhalter mit vierkantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.




# PSRN 75°

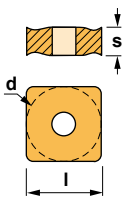
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSRN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | SNM.. 1204.. | 0,135 |
| PSRN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | SNM.. 1204.. | 0,180 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSRN R/L 16CA-12 | 8312 | 1648 | 5003 | 3512 | 4112 | 1406 | 1505 | 0012 | 5025 | 2808 | 1808 | 5005 | 3.0 |
| PSRN R/L 20CA-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |

## SNM..

Square negative inserts. Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |




SNMG-KC | SNMG-FMC | SNMG-MHC



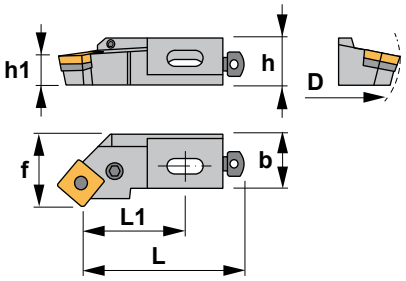
SNMG-RC | SNMG-TC





Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -7°
Radial -7°

Eigenschaften:
Kurzklemmhalter mit vierkantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.




# PSSN 45°

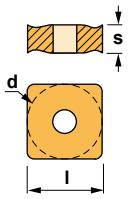
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSSN R/L 12CA-12 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | SNM.. 1204.. | 0,070 |
| PSSN R/L 16CA-12 | 60 | 25 | 16 | 53 | 28 | 25 | 20 | SNM.. 1204.. | 0,110 |
| PSSN R/L 20CA-12 | 70 | 30 | 20 | 60 | 30 | 25 | 20 | SNM.. 1204.. | 0,140 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSSN R/L 12CA-12 | 8212 | 1626 | 5025 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 2.0 |
| PSSN R/L 16CA-12 | 8312 | 1648 | 5003 | 3512 | 4112 | 1406 | 1505 | 0012 | 5025 | 2808 | 1808 | 5005 | 3.0 |
| PSSN R/L 20CA-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |




SNMG-KC | SNMG-FMC | SNMG-MHC



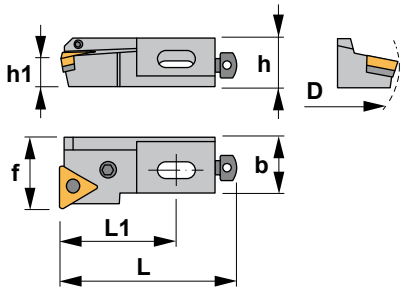
SNMG-RC | SNMG-TC





Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -6°
Radial -8°

Eigenschaften:
Kurzklemmhalter mit dreikantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.




# PTFN 90°

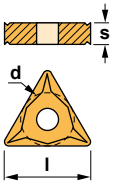
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PTFN R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | TNM.. 1604.. | 0,080 |
| PTFN R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | TNM.. 1604.. | 0,120 |
| PTFN R/L 20CA-22 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | TNM.. 2204.. | 0,160 |
| PTFN R/L 25CA-22 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | TNM.. 2204.. | 0,400 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTFN R/L 12CA-16 | 8216 | 1605 | 5002 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 1.4 |
| PTFN R/L 16CA-16 | 8009 | 1606 | 5025 | 3416 | 4109 | 1406 | 1505 | 0009 | 5025 | 2808 | 1808 | 5005 | 2.0 |
| PTFN R/L 20CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |
| PTFN R/L 25CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1408 | 1508 | 0012 | 5004 | 2810 | 1810 | 5006 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative Wendeschneidplatten. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |




TNMG-FC | TNMG-MC

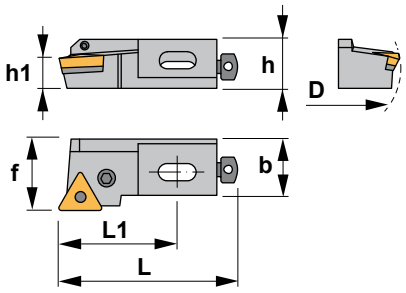


More inserts / Andere Wendeschneidplatten: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.



Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -6°
Radial -10°

Eigenschaften:
Kurzklemmhalter mit dreikantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.



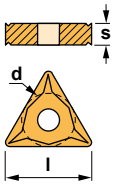

# PTGN 90°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PTGN R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | TNM.. 1604.. | 0,080 |
| PTGN R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | TNM.. 1604.. | 0,120 |
| PTGN R/L 20CA-22 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | TNM.. 2204.. | 0,160 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTGN R/L 12CA-16 | 8216 | 1605 | 5002 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 1.4 |
| PTGN R/L 16CA-16 | 8009 | 1606 | 5025 | 3416 | 4109 | 1406 | 1505 | 0009 | 5025 | 2808 | 1808 | 5005 | 2.0 |
| PTGN R/L 20CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |

**TNM..** Triangular negative inserts. Dreikantige negative Wendeschneidplatten. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |



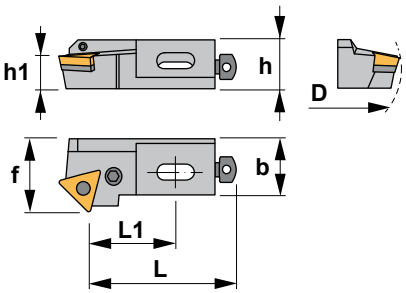

| TNMG-FC | TNMG-MC |
|---|---|
|  |  |

More inserts / Andere Wendeschneidplatten: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.



Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -7,75°
Radial -7,75°

Eigenschaften:
Kurzklemmhalter mit dreikantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.



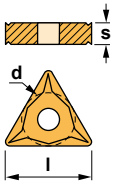

# PTSN 45°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PTSN R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | TNM.. 1604.. | 0,070 |
| PTSN R/L 16CA-16 | 60 | 25 | 16 | 53 | 28 | 25 | 20 | TNM.. 1604.. | 0,130 |
| PTSN R/L 20CA-22 | 70 | 30 | 20 | 60 | 30 | 25 | 20 | TNM.. 2204.. | 0,165 |
| PTSN R/L 25CA-22 | 100 | 35 | 25 | 67 | 37 | 32 | 25 | TNM.. 2204.. | 0,330 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTSN R/L 12CA-16 | 8216 | 1605 | 5002 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 1.4 |
| PTSN R/L 16CA-16 | 8009 | 1606 | 5025 | 3416 | 4109 | 1406 | 1505 | 0009 | 5025 | 2808 | 1808 | 5005 | 2.0 |
| PTSN R/L 20CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |
| PTSN R/L 25CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1408 | 1508 | 0012 | 5004 | 2810 | 1810 | 5006 | 3.0 |

**TNM..** Triangular negative inserts. Dreikantige negative Wendeschneidplatten. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |



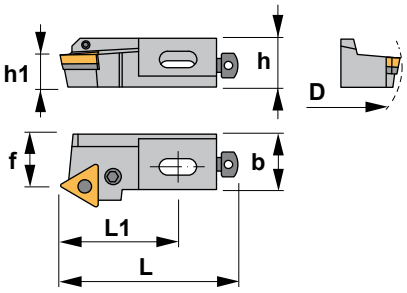

| TNMG-FC | TNMG-MC |
|---|---|
|  |  |

More inserts / Andere Wendeschneidplatten: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.



Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -6°
Radial -10°

Eigenschaften:
Kurzklemmhalter mit dreikantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.




# PTTN 60°

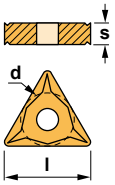
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PTTN R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 13 | 16 | TNM.. 1604.. | 0,135 |
| PTTN R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 15 | 20 | TNM.. 1604.. | 0,120 |
| PTTN R/L 20CA-22 | 70 | 30 | 20 | 70 | 40 | 15 | 20 | TNM.. 2204.. | 0,160 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTTN R/L 12CA-16 | 8216 | 1605 | 5002 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 1.4 |
| PTTN R/L 16CA-16 | 8009 | 1606 | 5025 | 3416 | 4109 | 1406 | 1505 | 0009 | 5025 | 2808 | 1808 | 5005 | 2.0 |
| PTTN R/L 20CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative Wendeschneidplatten. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |




TNMG-FC | TNMG-MC

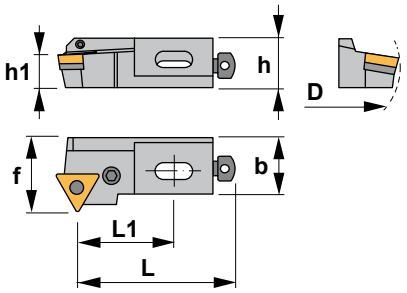


More inserts / Andere Wendeschneidplatten: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.



Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -6°
Radial -10°

Eigenschaften:
Kurzklemmhalter mit dreikantigen negativen Wendeschneidplatten mit verstärkten Schnittkanten.




# PTWN 30°

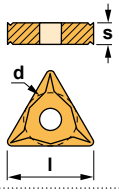
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PTWN R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | TNM.. 1604.. | 0,080 |
| PTWN R/L 16CA-16 | 60 | 25 | 16 | 53 | 28 | 25 | 20 | TNM.. 1604.. | 0,130 |
| PTWN R/L 20CA-22 | 70 | 30 | 20 | 60 | 30 | 25 | 20 | TNM.. 2204.. | 0,165 |

| Reference Bezeichnung | | | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTWN R/L 12CA-16 | 8216 | 1605 | 5002 | - | - | 1405 | 1505 | - | 5025 | 2806 | 1806 | 5004 | 1.4 |
| PTWN R/L 16CA-16 | 8009 | 1606 | 5025 | 3416 | 4109 | 1406 | 1505 | 0009 | 5025 | 2808 | 1808 | 5005 | 2.0 |
| PTWN R/L 20CA-22 | 8012 | 1608 | 5003 | 3422 | 4112 | 1406 | 1506 | 0012 | 5003 | 2808 | 1808 | 5005 | 3.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative Wendeschneidplatten. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |




TNMG-FC | TNMG-MC

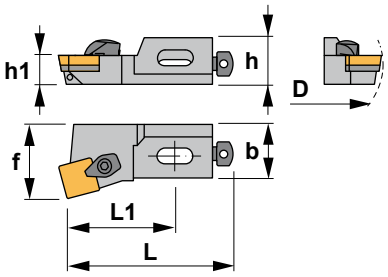


More inserts / Andere Wendeschneidplatten: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.



Characteristics:
Cartridge equipped with square positive inserts and strong cutting edges.
Axial 5,75°
Radial 1,50°

Eigenschaften:
Kurzklemmhalter mit vierkantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.



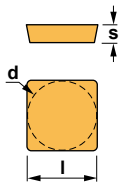

# CSKP 75°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CSKP R/L 10CA-09 | 40 | 15 | 10 | 50 | 30 | 14 | 11 | SP..0903.. | 0,035 |
| CSKP R/L 12CA-12 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | SP..1203.. | 0,075 |
| CSKP R/L 16CA-12 | 55 | 25 | 16 | 63 | 38 | 25 | 20 | SP..1203.. | 0,125 |

| Reference Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CSKP R/L 10CA-09 | 2304 | 5025 | - | - | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 2.0 |
| CSKP R/L 12CA-12 | 2305 | 5003 | - | - | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| CSKP R/L 16CA-12 | 2305 | 5003 | 3112 | 4002 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

**SP..** Square positive inserts with 11° clearance. Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |




SPMR



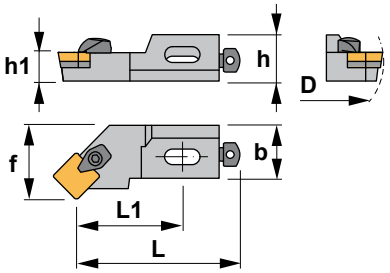
SPUN





Characteristics:
Cartridge equipped with square positive inserts and strong cutting edges.
Axial 5°
Radial 0°

Eigenschaften:
Kurzklemmhalter mit vierkantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.



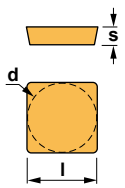

# CSSP 45°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CSSP R/L 10CA-09 | 40 | 15 | 10 | 44 | 24 | 14 | 11 | SP..0903.. | 0,035 |
| CSSP R/L 12CA-12 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | SP..1203.. | 0,065 |
| CSSP R/L 16CA-12 | 55 | 25 | 16 | 53 | 28 | 25 | 20 | SP..1203.. | 0,090 |

| Reference Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CSSP R/L 10CA-09 | 2304 | 5025 | - | - | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 2.0 |
| CSSP R/L 12CA-12 | 2305 | 5003 | - | - | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| CSSP R/L 16CA-12 | 2305 | 5003 | 3112 | 4002 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

**SP..** Square positive inserts with 11° clearance. Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. A43

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SP.. 0903.. | 9,52 | 3,18 | 9,52 |
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |




SPMR



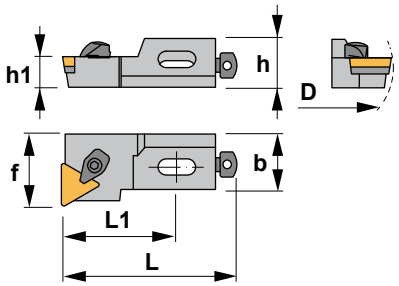
SPUN





Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 6°
Radial 0°

Eigenschaften:
Kurzklemmhalter mit dreikantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.



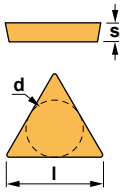

# CTFP 90°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CTFP R/L 10CA-11 | 40 | 15 | 10 | 50 | 30 | 14 | 11 | TP..1103.. | 0,035 |
| CTFP R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | TP..1603.. | 0,080 |
| CTFP R/L 16CA-16 | 55 | 25 | 16 | 63 | 38 | 25 | 20 | TP..1603.. | 0,120 |

| Reference Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CTFP R/L 10CA-11 | 2304 | 5025 | - | - | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 2.0 |
| CTFP R/L 12CA-16 | 2305 | 5003 | - | - | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| CTFP R/L 16CA-16 | 2305 | 5003 | 3116 | 4002 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive WSP mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |

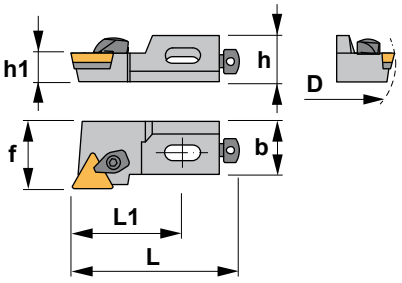



| TPMN | TPMR | TPUN | TPUX R/L |
|---|---|---|---|



Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 0°
Radial 4°

Eigenschaften:
Kurzklemmhalter mit dreikantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.



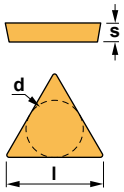

# CTGP 90°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CTGP R/L 10CA-11 | 40 | 15 | 10 | 50 | 30 | 14 | 11 | TP..1103.. | 0,035 |
| CTGP R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | TP..1603.. | 0,070 |
| CTGP R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | TP..1603.. | 0,115 |

| Reference Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CTGP R/L 10CA-11 | 2304 | 5025 | - | - | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 2.0 |
| CTGP R/L 12CA-16 | 2305 | 5003 | - | - | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| CTGP R/L 16CA-16 | 2305 | 5003 | 3116 | 4002 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive WSP mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |

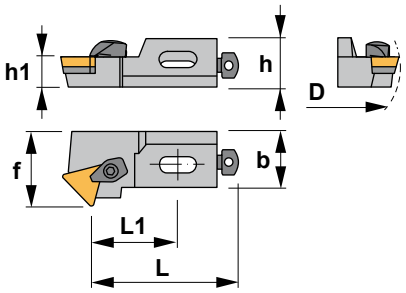



| TPMN | TPMR | TPUN | TPUX R/L |
|---|---|---|---|



Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 3,50°
Radial 3,50°

Eigenschaften:
Kurzklemmhalter mit dreikantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.



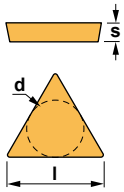

# CTSP 45°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CTSP R/L 10CA-11 | 40 | 15 | 10 | 44 | 24 | 14 | 11 | TP..1103.. | 0,035 |
| CTSP R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | TP..1603.. | 0,075 |
| CTSP R/L 16CA-16 | 55 | 25 | 16 | 53 | 28 | 25 | 20 | TP..1603.. | 0,140 |

| Reference Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CTSP R/L 10CA-11 | 2304 | 5025 | - | - | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 2.0 |
| CTSP R/L 12CA-16 | 2305 | 5003 | - | - | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| CTSP R/L 16CA-16 | 2305 | 5003 | 3116 | 4002 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive WSP mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |



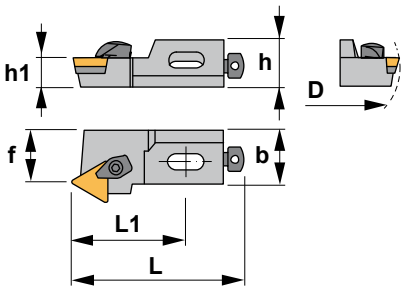

TPMN TPMR TPUN TPUX R/L





Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 0°
Radial 4°

Eigenschaften:
Kurzklemmhalter mit dreikantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.



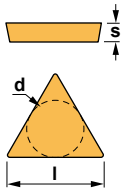

# CTTP 60°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CTTP R/L 10CA-11 | 40 | 15 | 10 | 50 | 30 | 9 | 11 | TP..1103.. | 0,040 |
| CTTP R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 13 | 16 | TP..1603.. | 0,075 |
| CTTP R/L 16CA-16 | 55 | 25 | 16 | 63 | 38 | 15 | 20 | TP..1603.. | 0,115 |

| Reference Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CTTP R/L 10CA-11 | 2304 | 5025 | - | - | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 2.0 |
| CTTP R/L 12CA-16 | 2305 | 5003 | - | - | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| CTTP R/L 16CA-16 | 2305 | 5003 | 3116 | 4002 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

**TP..** Triangular positive inserts with 11° clearance. Dreikantige positive WSP mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |



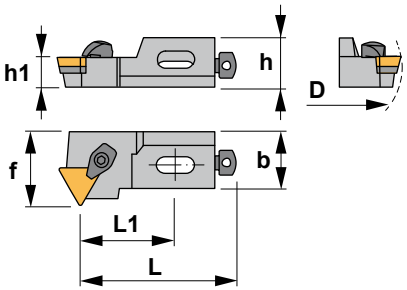

TPMN TPMR TPUN TPUX R/L





Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 5,25°
Radial 3°

Eigenschaften:
Kurzklemmhalter mit dreikantigen positiven Wendeschneidplatten mit verstärkten Schnittkanten.




# CTWP 30°

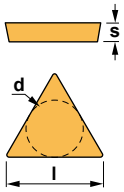
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CTWP R/L 10CA-11 | 40 | 15 | 10 | 44 | 24 | 14 | 11 | TP..1103.. | 0,035 |
| CTWP R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | TP..1603.. | 0,065 |
| CTWP R/L 16CA-16 | 55 | 25 | 16 | 53 | 28 | 25 | 20 | TP..1603.. | 0,105 |

| Reference Bezeichnung |  | Nm |
|---|---|---|
| CTWP R/L 10CA-11 | 2304 5025 - - 1405 1504 5002 2806 1816 5004 | 2.0 |
| CTWP R/L 12CA-16 | 2305 5003 - - 1405 1505 5025 2806 1806 5004 | 3.0 |
| CTWP R/L 16CA-16 | 2305 5003 3116 4002 1406 1505 5025 2808 1808 5005 | 3.0 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive WSP mit 11° Freiwinkel. A47

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |



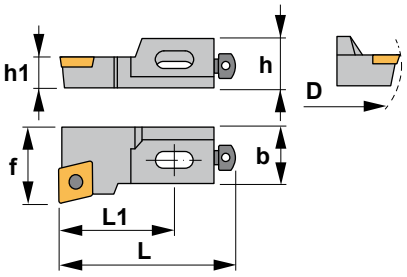

| TPMN | TPMR | TPUN | TPUX R/L |
|---|---|---|---|
|  |  |  |  |



# SCFC 90°

Characteristics:
Cartridge equipped with rhombic positive insert (angle 80°).
Axial 0°
Radial 0°

Eigenschaften:
Kurzklemmhalter mit rhombischen positiven Wendeschneidplatten (80° Winkel).

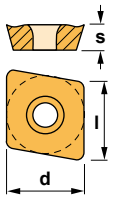



| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| SCFC R/L 06CA-06 | 20 | 8 | 6 | 25 | 13,5 | 10 | 5,0 | CCM.. 0602.. | 0,005 |
| SCFC R/L 08CA-06 | 25 | 11 | 8 | 27 | 15,0 | 10 | 7,5 | CCM.. 0602.. | 0,010 |
| SCFC R/L 10CA-09 | 30 | 14 | 10 | 42 | 24,0 | 14 | 10,0 | CCM.. 09T3.. | 0,030 |
| SCFC R/L 12CA-12 | 40 | 16 | 12 | 47 | 35,0 | 20 | 14,0 | CCM.. 1204.. | 0,060 |

| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| SCFC R/L 06CA-06 | 1425 | 5507 | 1403 | 1503 | 5015 | 2803 | 1803 | 5002 | 0.9 |
| SCFC R/L 08CA-06 | 1425 | 5507 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.9 |
| SCFC R/L 10CA-09 | 1440 | 5515 | 1405 | 1504 | 5002 | 2806 | 1806 | 5004 | 3.0 |
| SCFC R/L 12CA-12 | 1250 | 5520 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 4.0 |

**CC..** 80° rhombic positive inserts with 7° clearance. 80° rhombische positive WSP mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




| CCGT-AL | CCGT-AP | CCMT | CCMW |
|---|---|---|---|

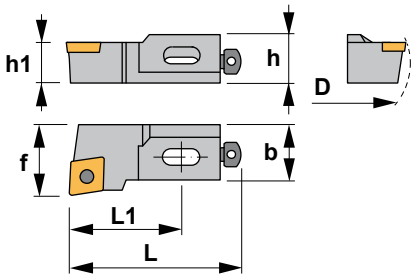




# SCLC 95°

Characteristics:
Cartridge equipped with rhombic positive insert (angle 80°).
Axial 0°
Radial 0°

Eigenschaften:
Kurzklemmhalter mit rhombischen positiven Wendeschneidplatten (80° Winkel).

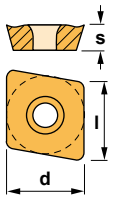



| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| SCLC R/L 06CA-06 | 20 | 8 | 6 | 25 | 13,5 | 10 | 5,0 | CCM.. 0602.. | 0,005 |
| SCLC R/L 08CA-06 | 25 | 11 | 8 | 27 | 15,0 | 12 | 7,5 | CCM.. 0602.. | 0,010 |
| SCLC R/L 10CA-09 | 30 | 14 | 10 | 42 | 24,0 | 14 | 10,0 | CCM.. 09T3.. | 0,030 |
| SCLC R/L 12CA-12 | 40 | 16 | 12 | 47 | 35,0 | 20 | 14,0 | CCM.. 1204.. | 0,060 |

| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| SCLC R/L 06CA-06 | 1425 | 5507 | 1403 | 1503 | 5015 | 2803 | 1803 | 5002 | 0.9 |
| SCLC R/L 08CA-06 | 1425 | 5507 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.9 |
| SCLC R/L 10CA-09 | 1440 | 5515 | 1405 | 1504 | 5002 | 2806 | 1806 | 5004 | 3.0 |
| SCLC R/L 12CA-12 | 1250 | 5520 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 4.0 |

**CC..** 80° rhombic positive inserts with 7° clearance. 80° rhombische positive WSP mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



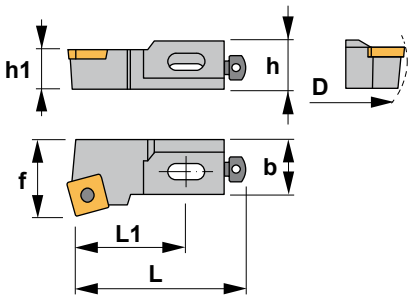

| CCGT-AL | CCGT-AP | CCMT | CCMW |
|---|---|---|---|





Characteristics:
Cartridge equipped with square positive inserts.
Axial -6°
Radial -10°

Eigenschaften:
Kurzklemmhalter mit vierkantigen positiven Wendeschneidplatten.



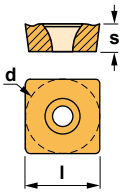

# SSKC 75°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| SSKC R/L 10CA-09 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | SC.. 09T3.. | 0,030 |
| SSKC R/L 12CA-12 | 40 | 16 | 12 | 55 | 35 | 20 | 14,0 | SC.. 1204.. | 0,065 |
| SSKC R/L 16CA-12 | 50 | 20 | 16 | 63 | 38 | 25 | 17,5 | SC.. 1204.. | 0,115 |

| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| SSKC R/L 10CA-09 | 1440 | 5515 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 3.0 |
| SSKC R/L 12CA-12 | 1250 | 5520 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 4.0 |
| SSKC R/L 16CA-12 | 1250 | 5520 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 4.0 |

**SC..** Square positive inserts with 7° clearance. Vierkantige positive WSP mit 7° Freiwinkel. A40

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |



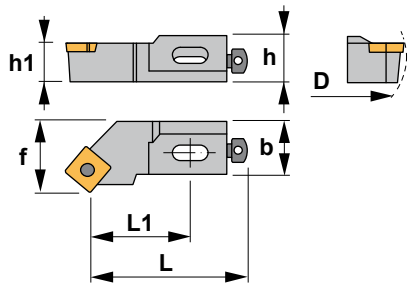

| SCGT-AL | SCMT | SCMT-39 | SCMW |
|---|---|---|---|





Characteristics:
Cartridge equipped with square positive inserts.
Axial -3,5°
Radial -3,5°

Eigenschaften:
Kurzklemmhalter mit vierkantigen positiven Wendeschneidplatten.



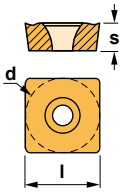

# SSSC 45°

| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| SSSC R/L 10CA-09 | 30 | 14 | 10 | 44 | 24 | 14 | 10,0 | SC.. 09T3.. | 0,030 |
| SSSC R/L 12CA-12 | 40 | 16 | 12 | 47 | 27 | 20 | 14,0 | SC.. 1204.. | 0,055 |
| SSSC R/L 16CA-12 | 50 | 20 | 16 | 53 | 28 | 25 | 17,5 | SC.. 1204.. | 0,090 |

| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| SSSC R/L 10CA-09 | 1440 | 5515 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 3.0 |
| SSSC R/L 12CA-12 | 1250 | 5520 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 4.0 |
| SSSC R/L 16CA-12 | 1250 | 5520 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 4.0 |

**SC..** Square positive inserts with 7° clearance. Vierkantige positive WSP mit 7° Freiwinkel. A40

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |



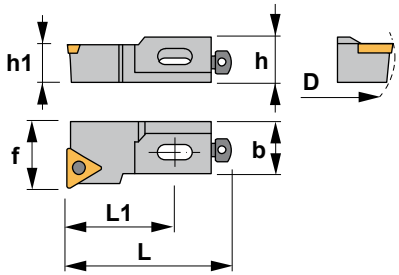

| SCGT-AL | SCMT | SCMT-39 | SCMW |
|---|---|---|---|





Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial -3°

Eigenschaften:
Kurzklemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.




# STFC 90°

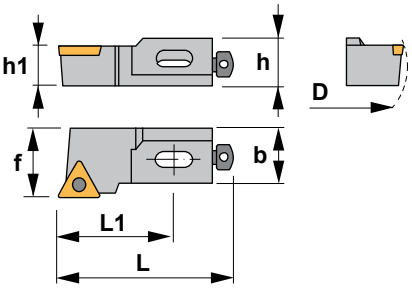
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| STFC R/L 08CA-09 | 25 | 11 | 8 | 32 | 15 | 10 | 7,5 | TC.. 0902.. | 0,010 |
| STFC R/L 08CA-11 | 25 | 11 | 8 | 32 | 15 | 11 | 7,5 | TC.. 1102.. | 0,010 |
| STFC R/L 10CA-11 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | TC.. 1102.. | 0,035 |
| STFC R/L 12CA-16 | 40 | 16 | 12 | 55 | 35 | 20 | 14,0 | TC.. 16T3.. | 0,065 |
| STFC R/L 16CA-16 | 50 | 20 | 16 | 63 | 38 | 25 | 17,5 | TC.. 16T3.. | 0,125 |

| Reference Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| STFC R/L 08CA-09 | 1222 | 5506 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.6 |
| STFC R/L 08CA-11 | 1225 | 5507 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.9 |
| STFC R/L 10CA-11 | 1225 | 5507 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 0.9 |
| STFC R/L 12CA-16 | 1240 | 5515 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| STFC R/L 16CA-16 | 1240 | 5515 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |



Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial -3°

Eigenschaften:
Kurzklemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.




# STGC 90°

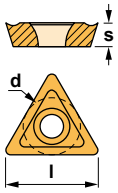
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| STGC R/L 10CA-11 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | TC.. 1102.. | 0,035 |
| STGC R/L 12CA-16 | 40 | 16 | 12 | 55 | 35 | 20 | 14,0 | TC.. 16T3.. | 0,065 |
| STGC R/L 16CA-16 | 50 | 20 | 16 | 63 | 38 | 25 | 17,5 | TC.. 16T3.. | 0,125 |

| Reference Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| STGC R/L 10CA-11 | 1225 | 5507 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 0.9 |
| STGC R/L 12CA-16 | 1240 | 5515 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| STGC R/L 16CA-16 | 1240 | 5515 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive WSP mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

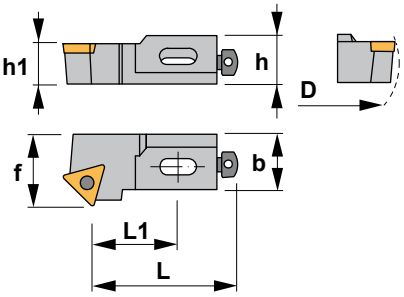



| TCGT-AL | TCMT | TCMW |
|---|---|---|
|  |  |  |



Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial -3,5°
Radial -3,5°

Eigenschaften:
Kurzklemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.




# STSC 45°

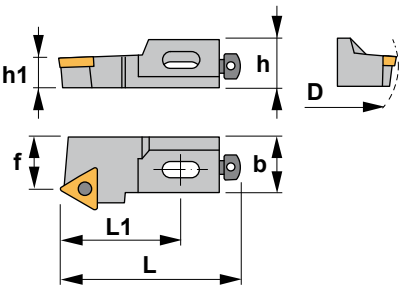
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| STSC R/L 08CA-09 | 25 | 11 | 8 | 28 | 11 | 10 | 7,5 | TC.. 0902.. | 0,005 |
| STSC R/L 08CA-11 | 25 | 11 | 8 | 27 | 10 | 11 | 7,5 | TC.. 1102.. | 0,005 |
| STSC R/L 10CA-11 | 30 | 14 | 10 | 44 | 24 | 14 | 10,0 | TC.. 1102.. | 0,035 |
| STSC R/L 12CA-16 | 40 | 16 | 12 | 47 | 27 | 20 | 14,0 | TC.. 16T3.. | 0,065 |
| STSC R/L 16CA-16 | 50 | 20 | 16 | 53 | 28 | 25 | 17,5 | TC.. 16T3.. | 0,110 |

| Reference Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| STSC R/L 08CA-09 | 1222 | 5506 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.6 |
| STSC R/L 08CA-11 | 1225 | 5507 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.9 |
| STSC R/L 10CA-11 | 1225 | 5507 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 0.9 |
| STSC R/L 12CA-16 | 1240 | 5515 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| STSC R/L 16CA-16 | 1240 | 5515 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |



Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial -1,5°
Radial -2,5°

Eigenschaften:
Kurzklemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.




# STTC 60°

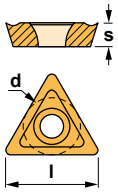
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| STTC R/L 08CA-09 | 25 | 11 | 8 | 32 | 15 | 6 | 7,5 | TC.. 0902.. | 0,010 |
| STTC R/L 08CA-11 | 25 | 11 | 8 | 32 | 15 | 6 | 7,5 | TC.. 1102.. | 0,010 |
| STTC R/L 10CA-11 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | TC.. 1102.. | 0,035 |
| STTC R/L 12CA-16 | 40 | 16 | 12 | 55 | 35 | 13 | 14,0 | TC.. 16T3.. | 0,065 |
| STTC R/L 16CA-16 | 50 | 20 | 16 | 63 | 38 | 15 | 17,5 | TC.. 16T3.. | 0,105 |

| Reference Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| STTC R/L 08CA-09 | 1222 | 5506 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.6 |
| STTC R/L 08CA-11 | 1225 | 5507 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.9 |
| STTC R/L 10CA-11 | 1225 | 5507 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 0.9 |
| STTC R/L 12CA-16 | 1240 | 5515 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| STTC R/L 16CA-16 | 1240 | 5515 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive WSP mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

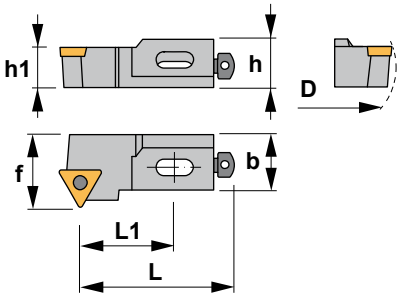



| TCGT-AL | TCMT | TCMW |
|---|---|---|
|  |  |  |



Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial -1,5°
Radial -2,5°

Eigenschaften:
Kurzklemmhalter zum Plandrehen mit dreikantigen positiven Wendeschneidplatten.




# STWC 60°

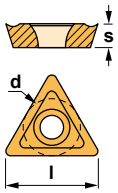
| Reference Bezeichnung | D | h | h1 | L | L1 | f | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| STWC R/L 08CA-11 | 25 | 11 | 8 | 27 | 10 | 10 | 7,5 | TC.. 1102.. | 0,005 |
| STWC R/L 10CA-11 | 30 | 14 | 10 | 44 | 24 | 14 | 10,0 | TC.. 1102.. | 0,035 |
| STWC R/L 12CA-16 | 40 | 16 | 12 | 47 | 27 | 20 | 14,0 | TC.. 16T3.. | 0,065 |
| STWC R/L 16CA-16 | 50 | 20 | 16 | 53 | 28 | 25 | 17,5 | TC.. 16T3.. | 0,110 |

| Reference Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| STWC R/L 08CA-11 | 1225 | 5507 | 1404 | 1503 | 5015 | 2804 | 1804 | 5025 | 0.9 |
| STWC R/L 10CA-11 | 1225 | 5507 | 1405 | 1504 | 5002 | 2806 | 1816 | 5004 | 0.9 |
| STWC R/L 12CA-16 | 1240 | 5515 | 1405 | 1505 | 5025 | 2806 | 1806 | 5004 | 3.0 |
| STWC R/L 16CA-16 | 1240 | 5515 | 1406 | 1505 | 5025 | 2808 | 1808 | 5005 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive WSP mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



TCMW





# BRAZED TOOLS
# HM-GELÖTETE WERKZEUGE

Technical information
Technische Auskünfte — A270

Applications index
Anwendungen — A271

Toolholders
Drehmeißel — A272-274

Boring bars
Innendrehmeißel — A275-276

## *Uncoated inserts / Unbeschichtete Sorten*

### KM15

Finishing grade in the K10 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys.

Es ist eine Sorte zum Schlichten, im K10 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständige Legierungen geeignet. Es hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetische Materialien und ist für Schlichten in hitzebeständigen Legierungen besonders gut geeignet.

### PM25

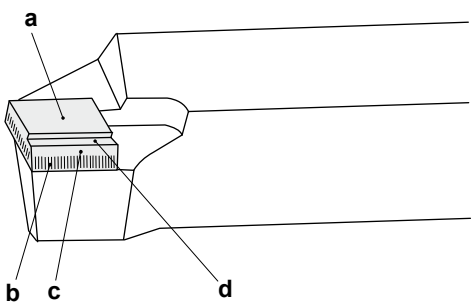
General purpose uncoated grade in the P30 range. This tough, economical grade is suitable for the machining of carbon steels, alloyed steels, tool steels and stainless steels.
PM25 provides toughness and resistance to deformation in roughing and semi-finishing operations.

Eine allgemeine unbeschichtete Sorte im P30 Bereich. Diese zähe und wirtschaftliche Sorte ist zur Bearbeitung von Kohlenstoffstahl, legiertem Stahl, Werkzeugstahl und rostfreiem Stahl gut geeignet.
PM25 hat eine gute Zähigkeit und Verschleißfestigkeit für Schrupp- und mittlere Schlichtarbeiten.

## *Grinding / Schleifen*

In order to obtain a satisfactory result, it is necessary to have a steady grinding table or holder that can be set to the required angle by means of a graduated scale and by non-vibrating small spindles.
Rough grinding is normally carried out using a silicon carbide grinding wheel. The finish grind or lapping must always be made using a diamond wheel.
Longer life of the cutting edge and less breakage justify the increased cost of correct grinding.
The grinding wheel must be kept clean to ensure that cutting capacity is maintained.
Whenever possible, always grind perpendicular to the cutting edge.

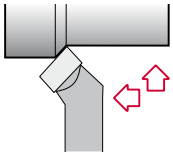
Um ein erfolgreiches Ergebnis zu bekommen, braucht man stabile Auflagetische oder Halter, die man mit Hilfe eines Gradmessers im gewünschten Winkel einstellen kann, sowie schwingungsfreie Spindeln.
Zum Grobschleifen kann man eine Siliziumskarbidscheibe verwenden. Aber zum Feinschleifen und Lappen muß man immer eine Diamantscheibe verwenden. Längere Standzeit der Schneiden und wenige Kantenausbrüche gleichen die höheren Kosten von einem korrekten Schleifen aus.
Die Schleifscheibe muß man sauber halten, denn das beeinflußt wesentlich die Schneidleistung.
Wenn möglich, immer gegen die Schneidkante schleifen.




**a.-** Top face / Spanflächen
**b.-** Secondary clearances / Freiflächen
**c.-** Lapped primary clearances / Läppfasen
**d.-** Chipbreaker groove / Spanleitstufe

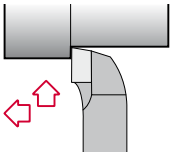
## *Toolholders*
## *Drehmeißel*

**ISO 2 45º**



*Page*
*Seite A272*

**ISO 6 90º**



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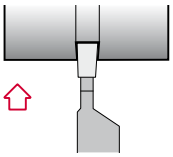
*Seite A272*

**ISO 7 90º**



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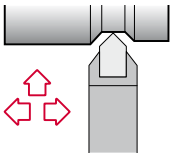
*Seite A273*

**ISO 351 80º**



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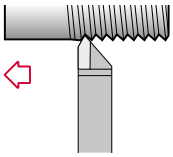
*Seite A273*

**UI 30 60º**



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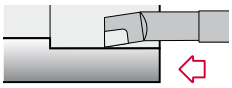
*Seite A274*

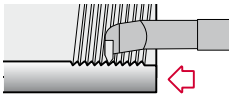
## *Boring bars*
## *Innendrehmeißel*

**ISO 9 90º**



*Page*
*Seite A275*

**UI 40 60º**



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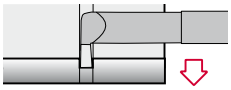
*Seite A275*

**UI 50 90º**



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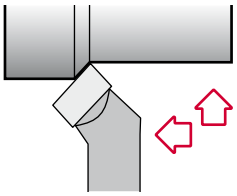
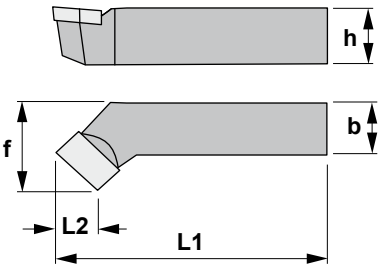
*Seite A276*



Characteristics:
Brazed toolholder.
DIN 4972

Eigenschaften:
HM-Gelöteter Drehmeißel.





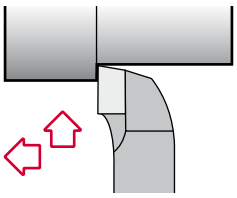

# ISO 2 45°

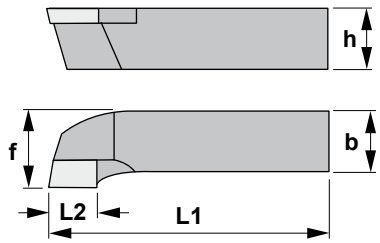
| Reference<br>Bezeichnung | h | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| ISO2 1010 R | 10 | 10 | 90 | 8 | 14 | C8 | 0,070 | ○ | ○ |
| ISO2 1010 L | 10 | 10 | 90 | 8 | 14 | C8 | 0,070 | ○ | ○ |
| ISO2 1212 R | 12 | 12 | 100 | 10 | 17 | ABC10 | 0,100 | ○ | ● |
| ISO2 1212 L | 12 | 12 | 100 | 10 | 17 | ABC10 | 0,100 | ○ | ● |
| ISO2 1616 R | 16 | 16 | 110 | 12 | 22 | ABC12 | 0,200 | ● | ● |
| ISO2 1616 L | 16 | 16 | 110 | 12 | 22 | ABC12 | 0,200 | ● | ● |
| ISO2 2020 R | 20 | 20 | 125 | 16 | 28 | ABC16 | 0,400 | ● | ● |
| ISO2 2020 L | 20 | 20 | 125 | 16 | 28 | ABC16 | 0,400 | ● | ● |
| ISO2 2525 R | 25 | 25 | 140 | 20 | 35 | ABC20 | 0,650 | ● | ● |
| ISO2 2525 L | 25 | 25 | 140 | 20 | 35 | ABC20 | 0,650 | ● | ● |



Characteristics:
Brazed toolholder.
DIN 4980

Eigenschaften:
HM-Gelöteter Drehmeißel.

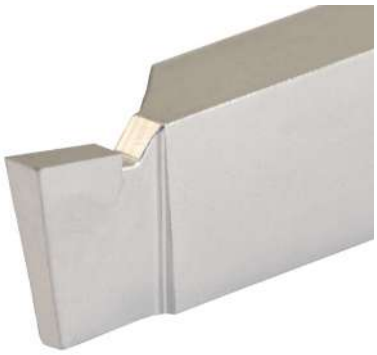





**AVAILABILITY / VERFÜGBARKEIT**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

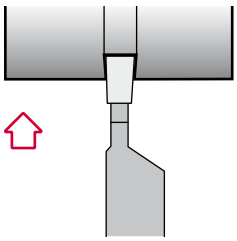
# ISO 6 90°

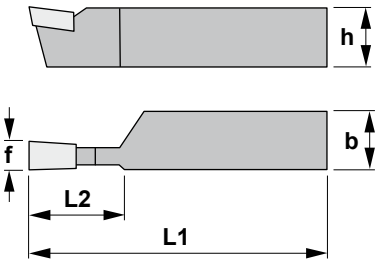
| Reference<br>Bezeichnung | h | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| ISO6 1010 R | 10 | 10 | 90 | 8 | 14 | C8 | 0,070 | ○ | ○ |
| ISO6 1010 L | 10 | 10 | 90 | 8 | 14 | C8 | 0,070 | ○ | ○ |
| ISO6 1212 R | 12 | 12 | 100 | 10 | 17 | ABC10 | 0,100 | ○ | ● |
| ISO6 1212 L | 12 | 12 | 100 | 10 | 17 | ABC10 | 0,100 | ○ | ● |
| ISO6 1616 R | 16 | 16 | 110 | 12 | 22 | ABC12 | 0,200 | ● | ● |
| ISO6 1616 L | 16 | 16 | 110 | 12 | 22 | ABC12 | 0,200 | ● | ● |
| ISO6 2020 R | 20 | 20 | 125 | 16 | 28 | ABC16 | 0,400 | ● | ● |
| ISO6 2020 L | 20 | 20 | 125 | 16 | 28 | ABC16 | 0,400 | ● | ● |
| ISO6 2525 R | 25 | 25 | 140 | 20 | 35 | ABC20 | 0,650 | ● | ● |
| ISO6 2525 L | 25 | 25 | 140 | 20 | 35 | ABC20 | 0,650 | ● | ● |



Characteristics:
Brazed toolholder.
DIN 4981

Eigenschaften:
HM-Gelöteter Drehmeißel.





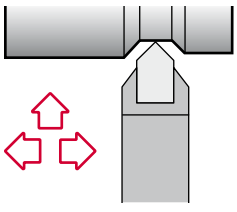

# ISO 7 90°

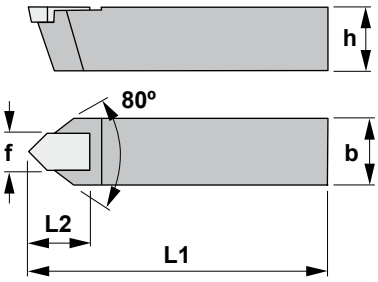
| Reference<br>Bezeichnung | h | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| ISO7 1208 R | 12 | 08 | 100 | 12 | 3 | D3 | 0,070 | ○ | ● |
| ISO7 1208 L | 12 | 08 | 100 | 12 | 3 | D3 | 0,070 | ○ | ● |
| ISO7 1610 R | 16 | 10 | 110 | 14 | 4 | D4 | 0,150 | ● | ● |
| ISO7 1610 L | 16 | 10 | 110 | 14 | 4 | D4 | 0,150 | ● | ● |
| ISO7 2012 R | 20 | 12 | 125 | 16 | 5 | D5 | 0,200 | ● | ● |
| ISO7 2012 L | 20 | 12 | 125 | 16 | 5 | D5 | 0,200 | ● | ● |
| ISO7 2516 R | 25 | 16 | 140 | 20 | 6 | D6 | 0,400 | ● | ● |
| ISO7 2516 L | 25 | 16 | 140 | 20 | 6 | D6 | 0,400 | ● | ● |
| ISO7 3220 R | 32 | 20 | 170 | 25 | 8 | D8 | 0,750 | ● | ● |
| ISO7 3220 L | 32 | 20 | 170 | 25 | 8 | D8 | 0,750 | ● | ● |



Characteristics:
Brazed toolholder.
DIN 4975

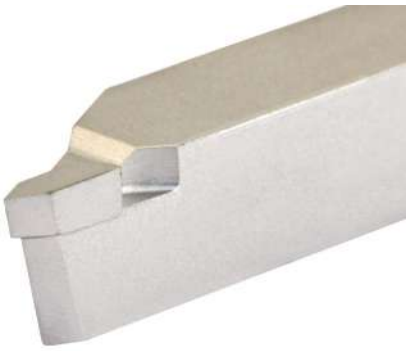
Eigenschaften:
HM-Gelöteter Drehmeißel.





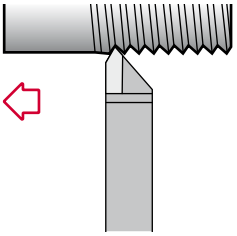

# ISO 351 80°

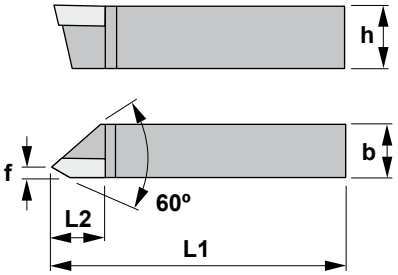
| Reference<br>Bezeichnung | h | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| ISO351 1212 N | 12 | 12 | 100 | 10 | 5 | E5 | 0,100 | ○ | ○ |
| ISO351 1616 N | 16 | 16 | 110 | 12 | 6 | E6 | 0,200 | ○ | ○ |
| ISO351 2020 N | 20 | 20 | 125 | 16 | 8 | E8 | 0,400 | ○ | ○ |
| ISO351 2525 N | 25 | 25 | 140 | 18 | 10 | E10 | 0,650 | ○ | ○ |



Characteristics:
Brazed toolholder.
ISO 352

Eigenschaften:
HM-Gelöteter Drehmeißel.





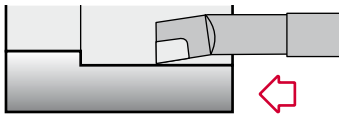

# UI 30 60°

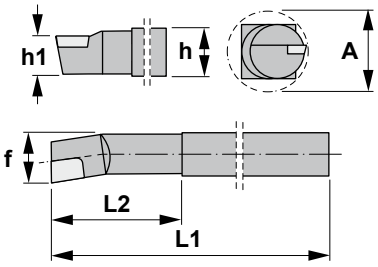
| Reference<br>Bezeichnung | h | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| UI 30 60° 1212 R | 12 | 12 | 100 | 12 | 1,8 | E5 | 0,100 | ● | ● |
| UI 30 60° 1616 R | 16 | 16 | 110 | 14 | 2,0 | E6 | 0,200 | ● | ● |
| UI 30 60° 2020 R | 20 | 20 | 125 | 16 | 2,5 | E8 | 0,350 | ● | ● |
| UI 30 60° 2525 R | 25 | 25 | 140 | 18 | 3,0 | E10 | 0,600 | ● | ● |



Characteristics:
Brazed boring bar.
UNI 4111

Eigenschaften:
HM-Gelöteter Innendrehmeißel.





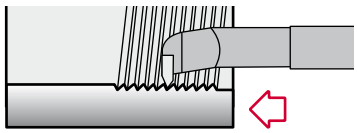

# ISO 9 90°

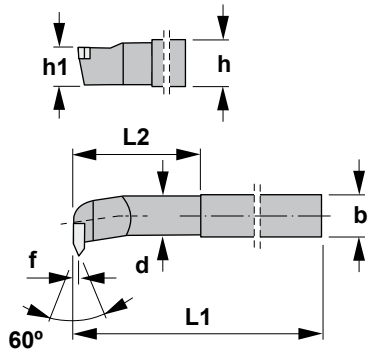
| Reference<br>Bezeichnung | h=b | h1 | L | b2 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO9 0808 R | 8 | 6,4 | 125 | 3,1 | 40 | 11 | 14 | C7 | 0,060 | ● | ● |
| ISO9 1010 R | 10 | 8,0 | 150 | 4,0 | 50 | 14 | 18 | C7 | 0,100 | ● | ● |
| ISO9 1212 R | 12 | 9,6 | 180 | 5,1 | 63 | 17 | 21 | C8 | 0,250 | ● | ● |
| ISO9 1616 R | 16 | 12,8 | 210 | 6,2 | 80 | 22 | 27 | ABC 10 | 0,400 | ● | ● |
| ISO9 2020 R | 20 | 16,0 | 250 | 8,3 | 100 | 28 | 34 | ABC 12 | 0,700 | ● | ● |
| ISO9 2525 R | 25 | 20,0 | 300 | 10,0 | 125 | 35 | 43 | ABC 16 | 1,300 | ● | ● |
| ISO9 3232 R | 32 | 25,6 | 355 | 12,0 | 160 | 44 | 52 | ABC 20 | 2,500 | ● | ● |



Characteristics:
Brazed boring bar.
ISO 353

Eigenschaften:
HM-Gelöteter
Innendrehmeißel.






**AVAILABILITY / VERFÜGBARKEIT**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

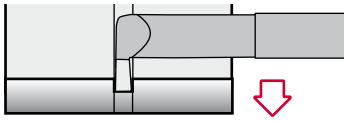
# UI 40 60°

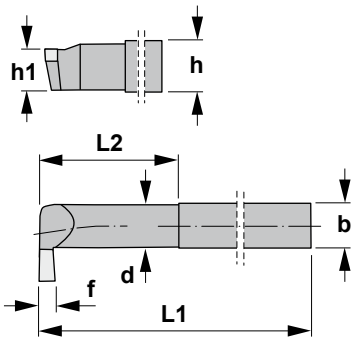
| Reference<br>Bezeichnung | d | h=b | L | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| UI 40 60° 1010 R | 10 | 10 | 100 | 26 | 1,8 | E4 | 0,070 | ● | ● |
| UI 40 60° 1212 R | 12 | 12 | 110 | 26 | 1,8 | E4 | 0,200 | ● | ● |
| UI 40 60° 1616 R | 16 | 16 | 140 | 33 | 2,0 | E5 | 0,250 | ● | ● |
| UI 40 60° 2020 R | 20 | 20 | 160 | 41 | 2,0 | E6 | 0,450 | ● | ● |
| UI 40 60° 2525 R | 25 | 25 | 180 | 49 | 2,5 | E8 | 0,750 | ● | ● |



Characteristics:
Brazed boring bar.
ISO 354

Eigenschaften:
HM-Gelöteter Innendrehmeißel.






# UI 50 90°

| Reference<br>Bezeichnung | d | h=b | L | L2 | f | Insert size<br>Wendeschneidplatte | Kg | KM15 | PM25 |
|---|---|---|---|---|---|---|---|---|---|
| UI 50 90° 1010 R | 10 | 10 | 140 | 52 | 3 | D3 | 0,100 | ● | ● |
| UI 50 90° 1212 R | 12 | 12 | 160 | 56 | 4 | D4 | 0,200 | ● | ● |
| UI 50 90° 1616 R | 16 | 16 | 180 | 63 | 5 | D5 | 0,350 | ● | ● |
| UI 50 90° 2020 R | 20 | 20 | 210 | 80 | 6 | D6 | 0,700 | ● | ● |
| UI 50 90° 2525 R | 25 | 25 | 250 | 100 | 8 | D8 | 1,250 | ● | ● |



# PARTING AND GROOVING AB- UND EINSTECHDREHEN

B

Inserts for parting and grooving
Ab- und Einstechwendeschneidplatten B02-15

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B

# CVD / PVD



## CVD coated carbide

The CVD coatings are generated by a chemical reaction at high temperatures (700-1050ºC). All CVD coatings provide a high wear resistance due to its excellent adhesion to cemented carbide.

CVD coatings are the first choice in a large turning range where wear resistance is important.

## PVD coated carbide

PVD coatings offer wear resistance due to their hardness. The coating process involves the evaporation of metal, which reacts with nitrogen to form a hard nitride coating. The full process is made at relatively low temperatures (400-600ºC).

PVD coatings are recommended when sharp cutting edges are needed.

# Features of CVD and PVD coated carbide

| | Grade | Colour | Coating composition | Definition |
|---|---|---|---|---|
|  | ***TN15*** | ● | TiN-TiC-TiN | CVD coating with TiN-TiC-TiN. The coating has a thickness of 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant. |
|  | ***TN30*** | ● | $TiCN+Al_2O_3+TiN$ | General purpose wear resistant CVD turning grade. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel at lower speeds thanTN15.<br>This turning grade is for demanding metal removal operations, including cutting through scale at low speeds through heavy interruption, and problem machining of stainless steel at low speed and poor rigidity. |
|  | ***TL20*** | ● | TiAlN | Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel. |
|  | ***TL30*** | ● | TiAlN | The PVD universal high-performance grade for steel, austenitic steel, cast iron and heat-resistant alloys. |
|  | ***TL40*** | ● | TiAlN | Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel. |

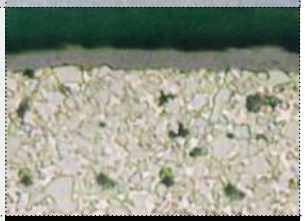
## CVD-beschichteter Hartmetall

Die CVD-Beschichtungen erfolgen durch eine chemische Reaktion bei hohen Temperaturen (700-1050ºC). Alle CVD-Beschichtungen verfügen über eine hohe Verschleißfestigkeit, weil sie eine hervorragende Haftung auf dem Hartmetall haben.
Die CVD-Beschichtungen sind die erste Wahl bei einer breiten Drehpalette, bei der die Verschleißfestigkeit wichtig ist.

## PVD-beschichteter Hartmetall

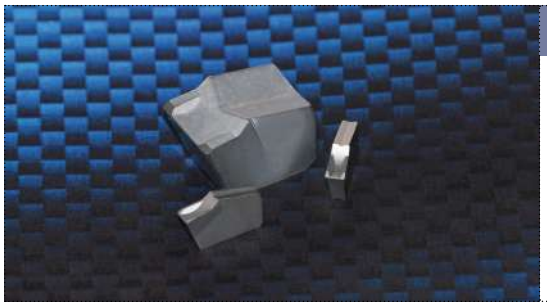
Aufgrund Ihrer Härte bieten PVD-Beschichtungen Verschleißfestigkeit an. Der Beschichtungsprozess beinhaltet die Verdampfung des Metalls, das mit Stickstoff reagiert, um eine harte Nitridbeschichtung auszubilden. Der ganze Prozess erfolgt bei relativ niedrigen Temperaturen (400-600ºC).
PVD-Beschichtungen werden empfohlen, wenn man scharfe Schneidkanten braucht.

# Eigenschaften von CVD und PVD-beschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | |
|---|---|---|---|---|
| CVD-Beschichtung mit TiN-TiC-TiN. Die Dicke der Schicht ist 3-5 Mikron und ist zur Bearbeitung von Stahl, legierten Stahl und rostfreien Stahl geeignet, mit oder ohne Kühlung. | TiN-TiC-TiN | | ***TN15*** |  |
| Es ist eine allgemeine verschleißfeste Sorte zum CVD Drehen. Die mehrlagige Beschichtung enthält Aluminiumoxyd, um zusätzliche Wärme und Verschleißfestigkeit zu erreichen. Es wird für die Bearbeitung von Stahl bei niedrigeren Geschwindigkeiten als TN15 benutzt. Diese Sorte ist für Operationen mit großen Spanabfluß geeignet, auch mit unterbrochenen Schnitten und für die problematische Bearbeitung von rostfreiem Stahl bei niedrigen Geschwindigkeiten und ungünstigen Bedingungen. | $TiCN+Al_2O_3+TiN$ | | ***TN30*** |  |
| PVD beschichtete Sorte mit TiAlN und einer Gleitschicht. Sie hat einen niedrigen Reibungswert und eine niedrige Schneidenenergie beim Schlichten. Die scharfe Schneidkante reduziert den Schneidenaufbau und erzeugt eine hervorragende Oberfläche. Empfohlen für legierten Stahl. | TiAlN | | ***TL20*** |  |
| Die PVD universell einsetzbare Hochleistungssorte für Stahlwerkstoffe, austenitischen Stahl, Gusswerkstoffe und hochwarmfeste Legierungen. | TiAlN | | ***TL30*** |  |
| PVD beschichtete Sorte mit TiAlN und einer Gleitschicht. Sie hat einen niedrigen Reibungswert und eine niedrige Schneidenenergie beim Schlichten. Die scharfe Schneidkante reduziert den Schneidenaufbau und erzeugt eine hervorragende Oberfläche. Empfohlen für legierten Stahl. | TiAlN | | ***TL40*** |  |

B

# UNCOATED CARBIDE



## UNCOATED CARBIDE

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

## Features of uncoated carbide

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| **P** Steel |  | ***PM25*** | | WC+TiC+TaC+Co | General purpose uncoated grade in the P30 range. This tough, economical grade is suitable to work carbon steels, alloyed steels, tool steels and stainless steels. PM25 provides toughness and resistance to deformation in roughing and semi-finishing applications. |
| |  | ***PM40*** | | WC+TiC+TaC+Co | Roughing grade in the P35 range. This tough grade is for structural, cast and tool steels. It is recommended when toughness is more important than wear resistance. |
| **K** Cast iron |  | ***KM15*** | | WC+Co | Finishing grade in the K10 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys. |

## Application

| ISO | Composition | Features | Workpiece |
|---|---|---|---|
| **P** | WC+TiC+TaC+Co | Heat resistance, excellent plastic deformation resistance. | Carbon steel, alloyed steel, stainless steel. |
| **M** | WC+TiC+TaC+Co | General tools stable heat resistance with strength. | Carbon steel, alloyed steel, stainless steel, cast steel. |
| **K** | WC+Co | High strength and superior wear resistance. | Carbon iron, non-ferrous metal, plastic, etc. |

## Properties

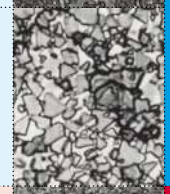
| Grade | Hardness (HRA) | TRS ($Kgf/mm^2$) | Young's modulus ($103Kgf/mm^2$) | Thermal expansion coefficient ($10^{-6}/°C$) | Thermal conductivity ($cal/cm \cdot sec \cdot °C$) |
|---|---|---|---|---|---|
| **KM15** | 90.9 | 250 | 63 | - | 105 |
| **PM25** | 91.9 | 200 | 56 | 5.2 | 45 |
| **PM40** | 91.3 | 230 | 53 | 5.2 | - |

B

## HARTMETALL

- Die hervorragende Wärmerißbeständigkeit ermöglicht eine Bearbeitung mit Kühlmittel.
- Unbeschichtetes Hartmetall eignet sich zur Bearbeitung von verschiedenen Werkstoffen.
- Hohe Zähfestigkeit und geringe Schneidkraft.
- Niedrige Affinität zum Werkstoff.

# Eigenschaften von unbeschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| Allgemeine unbeschichtete Sorte im P30 Bereich. Diese zähe und wirtschaftliche Sorte ist zur Bearbeitung von Kohlenstoffstahl, legiertem Stahl, Werkzeugstahl und rostfreiem Stahl gut geeignet. PM25 hat eine gute Zähigkeit und Verschleißfestigkeit in Schrupp- und mittlere Schlichtarbeiten. | WC+TiC+TaC+Co | | ***PM25*** |  | **P** Stahl |
| Es ist eine Sorte zum Schruppen im P35 Bereich. Diese zähe Sorte ist für Baustahl, Stahlguß und Werkzeugstahl geeignet, insbesonders wenn die Zähigkeit wichtiger als die Verschleißfestigkeit ist. | WC+TiC+TaC+Co | | ***PM40*** |  | |
| Es ist eine Sorte zum Schlichten im K10 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständigen Legierungen geeignet. Sie hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetischen Materialien und ist für das Schlichten in hitzebeständigen Legierungen besonders gut geeignet. | WC+Co | | ***KM15*** |  | **K** Guß |

# Anwendung

| ISO | Zusammensetzung | Eigenschaften | Bearbeitungsstück |
|---|---|---|---|
| **P** | WC+TiC+TaC+Co | Hitzebeständigkeit, ausgezeichneter Widerstand gegen plastische Verformung. | Kohlenstoffstahl, legierter Stahl, rostfreier Stahl. |
| **M** | WC+TiC+TaC+Co | Stabile hitzebeständighkeit mit Stärke. | Kohlenstoffstahl, legierter Stahl, rostfreier Stahl, Stahlguß. |
| **K** | WC+Co | Hohe Festigkeit und hervorragende Verschleißfestigkeit. | Kohlenstoff-Eisen, Nicht-Eisen-Metall, Kunststoff, usw. |

# Sorteneigenschaften

| Sorte | Härte (HRA) | TRS (Kgf/mm²) | Youngscher Modul (103Kgf/mm²) | Wärmeausdehnungs-Koeffizient ($10^{-6}$/°C) | Wärmeleitfähigkeit (cal/cm·sec·°C) |
|---|---|---|---|---|---|
| **KM15** | 90.9 | 250 | 63 | - | 105 |
| **PM25** | 91.9 | 200 | 56 | 5.2 | 45 |
| **PM40** | 91.3 | 230 | 53 | 5.2 | - |

B

# Inserts for parting and grooving
# Ab- und Einstechwendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

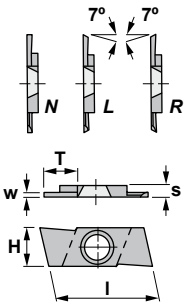
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | Continuous / Ununterbrochen | Slight interruption / Leicht unterbrochen | Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | ● | ◕ | |
| TN30 | ● | ◕ | ✣ |
| TL20 | ● | ◕ | ✣ |
| TL30 | ● | ◕ | ✣ |
| TL40 | ● | ◕ | ✣ |
| PM25 | ● | ◕ | |
| PM40 | ● | ◕ | ✣ |
| KM15 | ● | ◕ | |



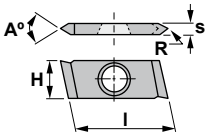



## GIGP

Grooving and parting inserts.
Wendeschneidplatten zum Ein- und Abstechen.

| Reference / Bezeichnung | l | s | H | T | w | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|
| GIGP10RN | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | | ● |
| GIGP10RR | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | | ● |
| GIGP10LN | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | | ● |
| GIGP10LL | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | | ● |
| GIGP15RN | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | | ● |
| GIGP15RR | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | | ● |
| GIGP15LN | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | | ● |
| GIGP15LL | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | | ● |
| GIGP20RN | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | | ● |
| GIGP20RR | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | | ● |
| GIGP20LN | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | | ● |
| GIGP20LL | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | | ● |



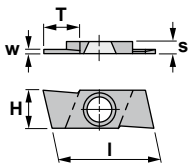



## GIGW

Threading inserts.
Wendeschneidplatten zum Gewindedrehen.

| Reference / Bezeichnung | l | s | H | T | w | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|
| GIGW55R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | | ● |
| GIGW60R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | | ● |



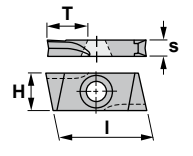



## GISG

Standard grooving inserts.
Standard-Wendeschneidplatten zum Einstechen.

| Reference / Bezeichnung | l | s | H | T | w | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|
| GISG05R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,50 | | | | ● |
| GISG07R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,70 | | | | ● |
| GISG08R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,80 | | | | ● |
| GISG09R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,90 | | | | ● |
| GISG11R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,10 | | | | ● |
| GISG13R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,30 | | | | ● |
| GISG16R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,60 | | | | ● |
| GISG185R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,85 | | | | ● |






## GIST

Turning inserts.
Wendeschneidplatten zum Drehen.

| Reference / Bezeichnung | l | s | H | T | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|
| GIST3R-L | 17,00 | 3,17 | 7,00 | 6,00 | | | | ● |

B

# Inserts for parting and grooving
# Ab- und Einstechwendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

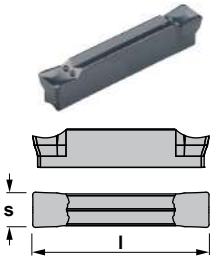
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

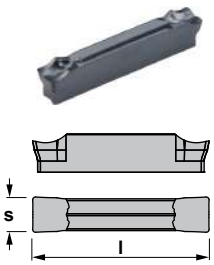
| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | ● | ◕ | |
| TN30 | ● | ◕ | ✣ |
| TL20 | ● | ◕ | ✣ |
| TL30 | ● | ◕ | ✣ |
| TL40 | ● | ◕ | ✣ |
| PM25 | ● | ◕ | |
| PM40 | ● | ◕ | ✣ |
| KM15 | ● | ◕ | |

## WDMG



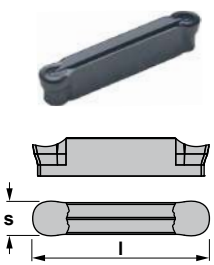

| Reference / Bez. | l | s | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL30 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WDMG 02 | 22 | 2,0 | | | | | | | | ● | |
| WDMG 03 | 22 | 3,0 | | | | | | | | ● | |
| WDMG 04 | 25 | 4,0 | | | | | | | | ● | |
| WDMG 05 | 25 | 5,0 | | | | | | | | ● | |
| WDMG 06 | 25 | 6,0 | | | | | | | | ● | |

## WDMP



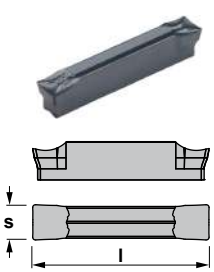

| Reference / Bez. | l | s | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL30 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WDMP 02 | 22 | 2,0 | | | | | | | | ● | |
| WDMP 03 | 22 | 3,0 | | | | | | | | ● | |
| WDMP 04 | 25 | 4,0 | | | | | | | | ● | |
| WDMP 05 | 25 | 5,0 | | | | | | | | ● | |
| WDMP 06 | 25 | 6,0 | | | | | | | | ● | |

## WDMR




| Reference / Bez. | l | s | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL30 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WDMR 02 | 22 | 2,0 | | | | | | | | ● | |
| WDMR 03 | 22 | 3,0 | | | | | | | | ● | |
| WDMR 04 | 25 | 4,0 | | | | | | | | ● | |
| WDMR 05 | 25 | 5,0 | | | | | | | | ● | |
| WDMR 06 | 25 | 6,0 | | | | | | | | ● | |

## WDMT




| Reference / Bez. | l | s | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL30 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WDMT 02 | 22 | 2,0 | | | | | | | | ● | |
| WDMT 03 | 22 | 3,0 | | | | | | | | ● | |
| WDMT 04 | 25 | 4,0 | | | | | | | | ● | |
| WDMT 05 | 25 | 5,0 | | | | | | | | ● | |
| WDMT 06 | 25 | 6,0 | | | | | | | | ● | |

B

# Inserts for parting and grooving
# Ab- und Einstechwendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

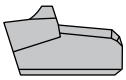
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

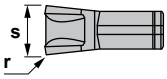
**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | | | |
| TN30 | | | |
| TL20 | | | |
| TL30 | | | |
| TL40 | | | |
| PM25 | | | |
| PM40 | | | |
| KM15 | | | |



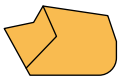


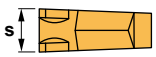



## MRCN

| Reference / Bezeichnung | s | r | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MRCN 1.6 | 1,6 | 0,15 | | | | | | | | | |
| MRCN 2.2 | 2,2 | 0,20 | | | | | | | | ○ | |
| MRCN 3.0 | 3,0 | 0,20 | | | | | | | | ○ | |
| MRCN 4.0 | 4,0 | 0,20 | | | | | | | | ○ | |
| MRCN 5.0 | 5,0 | 0,30 | | | | | | | | ○ | |
| MRCN 6.0 | 6,0 | 0,40 | | | | | | | | ○ | |








## PTNT

| Reference / Bezeichnung | s | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TIN21 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|
| PTNT 02 | 2,10 | | ● | ● | | | ● | | | |
| PTNT 03 | 3,10 | ○ | ● | ● | | | ● | ● | | |
| PTNT 04 | 4,10 | | ● | ● | | | ● | ● | | |
| PTNT 05 | 5,10 | ○ | ○ | | | | ○ | | | |
| PTNT 06 | 6,10 | | | | | | ○ | | | |
| PTNT 08 | 8,10 | | | | | | ● | | | |
| PTNT 09 | 9,10 | | ○ | | | | ● | | | |

# Inserts for parting and grooving
# Ab- und Einstechwendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

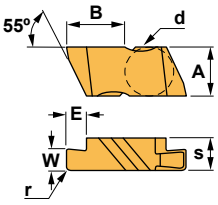
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | ■ | ■ | |
| TN30 | ■ | ■ | ■ |
| TL20 | ■ | ■ | ■ |
| TL30 | ■ | ■ | ■ |
| TL40 | ■ | ■ | ■ |
| PM25 | ■ | ■ | |
| PM40 | ■ | ■ | ■ |
| KM15 | ■ | ■ | |






## NG

| Reference / Bez. | d | A | B | E | r | s | W | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NG2031R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 0,79 | | | | ○ | | | | | |
| NG210R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 0,99 | | | | ○ | | | | | |
| NG2041R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 1,04 | | | | ○ | | | | | |
| NG2047R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 1,19 | | | | ○ | | | | | |
| NG2058R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 1,47 | | | | ○ | | | | | |
| NG2062R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 1,57 | | | | ○ | | | | | |
| NG220R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 2,01 | | | | ○ | | | | | |
| NG2094R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 2,39 | | | | ○ | | | | | |
| NG230R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 3,00 | | | | ○ | | | | | |
| NG2125R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 3,18 | | | | ○ | | | | | |
| NG3031R/L | 9,53 | 8,74 | 10,29 | 1,27 | 0,05 | 4,95 | 0,79 | | | | ○ | | | | | |
| NG310R/L | 9,53 | 8,74 | 10,29 | 1,27 | 0,05 | 4,95 | 0,99 | | | | ○ | | | | | |
| NG3047R/L | 9,53 | 8,74 | 10,29 | 1,91 | 0,05 | 4,95 | 1,19 | | | | ○ | | | | | |
| NG3062R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 1,57 | | | | ○ | | | | | |
| NG3072R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 1,83 | | | | ○ | | | | | |
| NG3078R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 1,98 | | | | ○ | | | | | |
| NG320R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 2,01 | | | | ○ | | | | | |
| NG3088R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 2,24 | | | | ○ | | | | | |
| NG3094R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 2,39 | | | | ○ | | | | | |
| NG3105R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 2,67 | | | | ○ | | | | | |
| NG3110R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 2,79 | | | | ○ | | | | | |
| NG330R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,00 | | | | ○ | | | | | |
| NG3122R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,10 | | | | ○ | | | | | |
| NG3125R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,18 | | | | ○ | | | | | |
| NG3142R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,61 | | | | ○ | | | | | |
| NG3156R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,96 | | | | ○ | | | | | |
| NG340R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 4,01 | | | | ○ | | | | | |
| NG3178R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 4,52 | | | | ○ | | | | | |
| NG3185R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,51 | 4,95 | 4,70 | | | | ○ | | | | | |
| NG3189R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,51 | 4,95 | 4,80 | | | | ○ | | | | | |
| NG4125R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,13 | 6,48 | 3,18 | | | | ○ | | | | | |
| NG4189R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,51 | 6,48 | 4,80 | | | | ○ | | | | | |
| NG4213R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,13 | 6,48 | 5,41 | | | | ○ | | | | | |
| NG4219R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,51 | 6,48 | 5,56 | | | | ○ | | | | | |
| NG4250R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,51 | 6,48 | 6,35 | | | | ○ | | | | | |
| NG4312R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 6,48 | 7,92 | | | | ○ | | | | | |
| NG6281R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 9,73 | 7,14 | | | | ○ | | | | | |
| NG6312R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 9,73 | 7,92 | | | | ○ | | | | | |
| NG6375R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 9,73 | 9,53 | | | | ○ | | | | | |

B

# Inserts for parting and grooving
# Ab- und Einstechwendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

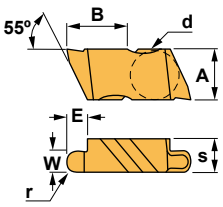
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | | | |
| TN30 | | | |
| TL20 | | | |
| TL30 | | | |
| TL40 | | | |
| PM25 | | | |
| PM40 | | | |
| KM15 | | | |

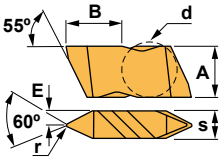





## NR

| Reference / Bez. | d | A | B | E | r | s | W | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NR2031R/L | 4,76 | 5,56 | 6,81 | 2,79 | 0,79 | 3,81 | 1,57 | | | | ○ | | | | | |
| NR2047R/L | 4,76 | 5,56 | 6,79 | 2,79 | 1,19 | 3,81 | 2,39 | | | | ○ | | | | | |
| NR2062R/L | 4,76 | 5,56 | 6,77 | 2,79 | 1,57 | 3,81 | 3,18 | | | | ○ | | | | | |
| NR3031R/L | 9,53 | 8,74 | 10,24 | 3,81 | 0,79 | 4,95 | 1,57 | | | | ○ | | | | | |
| NR3047R/L | 9,53 | 8,74 | 10,22 | 3,81 | 1,19 | 4,95 | 2,39 | | | | ○ | | | | | |
| NR3062R/L | 9,53 | 8,74 | 10,20 | 3,81 | 1,57 | 4,95 | 3,18 | | | | ○ | | | | | |
| NR3078R/L | 9,53 | 8,74 | 10,18 | 3,81 | 1,98 | 4,95 | 3,96 | | | | ○ | | | | | |
| NR3094R/L | 9,53 | 8,74 | 10,16 | 3,81 | 2,39 | 4,95 | 4,78 | | | | ○ | | | | | |
| NR4062R/L | 9,53 | 11,51 | 16,07 | 6,35 | 1,57 | 6,48 | 3,18 | | | | ○ | | | | | |
| NR4094R/L | 9,53 | 11,51 | 10,03 | 6,35 | 2,39 | 6,48 | 4,78 | | | | ○ | | | | | |
| NR4125R/L | 9,53 | 11,51 | 15,98 | 6,35 | 3,18 | 6,48 | 6,35 | | | | ○ | | | | | |






## NT

| Reference / Bez. | d | A | B | E | r | s | KM15 | PM25 | PM40 | TN15 | TN20 | TN30 | TK15 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NT2R/L | 4,76 | 5,56 | 6,76 | 1,91 | 0,08 | 3,81 | | | | ○ | | | | | |
| NT3R/L | 9,53 | 8,74 | 10,16 | 2,49 | 0,13 | 4,95 | | | | ○ | | | | | |
| NT4R/L | 9,53 | 11,51 | 15,98 | 3,25 | 0,13 | 6,48 | | | | ○ | | | | | |

B

# Microturn

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

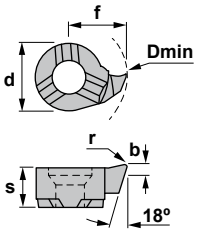
**AVAILABILITY**
- Standard item
- Check availability

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | ● | ◕ | |
| TN30 | ● | ◕ | ✣ |
| TL20 | ● | ◕ | ✣ |
| TL30 | ● | ◕ | ✣ |
| TL40 | ● | ◕ | ✣ |
| PM25 | ● | ◕ | |
| PM40 | ● | ◕ | ✣ |
| KM15 | ● | ◕ | |



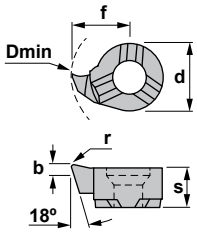



## L

Insert for turning.
Wendeschneidplatte zum Drehen.

| Reference / Bezeichnung | Dmin | b | f | s | d | r | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|
| LS08.1846.02 | 7,8 | 3,3 | 4,65 | 3,5 | 6,0 | 0,2 | | | | ● |
| LS11.1855.02 | 9,8 | 3,9 | 5,50 | 4,2 | 8,0 | 0,2 | | | | ● |
| LS11.1867.02 | 11,0 | 3,9 | 6,70 | 4,2 | 8,0 | 0,2 | | | | ● |
| LS14.1867.02 | 13,8 | 5,0 | 8,70 | 5,1 | 9,0 | 0,2 | | | | ● |
| LS16.1897.02 | 15,5 | 5,0 | 9,70 | 5,4 | 11,0 | 0,2 | | | | ● |






## R

Insert for turning.
Wendeschneidplatte zum Drehen.

| Reference / Bezeichnung | Dmin | b | f | s | d | r | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|
| RS08.1846.02 | 7,8 | 3,3 | 4,65 | 3,5 | 6,0 | 0,2 | | | | ● |
| RS11.1855.02 | 9,8 | 3,9 | 5,50 | 4,2 | 8,0 | 0,2 | | | | ● |
| RS11.1867.02 | 11,0 | 3,9 | 6,70 | 4,2 | 8,0 | 0,2 | | | | ● |
| RS14.1867.02 | 13,8 | 5,0 | 8,70 | 5,1 | 9,0 | 0,2 | | | | ● |
| RS16.1897.02 | 15,5 | 5,0 | 9,70 | 5,4 | 11,0 | 0,2 | | | | ● |

B

## Microturn

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

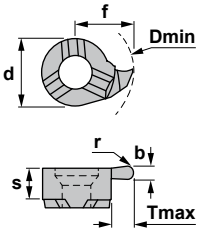
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | | | |
| TN30 | | | |
| TL20 | | | |
| TL30 | | | |
| TL40 | | | |
| PM25 | | | |
| PM40 | | | |
| KM15 | | | |



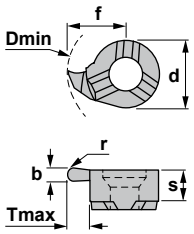



### L

Insert for grooving with radius.
Wendeschneidplatten zum Vollradius-Einstechen.

| Reference / Bezeichnung | Dmin | b | r | f | s | d | tmax | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LS08.008R04 | 8,0 | 0,8 | 0,4 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS08.012R06 | 8,0 | 1,2 | 0,6 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS08.018R09 | 8,0 | 1,8 | 0,9 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS11.008R04 | 11,0 | 0,8 | 0,4 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS11.012R06 | 11,0 | 1,2 | 0,6 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS11.018R09 | 11,0 | 1,8 | 0,9 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS11.020R10 | 11,0 | 2,0 | 1,0 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS11.030R15 | 11,0 | 3,0 | 1,5 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS14.012R06 | 14,0 | 1,2 | 0,6 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| LS14.018R09 | 14,0 | 1,8 | 0,9 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| LS14.020R10 | 14,0 | 2,0 | 1,0 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| LS14.022R11 | 14,0 | 2,2 | 1,1 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| LS14.030R15 | 14,0 | 3,0 | 1,5 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| LS16.018R09 | 16,0 | 1,8 | 0,9 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS16.022R11 | 16,0 | 2,2 | 1,1 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS16.030R15 | 16,0 | 3,0 | 1,5 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS16.040R20 | 16,0 | 4,0 | 2,0 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |






### R

Insert for grooving with radius.
Wendeschneidplatten zum Vollradius-Einstechen.

| Reference / Bezeichnung | Dmin | b | r | f | s | d | tmax | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RS08.008R04 | 8,0 | 0,8 | 0,4 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS08.012R06 | 8,0 | 1,2 | 0,6 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS08.018R09 | 8,0 | 1,8 | 0,9 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS11.008R04 | 11,0 | 0,8 | 0,4 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS11.012R06 | 11,0 | 1,2 | 0,6 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS11.018R09 | 11,0 | 1,8 | 0,9 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS11.020R10 | 11,0 | 2,0 | 1,0 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS11.030R15 | 11,0 | 3,0 | 1,5 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS14.012R06 | 14,0 | 1,2 | 0,6 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| RS14.018R09 | 14,0 | 1,8 | 0,9 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| RS14.020R10 | 14,0 | 2,0 | 1,0 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| RS14.022R11 | 14,0 | 2,2 | 1,1 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| RS14.030R15 | 14,0 | 3,0 | 1,5 | 9,0 | 4,0 | 9,0 | 4,0 | | | | ● |
| RS16.018R09 | 16,0 | 1,8 | 0,9 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS16.022R11 | 16,0 | 2,2 | 1,1 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS16.030R15 | 16,0 | 3,0 | 1,5 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS16.040R20 | 16,0 | 4,0 | 2,0 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |

B

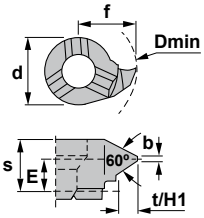
# Microturn

**USE CLASSIFICATION** / **EINSATZBEREICH**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**AVAILABILITY** / **VERFÜGBARKEIT**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | ■ | ■ | |
| TN30 | ■ | ■ | ■ |
| TL20 | ■ | ■ | ■ |
| TL30 | ■ | ■ | ■ |
| TL40 | ■ | ■ | ■ |
| PM25 | ■ | ■ | |
| PM40 | ■ | ■ | ■ |
| KM15 | ■ | ■ | |



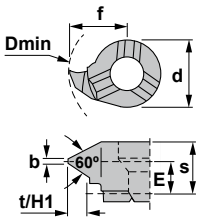



## L

Insert for threading.
Wendeschneidplatte zum Gewindedrehen.

| Reference / Bez. | Dmin | pitch. | t/H1 | f | E | s | b | d | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LS08.0815.01 | 8,0 | 1,5 / 1,75 | 0,95 | 4,8 | 2,5 | 3,5 | 0,18 | 6,0 | | | | ● |
| LS11.1020.01 | 11,0 | 2,0 | 1,08 | 6,7 | 3,0 | 4,3 | 0,25 | 8,0 | | | | ● |
| LS11.1325.01 | 11,0 | 2,5 | 1,35 | 6,7 | 3,0 | 4,3 | 0,31 | 8,0 | | | | ● |
| LS14.1020.01 | 14,0 | 2,0 | 1,08 | 9,0 | 4,2 | 5,4 | 0,25 | 9,0 | | | | ● |
| LS14.1325.01 | 14,0 | 2,5 | 1,35 | 9,0 | 4,7 | 5,4 | 0,31 | 9,0 | | | | ● |
| LS16.1325.01 | 16,0 | 2,5 | 1,35 | 10,2 | 4,2 | 5,5 | 0,31 | 11,0 | | | | ● |
| LS08.0205.01 | 8,0 | 0,5 / 0,75 | 0,43 | 4,8 | 2,7 | 3,5 | 0,06 | 6,0 | | | | ● |
| LS08.0510.01 | 8,0 | 1,0 / 1,25 | 0,70 | 4,8 | 2,7 | 3,5 | 0,12 | 6,0 | | | | ● |
| LS11.0205.01 | 11,0 | 0,5 / 0,75 | 0,75 | 6,7 | 3,5 | 4,3 | 0,06 | 8,0 | | | | ● |
| LS11.0510.01 | 11,0 | 1,0 | 0,55 | 6,7 | 3,5 | 4,3 | 0,12 | 8,0 | | | | ● |
| LS11.0815.01 | 11,0 | 1,5 | 0,81 | 6,7 | 3,5 | 4,3 | 0,18 | 8,0 | | | | ● |
| LS14.0510.01 | 14,0 | 1,0 | 0,55 | 9,0 | 4,7 | 5,4 | 0,12 | 9,0 | | | | ● |
| LS14.0815.01 | 14,0 | 1,5 | 0,81 | 9,0 | 4,5 | 5,4 | 0,18 | 9,0 | | | | ● |
| LS16.0510.01 | 16,0 | 1,0 | 0,55 | 10,2 | 4,7 | 5,5 | 0,12 | 11,0 | | | | ● |
| LS16.0815.01 | 16,0 | 1,5 | 0,81 | 10,2 | 4,5 | 5,5 | 0,18 | 11,0 | | | | ● |
| LS16.1020.01 | 16,0 | 2,0 | 1,08 | 10,2 | 4,2 | 5,5 | 0,25 | 11,0 | | | | ● |






## R

Insert for threading.
Wendeschneidplatte zum Gewindedrehen.

| Reference / Bez. | Dmin | pitch. | t/H1 | f | E | s | b | d | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS08.0815.01 | 8,0 | 1,5 / 1,75 | 0,95 | 4,8 | 2,5 | 3,5 | 0,18 | 6,0 | | | | ● |
| RS11.1020.01 | 11,0 | 2,0 | 1,08 | 6,7 | 3,0 | 4,3 | 0,25 | 8,0 | | | | ● |
| RS11.1325.01 | 11,0 | 2,5 | 1,35 | 6,7 | 3,0 | 4,3 | 0,31 | 8,0 | | | | ● |
| RS14.1020.01 | 14,0 | 2,0 | 1,08 | 9,0 | 4,2 | 5,4 | 0,25 | 9,0 | | | | ● |
| RS14.1325.01 | 14,0 | 2,5 | 1,35 | 9,0 | 4,7 | 5,4 | 0,31 | 9,0 | | | | ● |
| RS16.1325.01 | 16,0 | 2,5 | 1,35 | 10,2 | 4,2 | 5,5 | 0,31 | 11,0 | | | | ● |
| RS08.0205.01 | 8,0 | 0,5 / 0,75 | 0,43 | 4,8 | 2,7 | 3,5 | 0,06 | 6,0 | | | | ● |
| RS08.0510.01 | 8,0 | 1,0 / 1,25 | 0,70 | 4,8 | 2,7 | 3,5 | 0,12 | 6,0 | | | | ● |
| RS11.0205.01 | 11,0 | 0,5 / 0,75 | 0,75 | 6,7 | 3,5 | 4,3 | 0,06 | 8,0 | | | | ● |
| RS11.0510.01 | 11,0 | 1,0 | 0,55 | 6,7 | 3,5 | 4,3 | 0,12 | 8,0 | | | | ● |
| RS11.0815.01 | 11,0 | 1,5 | 0,81 | 6,7 | 3,5 | 4,3 | 0,18 | 8,0 | | | | ● |
| RS14.0510.01 | 14,0 | 1,0 | 0,55 | 9,0 | 4,7 | 5,4 | 0,12 | 9,0 | | | | ● |
| RS14.0815.01 | 14,0 | 1,5 | 0,81 | 9,0 | 4,5 | 5,4 | 0,18 | 9,0 | | | | ● |
| RS16.0510.01 | 16,0 | 1,0 | 0,55 | 10,2 | 4,7 | 5,5 | 0,12 | 11,0 | | | | ● |
| RS16.0815.01 | 16,0 | 1,5 | 0,81 | 10,2 | 4,5 | 5,5 | 0,18 | 11,0 | | | | ● |
| RS16.1020.01 | 16,0 | 2,0 | 1,08 | 10,2 | 4,2 | 5,5 | 0,25 | 11,0 | | | | ● |

B

## Microturn

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

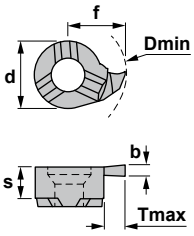
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | | | |
| TN30 | | | |
| TL20 | | | |
| TL30 | | | |
| TL40 | | | |
| PM25 | | | |
| PM40 | | | |
| KM15 | | | |






## L

Insert for grooving.
Wendeschneidplatte zum Einstechen.

| Reference / Bez. | Dmin | b | f | s | d | tmax | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|
| LS008.0070 | 8,0 | 0,73 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0080 | 8,0 | 0,83 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0090 | 8,0 | 0,93 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0110 | 8,0 | 1,20 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0130 | 8,0 | 1,40 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0160 | 8,0 | 1,70 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0100 | 8,0 | 1,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0150 | 8,0 | 1,50 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS008.0200 | 8,0 | 2,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| LS011.0070 | 11,0 | 0,73 | 6,7 | 4,2 | 8,0 | 1,2 | | | | ● |
| LS011.0080 | 11,0 | 0,83 | 6,7 | 4,2 | 8,0 | 1,3 | | | | ● |
| LS011.0090 | 11,0 | 0,93 | 6,7 | 4,2 | 8,0 | 1,5 | | | | ● |
| LS011.0110 | 11,0 | 1,20 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0130 | 11,0 | 1,40 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0160 | 11,0 | 1,70 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0100 | 11,0 | 1,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0150 | 11,0 | 1,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0200 | 11,0 | 2,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0250 | 11,0 | 2,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS011.0300 | 11,0 | 3,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| LS014.0070 | 14,0 | 0,73 | 9,0 | 5,3 | 9,0 | 1,2 | | | | ● |
| LS014.0080 | 14,0 | 0,83 | 9,0 | 5,3 | 9,0 | 1,3 | | | | ● |
| LS014.0090 | 14,0 | 0,93 | 9,0 | 5,3 | 9,0 | 1,5 | | | | ● |
| LS014.0110 | 14,0 | 1,20 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS014.0130 | 14,0 | 1,40 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS014.0160 | 14,0 | 1,70 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS014.0150 | 14,0 | 1,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS014.0200 | 14,0 | 2,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS014.0250 | 14,0 | 2,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS014.0300 | 14,0 | 3,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| LS016.0070 | 16,0 | 0,73 | 10,2 | 5,4 | 11,0 | 1,2 | | | | ● |
| LS016.0080 | 16,0 | 0,83 | 10,2 | 5,4 | 11,0 | 1,3 | | | | ● |
| LS016.0090 | 16,0 | 0,93 | 10,2 | 5,4 | 11,0 | 1,5 | | | | ● |
| LS016.0110 | 16,0 | 1,20 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0130 | 16,0 | 1,40 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0160 | 16,0 | 1,70 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0150 | 16,0 | 1,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0200 | 16,0 | 2,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0250 | 16,0 | 2,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0300 | 16,0 | 3,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0350 | 16,0 | 3,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| LS016.0400 | 16,0 | 4,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |

B

# Microturn

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

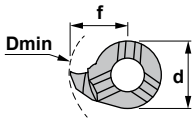
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

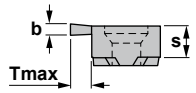
**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Grade Sorte | ● Continuous / Ununterbrochen | ◕ Slight interruption / Leicht unterbrochen | ✣ Interruption / Unterbrochen |
|---|---|---|---|
| TN15 | | | |
| TN30 | | | |
| TL20 | | | |
| TL30 | | | |
| TL40 | | | |
| PM25 | | | |
| PM40 | | | |
| KM15 | | | |



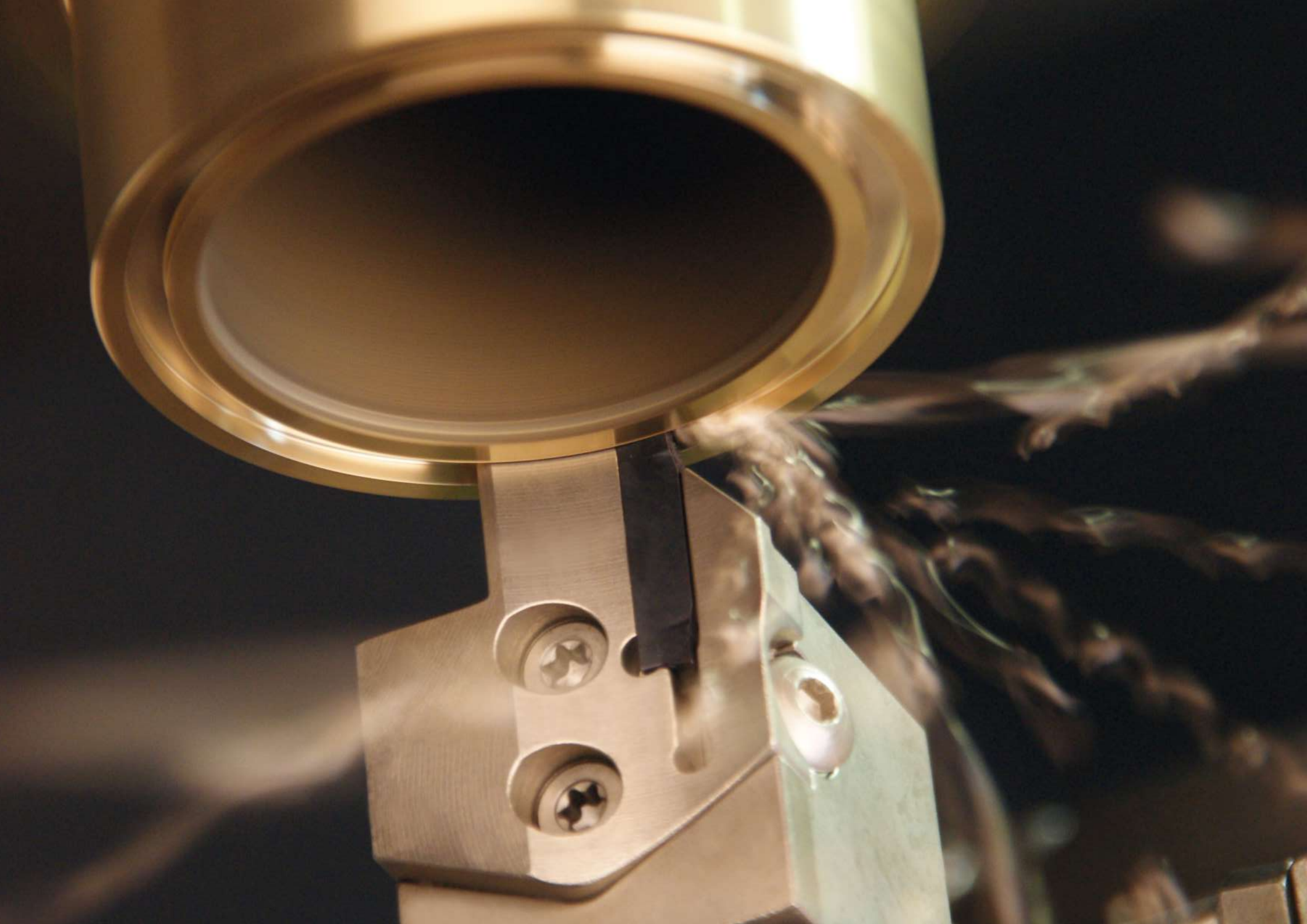



## R

Insert for grooving.
Wendeschneidplatte zum Einstechen.

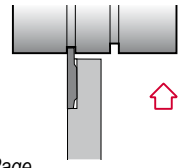
| Reference / Bez. | Dmin | b | f | s | d | tmax | KM15 | PM25 | TIN25 | TL20 |
|---|---|---|---|---|---|---|---|---|---|---|
| RS008.0070 | 8,0 | 0,73 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0080 | 8,0 | 0,83 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0090 | 8,0 | 0,93 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0110 | 8,0 | 1,20 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0130 | 8,0 | 1,40 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0160 | 8,0 | 1,70 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0100 | 8,0 | 1,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0150 | 8,0 | 1,50 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS008.0200 | 8,0 | 2,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | ● |
| RS011.0070 | 11,0 | 0,73 | 6,7 | 4,2 | 8,0 | 1,2 | | | | ● |
| RS011.0080 | 11,0 | 0,83 | 6,7 | 4,2 | 8,0 | 1,3 | | | | ● |
| RS011.0090 | 11,0 | 0,93 | 6,7 | 4,2 | 8,0 | 1,5 | | | | ● |
| RS011.0110 | 11,0 | 1,20 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0130 | 11,0 | 1,40 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0160 | 11,0 | 1,70 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0100 | 11,0 | 1,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0150 | 11,0 | 1,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0200 | 11,0 | 2,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0250 | 11,0 | 2,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS011.0300 | 11,0 | 3,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | ● |
| RS014.0070 | 14,0 | 0,73 | 9,0 | 5,3 | 9,0 | 1,2 | | | | ● |
| RS014.0080 | 14,0 | 0,83 | 9,0 | 5,3 | 9,0 | 1,3 | | | | ● |
| RS014.0090 | 14,0 | 0,93 | 9,0 | 5,3 | 9,0 | 1,5 | | | | ● |
| RS014.0110 | 14,0 | 1,20 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS014.0130 | 14,0 | 1,40 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS014.0160 | 14,0 | 1,70 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS014.0150 | 14,0 | 1,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS014.0200 | 14,0 | 2,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS014.0250 | 14,0 | 2,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS014.0300 | 14,0 | 3,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | ● |
| RS016.0070 | 16,0 | 0,73 | 10,2 | 5,4 | 11,0 | 1,2 | | | | ● |
| RS016.0080 | 16,0 | 0,83 | 10,2 | 5,4 | 11,0 | 1,3 | | | | ● |
| RS016.0090 | 16,0 | 0,93 | 10,2 | 5,4 | 11,0 | 1,5 | | | | ● |
| RS016.0110 | 16,0 | 1,20 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0130 | 16,0 | 1,40 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0160 | 16,0 | 1,70 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0150 | 16,0 | 1,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0200 | 16,0 | 2,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0250 | 16,0 | 2,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0300 | 16,0 | 3,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0350 | 16,0 | 3,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |
| RS016.0400 | 16,0 | 4,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | ● |



B

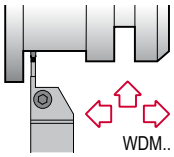
## Toolholders
## Klemmhalter

### STHE



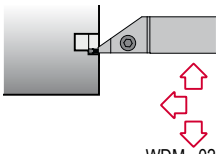
Page
Seite B18
GI..

### CZDP



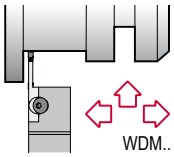
WDM.. 02
Page ..
Seite B20 WDM.. 06

### CZCD



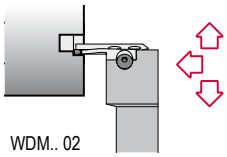
WDM.. 02
Page ..
Seite B21 WDM.. 06

### CZGD



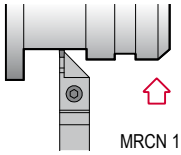
WDM.. 02
Page ..
Seite B22 WDM.. 06

### CZFD



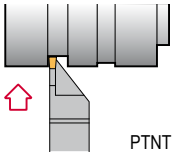
WDM.. 02
..
WDM.. 06
Page
Seite B25

### CZCB



MRCN 1,6
Page ..
Seite B42 MRCN 6,0

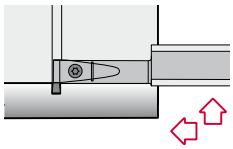
### XLCF



PTNT 02
Page PTNT 03
Seite B43 PTNT 04

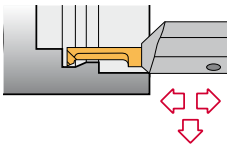
## Boring bars
## Bohrstangen

### CZGB



Page
Seite B47
MRCN 3,0
MRCN 4,0

### 00.30



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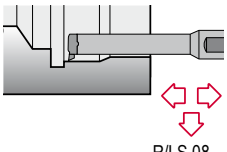
Seite B44
CTI 04..
CTI 06..

### 608.00



R/LS 08..
Page ..
Seite B46 R/LS 16..

## Tool blocks
## Grundhalter

### CPTS



Page
Seite B48

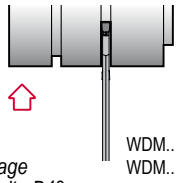
### DPTS



Page
Seite B48

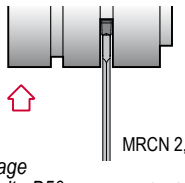
## Blades
## Stechschwerter

### CZDPN



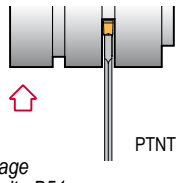
WDM.. 02
Page WDM.. 03
Seite B49 WDM.. 04

### CRCFN



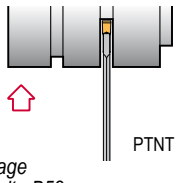
MRCN 2,2
Page ..
Seite B50 MRCN 6,0

### XLCFN



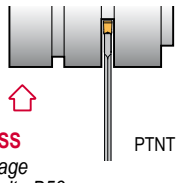
PTNT 02
Page ..
Seite B51 PTNT 09

### XLCTN



PTNT 02
Page ..
Seite B52 PTNT 06

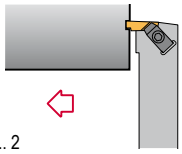
### XLCTN-HSS



HSS PTNT 02
Page ..
Seite B53 PTNT 04

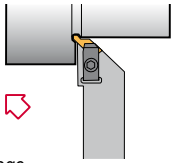
## Top Notch tools
## Top Notch Werkzeuge

### NE 93°



N.. 2
N.. 3
N.. 4
Page
Seite B54

### NR 45°



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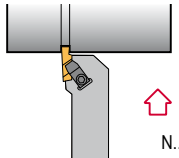
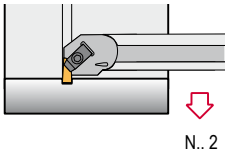
Seite B55
N.. 3

### NS 93°



Page
Seite B56
N.. 2
N.. 3
N.. 4

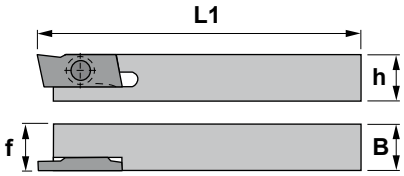
### NNTO 93°



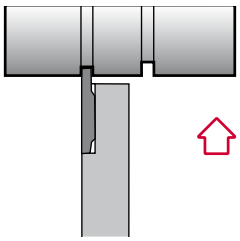
Page
Seite B57
N.. 2
N.. 3
N.. 4



Characteristics:
Multipurpose toolholders for grooving, threading and turning.
For precision turning.




Eigenschaften:
Multifunktions-Mini-Klemmhalter zum Einstechen, Gewindedrehen und Drehen.
Zum Präzisionsdrehen.



# STHE

| Reference Bezeichnung | h | h1 | B | L | f | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STHER/L0808M07 | 8 | 8 | 8 | 150 | 8 | GI.. | 0,070 |
| STHER/L1010M07 | 10 | 10 | 10 | 150 | 10 | GI.. | 0,110 |
| STHER/L1212M07 | 12 | 12 | 12 | 150 | 12 | GI.. | 0,150 |
| STHER/L1616M07 | 16 | 16 | 16 | 150 | 16 | GI.. | 0,280 |

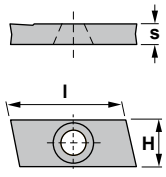
| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| STHER/L0808M07 | 1230 | 5508 | 1.2 |
| STHER/L1010M07 | 1230 | 5508 | 1.2 |
| STHER/L1212M07 | 1230 | 5508 | 1.2 |
| STHER/L1616M07 | 1230 | 5508 | 1.2 |

## GI

B06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| GI.. | 17,00 | 2,00 | 7,00 |

**GIGP** - Grooving and parting inserts / Ein- und Abstechplatten
**GIGW** - Threading inserts / Gewindedrehplatten
**GISG** - Grooving inserts / Einstechplatten
**GIST** - Turning inserts / Drehplatten




| GIGP | GIGW |
|---|---|
|  |  |
| **GISG** | **GIST** |
|  |  |

B

## Grooving and parting / Ein- und Abstechen

Characteristics:
- High precision.
- Close tolerances.
- Wide variety of insert widths.

Eigenschaften:
- Hohe Genauigkeit.
- Enge Toleranzen.
- Große Auswahl an WSP-Breiten.

**GIGP**
Grooving and parting inserts
Ein- und Abstechplatten



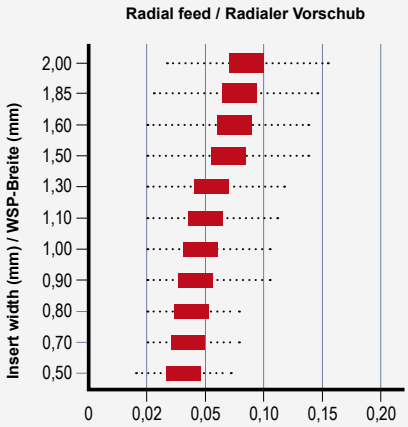
**GISG**
Grooving inserts
Einstechplatten



### Recommended cutting conditions / Empfohlene Schnittdaten

| Material Materialien | Cutting speed m/min. / Schnittgeschwindigkeit m/min. |
|---|---|
| | TN30 |
| P | 60-200 |
| M | 60-180 |
| K | 60-150 |
| S | 20-50 |

Recommended starting value
Empfohlener Anfangswert



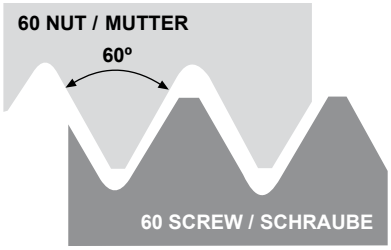

## Threading / Gewindedrehen

Two types of threading:
- Partial profile 55°.
- Partial profile 60°.

Zwei Gewinde-Ausführungen:
- Teilprofil 55°.
- Teilprofil 60°.

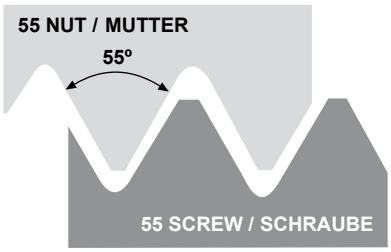
**GIGW**
Threading inserts
Gewindedrehplatten






### Recommended cutting conditions / Empfohlene Schnittdaten

| Material Materialien | Cutting speed m/min. / Schnittgeschwindigkeit m/min. |
|---|---|
| | TN30 |
| P | 60-200 |
| M | 60-180 |
| K | 60-150 |
| S | 20-50 |




## Turning / Drehen

Characteristics:
- Maximum deep of cut is 3,00 mm.
- Too low cutting speed will result in inadequate tool life and it is advisable to follow cutting speed recommendations.

Eigenschaften:
- Maximale Schnitttiefe: 3,00 mm.
- Eine zu niedrige Schnittgeschwindigkeit führt zu einer unzureichende Standzeit. Es ist ratsam, die empfohlene Schnittgeschwindigkeiten zu verwenden.

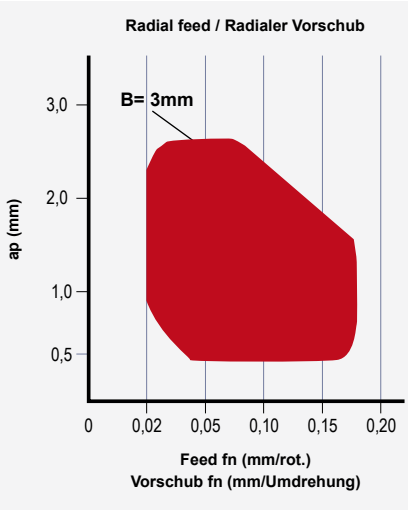
**GIST**
Turning inserts
Drehplatten



### Recommended cutting conditions / Empfohlene Schnittdaten

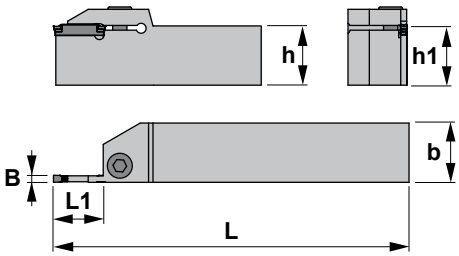
| Material Materialien | Cutting speed m/min. / Schnittgeschwindigkeit m/min. |
|---|---|
| | TN30 |
| P | 60-200 |
| M | 60-180 |
| K | 60-150 |
| S | 20-50 |

Machining field
Bearbeitungsbereich

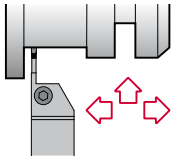




Characteristics:
Parting, grooving and face grooving toolholder that works well on steels, alloyed steels, stainless steels and refractories. Modular system for inserts with thickness from 2 to 6 mm.




Eigenschaften:
Klemmhalter zum Ab-, Ein- und Stirnstechen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Modulares System für Wendeschneidplatten von 2 bis o 6 mm Dicke.



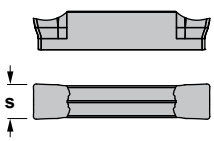
# CZDP

| Reference<br>Bezeichnung | h=h1 | b | L | L1 | B | | | Nm | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| CZDP L 1616 H02/12 | 16 | 16 | 100 | 12 | 2 | 1916 | 5005 | 4.0 | WDM.. 02 | 0,180 |
| CZDP R 1616 H02/12 | 16 | 16 | 100 | 12 | 2 | 1916 | 5005 | 4.0 | WDM.. 02 | 0,180 |
| CZDP L 1616 H03/12 | 16 | 16 | 100 | 12 | 3 | 1916 | 5005 | 4.0 | WDM.. 03 | 0,180 |
| CZDP R 1616 H03/12 | 16 | 16 | 100 | 12 | 3 | 1916 | 5005 | 4.0 | WDM.. 03 | 0,180 |
| CZDP L 1616 H03/20 | 16 | 16 | 100 | 20 | 3 | 1916 | 5005 | 4.0 | WDM.. 03 | 0,170 |
| CZDP R 1616 H03/20 | 16 | 16 | 100 | 20 | 3 | 1916 | 5005 | 4.0 | WDM.. 03 | 0,170 |
| CZDP L 2020 K03/12 | 20 | 20 | 125 | 12 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,370 |
| CZDP R 2020 K03/12 | 20 | 20 | 125 | 12 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,370 |
| CZDP L 2020 K03/20 | 20 | 20 | 125 | 20 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,350 |
| CZDP R 2020 K03/20 | 20 | 20 | 125 | 20 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,350 |
| CZDP L 2020 K04/12 | 20 | 20 | 125 | 12 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,370 |
| CZDP R 2020 K04/12 | 20 | 20 | 125 | 12 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,370 |
| CZDP L 2020 K04/20 | 20 | 20 | 125 | 20 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,350 |
| CZDP R 2020 K04/20 | 20 | 20 | 125 | 20 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,350 |
| CZDP L 2525 M03/12 | 25 | 25 | 150 | 12 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,680 |
| CZDP R 2525 M03/12 | 25 | 25 | 150 | 12 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,680 |
| CZDP L 2525 M03/20 | 25 | 25 | 150 | 20 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,650 |
| CZDP R 2525 M03/20 | 25 | 25 | 150 | 20 | 3 | 1906 | 5005 | 4.0 | WDM.. 03 | 0,650 |
| CZDP L 2525 M04/12 | 25 | 25 | 150 | 12 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,680 |
| CZDP R 2525 M04/12 | 25 | 25 | 150 | 12 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,680 |
| CZDP L 2525 M04/20 | 25 | 25 | 150 | 20 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,650 |
| CZDP R 2525 M04/20 | 25 | 25 | 150 | 20 | 4 | 1906 | 5005 | 4.0 | WDM.. 04 | 0,650 |
| CZDP L 2525 M05/12 | 25 | 25 | 150 | 12 | 5 | 1906 | 5005 | 4.0 | WDM.. 05 | 0,680 |
| CZDP R 2525 M05/12 | 25 | 25 | 150 | 12 | 5 | 1906 | 5005 | 4.0 | WDM.. 05 | 0,680 |
| CZDP L 2525 M05/22 | 25 | 25 | 150 | 22 | 5 | 1906 | 5005 | 4.0 | WDM.. 05 | 0,650 |
| CZDP R 2525 M05/22 | 25 | 25 | 150 | 22 | 5 | 1906 | 5005 | 4.0 | WDM.. 05 | 0,650 |
| CZDP L 2525 M06/22 | 25 | 25 | 150 | 22 | 6 | 1906 | 5005 | 4.0 | WDM.. 06 | 0,650 |
| CZDP R 2525 M06/22 | 25 | 25 | 150 | 22 | 6 | 1906 | 5005 | 4.0 | WDM.. 06 | 0,650 |

## WDM..

B07

| Reference / Bez. | s |
|---|---|
| WDM.. 02 | 2,0 |
| WDM.. 03 | 3,0 |
| WDM.. 04 | 4,0 |
| WDM.. 05 | 5,0 |
| WDM.. 06 | 6,0 |




WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.
WDMG: Wendeschneidplatte zum Einstechen.
WDMP: Wendeschneidplatte zum Abstechen.
WDMR: Wendeschneidplatte zum Vollradius-Stechen.
WDMT: Wendeschneidplatte zum Drehen.

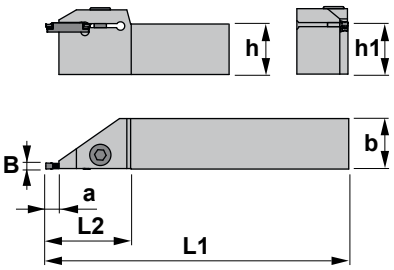
| WDMG | WDMP |
|---|---|
|  |  |
| **WDMR** | **WDMT** |
|  |  |



Characteristics:

Parting, grooving and side turning toolholder that works well on steels, alloyed steels, stainless steels and refractories.

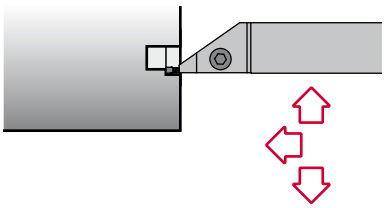
Double-ended inserts with thickness from 2 to 6 mm.




Eigenschaften:

Klemmhalter zum Ab- und Einstechen und Längsdrehen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.

Zweiseitige Wendeschneidplatten von 2 bis 6 mm Dicke.



# CZCD

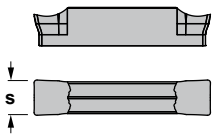
| Reference<br>Bezeichnung | h | b | L1 | L2 | h1 | B | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CZCD L 1616 H23 | 16 | 16 | 100 | 30 | 16 | 2-3 | 5 | WDM.. 02-03 | 0,190 |
| CZCD R 1616 H23 | 16 | 16 | 100 | 30 | 16 | 2-3 | 5 | WDM.. 02-03 | 0,190 |
| CZCD L 2020 K23 | 20 | 20 | 125 | 32 | 20 | 2-3 | 5 | WDM.. 02-03 | 0,360 |
| CZCD R 2020 K23 | 20 | 20 | 125 | 32 | 20 | 2-3 | 5 | WDM.. 02-03 | 0,360 |
| CZCD L 2020 K46 | 20 | 20 | 125 | 32 | 20 | 4-6 | 6 | WDM.. 04-06 | 0,360 |
| CZCD R 2020 K46 | 20 | 20 | 125 | 32 | 20 | 4-6 | 6 | WDM.. 04-06 | 0,360 |
| CZCD L 2525 M46 | 25 | 25 | 150 | 34 | 25 | 4-6 | 6 | WDM.. 04-06 | 0,660 |
| CZCD R 2525 M46 | 25 | 25 | 150 | 34 | 25 | 4-6 | 6 | WDM.. 04-06 | 0,660 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| CZCD L 1616 H23 | 1916 | 5005 | 4.0 |
| CZCD R 1616 H23 | 1916 | 5005 | 4.0 |
| CZCD L 2020 K23 | 1906 | 5005 | 4.0 |
| CZCD R 2020 K23 | 1906 | 5005 | 4.0 |
| CZCD L 2020 K46 | 1906 | 5005 | 4.0 |
| CZCD R 2020 K46 | 1906 | 5005 | 4.0 |
| CZCD L 2525 M46 | 1906 | 5005 | 4.0 |
| CZCD R 2525 M46 | 1906 | 5005 | 4.0 |

## WDM..

B07

| Reference / Bez. | s |
|---|---|
| WDM.. 02 | 2,0 |
| WDM.. 03 | 3,0 |
| WDM.. 04 | 4,0 |
| WDM.. 05 | 5,0 |
| WDM.. 06 | 6,0 |

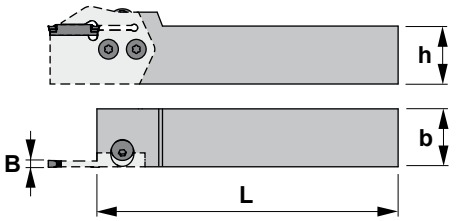



WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.
WDMG: Wendeschneidplatte zum Einstechen.
WDMP: Wendeschneidplatte zum Abstechen.
WDMR: Wendeschneidplatte zum Vollradius-Stechen.
WDMT: Wendeschneidplatte zum Drehen.

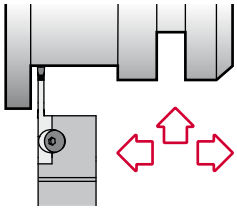
| WDMG | WDMP |
|---|---|
|  |  |
| **WDMR** | **WDMT** |
|  |  |



Characteristics:
Parting, grooving and side turning toolholder that works well on steels, alloyed steels, stainless steels and refractories.
Double-ended inserts with thickness from 2 to 6 mm.




Eigenschaften:
Klemmhalter zum Ab- und Einstechen und Längsdrehen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Zweiseitige Wendeschneidplatten von 2 bis 6 mm Dicke.



# CZGD

| Reference<br>Bezeichnung | h | b | L | B | Kg |
|---|---|---|---|---|---|
| CZGD L 2020 K26 | 20 | 20 | 125 | 2-6 | 0,310 |
| CZGD R 2020 K26 | 20 | 20 | 125 | 2-6 | 0,310 |
| CZGD L 2525 M26 | 25 | 25 | 150 | 2-6 | 0,610 |
| CZGD R 2525 M26 | 25 | 25 | 150 | 2-6 | 0,610 |
| CZGD L 3232 P26 | 32 | 32 | 175 | 2-6 | 1,300 |
| CZGD R 3232 P26 | 32 | 32 | 175 | 2-6 | 1,300 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| CZGD L 2020 K26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZGD R 2020 K26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZGD L 2525 M26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZGD R 2525 M26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZGD L 3232 P26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZGD R 3232 P26 | 1815 | 1450 | 5003 | 5520 | 3.0 |

## Modular blades / Modulare Stechschwerter CZFD

WDM.. 02
WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06





**CZGD**

WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06



**Right-handed holders use right-handed modular blades.**

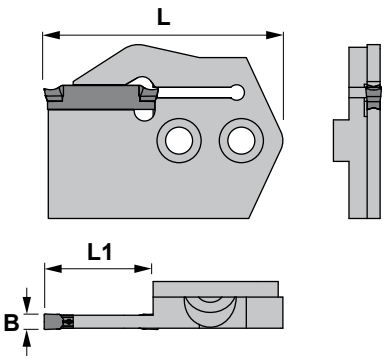
**Auf rechten Haltern werden rechte modulare Stechschwerter montiert.**

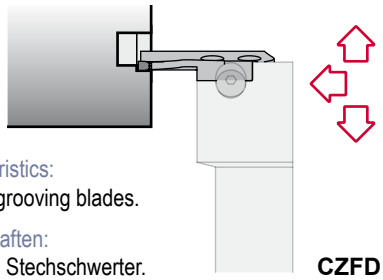


Right Hand / Rechts



Left Hand / Links

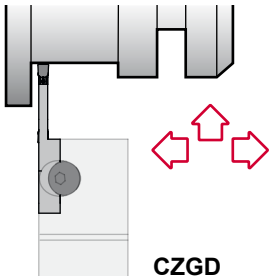


Characteristics:
Modular grooving blades.

Eigenschaften:
Modulare Stechschwerter.

CZFD



CZGD

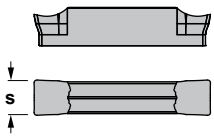
# CZFD

| Reference<br>Bezeichnung | L1 | L | B | Insert size<br>Wendeschneidplatte |
|---|---|---|---|---|
| CZFD L 0012-02 | 12 | 38 | 2 | WDM.. 02 |
| CZFD R 0012-02 | 12 | 38 | 2 | WDM.. 02 |
| CZFD L 0020-02 | 20 | 46 | 2 | WDM.. 02 |
| CZFD R 0020-02 | 20 | 46 | 2 | WDM.. 02 |
| CZFD L 0012-03 | 12 | 38 | 3 | WDM.. 03 |
| CZFD R 0012-03 | 12 | 38 | 3 | WDM.. 03 |
| CZFD L 0020-03 | 20 | 46 | 3 | WDM.. 03 |
| CZFD R 0020-03 | 20 | 46 | 3 | WDM.. 03 |
| CZFD L 0012-04 | 12 | 38 | 4 | WDM.. 04 |
| CZFD R 0012-04 | 12 | 38 | 4 | WDM.. 04 |
| CZFD L 0020-04 | 20 | 46 | 4 | WDM.. 04 |
| CZFD R 0020-04 | 20 | 46 | 4 | WDM.. 04 |
| CZFD L 0012-05 | 12 | 38 | 5 | WDM.. 05 |
| CZFD R 0012-05 | 12 | 38 | 5 | WDM.. 05 |
| CZFD L 0022-05 | 22 | 48 | 5 | WDM.. 05 |
| CZFD R 0022-05 | 22 | 48 | 5 | WDM.. 05 |
| CZFD L 0012-06 | 12 | 38 | 6 | WDM.. 06 |
| CZFD R 0012-06 | 12 | 38 | 6 | WDM.. 06 |
| CZFD L 0022-06 | 22 | 48 | 6 | WDM.. 06 |
| CZFD R 0022-06 | 22 | 48 | 6 | WDM.. 06 |

## WDM..

B07

| Reference / Bez. | s |
|---|---|
| WDM.. 02 | 2,0 |
| WDM.. 03 | 3,0 |
| WDM.. 04 | 4,0 |
| WDM.. 05 | 5,0 |
| WDM.. 06 | 6,0 |




WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.
WDMG: Wendeschneidplatte zum Einstechen.
WDMP: Wendeschneidplatte zum Abstechen.
WDMR: Wendeschneidplatte zum Vollradius-Stechen.
WDMT: Wendeschneidplatte zum Drehen.

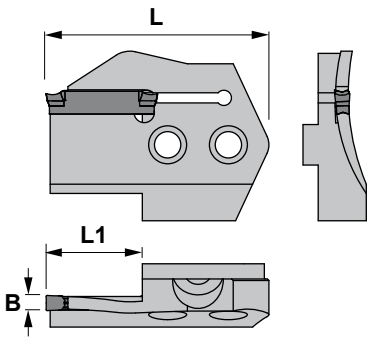
| WDMG | WDMP |
|---|---|
|  |  |
| **WDMR** | **WDMT** |
|  |  |



Right Hand / Rechts



Left Hand / Links

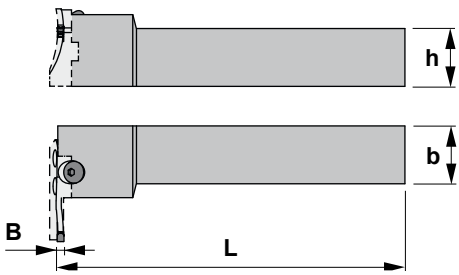



# CZFD

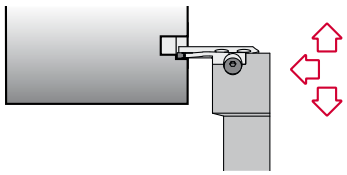
| Reference<br>Bezeichnung | L1 | L | B | Ø Range<br>Ø Bereich | Insert size<br>Wendeschneidplatte |
|---|---|---|---|---|---|
| CZFD L 4055-03 | 12 | 38 | 3 | 40-55 | WDM.. 03 |
| CZFD R 4055-03 | 12 | 38 | 3 | 40-55 | WDM.. 03 |
| CZFD L 5570-03 | 15 | 41 | 3 | 55-70 | WDM.. 03 |
| CZFD R 5570-03 | 15 | 41 | 3 | 55-70 | WDM.. 03 |
| CZFD L 7098-03 | 18 | 44 | 3 | 70-98 | WDM.. 03 |
| CZFD R 7098-03 | 18 | 44 | 3 | 70-98 | WDM.. 03 |
| CZFD L 90140-03 | 18 | 44 | 3 | 90-140 | WDM.. 03 |
| CZFD R 90140-03 | 18 | 44 | 3 | 90-140 | WDM.. 03 |
| CZFD L 130300-03 | 18 | 44 | 3 | 130-300 | WDM.. 03 |
| CZFD R 130300-03 | 18 | 44 | 3 | 130-300 | WDM.. 03 |
| CZFD L 300999-03 | 18 | 44 | 3 | 300-999 | WDM.. 03 |
| CZFD R 300999-03 | 18 | 44 | 3 | 300-999 | WDM.. 03 |
| CZFD L 4055-04 | 18 | 44 | 4 | 40-55 | WDM.. 04 |
| CZFD R 4055-04 | 18 | 44 | 4 | 40-55 | WDM.. 04 |
| CZFD L 5570-04 | 18 | 44 | 4 | 55-70 | WDM.. 04 |
| CZFD R 5570-04 | 18 | 44 | 4 | 55-70 | WDM.. 04 |
| CZFD L 7098-04 | 18 | 44 | 4 | 70-98 | WDM.. 04 |
| CZFD R 7098-04 | 18 | 44 | 4 | 70-98 | WDM.. 04 |
| CZFD L 90140-04 | 18 | 44 | 4 | 90-140 | WDM.. 04 |
| CZFD R 90140-04 | 18 | 44 | 4 | 90-140 | WDM.. 04 |
| CZFD L 130300-04 | 18 | 44 | 4 | 130-300 | WDM.. 04 |
| CZFD R 130300-04 | 18 | 44 | 4 | 130-300 | WDM.. 04 |
| CZFD L 300999-04 | 18 | 44 | 4 | 300-999 | WDM.. 04 |
| CZFD R 300999-04 | 18 | 44 | 4 | 300-999 | WDM.. 04 |
| CZFD L 5070-05 | 20 | 46 | 5 | 50-70 | WDM.. 05 |
| CZFD R 5070-05 | 20 | 46 | 5 | 50-70 | WDM.. 05 |
| CZFD L 7098-05 | 20 | 46 | 5 | 70-98 | WDM.. 05 |
| CZFD R 7098-05 | 20 | 46 | 5 | 70-98 | WDM.. 05 |
| CZFD L 90140-05 | 20 | 46 | 5 | 90-140 | WDM.. 05 |
| CZFD R 90140-05 | 20 | 46 | 5 | 90-140 | WDM.. 05 |
| CZFD L 130300-05 | 20 | 46 | 5 | 130-300 | WDM.. 05 |
| CZFD R 130300-05 | 20 | 46 | 5 | 130-300 | WDM.. 05 |
| CZFD L 300999-05 | 20 | 46 | 5 | 300-999 | WDM.. 05 |
| CZFD R 300999-05 | 20 | 46 | 5 | 300-999 | WDM.. 05 |
| CZFD L 5070-06 | 20 | 46 | 6 | 50-70 | WDM.. 06 |
| CZFD R 5070-06 | 20 | 46 | 6 | 50-70 | WDM.. 06 |
| CZFD L 7098-06 | 20 | 46 | 6 | 70-98 | WDM.. 06 |
| CZFD R 7098-06 | 20 | 46 | 6 | 70-98 | WDM.. 06 |
| CZFD L 90140-06 | 20 | 46 | 6 | 90-140 | WDM.. 06 |
| CZFD R 90140-06 | 20 | 46 | 6 | 90-140 | WDM.. 06 |
| CZFD L 130300-06 | 20 | 46 | 6 | 130-300 | WDM.. 06 |
| CZFD R 130300-06 | 20 | 46 | 6 | 130-300 | WDM.. 06 |
| CZFD L 300999-06 | 20 | 46 | 6 | 300-999 | WDM.. 06 |
| CZFD R 300999-06 | 20 | 46 | 6 | 300-999 | WDM.. 06 |



Characteristics:
Parting, grooving and face grooving toolholder that works well on steels, alloyed steels, stainless steels and refractories. Modular system for inserts with thickness from 2 to 6 mm.




Eigenschaften:
Klemmhalter zum Ein-, Ab- und Stirnstechen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Modulares System für Wendeschneidplatten von 2 bis o 6 mm Dicke.



# CZFD

| Reference<br>Bezeichnung | h | b | L | B | Kg |
|---|---|---|---|---|---|
| CZFD L 2020 K26 | 20 | 20 | 125 | 2-6 | 0,450 |
| CZFD R 2020 K26 | 20 | 20 | 125 | 2-6 | 0,450 |
| CZFD L 2525 M26 | 25 | 25 | 150 | 2-6 | 0,780 |
| CZFD R 2525 M26 | 25 | 25 | 150 | 2-6 | 0,780 |
| CZFD L 3232 P26 | 32 | 32 | 175 | 2-6 | 1,400 |
| CZFD R 3232 P26 | 32 | 32 | 175 | 2-6 | 1,400 |

| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| CZFD L 2020 K26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZFD R 2020 K26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZFD L 2525 M26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZFD R 2525 M26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZFD L 3232 P26 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| CZFD R 3232 P26 | 1815 | 1450 | 5003 | 5520 | 3.0 |

## Modular blades / Modulare Stechschwerter CZFD

WDM.. 02
WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06





**CZFD**

WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06



**Right-handed holders use left-handed modular blades.**

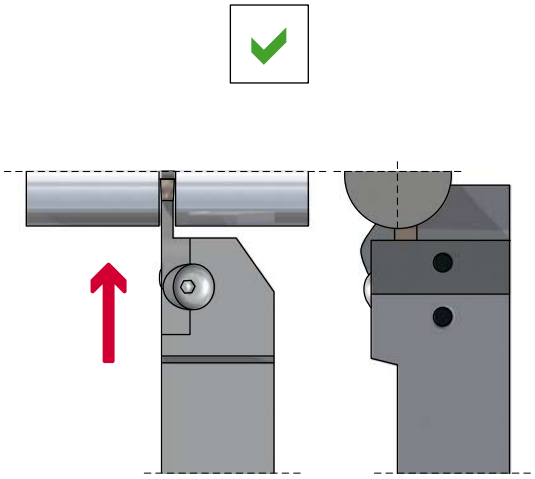
**Auf rechten Haltern werden linke modulare Stechschwerter montiert.**

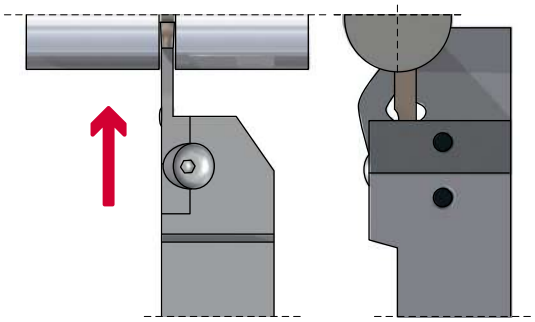
B

## *Tool selection*
## *Werkzeugauswahl*

### *Notes to select the tool body*
### *Hinweise zur Auswahl des Werkzeuges*

*Modular blade*
*Modulares Schwert*

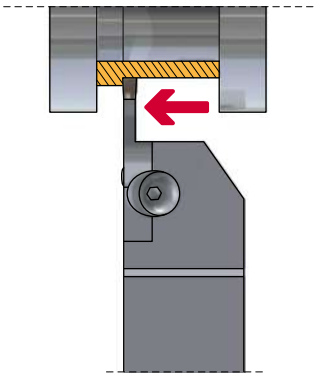


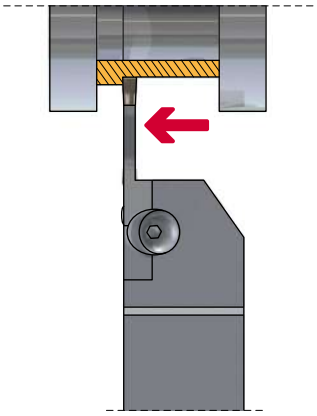


Select the shortest possible blade suitable for the application.

Wählen Sie das kürzeste Schwert aus, das für die Anwendung geeignet ist.

*Modular blade*
*Modulares Schwert*





Select the shortest possible blade suitable for the application.

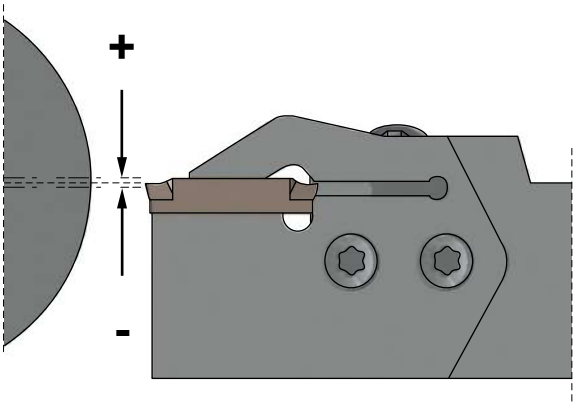
Wählen Sie das kürzeste Schwert aus, das für die Anwendung geeignet ist.

## *Tool selection*
## *Werkzeugauswahl*



### *Notes for the tool setting*
### *Hinweise zum Einsetzen des Werkzeuges*

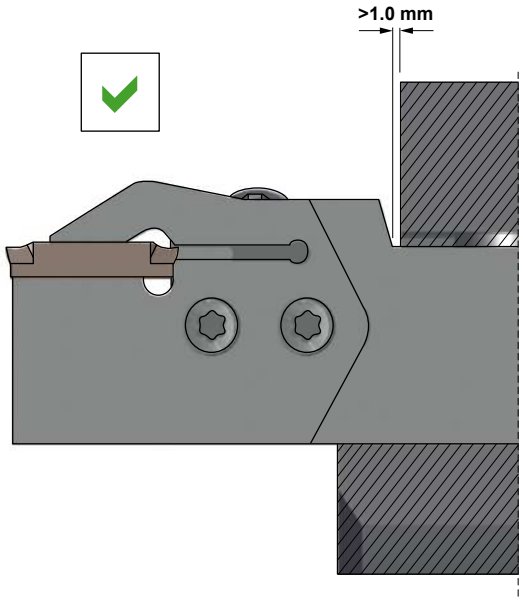
*Setting of the cutting edge height*
*Einstellen der Schneidkantenhöhe*

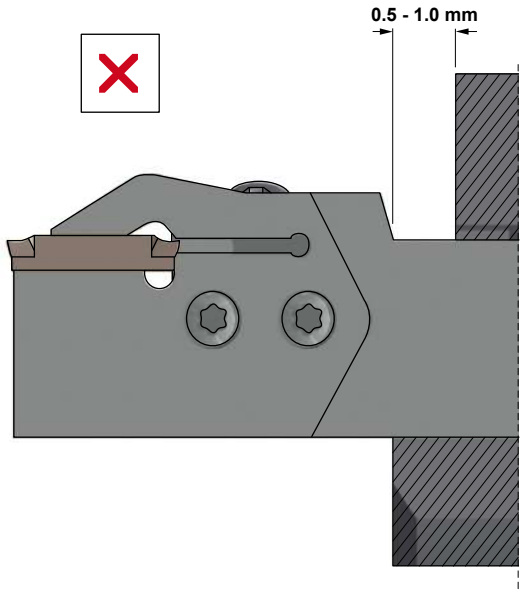



<Grooving/Cross-feed machining> Set the cutting edge height to ± 0,1 mm parallel to the central axis.
<Parting> Set the cutting edge height to 0-±0,2 mm parallel to the central axis.

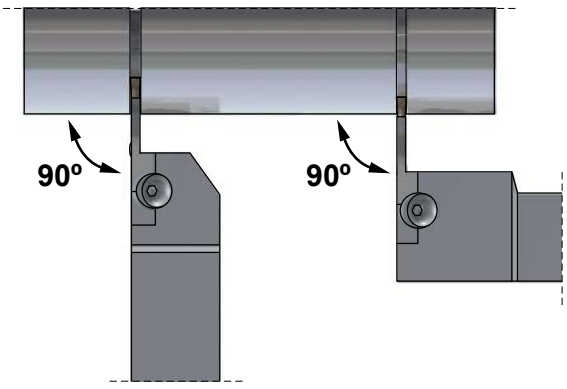
<Beim Einstechen> Schnittkantenhöhe auf ±0,1mm parallel zur Mittelachse einsetzen.
<Beim Abstechen> Schnittkantenhöhe auf 0-±0,2 mm parallel zur Mittelachse einsetzen.

*Overhang*
*Auskragung*




*Tool setting angle*
*Einstellen des Zustellwinkels*




Set the insert perpendicular to the central axis.

Schneidplatte senkrecht zur Mittelachse positionieren.

When you set the tool, ensure that the overhang is as short as possible.

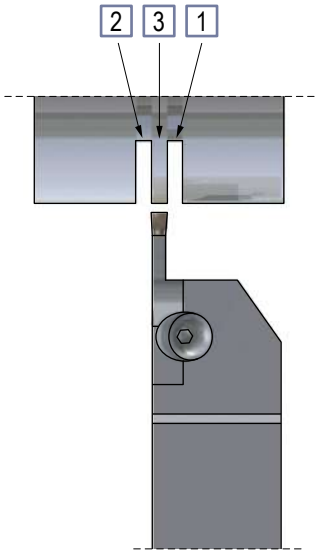
Achten Sie beim Einstellen des Werkzeuges darauf, dass die Auskragung so kurz wie möglich ist.

B

## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for multi-functional machining*
### *Hinweis für Bearbeitung mit Multifunktions-Haltern*

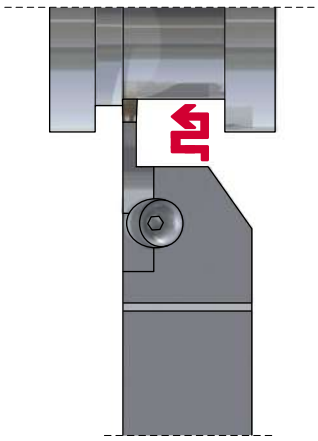
*Machining of narrow grooves*
*Bearbeitung enger Nuten*




We recommend to do the plunging in several passes. Following the above mentioned steps makes it difficult for the chips to elongate.
This also improves the accuracy of the workpiece wall surface.

Wir empfehlen, das Eintauchen in mehreren Durchgängen durchzuführen, um keine langen Späne zu produzieren. Dadurch wird auch die Genauigkeit des Werkstückes verbessert.

*Machining wide grooves*
*Bearbeitung breiter Nuten*

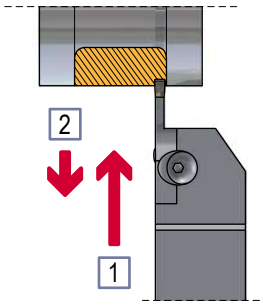


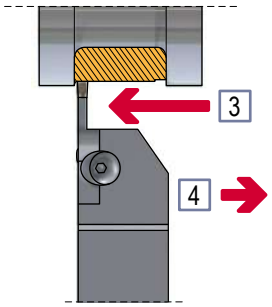
It is recommended to use cross-feed machining.

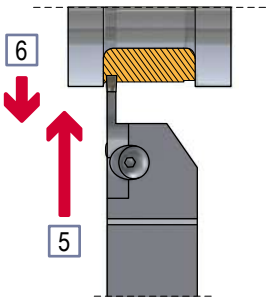
Es wird empfohlen, die Bearbeitung von breiten Nuten mit Stechdrehen durchzuführen.

*Machining of wide grooves*
*Bearbeitung breiter Nuten*

*ROUGHING*
*SCHRUPPEN*




1 - Carry out grooving.
Einstechen.
2 - Retract the tool approx. 0,1 mm.
Werkzeug um ca. 0,1 mm herausziehen.
3 - Carry out cross-feed machining.
Längsdrehbearbeitung durchführen.
4 - Retract the tool approx. 0,1 mm.
Werkzeug um ca. 0,1 mm herausziehen.
5 - Carry out grooving.
Einstechen.
6 - Retract the tool approx. 0,1 mm.
Werkzeug um ca. 0,1 mm herausziehen.
* Repeat the steps 1 - 6.
* Schritte 1 - 6 wiederholen.

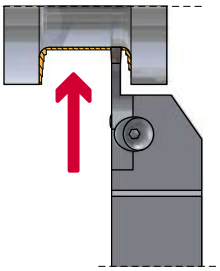
## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for multi-functional machining*
### *Hinweise für multifunktionale Bearbeitung*

*Machining wide grooves*
*Bearbeitung breiter Nuten*

*FINISHING*
*SCHLICHTEN*

7



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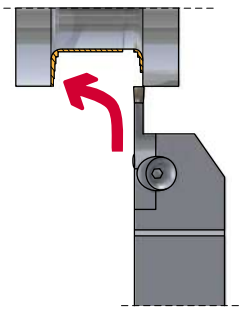

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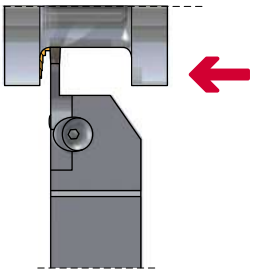
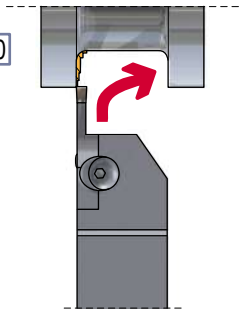


7 - Carry out grooving to the end point of the corner radius.
Einstechen bis zum Ende des Eckenradius ausführen.
8 - The machining of the wall surface, corner radius and bottom face must be carried out in one process.
Die Bearbeitung der Planfläche, der Konturen und der unteren Fläche sollte in einem Arbeitsgang erfolgen.
9 - Stop at the bottom of the corner radius.
Halten Sie am unteren Ende des Eckenradius an.

*Machining wide grooves*
*Bearbeitung breiter Nuten*

*FINISHING*
*SCHLICHTEN*

10



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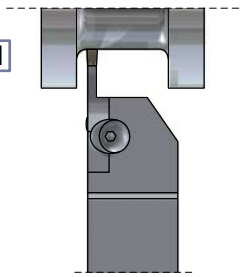


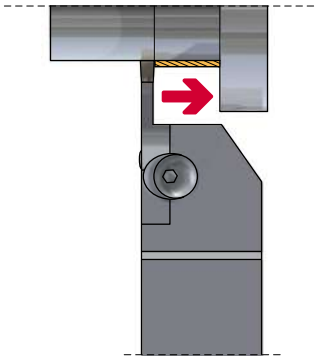
10 - Machine the counter wall to the corner radius in one process.
Bearbeiten Sie die dem Eckenradius gegenüberliegende Wand in einem Arbeitsgang.
11 - Finish the machining.
Beenden Sie die Bearbeitung.

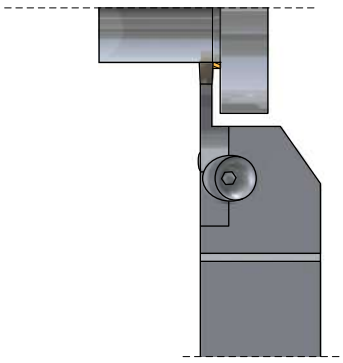
B

## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for multi-functional machining*
### *Hinweise für multifunktionale Bearbeitung*

*Wall machining*
*Bearbeitung von Wandungen*

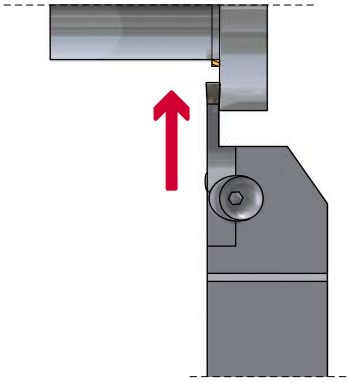


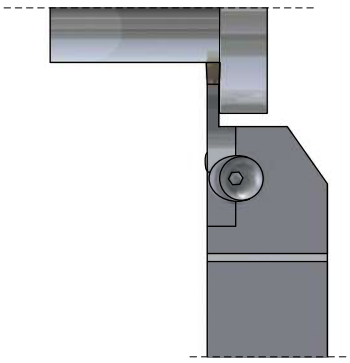


When machining a wall, chip jamming can occur. In that case, stop the cross-feed machining just before the wall (a point less than the insert width) and then remove the remaining material by plunging.

Beim Bearbeiten von Wandungen kann Spanstau entstehen. In diesem Fall die Längsbearbeitung kurz vor der Wandung beenden (ein Punkt weniger als die Plattenbreite) und durch erneutes Einstechen fertig bearbeiten.

*Wall machining*
*Bearbeitung von Wandungen*



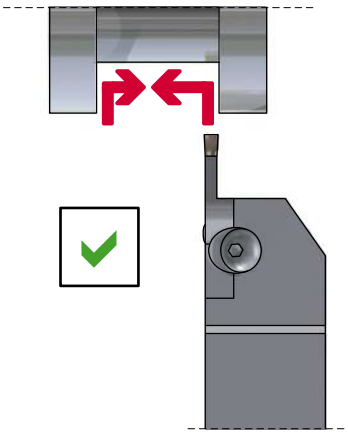


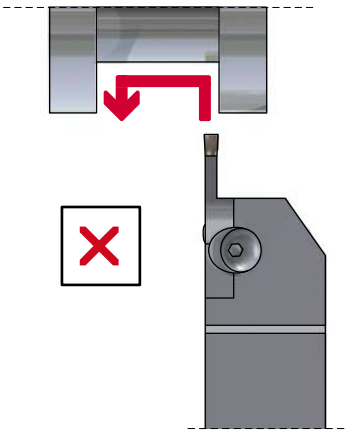
## *Machining recommendations*
## *Bearbeitungsempfehlungen*



### *Notes for multi-functional machining*
### *Hinweise für multifunktionale Bearbeitung*

*Precautions when finishing walls*
*Vorsichtsmaßnahmen beim Schlichten von Wandungen*

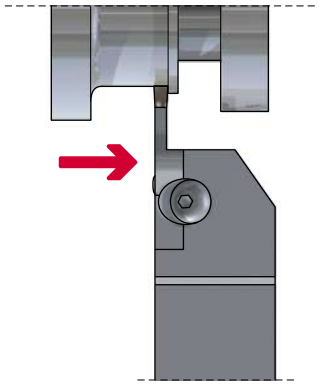


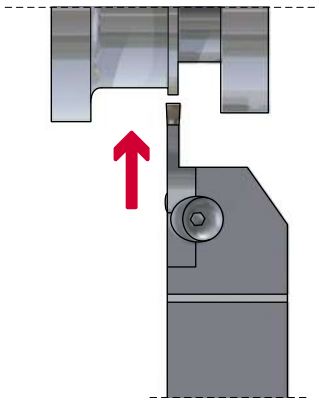


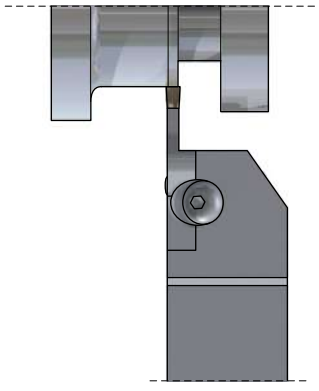
To produce high accuracy walls using face grooving inserts, do not carry out back turning. We recommend plunging.

Zum Herstellen von Präzisionswänden mit Stechplatten nicht die Richtung umkehren.
Empfohlen wird Eintauchen.

*Machining of a ring*
*Bearbeitung von Ringen*







When a ring remains in a cross-feed end process, finish the cross-feed machining 1-1,5 mm short of the end point, and then remove the ring by plunging.

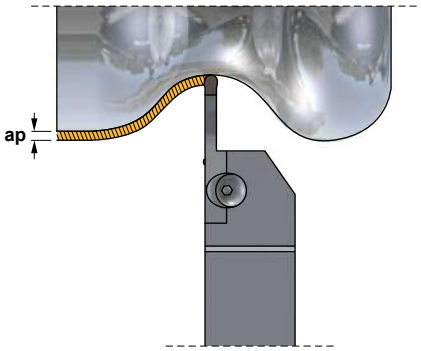
Wenn sich ein Ring in einem Kreuzvorschub-Endprozess befindet, beenden Sie die Bearbeitung 1-1,5 mm kurz vor dem Endpunkt und entfernen Sie den Ring dann durch Einstechen.

B

## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for multi-functional machining*
### *Hinweise für multifunktionale Bearbeitung*

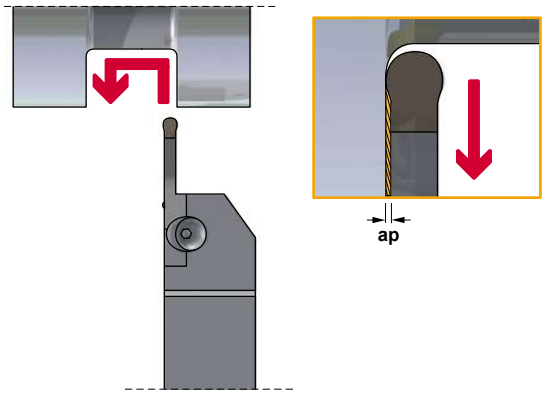
*Notes for the first pass*
*Hinweise für den ersten Durchgang*




With the face grooving ball nose insert it is possible to do tridimensional copying. Set the depth of cut (ap) to 40% less than the insert width.

Mit der Vollradius-Stechplatte ist 3D-Kopieren möglich. Die Schnitttiefe (ap) auf 40% der WSP-Breite einstellen.

*FINISHING*
*SCHLICHTEN*



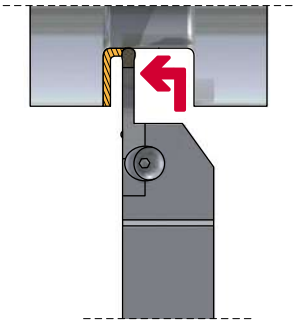


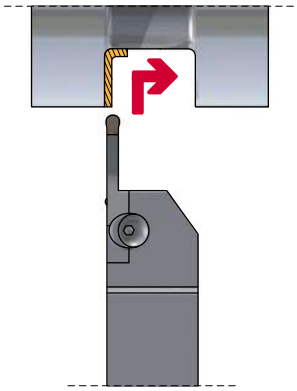

| WDMR | ap (mm) |
|---|---|
| WDMR 03 | 0,10 |
| WDMR 04 | 0,15 |
| WDMR 05 | 0,20 |
| WDMR 06 | 0,25 |

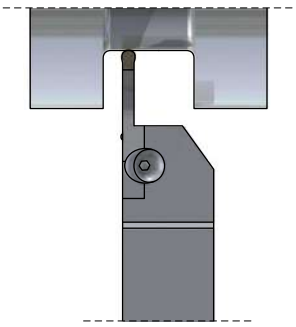
Carry out finishing in one process. For the depth of cut (ap) when back turning, refer to the table above.

Das Schlichten in einem Vorgang ausführen.Die Schnitttiefe (ap) beim Ausstechen entnehmen Sie bitte der oberenTabelle.

*ROUGHING*
*SCHRUPPEN*







Use plunging and cross-feed machining. When machining the corner, vibration is likely to occur. To avoid this, reduce the feed by 50%.

Eintauchen und Längsdrehen wird empfohlen. Den Vorschub um 50% reduzieren, um die beim Bearbeiten der Ecken möglichen Vibrationen zu dämpfen.

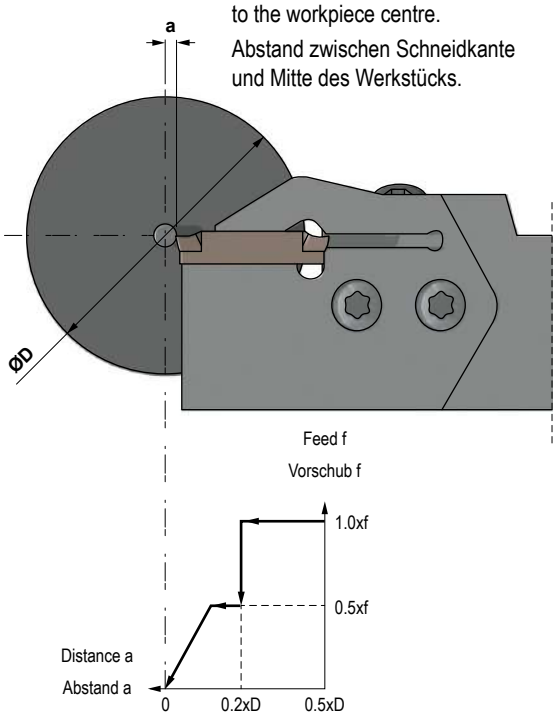
# Machining recommendations
# Bearbeitungsempfehlungen

## Notes for parting
## Hinweise zum Abstechen

### FEED
### VORSCHUB

<Feed>
<Vorschub>

Distance from the cutting edge to the workpiece centre.
Abstand zwischen Schneidkante und Mitte des Werkstücks.



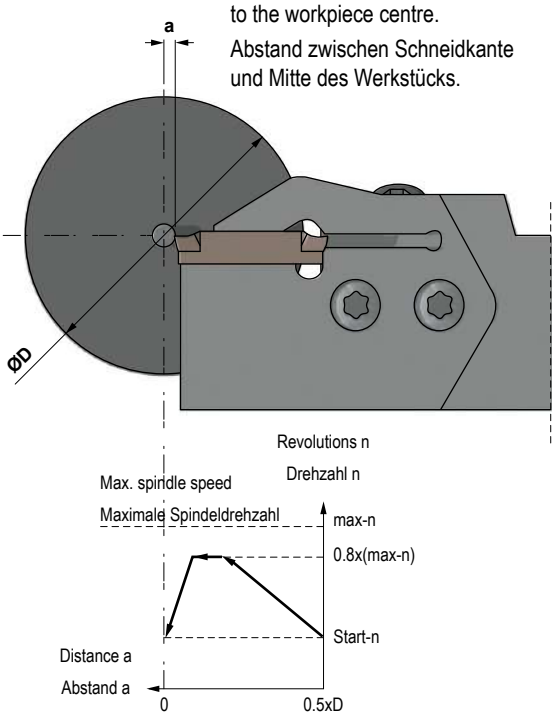

- When the cutting edge approaches the centre, reduce the feed by 50%.
- If necessary, stop the feed prior to reaching the centre of the workpiece to prevent it falling under its own weight.

- Den Vorschub um 50% reduzieren, wenn die Schneidkante sich der Mitte nähert.
- Den Vorschub ggf. vor Erreichen der Werkstückmitte ausschalten, damit das Werkstück nicht unter seinem Eigengewicht einfällt

### REVOLUTIONS
### DREHZAHL

<Spindle speed>
<Spindeldrehzahl>

Distance from the cutting edge to the workpiece centre.
Abstand zwischen Schneidkante und Mitte des Werkstücks.




If you use a constant cutting speed during a parting cycle, it is recommended to limit the spindle speed to 80% of maximum to ensure stability.
- To prevent the workpiece from being expelled, reduce the spindle speed before finishing the grooving operation.

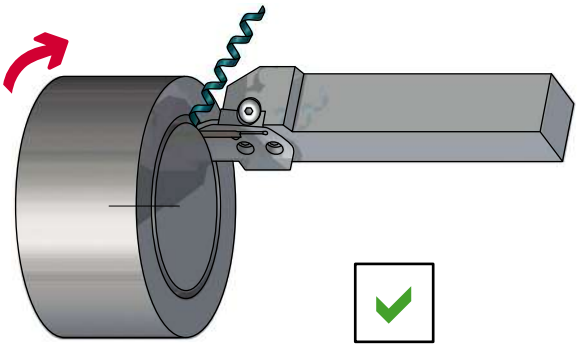
Bei konstanter Schnittgeschwindigkeit während eines Abstechzyklus wird empfohlen, die Spindeldrehzahl auf 80% des Maximus einzustellen, um die Stabilität sicherzustellen.
- Die Spindeldrehzahl vor Beenden des Einstechsvorgangs reduzieren, um ein Wegschleudern des Werkzeuges zu verhindern.

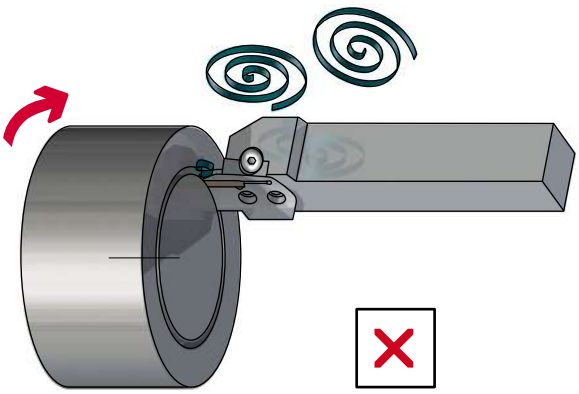
B

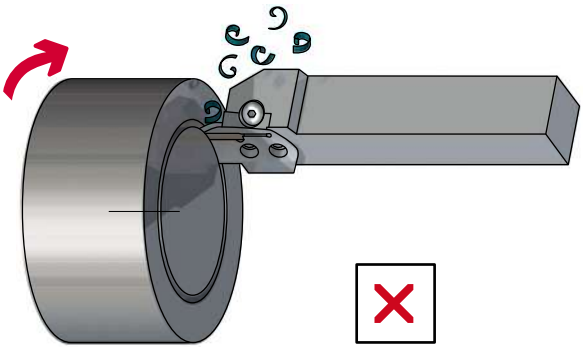
## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for face grooving*
### *Hinweise für Stirneinstechen*

*Notes for the first pass*
*Hinweise zum ersten Einstich*



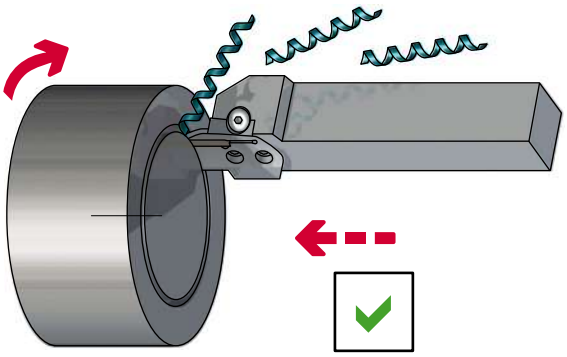


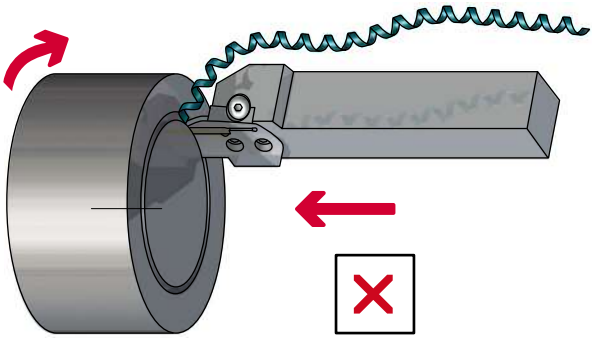


During the first face grooving pass it is difficult to disperse the broken chips, and that can lead to problems, such as insert wearing.
Maintain longer chips that disperse easily by reducing the feed per rotation.

Beim ersten Stirneinstich ist die Spanabfuhr schwierig und dies kann zu vorzeitigem Wendeplattenverschleiß führen. Um längere Späne zu erzeugen, die einfacher entfernt werden, reduzieren Sie einfach den Vorschub.

*Notes for the first pass*
*Hinweise zum ersten Einstich*





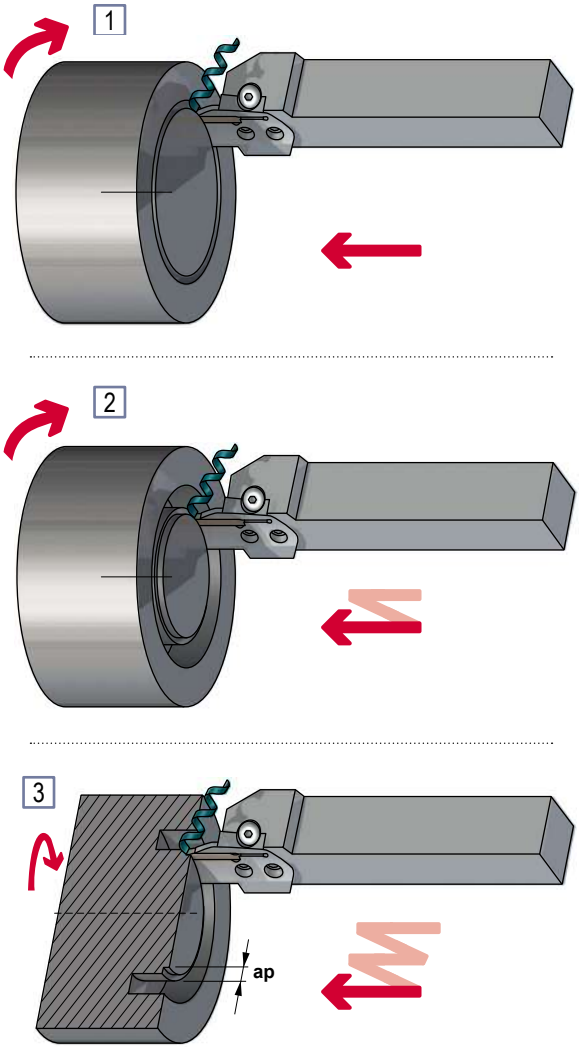
If the chips become too long, use peck feed to break them into a suitable length.

Wenn die Späne zu lang werden, sollten Vorschubstopps programmiert werden, um die Späne in einer geeigneten Länge zu brechen.

## Machining recommendations
## Bearbeitungsempfehlungen

### Notes for face grooving
### Hinweise für Stirneinstechen

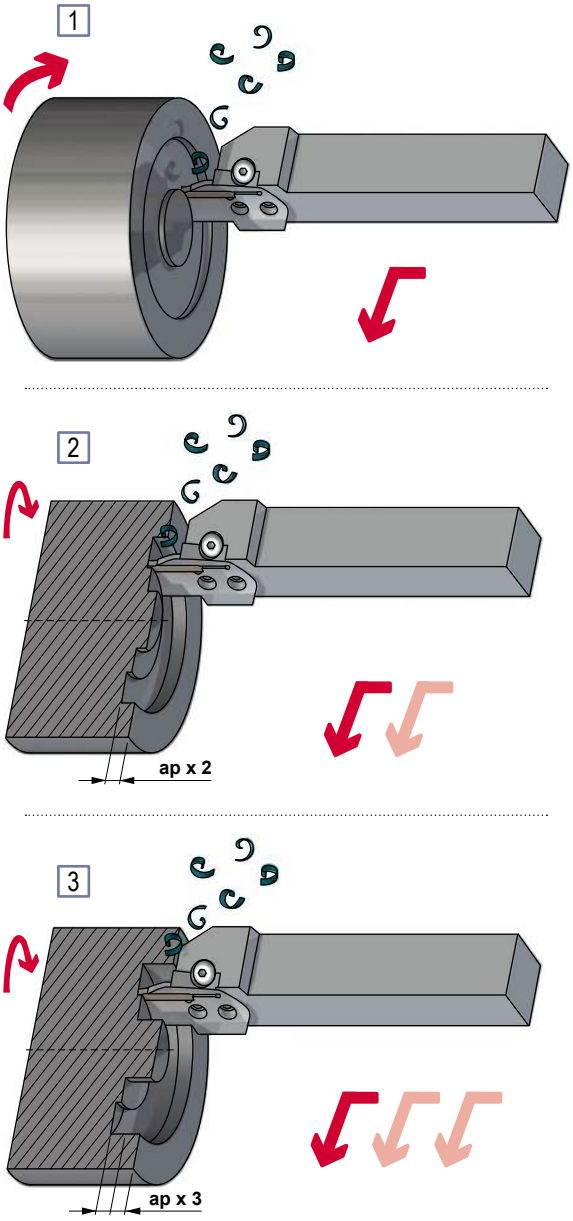
*Notes for face grooving by plunging in several passes*
*Hinweise für Mehrfach-Stirneinstechen*




When machining a face groove in several passes, machine from the outer diametre towards the centre, leaving space for discharging chips, and so preventing insert damage caused by chip jamming.
It is recommended to set the plunging width of cut at 60-80% of the insert width. This enhances the effect of the chipbreaker by enlarging the width of the groove to improve chip dispersal.

Beim Mehrfach-Stirneinstechen bearbeiten Sie das Werkstück von außen nach innen, um eine gute Spanabfuhr zu gewährleisten und die Schneidplatte vor Bruch durch Spänestau zu schützen.
Setzen Sie die Einstichbreite auf 60-80% der Schneidplattenbreite. Dies verbessert die Wirkung des Spanbrechers und die Spanentfernung ist einfacher.

*Notes for face grooving by combination of plunging and traverse machining*
*Hinweise für das Kombinieren von Stirneinstechen mit Stechdrehen*




When face grooving by using plunge feed and traverse machining, always machine from the outer diametre towards the centre to disperse the chips outwards in order to avoid chip jamming problems.
Set the depth of cut within 40% of the insert width.

Beim Stirneinstechen und Stechdrehen bearbeiten Sie das Werkstück von außen nach innen, um eine gute Spanabfuhr zu gewährleisten.
Stellen Sie die axiale Schnitttiefe innerhalb 40% der Schneidplattenbreite ein.

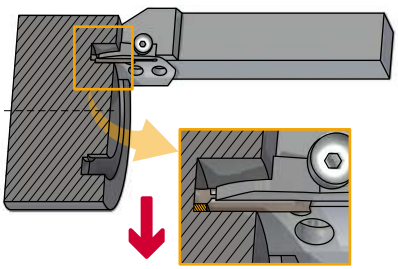
B

## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for face grooving*
### *Hinweise für Stirneinstechen*

*Notes for face grooving by combination of plunging and traverse machining*
*Hinweise für das Kombinieren von Stirneinstechen mit Stechdrehen*

1



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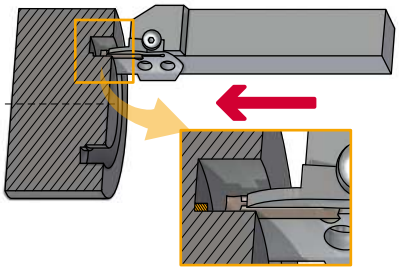

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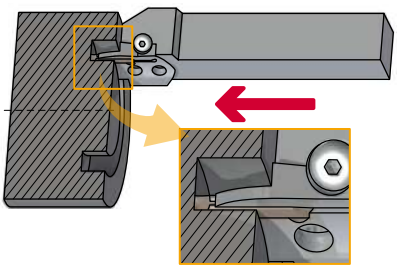
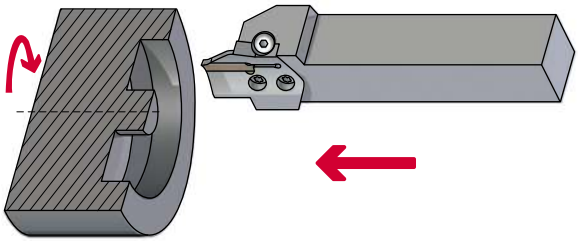


When infeed machining at the bottom of a deep groove, chips may interfere on the cutting edge near the centre wall.
In such cases, stop infeed machining just before the centre wall (at a point less than the insert width) and then remove the remaining material by plunging.

Beim Stirneinstechen von tiefen Nuten kann es bei Wandungen zu Spänestau kommen.
In diesem Fall stoppen Sie kurz vor der Wandung die Bearbeitung (einen Punkt weniger als die Plattenbreite) und entfernen Sie das Restmaterial durch Stirneinstechen.

*Finishing*
*Schlichten*

1



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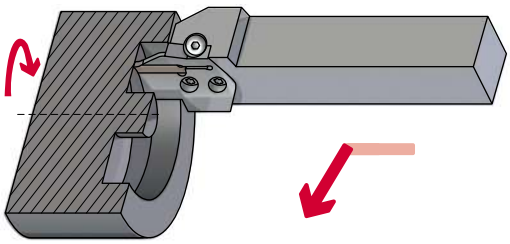

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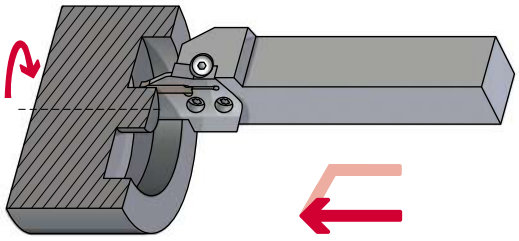


When you finish cutting, machine continously from the outer wall to the bottom of the groove, then finally plunge cut the centre wall.

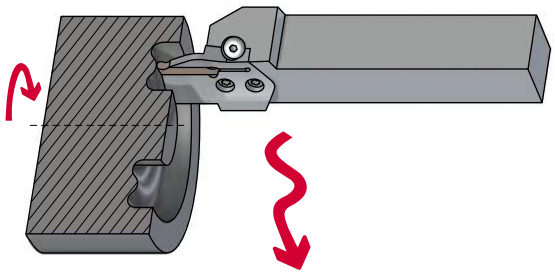
Beim Schlichten bearbeiten Sie bitte das Werkstück ununterbrochen bis zur unterer Fläche, abschließend schlichten Sie den inneren Durchmesser durch Stirneinstechen.

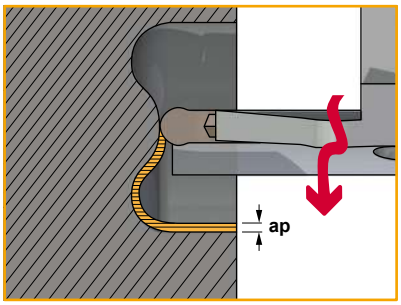
B

## *Machining recommendations*
## *Bearbeitungsempfehlungen*

### *Notes for face grooving*
### *Hinweise für Stirneinstechen*

*Notes for the copying with a ball nose insert*
*Hinweise für das axiale Kopieren*
*mit Vollradiusplatten*



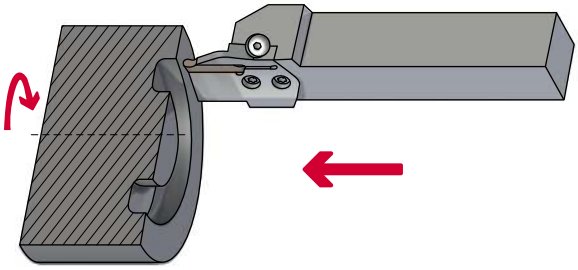



With the ball nose insert it is possible to do tridimensional copying. Set the depth of cut (ap) to 30% less than the insert width.

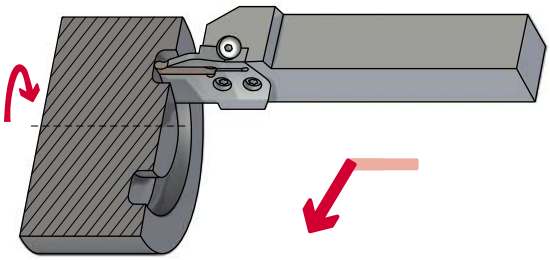
Mit der Vollradius-Schneidplatte ist 3D-Kopieren möglich. Die Schnitttiefe (ap) auf 30% der WSP-Breite einstellen.

*Finishing with a ball nose insert*
*Schlichten mit Vollradiusplatten*

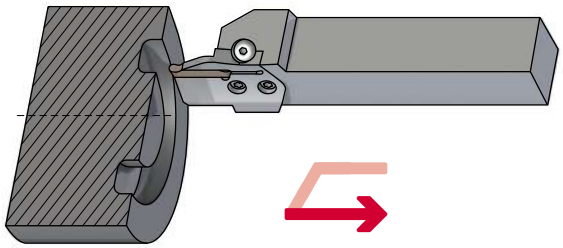
1



2

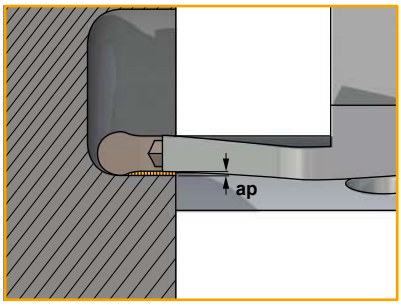


3





| WDMR | ap (mm) |
|---|---|
| WDMR 03 | 0,10 |
| WDMR 04 | 0,15 |
| WDMR 05 | 0,20 |
| WDMR 06 | 0,25 |




Carry out finishing in one process. For the depth of cut (ap) when back turning, refer to the table above.
Die Feinbearbeitung in einem Vorgang ausführen. Die Schnitttiefe (ap) beim Ausstechen entnehmen Sie bitte der oberen Tabelle.

B

## *Nominal cutting speed and feed values for parting and grooving*
## *Nennschnittgeschwindigkeit und Vorschub-Werte für Ab- und Einstechdrehen*

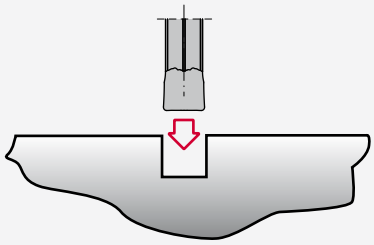


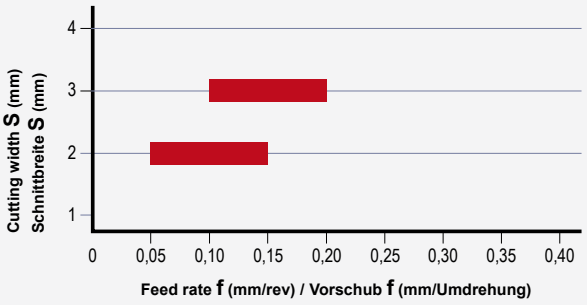

### ***WDMG*** *Medium cutting geometry*

- ***Insert with narrow negative chamfer.***
- ***Suitable for all steel materials with high strength.***
- ***Suitable for all applications.***
- ***For steel and grey cast iron.***

### ***WDMG*** *Mittlere Schneidengeometrie*

- ***Wendeplatten mit engen negativen Fasen.***
- ***Geeignet für alle hochfesten Stähle.***
- ***Geeignet für alle Anwendungen.***
- ***Für Stahl und Grauguß.***






| Material Materialien P | HB | Condition Beschaffenheit | Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min) |
|---|---|---|---|
| Unalloyed steel<br>Unlegierter Stahl | 150-250 | C= 0,15% - 0,45% C | 80 180 |
| Low alloyed steel<br>Niedriglegierter Stahl | 250-300 | Tempered<br>Gehärtet | 60 150 |
| High alloyed steel<br>Hochlegierter Stahl | 350 | Tempered<br>Gehärtet | 50 120 |
| Corrosion resistant steel<br>Korrosionsbeständiger Stahl | 200 | Annealed<br>Geglüht | 50 200 |

| Material Materialien K | HB | Condition Beschaffenheit | Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min) |
|---|---|---|---|
| Grey cast iron<br>Grauguß | 180 | | 100 200 |
| Spheroidal graphite<br>Sphäroguß | 160 | | 100 180 |
| Malleable cast iron<br>Temperguß | 130 | Ferritic<br>Ferritisch | 80 160 |

# *Nominal cutting speed and feed values for parting and grooving*
# *Nennschnittgeschwindigkeit und Vorschub-Werte für Ab- und Einstechdrehen*



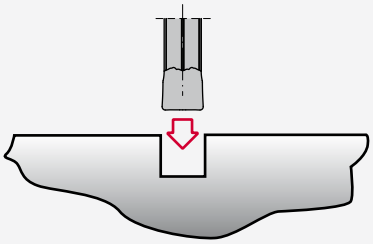


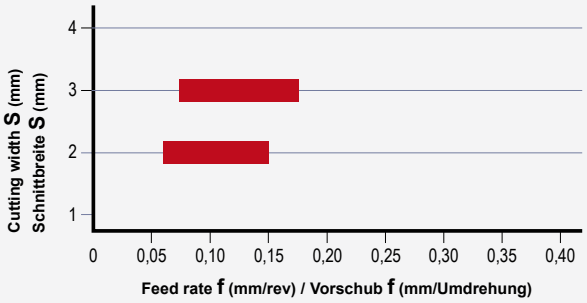

***WDMP*** *Soft cutting geometry*

- ***Especially for stainless steel.***
- ***Problem solver for steel machining.***

***WDMP*** *Weiche Schneidengeometrie*

- ***Hauptsächlich für rostfreien Stahl.***
- ***Problemlöser für Stahlbearbeitung.***






| Material<br>Materialien | HB | Condition<br>Beschaffenheit | Cutting speed / Schnittgeschwindigkeit m/min.<br>TL30<br>Vc (m/min) |
|---|---|---|---|
| Stainless steel<br>Rostfreier Stahl | 200<br>180<br>230-260<br>330 | Annealed ferritic / Geglüht ferritisch<br>Quenched austenitic / Abgeschreckt austenitisch<br>Quenched duplex / Abgeschreckt Duplex<br>Hardened martensitic / Gehärtet martensitisch | 50 200<br>50 180<br>50 100<br>50 80 |

B

## *Nominal cutting speed and feed values for parting and grooving*
## *Nennschnittgeschwindigkeit und Vorschub-Werte für Ab- und Einstechdrehen*

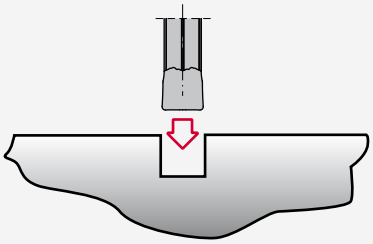


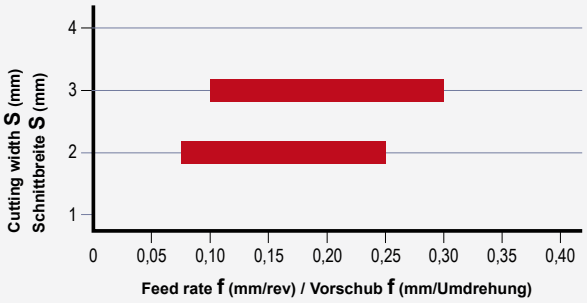

### ***WDMR*** *Radius grooves*

- ***Insert for radius grooves.***
- ***For copy turning.***
- ***Suitable for all steel and cast iron materials.***

### ***WDMR*** *Radiusnuten*

- ***Wendeplatten für Radiusnuten.***
- ***Zum Profildrehen.***
- ***Geeignet für alle Stahl- und Gußwerkstoffe.***






| Material Materialien P | HB | Condition Beschaffenheit | Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min) |
|---|---|---|---|
| Unalloyed steel<br>Unlegierter Stahl | 150-250 | C= 0,15% - 0,45% C | 80 180 |
| Low alloyed steel<br>Niedriglegierter Stahl | 250-300 | Tempered<br>Gehärtet | 60 150 |
| High alloyed steel<br>Hochlegierter Stahl | 350 | Tempered<br>Gehärtet | 50 120 |
| Corrosion resistant steel<br>Korrosionsbeständiger Stahl | 200 | Annealed<br>Geglüht | 50 200 |

| Material Materialien M | HB | Condition Beschaffenheit | Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min) |
|---|---|---|---|
| Stainless steel<br>Rostfreier Stahl | 200<br>180<br>230-260<br>330 | Annealed ferritic / Geglüht ferritisch<br>Quenched austenitic / Abgeschreckt austenitisch<br>Quenched duplex / Abgeschreckt Duplex<br>Hardened martensitic / Gehärtet martensitisch | 50 200<br>50 180<br>50 100<br>50 80 |

| Material Materialien K | HB | Condition Beschaffenheit | Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min) |
|---|---|---|---|
| Grey cast iron<br>Grauguß | 180 | | 100 200 |
| Spheroidal graphite<br>Sphäroguß | 160 | | 100 180 |
| Malleable cast iron<br>Temperguß | 130 | Ferritic<br>Ferritisch | 80 160 |

B

## *Nominal cutting speed and feed values for parting and grooving*
## *Nennschnittgeschwindigkeit und Vorschub-Werte für Ab- und Einstechdrehen*

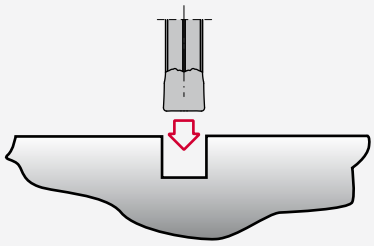


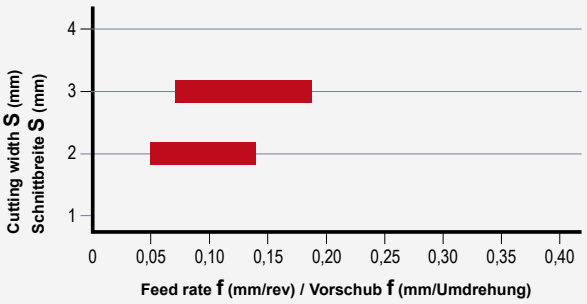

### ***WDMT*** *Grooving and Turning*

- ***For grooving and turning.***
- ***Suitable for all steel and stainless steel materials.***
- ***Very good chip control.***

### ***WDMT*** *Einstechen und Drehen*

- ***Zum Einstechen und Drehen.***
- ***Geeignet für alle Stahl- und rostfreien Stahlwerkstoffe.***
- ***Sehr gute Spankontrolle.***





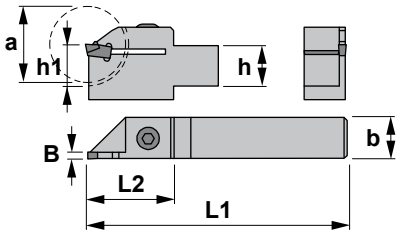

| **Material Materialien** P | **HB** | **Condition Beschaffenheit** | **Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min)** |
|---|---|---|---|
| Unalloyed steel<br>Unlegierter Stahl | 150-250 | C= 0,15% - 0,45% C | 80 180 |
| Low alloyed steel<br>Niedriglegierter Stahl | 250-300 | Tempered<br>Gehärtet | 60 150 |
| High alloyed steel<br>Hochlegierter Stahl | 350 | Tempered<br>Gehärtet | 50 120 |
| Corrosion resistant steel<br>Korrosionsbeständiger Stahl | 200 | Annealed<br>Geglüht | 50 200 |

| **Material Materialien** M | **HB** | **Condition Beschaffenheit** | **Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min)** |
|---|---|---|---|
| Stainless steel<br>Rostfreier Stahl | 200<br>180<br>230-260<br>330 | Annealed ferritic / Geglüht ferritisch<br>Quenched austenitic / Abgeschreckt austenitisch<br>Quenched duplex / Abgeschreckt Duplex<br>Hardened martensitic / Gehärtet martensitisch | 50 200<br>50 180<br>50 100<br>50 80 |

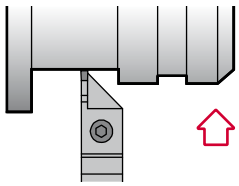
| **Material Materialien** K | **HB** | **Condition Beschaffenheit** | **Cutting speed / Schnittgeschwindigkeit m/min. TL30 Vc (m/min)** |
|---|---|---|---|
| Grey cast iron<br>Grauguß | 180 | | 100 200 |
| Spheroidal graphite<br>Sphäroguß | 160 | | 100 180 |
| Malleable cast iron<br>Temperguß | 130 | Ferritic<br>Ferritisch | 80 160 |



Characteristics:
Parting, grooving and side turning toolholder that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 1,6 to 6 mm.




Eigenschaften:
Klemmhalter zum Ein- und Abstechen und Längsdrehen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Einseitige Wendeschneidplatte von 1,6 bis 6 mm Dicke.



# CZCB

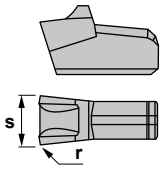
| Reference<br>Bezeichnung | h | b | L1 | L2 | h1 | B | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| CZCB R/L 1010 J01 | 10 | 10 | 110 | 25 | 10 | 1,6 | 22 | MRCN 1,6 | 0,080 |
| CZCB R/L 1010 J02 | 10 | 10 | 110 | 25 | 10 | 2,2 | 22 | MRCN 2,2 | 0,080 |
| CZCB R/L 1212 J01 | 12 | 12 | 110 | 26 | 12 | 1,6 | 22 | MRCN 1,6 | 0,100 |
| CZCB R/L 1212 J02 | 12 | 12 | 110 | 26 | 12 | 2,2 | 22 | MRCN 2,2 | 0,100 |
| CZCB R/L 1616 J02 | 16 | 16 | 110 | 30 | 16 | 2,2 | 32 | MRCN 2,2 | 0,150 |
| CZCB R/L 1616 J03 | 16 | 16 | 110 | 30 | 16 | 3,0 | 32 | MRCN 3,0 | 0,150 |
| CZCB R/L 2020 K03 | 20 | 20 | 125 | 36 | 20 | 3,0 | 42 | MRCN 3,0 | 0,350 |
| CZCB R/L 2020 K04 | 20 | 20 | 125 | 36 | 20 | 4,0 | 42 | MRCN 4,0 | 0,350 |
| CZCB R/L 2020 K05 | 20 | 20 | 125 | 36 | 20 | 5,0 | 42 | MRCN 5,0 | 0,350 |
| CZCB R/L 2020 K06 | 20 | 20 | 125 | 36 | 20 | 6,0 | 42 | MRCN 6,0 | 0,350 |
| CZCB R/L 2525 M03 | 25 | 25 | 150 | 50 | 25 | 3,0 | 60 | MRCN 3,0 | 0,550 |
| CZCB R/L 2525 M04 | 25 | 25 | 150 | 50 | 25 | 4,0 | 60 | MRCN 4,0 | 0,550 |
| CZCB R/L 2525 M05 | 25 | 25 | 150 | 50 | 25 | 5,0 | 60 | MRCN 5,0 | 0,550 |
| CZCB R/L 2525 M06 | 25 | 25 | 150 | 50 | 25 | 6,0 | 60 | MRCN 6,0 | 0,550 |

| Reference<br>Bezeichnung |  |  |
|---|---|---|
| CZCB R/L 1010 J01 | 1905 | 5004 |
| CZCB R/L 1010 J02 | 1905 | 5004 |
| CZCB R/L 1212 J01 | 1905 | 5004 |
| CZCB R/L 1212 J02 | 1905 | 5004 |
| CZCB R/L 1616 J02 | 1916 | 5005 |
| CZCB R/L 1616 J03 | 1916 | 5005 |
| CZCB R/L 2020 K03 | 1906 | 5005 |
| CZCB R/L 2020 K04 | 1906 | 5005 |
| CZCB R/L 2020 K05 | 1906 | 5005 |
| CZCB R/L 2020 K06 | 1906 | 5005 |
| CZCB R/L 2525 M03 | 1906 | 5005 |
| CZCB R/L 2525 M04 | 1906 | 5005 |
| CZCB R/L 2525 M05 | 1906 | 5005 |
| CZCB R/L 2525 M06 | 1906 | 5005 |

## MRCN

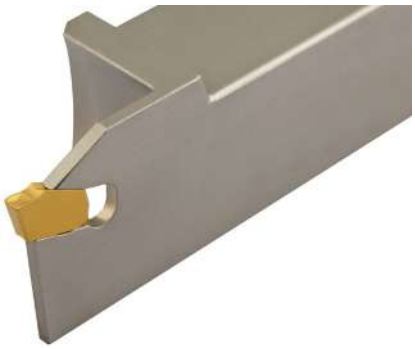
Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen. B08

| Reference / Bez. | s | r |
|---|---|---|
| MRCN 1,6 | 1,6 | 0,15 |
| MRCN 2,2 | 2,2 | 0,20 |
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |
| MRCN 5,0 | 5,0 | 0,30 |
| MRCN 6,0 | 6,0 | 0,40 |




MRCN

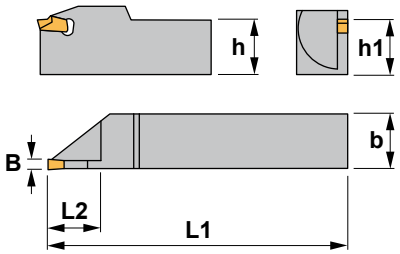




Characteristics:

Parting and grooving toolholder that works well on steels, alloyed steels, stainless steels and refractories.

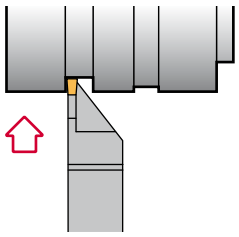
Single-ended inserts with thickness from 2 to 4 mm.




Eigenschaften:

Klemmhalter zum Ab- und Einstechen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.

Einseitige Wendeschneidplatte von 2 bis 4 mm Dicke.



# XLCF

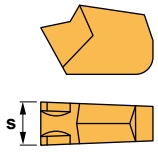
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | B | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| XLCF R/L 1010 J02 | 10 | 10 | 110 | 18 | 2 | PTNT 02 | 0,080 |
| XLCF R/L 1212 J02 | 12 | 12 | 110 | 18 | 2 | PTNT 02 | 0,100 |
| XLCF R/L 1616 J03 | 16 | 16 | 110 | 20 | 3 | PTNT 03 | 0,150 |
| XLCF R/L 1616 J04 | 16 | 16 | 110 | 20 | 4 | PTNT 04 | 0,150 |
| XLCF R/L 2020 K03 | 20 | 20 | 125 | 20 | 3 | PTNT 03 | 0,350 |
| XLCF R/L 2020 K04 | 20 | 20 | 125 | 20 | 4 | PTNT 04 | 0,350 |
| XLCF R/L 2525 M03 | 25 | 25 | 150 | 20 | 3 | PTNT 03 | 0,650 |
| XLCF R/L 2525 M04 | 25 | 25 | 150 | 20 | 4 | PTNT 04 | 0,650 |

| Reference<br>Bezeichnung | |
|---|---|
| XLCF R/L 1010 J02 | 5732 |
| XLCF R/L 1212 J02 | 5732 |
| XLCF R/L 1616 J03 | 5732 |
| XLCF R/L 1616 J04 | 5732 |
| XLCF R/L 2020 K03 | 5732 |
| XLCF R/L 2020 K04 | 5732 |
| XLCF R/L 2525 M03 | 5732 |
| XLCF R/L 2525 M04 | 5732 |

## PTNT

Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen.
B08

| Reference / Bez. | s |
|---|---|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |

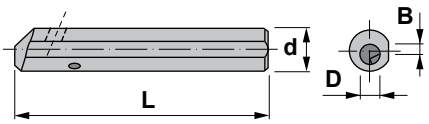



PTNT

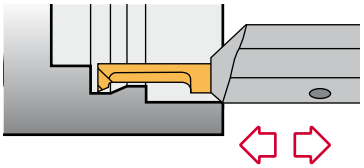




Characteristics:
Multipurpose boring bar for grooving, threading and turning.
For smaller diameters from 4,2 mm.




Eigenschaften:
Multifunktions-Bohrstange zum Einstechen, Gewindedrehen und Drehen.
Für kleinere Durchmesser ab 4,2mm.



# 00.30

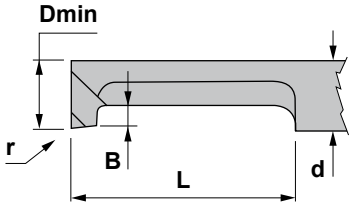
| Reference<br>Bezeichnung | L | d | B | D | Tool size<br>Werkzeug | Kg |
|---|---|---|---|---|---|---|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 / 4,2 | CTI 04.. | 0,070 |
| 00.30.16.06 | 120 | 16 | 2,80 | 8,2 | CTI 06.. | 0,150 |

| Reference<br>Bezeichnung |  |  | Nm |
|---|---|---|---|
| 00.30.12.04 | 1505 | 5025 | 2.0 |
| 00.30.16.06 | 1506 | 5003 | 3.0 |



Characteristics:
Turning tool.

Eigenschaften:
Drehwerkzeug.



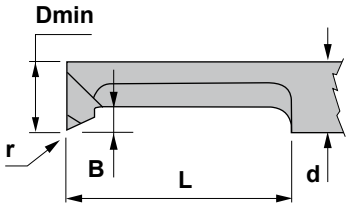

## AR

| Reference Bezeichnung | L | d | B | Dmin | r |
|---|---|---|---|---|---|
| CTI 0402 AR | 15 | 4 | 0,8 | 4,2 | 0,2 |
| CTI 0602 AR | 20 | 6 | 1,8 | 6,2 | 0,2 |



Characteristics:
Copying tool.

Eigenschaften:
Kopierwerkzeug.



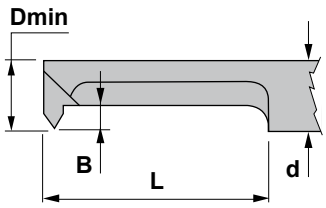

## BR

| Reference Bezeichnung | L | d | B | Dmin | r |
|---|---|---|---|---|---|
| CTI 0402 BR | 15 | 4 | 0,8 | 4,2 | 0,2 |
| CTI 0602 BR | 20 | 6 | 1,8 | 6,2 | 0,2 |



Characteristics:
Threading tool.

Eigenschaften:
Gewindewerkzeug.



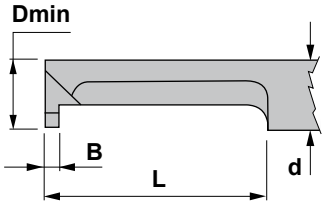

## CR

| Reference Bezeichnung | L | d | B | Dmin |
|---|---|---|---|---|
| CTI 0400 CR | 15 | 4 | 0,8 | M5 |
| CTI 0600 CR | 20 | 6 | 1,8 | M8 |



Characteristics:
Grooving tool.

Eigenschaften:
Einstechwerkzeug.



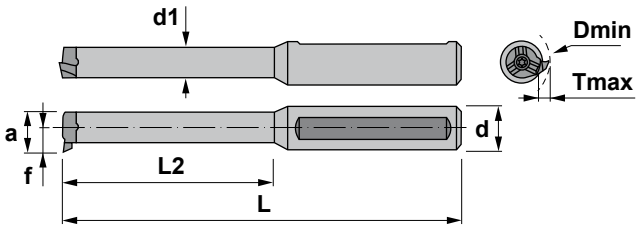

## DR

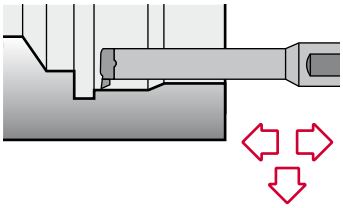
| Reference Bezeichnung | L | d | B | Dmin |
|---|---|---|---|---|
| CTI 0410 DR | 15 | 4 | 1,0 | 4,2 |
| CTI 0615 DR | 20 | 6 | 1,8 | 6,2 |



Characteristics: Multipurpose boring bar for grooving, threading and turning.
For smaller diameters from 8 mm.

Eigenschaften: Multifunktions-Bohrstange zum Einstechen, Gewindedrehen und Drehen.
Für kleinere Durchmesser ab 8mm.



# 608.00

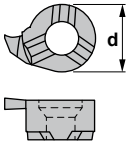
| Reference<br>Bezeichnung | Dmin | d | d1 | L | L2 | a | f | Tmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 608.0012.2 HM | 8 | 12 | 6 | 90 | 30 | 7,8 | 4,8 | 1,0 | R/LS08 | 0,090 |
| 611.0012.2 HM | 11 | 12 | 8 | 110 | 42 | 10,7 | 6,7 | 2,3 | R/LS11 | 0,090 |
| 614.0012.2 HM | 14 | 12 | 11 | 110 | 45 | 13,8 | 9,0 | 4,0 | R/LS14 | 0,130 |
| 616.0012.2 HM | 16 | 12 | 11 | 130 | 56 | 15,7 | 10,2 | 4,3 | R/LS16 | 0,265 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 608.0012.2 HM | 1226 | 5508 | 1.2 |
| 611.0012.2 HM | 1535 | 5510 | 2.0 |
| 614.0012.2 HM | 1244 | 5515 | 3.0 |
| 616.0012.2 HM | 1255 | 5520 | 4.0 |

## R/LS..

B11-15

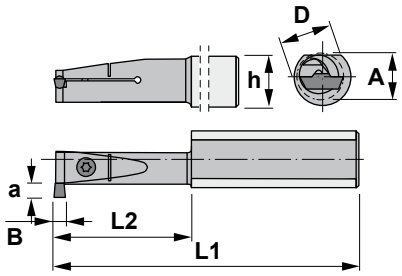
| Reference / Bez. | d |
|---|---|
| R/LS.. 08.. | 6,0 |
| R/LS.. 11.. | 8,0 |
| R/LS.. 14.. | 9,0 |
| R/LS.. 16.. | 11,0 |



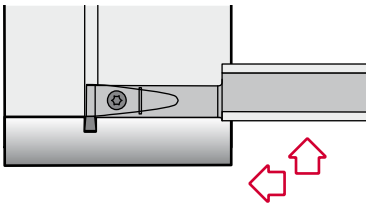

| R/LS | R/LS |
|---|---|
|  |  |
| Insert for turning<br>WSP zum Drehen | Insert for grooving with radius<br>WSP zum Vollradius-Einstechen |
| **R/LS** | **R/LS** |
|  |  |
| Insert for threading<br>WSP zum Gewindedrehen | Insert for grooving<br>WSP zum Einstechen |



Characteristics:
Grooving toolholder that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 3 to 4 mm.




Eigenschaften:
Bohrstange zum Einstechen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Einseitige Wendeschneidplatte von 3 bis 4 mm Dicke.



# CZGB

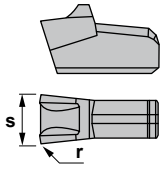
| Reference<br>Bezeichnung | D | A | h | L1 | L2 | B | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S16M CZGB R/L 03 | 16 | 16 | 15 | 150 | 30 | 3 | 4 | MCRN 3,0 | 0,180 |
| S20R CZGB R/L 03 | 20 | 20 | 18 | 200 | 35 | 3 | 6 | MCRN 3,0 | 0,400 |
| S25S CZGB R/L 03 | 25 | 25 | 23 | 250 | 40 | 3 | 8 | MCRN 3,0 | 0,650 |
| S20R CZGB R/L 04 | 20 | 20 | 18 | 200 | 35 | 4 | 6 | MCRN 4,0 | 0,400 |
| S25S CZGB R/L 04 | 25 | 25 | 23 | 250 | 40 | 4 | 8 | MCRN 4,0 | 0,650 |

| Reference<br>Bezeichnung | | | | |
|---|---|---|---|---|
| S16M CZGB R/L 03 | 1250 | 5520 | - | - |
| S20R CZGB R/L 03 | 1250 | 5520 | - | - |
| S25S CZGB R/L 03 | - | - | 1006 | 5004 |
| S20R CZGB R/L 04 | - | - | 1006 | 5004 |
| S25S CZGB R/L 04 | - | - | 1006 | 5004 |

## MRCN

Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen.
B08

| Reference / Bez. | s | r |
|---|---|---|
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |

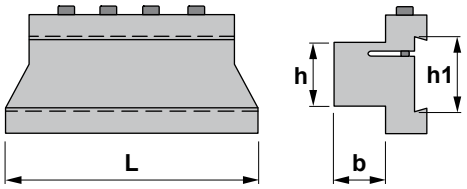



MRCN





Characteristics:
Tool blocks manufactured with two slot-guides that allow to mantain the blade always guided.
For manual and C.N.C. lathes.



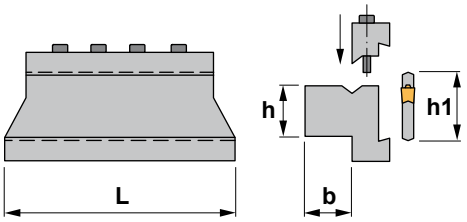

Eigenschaften:
Grundhalter hergestellt mit zwei Schlitzführungen, die stets das Stechschwert gerade halten.
Für konvenzionelle und C.N.C. Drehmachinen.

# CPTS

| Reference Bezeichnung | h1 | L | h | b | | | Kg |
|---|---|---|---|---|---|---|---|
| CPTS 1916 | 19 | 76 | 16 | 16 | 1075 | 5004 | 0,300 |
| CPTS 2616 | 26 | 87 | 16 | 16 | 1076 | 5005 | 0,450 |
| CPTS 2620 | 26 | 87 | 20 | 20 | 1076 | 5005 | 0,500 |
| CPTS 2625 | 26 | 87 | 25 | 25 | 1076 | 5005 | 0,650 |
| CPTS 3220 | 32 | 100 | 20 | 20 | 1076 | 5005 | 0,700 |
| CPTS 3225 | 32 | 110 | 25 | 25 | 1076 | 5005 | 0,950 |
| CPTS 3232 | 32 | 120 | 32 | 32 | 1076 | 5005 | 1,400 |
| CPTS 5250 | 52 | 135 | 50 | 50 | 1078 | 5006 | 3,400 |



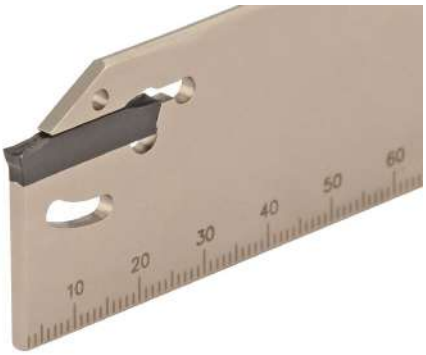
Characteristics:
Tool blocks manufactured with two slot-guides that allow to mantain the blade always guided. Fixing system in two parts for machines with difficult access.
For manual and C.N.C. lathes.




Eigenschaften:
Grundhalter hergestellt mit zwei Schlitzführungen, die stets das Stechschwert gerade halten.
Das Klemmungsystem in zwei Teilen ist für schwer zugängliche Maschinen empfohlen.
Für konvenzionelle und C.N.C. Drehmachinen.

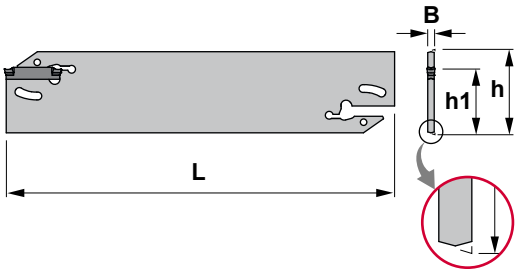
# DPTS

| Reference Bezeichnung | h1 | L | h | b | | | | Kg |
|---|---|---|---|---|---|---|---|---|
| DPTS 1916 | 19 | 76 | 16 | 16 | 1075 | 2916 | 5004 | 0,250 |
| DPTS 2620 | 26 | 87 | 20 | 20 | 1076 | 2920 | 5005 | 0,550 |
| DPTS 2625 | 26 | 87 | 25 | 25 | 1076 | 2920 | 5005 | 0,700 |
| DPTS 3220 | 32 | 100 | 20 | 20 | 1076 | 2930 | 5005 | 0,750 |
| DPTS 3225 | 32 | 110 | 25 | 25 | 1076 | 2935 | 5005 | 1,000 |
| DPTS 3232 | 32 | 120 | 32 | 32 | 1076 | 2942 | 5005 | 1,450 |
| DPTS 5250 | 52 | 135 | 50 | 50 | 1078 | 2950 | 5006 | 3,450 |



Characteristics:

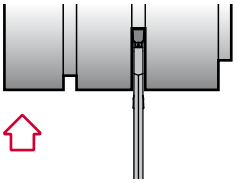
Parting, grooving and face grooving blade that works well on steels, alloyed steels, stainless steels and refractories. Modular system for inserts with thickness from 2 to 4 mm.




Eigenschaften:

Schwerter zum Ein-, Ab- und Stirnstechen. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.

Modulares System für Wendeschneidplatten von 2 bis o 4 mm Dicke.



# CZDPN

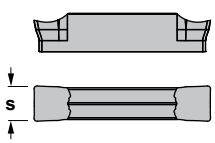
| Reference<br>Bezeichnung | h | L | h1 | B | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| CZDP N 2601 J02 | 26 | 110 | 21,4 | 2,2 | WDM.. 02 | 0,060 |
| CZDP N 2602 J03 | 26 | 110 | 21,4 | 3,0 | WDM.. 03 | 0,070 |
| CZDP N 3201 M02 | 32 | 150 | 25,0 | 2,2 | WDM.. 02 | 0,090 |
| CZDP N 3202 M03 | 32 | 150 | 25,0 | 3,0 | WDM.. 03 | 0,100 |
| CZDP N 3203 M04 | 32 | 150 | 25,0 | 4,0 | WDM.. 04 | 0,125 |

| Reference<br>Bezeichnung | |
|---|---|
| CZDP N 2601 J02 | 5735 |
| CZDP N 2602 J03 | 5735 |
| CZDP N 3201 M02 | 5735 |
| CZDP N 3202 M03 | 5735 |
| CZDP N 3203 M04 | 5735 |

## WDM..

B07

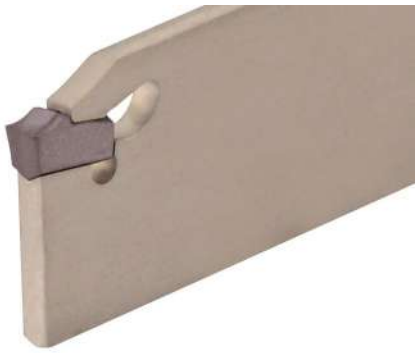
| Reference / Bez. | s |
|---|---|
| WDM.. 02 | 2,0 |
| WDM.. 03 | 3,0 |
| WDM.. 04 | 4,0 |



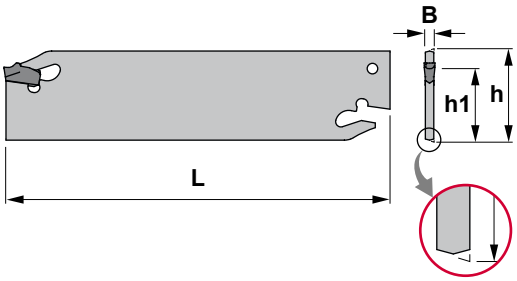

WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.

WDMG: Wendeschneidplatte zum Einstechen.
WDMP: Wendeschneidplatte zum Abstechen.
WDMR: Wendeschneidplatte zum Vollradius-Stechen.
WDMT: Wendeschneidplatte zum Drehen.

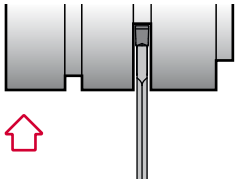
| WDMG | WDMP |
|---|---|
|  |  |
| **WDMR** | **WDMT** |
|  |  |



Characteristics:
Parting and grooving blade that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 2,2 to 6 mm.




Eigenschaften:
Ab- und Einstechschwerter. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Einseitige Wendeschneidplatte von 2,2 bis 6 mm Dicke.



# CRCFN

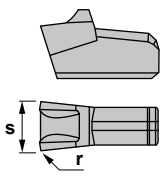
| Reference<br>Bezeichnung | h | L | h1 | B | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| CRCF N 1901 X02 | 19 | 86 | 16,0 | 2,2 | MCRN 2,2 | 0,040 |
| CRCF N 2601 J02 | 26 | 110 | 21,4 | 2,2 | MCRN 2,2 | 0,060 |
| CRCF N 2602 J03 | 26 | 110 | 21,4 | 3,0 | MCRN 3,0 | 0,070 |
| CRCF N 2603 J04 | 26 | 110 | 21,4 | 4,0 | MCRN 4,0 | 0,090 |
| CRCF N 2604 J05 | 26 | 110 | 21,4 | 5,0 | MCRN 5,0 | 0,100 |
| CRCF N 2605 J06 | 26 | 110 | 21,4 | 6,0 | MCRN 6,0 | 0,100 |
| CRCF N 3202 M03 | 32 | 150 | 25,0 | 3,0 | MCRN 3,0 | 0,100 |
| CRCF N 3203 M04 | 32 | 150 | 25,0 | 4,0 | MCRN 4,0 | 0,125 |
| CRCF N 3204 M05 | 32 | 150 | 25,0 | 5,0 | MCRN 5,0 | 0,150 |
| CRCF N 3205 M06 | 32 | 150 | 25,0 | 6,0 | MCRN 6,0 | 0,170 |

| Reference<br>Bezeichnung | |
|---|---|
| CRCF N 1901 X02 | 5732 |
| CRCF N 2601 J02 | 5732 |
| CRCF N 2602 J03 | 5732 |
| CRCF N 2603 J04 | 5732 |
| CRCF N 2604 J05 | 5732 |
| CRCF N 2605 J06 | 5732 |
| CRCF N 3202 M03 | 5732 |
| CRCF N 3203 M04 | 5732 |
| CRCF N 3204 M05 | 5732 |
| CRCF N 3205 M06 | 5732 |

## MRCN

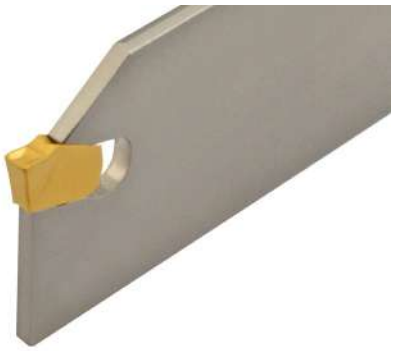
Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen. B08

| Reference / Bez. | s | r |
|---|---|---|
| MRCN 2,2 | 2,2 | 0,20 |
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |
| MRCN 5,0 | 5,0 | 0,30 |
| MRCN 6,0 | 6,0 | 0,40 |

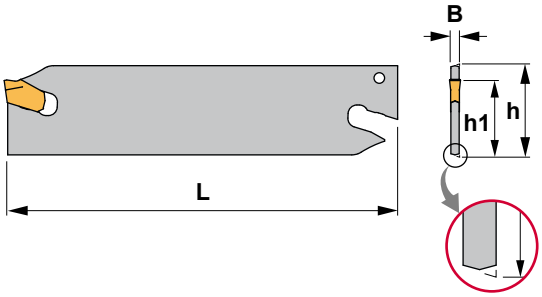



MRCN

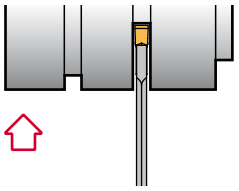




Characteristics:
Parting and grooving blade that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 2 to 9 mm.




Eigenschaften:
Ab- und Einstechschwerter. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Einseitige Wendeschneidplatte von 2 bis 9 mm Dicke.



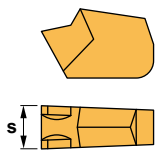
# XLCFN

| Reference<br>Bezeichnung | h | L | h1 | B | | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| XLCF N 1901 X02 | 19,0 | 86 | 16,0 | 2,1 | 5732 | PTNT 02 | 0,040 |
| XLCF N 2601 J02 | 26,0 | 110 | 21,4 | 2,1 | 5732 | PTNT 02 | 0,050 |
| XLCF N 2602 J03 | 26,0 | 110 | 21,4 | 3,1 | 5732 | PTNT 03 | 0,050 |
| XLCF N 2603 J04 | 26,0 | 110 | 21,4 | 4,1 | 5732 | PTNT 04 | 0,085 |
| XLCF N 2604 J05 | 26,0 | 110 | 21,4 | 5,1 | 5732 | PTNT 05 | 0,095 |
| XLCF N 2605 J06 | 26,0 | 110 | 21,4 | 6,1 | 5732 | PTNT 06 | 0,120 |
| XLCF N 3201 M02 | 32,0 | 150 | 25,0 | 2,1 | 5732 | PTNT 02 | 0,075 |
| XLCF N 3202 M03 | 32,0 | 150 | 25,0 | 3,1 | 5732 | PTNT 03 | 0,100 |
| XLCF N 3203 M04 | 32,0 | 150 | 25,0 | 4,1 | 5732 | PTNT 04 | 0,130 |
| XLCF N 3204 M05 | 32,0 | 150 | 25,0 | 5,1 | 5732 | PTNT 05 | 0,160 |
| XLCF N 3205 M06 | 32,0 | 150 | 25,0 | 6,1 | 5732 | PTNT 06 | 0,190 |
| XLCF N 3207 M08 | 32,0 | 150 | 25,0 | 8,1 | 5732 | PTNT 08 | 0,230 |
| XLCF N 3208 M09 | 32,0 | 150 | 25,0 | 9,1 | 5732 | PTNT 09 | 0,270 |
| XLCF N 5207 X08 | 52,6 | 190 | 45,0 | 8,1 | 5732 | PTNT 08 | 0,500 |
| XLCF N 5208 X09 | 52,6 | 190 | 45,0 | 9,1 | 5732 | PTNT 09 | 0,600 |
| XLCF N 5307 X08 | 52,6 | 260 | 45,0 | 8,1 | 5732 | PTNT 08 | 0,700 |
| XLCF N 5308 X09 | 52,6 | 260 | 45,0 | 9,1 | 5732 | PTNT 09 | 0,800 |

## PTNT

Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen.
B08

| Reference / Bez. | s |
|---|---|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |
| PTNT 05 | 5,10 |
| PTNT 06 | 6,10 |
| PTNT 08 | 8,10 |
| PTNT 09 | 9,10 |

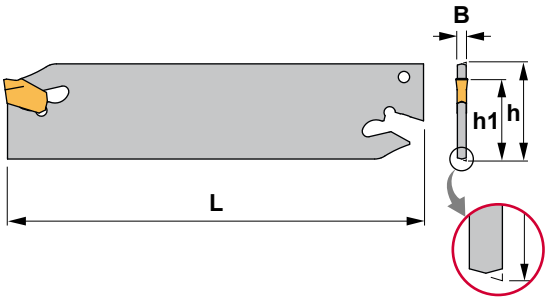



PTNT

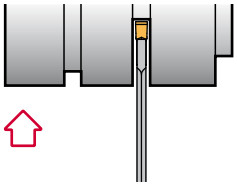




Characteristics:
Parting and grooving positive stop blade that works well on steels, alloyed steels, stainless steels and refractories.
For inserts with thickness from 2 to 6 mm.




Eigenschaften:
Ab- und Einstechschwerter mit Festanschlag. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Einseitige Wendeschneidplatte von 2 bis 6 mm Dicke.



# XLCTN

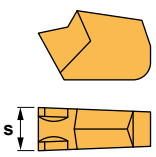
| Reference<br>Bezeichnung | h | L | h1 | B | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| XLCT N 1901 X02 | 19 | 86 | 16,0 | 2,1 | PTNT 02 | 0,040 |
| XLCT N 2601 J02 | 26 | 110 | 21,4 | 2,1 | PTNT 02 | 0,050 |
| XLCT N 2602 J03 | 26 | 110 | 21,4 | 3,1 | PTNT 03 | 0,050 |
| XLCT N 2603 J04 | 26 | 110 | 21,4 | 4,1 | PTNT 04 | 0,085 |
| XLCT N 2604 J05 | 26 | 110 | 21,4 | 5,1 | PTNT 05 | 0,095 |
| XLCT N 2605 J06 | 26 | 110 | 21,4 | 6,1 | PTNT 06 | 0,120 |
| XLCT N 3201 M02 | 32 | 150 | 25,0 | 2,1 | PTNT 02 | 0,075 |
| XLCT N 3202 M03 | 32 | 150 | 25,0 | 3,1 | PTNT 03 | 0,100 |
| XLCT N 3203 M04 | 32 | 150 | 25,0 | 4,1 | PTNT 04 | 0,130 |
| XLCT N 3204 M05 | 32 | 150 | 25,0 | 5,1 | PTNT 05 | 0,160 |
| XLCT N 3205 M06 | 32 | 150 | 25,0 | 6,1 | PTNT 06 | 0,190 |

| Reference<br>Bezeichnung |  |
|---|---|
| XLCT N 1901 X02 | 5732 |
| XLCT N 2601 J02 | 5732 |
| XLCT N 2602 J03 | 5732 |
| XLCT N 2603 J04 | 5732 |
| XLCT N 2604 J05 | 5732 |
| XLCT N 2605 J06 | 5732 |
| XLCT N 3201 M02 | 5732 |
| XLCT N 3202 M03 | 5732 |
| XLCT N 3203 M04 | 5732 |
| XLCT N 3204 M05 | 5732 |
| XLCT N 3205 M06 | 5732 |

## PTNT

Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen.
B08

| Reference / Bez. | s |
|---|---|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |
| PTNT 05 | 5,10 |
| PTNT 06 | 6,10 |

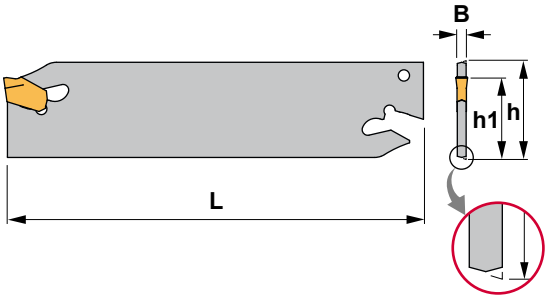



PTNT



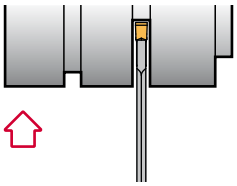


Characteristics:
Parting and grooving positive stop blade that works well on steels, alloyed steels, stainless steels and refractories.
For inserts with thickness from 2 to 4 mm.




**HSS**

Eigenschaften:
Ab- und Einstechschwerter mit Festanschlag. Geeignet für Stähle, legierte Stähle, rostfreie Stähle und feuerfeste Materialien.
Einseitige Wendeschneidplatte von 2 bis 4 mm Dicke.



# XLCTN-HSS

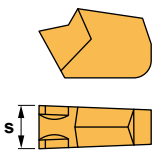
| Reference<br>Bezeichnung | h | L | h1 | B | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| XLCT N 2601 J02-HSS | 26 | 110 | 21,4 | 2,1 | PTNT 02 | 0,050 |
| XLCT N 2602 J03-HSS | 26 | 110 | 21,4 | 3,1 | PTNT 03 | 0,050 |
| XLCT N 2603 J04-HSS | 26 | 110 | 21,4 | 4,1 | PTNT 04 | 0,085 |
| XLCT N 3201 M02-HSS | 32 | 150 | 25,0 | 2,1 | PTNT 02 | 0,075 |
| XLCT N 3202 M03-HSS | 32 | 150 | 25,0 | 3,1 | PTNT 03 | 0,100 |
| XLCT N 3203 M04-HSS | 32 | 150 | 25,0 | 4,1 | PTNT 04 | 0,130 |

| Reference<br>Bezeichnung | |
|---|---|
| XLCT N 2601 J02-HSS | 5732 |
| XLCT N 2602 J03-HSS | 5732 |
| XLCT N 2603 J04-HSS | 5732 |
| XLCT N 3201 M02-HSS | 5732 |
| XLCT N 3202 M03-HSS | 5732 |
| XLCT N 3203 M04-HSS | 5732 |

## PTNT

Single-ended insert for parting and grooving.
Einseitige Wendeschneidplatte zum Ab- und Einstechen.
B08

| Reference / Bez. | s |
|---|---|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |



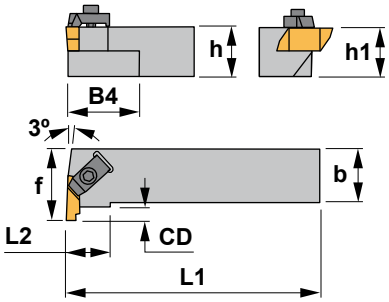

PTNT



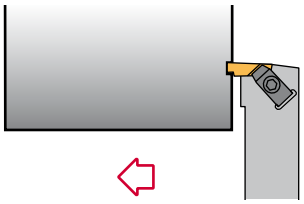
B



Characteristics:
Multipurpose grooving and threading top clamp external toolholder.




Eigenschaften:
Multifunktionaler Klemmhalter zum Einstechen und Gewindedrehen mit Top Notch Klemmung.



# NE 93°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| NE R/L 1616 H02 | 16 | 16 | 100 | 25,40 | 20 | N..2 | 0,200 |
| NE R/L 2020 K02 | 20 | 20 | 125 | 25,40 | 25 | N..2 | 0,400 |
| NE R/L 2525 M02 | 25 | 25 | 150 | 25,40 | 32 | N..2 | 0,700 |
| NE R/L 2525 M03 | 25 | 25 | 150 | 50,80 | 32 | N..3 | 0,700 |
| NE R/L 3225 P03 | 32 | 25 | 170 | 50,80 | 32 | N..3 | 1,000 |
| NE R/L 2525 M04 | 25 | 25 | 150 | 50,80 | 35 | N..4 | 0,700 |
| NE R/L 3225 P04 | 32 | 25 | 170 | 50,80 | 35 | N..4 | 1,000 |
| NE R/L 3232 P04 | 32 | 32 | 170 | 50,80 | 40 | N..4 | 1,250 |

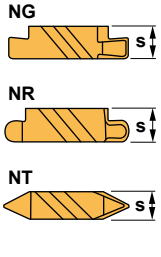
| Reference<br>Bezeichnung | | | | |
|---|---|---|---|---|
| NE R/L 1616 H02 | 5003 | TF-75 | TF-74 | 1494 |
| NE R/L 2020 K02 | 5003 | TF-75 | TF-74 | 1494 |
| NE R/L 2525 M02 | 5003 | TF-75 | TF-74 | 1494 |
| NE R/L 2525 M03 | 5004 | TF-73 | TF-72 | 1495 |
| NE R/L 3225 P03 | 5004 | TF-73 | TF-72 | 1495 |
| NE R/L 2525 M04 | 5004 | TF-73 | TF-72 | 1495 |
| NE R/L 3225 P04 | 5004 | TF-73 | TF-72 | 1495 |
| NE R/L 3232 P04 | 5004 | TF-73 | TF-72 | 1495 |

## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 2 | 3,81 |
| N.. 3 | 4,95 |
| N.. 4 | 6,48 |

NG: Insert for grooving / Einstechwendeschneidplatte
NR: Insert for grooving with radius / Vollradius-Einstechplatte
NT: Insert for threading / Gewindewendeschneidplatte




NG



NR

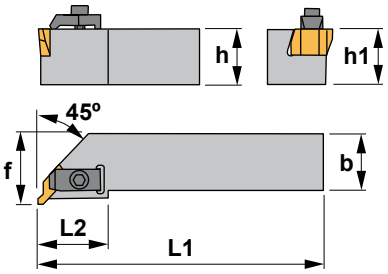


NT

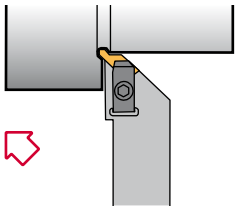




Characteristics:
Specific application external grooving toolholder.
Right tools require left inserts and vice versa. Maximum grooving depth depending on insert.




Eigenschaften:
Klemmhalter zum Einstechen für spezifische Anwendungen.
Rechte Werkzeuge benötigen linke Wendeschneidplatten und umgekehrt.
Die maximale Nutentiefe hängt von der Platte ab.



# NR 45°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|
| NR R/L 2020 K03 | 20 | 20 | 125 | 32 | 25 | N..3 | 0,400 |
| NR R/L 2525 M03 | 25 | 25 | 150 | 32 | 32 | N..3 | 0,700 |
| NR R/L 3225 P03 | 32 | 25 | 170 | 32 | 32 | N..3 | 1,000 |

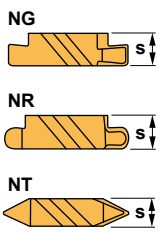
| Reference<br>Bezeichnung | | | | |
|---|---|---|---|---|
| NR R/L 2020 K03 | 5004 | TF-73 | TF-72 | 1495 |
| NR R/L 2525 M03 | 5004 | TF-73 | TF-72 | 1495 |
| NR R/L 3225 P03 | 5004 | TF-73 | TF-72 | 1495 |

## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 3 | 4,95 |

NG: Insert for grooving / Einstechwendeschneidplatte
NR: Insert for grooving with radius / Vollradius-Einstechplatte
NT: Insert for threading / Gewindewendeschneidplatte




NG



NR



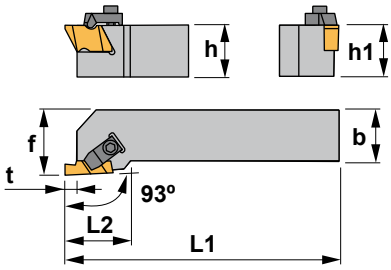
NT



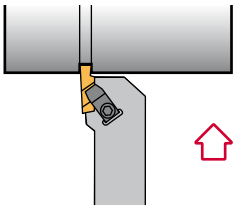
B



Characteristics:
Multipurpose grooving and threading top clamp external toolholder.
Maximum grooving depth depending on insert.




Eigenschaften:
Multifunktionaler Klemmhalter zum Einstechen und Gewindedrehen mit Top Notch Klemmung.
Die maximale Nutentiefe hängt von der Platte ab.



# NS 93°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| NS R/L 1010 E02 | 10 | 10 | 70 | 6,35 | 14 | N..2 | 0,070 |
| NS R/L 1212 F02 | 12 | 12 | 80 | 6,35 | 16 | N..2 | 0,100 |
| NS R/L 1616 H02 | 16 | 16 | 100 | 6,35 | 20 | N..2 | 0,200 |
| NS R/L 2020 K02 | 20 | 20 | 125 | 6,35 | 25 | N..2 | 0,400 |
| NS R/L 2525 M02 | 25 | 25 | 150 | 6,35 | 32 | N..2 | 0,700 |
| NS R/L 2020 K03 | 20 | 20 | 125 | 9,65 | 25 | N..3 | 0,400 |
| NS R/L 2525 M03 | 25 | 25 | 150 | 9,65 | 32 | N..3 | 0,700 |
| NS R/L 3225 P03 | 32 | 25 | 170 | 9,65 | 32 | N..3 | 0,900 |
| NS R/L 3232 P03 | 32 | 32 | 170 | 9,65 | 40 | N..3 | 1,250 |
| NS R/L 2525 M04 | 25 | 25 | 150 | 9,65 | 32 | N..4 | 0,700 |
| NS R/L 3225 P04 | 32 | 25 | 170 | 9,65 | 32 | N..4 | 0,900 |
| NS R/L 3232 P04 | 32 | 32 | 170 | 9,65 | 40 | N..4 | 1,250 |

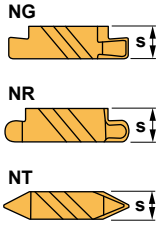
| Reference<br>Bezeichnung |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| NS R/L 1010 E02 | 5003 | TF-75 | TF-74 | - | - | 1494 |
| NS R/L 1212 F02 | 5003 | TF-75 | TF-74 | - | - | 1494 |
| NS R/L 1616 H02 | 5003 | TF-75 | TF-74 | - | - | 1494 |
| NS R/L 2020 K02 | 5003 | TF-75 | TF-74 | - | - | 1494 |
| NS R/L 2525 M02 | 5003 | TF-75 | TF-74 | - | - | 1494 |
| NS R/L 2020 K03 | 5004 | TF-73 | TF-72 | - | - | 1495 |
| NS R/L 2525 M03 | 5004 | TF-73 | TF-72 | - | - | 1495 |
| NS R/L 3225 P03 | 5004 | TF-73 | TF-72 | - | - | 1495 |
| NS R/L 3232 P03 | 5004 | TF-73 | TF-72 | - | - | 1495 |
| NS R/L 2525 M04 | 5004 | TF-73 | TF-72 | 3521 | 1625 | 1495 |
| NS R/L 3225 P04 | 5004 | TF-73 | TF-72 | 3521 | 1625 | 1495 |
| NS R/L 3232 P04 | 5004 | TF-73 | TF-72 | 3521 | 1625 | 1495 |

## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 2 | 3,81 |
| N.. 3 | 4,95 |
| N.. 4 | 6,48 |

NG: Insert for grooving / Einstechwendeschneidplatte
NR: Insert for grooving with radius / Vollradius-Einstechplatte
NT: Insert for threading / Gewindewendeschneidplatte




NG



NR



NT

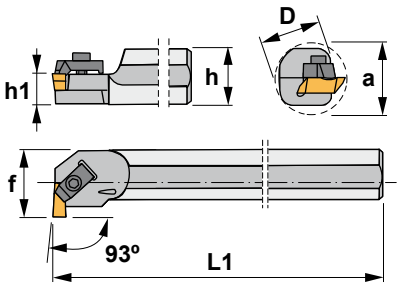




Characteristics:

Multipurpose grooving and threading top clamp boring bar. Right tools require left inserts and vice versa.

Maximum grooving depth depending on insert.

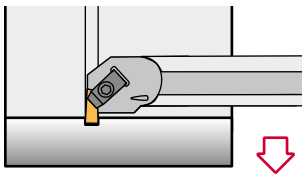



Eigenschaften:

Multifunktionale Bohrstange zum Einstechen und Gewindedrehen mit Top Notch Klemmung.

Rechte Werkzeuge benötigen linke Wendeschneidplatten und umgekehrt.

Die maximale Nutentiefe hängt von der Platte ab.



# NNTO 93°

| Reference<br>Bezeichnung | D | h | h1 | L1 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| A12M-NNTO R/L 02 | 12 | 11 | 5,5 | 150 | 11 | 18,5 | N..2 | 0,150 |
| A16M-NNTO R/L 02 | 16 | 15 | 7,5 | 150 | 11 | 22,0 | N..2 | 0,200 |
| A20Q-NNTO R/L 02 | 20 | 18 | 9,0 | 180 | 13 | 26,0 | N..2 | 0,400 |
| A25R-NNTO R/L 02 | 25 | 23 | 11,5 | 200 | 17 | 34,0 | N..2 | 0,700 |
| A25R-NNTO R/L 03 | 25 | 23 | 11,5 | 200 | 17 | 34,0 | N..3 | 0,700 |
| A32S-NNTO R/L 03 | 32 | 30 | 15,0 | 250 | 22 | 44,0 | N..3 | 1,400 |
| A40T-NNTO R/L 03 | 40 | 37 | 18,5 | 300 | 27 | 54,0 | N..3 | 2,650 |
| A40T-NNTO R/L 04 | 40 | 37 | 18,5 | 300 | 27 | 54,0 | N..4 | 2,650 |
| A50U-NNTO R/L 04 | 50 | 47 | 23,5 | 350 | 35 | 70,0 | N..4 | 5,400 |

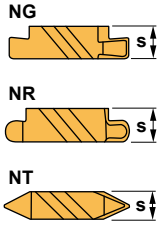
| Reference<br>Bezeichnung |  |  |  |
|---|---|---|---|
| A12M-NNTO R/L 02 | TF-147 | TF-146 | 1494 |
| A16M-NNTO R/L 02 | TF-75 | TF-74 | 1494 |
| A20Q-NNTO R/L 02 | TF-75 | TF-74 | 1494 |
| A25R-NNTO R/L 02 | TF-75 | TF-74 | 1494 |
| A25R-NNTO R/L 03 | TF-73 | TF-72 | 1495 |
| A32S-NNTO R/L 03 | TF-73 | TF-72 | 1495 |
| A40T-NNTO R/L 03 | TF-73 | TF-72 | 1495 |
| A40T-NNTO R/L 04 | TF-73 | TF-72 | 1495 |
| A50U-NNTO R/L 04 | TF-73 | TF-72 | 1495 |

## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 2 | 3,81 |
| N.. 3 | 4,95 |
| N.. 4 | 6,48 |

NG: Insert for grooving / Einstechwendeschneidplatte
NR: Insert for grooving with radius / Vollradius-Einstechplatte
NT: Insert for threading / Gewindewendeschneidplatte




NG



NR



NT






## *Nominal cutting speed for parting*

| Material P | HB | Condition | Basic grades TL40 | TN15 | TN30 | PM25 | KM15 | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Cutting speed m/min. | | | | | |
| Unalloyed steel | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 160-120<br>150-110<br>130-90 | 480-345-250<br>440-315-230<br>385-275-200 | 200-150<br>190-140<br>170-120 | 160-120<br>150-110<br>130-90 | | 1900<br>2100<br>2250 |
| Low alloyed steel | 180<br>275<br>300<br>350 | Annealed<br>Hardened<br>Hardened<br>Hardened | 140-100<br>120-80<br>110-70<br>90-60 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 180-130<br>160-110<br>150-100<br>140-90 | 140-100<br>120-80<br>110-70<br>90-60 | | 2100<br>2600<br>2700<br>2850 |
| High alloyed steel | 200<br>325 | Annealed<br>Hardened | 70-60<br>45-30 | 350-230-170<br>170-110 | 110-90<br>70-50 | 70-60<br>45-30 | | 2600<br>3900 |
| Stainless steel | 200 | Martensitic / ferritic | 130-90 | 295-240-190 | 170-120 | 130-90 | | 2300 |
| Steel | 180<br>200<br>225 | Unalloyed<br>Low alloyed<br>High alloyed | 100-60<br>90-50<br>80-40 | 260-185-145<br>230-160-120<br>190-130-95 | 130-90<br>115-75<br>100-60 | 100-60<br>90-50<br>80-40 | | 2000<br>2500<br>2700 |

| Material M | HB | Condition | Basic grades TL40 | TN15 | TN30 | PM25 | KM15 | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Cutting speed m/min. | | | | | |
| Stainless steel annealed | 180 | | 130-90 | 180-150-120 | 170-120 | 130-90 | 100-60 | 2450 |
| Heat-resistant alloys | 200<br>280<br>250<br>350<br>320 | Annealed<br>Aged<br>Annealed<br>Aged<br>Cast | Iron base<br>Iron base<br>Ni or Co base<br>Ni or Co base<br>Ni or Co base | | | | 50-30<br>40-20<br>30-20<br>20-10<br>20-10 | 3000<br>3050<br>3500<br>4150<br>4150 |
| Titanium alloys | 400<br>950<br>1050 | Ti<br>Cast α, almost α and α+β<br>Aged cast α+β | | | | | | 1520<br>1675<br>1690 |

| Material K | HB | Condition | Basic grades TN15 | TN30 | PM25 | KM15 | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|
| | | | Cutting speed m/min. | | | | |
| Hardened steel | 220<br>250 | Hardened steel<br>Manganese steel 12% | 175-145-100<br>120-85-50 | | | | 4500 |
| Malleable cast iron | 130<br>230 | Ferritic<br>Pearlitic | 225-150-90<br>155-95-55 | 140-110<br>100-70 | | 100-80<br>70-50 | 1100<br>1100 |
| Cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | 165-110-70<br>120-90-55 | 110-85<br>100-70 | | 80-60<br>70-50 | 1100<br>1500 |
| Nodular SG iron | 160<br>250 | Ferritic<br>Pearlitic | | 100-70<br>85-60 | | 70-50<br>60-40 | 1100<br>1800 |
| Aluminium alloys | 60<br>100 | Non heat treatable<br>Heat treatable | | 1500<br>500 | 1500<br>500 | 1000<br>420 | 500<br>800 |
| Aluminium alloys (cast) | 75<br>90 | Non heat treatable<br>Heat treatable | | 1500<br>750 | 1500<br>750 | 1000<br>650 | 750<br>900 |
| Bronze-brass alloys | 110<br>90<br>100 | Lead alloys, Pb>1%<br>Brass, red brass<br>Bronze and lead-free copper | | 300<br>200<br>150 | 300<br>200<br>150 | 300<br>200<br>150 | 700<br>750<br>1750 |

## *Nennschnittgeschwindigkeit für Abstechwerkzeuge*

| Materialien P | HB | Beschaffenheit | Hauptsorten TL40 | TN15 | TN30 | PM25 | KM15 | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Schnittgeschwindigkeit m/min. | | | | | |
| Unlegierter Stahl | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 160-120<br>150-110<br>130-90 | 480-345-250<br>440-315-230<br>385-275-200 | 200-150<br>190-140<br>170-120 | 160-120<br>150-110<br>130-90 | | 1900<br>2100<br>2250 |
| Niedriglegierter Stahl | 180<br>275<br>300<br>350 | Geglüht<br>Vergütet<br>Vergütet<br>Vergütet | 140-100<br>120-80<br>110-70<br>90-60 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 180-130<br>160-110<br>150-100<br>140-90 | 140-100<br>120-80<br>110-70<br>90-60 | | 2100<br>2600<br>2700<br>2850 |
| Hochlegierter Stahl | 200<br>325 | Geglüht<br>Vergütet | 70-60<br>45-30 | 350-230-170<br>170-110 | 110-90<br>70-50 | 70-60<br>45-30 | | 2600<br>3900 |
| Rostfreier Stahl | 200 | Martensitisch / Ferritisch | 130-90 | 295-240-190 | 170-120 | 130-90 | | 2300 |
| Stahlguß | 180<br>200<br>225 | Unlegiert<br>Niedriglegiert<br>Hochlegiert | 100-60<br>90-50<br>80-40 | 260-185-145<br>230-160-120<br>190-130-95 | 130-90<br>115-75<br>100-60 | 100-60<br>90-50<br>80-40 | | 2000<br>2500<br>2700 |

| Materialien M | HB | Beschaffenheit | Hauptsorten TL40 | TN15 | TN30 | PM25 | KM15 | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Schnittgeschwindigkeit m/min. | | | | | |
| Rostfreier Stahl, geglüht | 180 | | 130-90 | 180-150-120 | 170-120 | 130-90 | 100-60 | 2450 |
| Warmfeste Legierungen | 200<br>280<br>250<br>350<br>320 | Geglüht<br>Verältet<br>Geglüht<br>Verältet<br>Gegossen | Eisenbasis<br>Eisenbasis<br>Ni- oder Co-Basis<br>Ni- oder Co-Basis<br>Ni- oder Co-Basis | | | | 50-30<br>40-20<br>30-20<br>20-10<br>20-10 | 3000<br>3050<br>3500<br>4150<br>4150 |
| Titan-Legierungen | 400<br>950<br>1050 | Ti $\alpha$-Legierungen, fast $\alpha$-Legierungen<br>und $\alpha+\beta$ -Legierungen<br>Verältete $\alpha+\beta$ -Legierungen | | | | | | 1520<br>1675<br>1690 |

| Materialien K | HB | Beschaffenheit | Hauptsorten TN15 | TN30 | PM25 | KM15 | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|
| | | | Schnittgeschwindigkeit m/min. | | | | |
| Gehärteter Stahl | 220<br>250 | Vergüteter Stahl<br>Mangan-Stahl 12% | 175-145-100<br>120-85-50 | | | | 4500 |
| Temperguß | 130<br>230 | Ferritisch<br>Perlitisch | 225-150-90<br>155-95-55 | 140-110<br>100-70 | | 100-80<br>70-50 | 1100<br>1100 |
| Guß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 165-110-70<br>120-90-55 | 110-85<br>100-70 | | 80-60<br>70-50 | 1100<br>1500 |
| SG-Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | | 100-70<br>85-60 | | 70-50<br>60-40 | 1100<br>1800 |
| Aluminium-Legierungen | 60<br>100 | Nicht warmbehandelbar<br>Warmbehandelbar | | 1500<br>500 | 1500<br>500 | 1000<br>420 | 500<br>800 |
| Gegossene Aluminium-Legierungen | 75<br>90 | Nicht warmbehandelbar<br>Warmbehandelbar | | 1500<br>750 | 1500<br>750 | 1000<br>650 | 750<br>900 |
| Bronze- und Messinglegierungen | 110<br>90<br>100 | Bleilegierungen, Pb>1%<br>Messing, rotes Messing<br>Bronze und bleifreies Kupfer | | 300<br>200<br>150 | 300<br>200<br>150 | 300<br>200<br>150 | 700<br>750<br>1750 |




## *Nominal cutting speed for grooving*

| Material P | HB | Condition | External | | | | Internal | | | | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TL40 | TN15 | TN30 | PM25 | TL40 | TN15 | TN30 | PM25 | |
| | | | Cutting speed m/min. | | | | | | | | |
| Unalloyed steel | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 160-120<br>150-110<br>130-90 | 480-345-250<br>440-315-230<br>385-275-200 | 200-150<br>190-140<br>170-120 | 160-120<br>150-110<br>130-90 | 110-85<br>105-80<br>90-60 | 480-345-250<br>440-315-230<br>385-275-200 | 140-105<br>135-100<br>120-85 | 110-85<br>105-80<br>90-60 | 1900<br>2100<br>2250 |
| Low alloyed steel | 180<br>275<br>300<br>350 | Annealed<br>Hardened<br>Hardened<br>Hardened | 140-100<br>120-80<br>110-70<br>90-60 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 180-130<br>160-110<br>150-100<br>140-90 | 140-100<br>120-80<br>110-70<br>90-60 | 100-70<br>85-55<br>80-50<br>60-45 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 125-90<br>110-80<br>105-70<br>100-60 | 100-70<br>85-55<br>80-50<br>60-45 | 2100<br>2600<br>2700<br>2850 |
| High alloyed steel | 200<br>325 | Annealed<br>Hardened | 70-60<br>45-30 | 350-230-170<br>170-110 | 110-90<br>70-50 | 70-60<br>45-30 | 50-45<br>32-20 | 350-230-170<br>170-110 | 80-60<br>80-35 | 50-45<br>32-20 | 2600<br>3900 |
| Stainless steel | 200 | Martensitic / ferritic | 130-90 | 295-240-190 | 170-120 | 130-90 | 90-60 | 295-240-190 | 120-85 | 90-60 | 2300 |
| Steel | 180<br>200<br>225 | Unalloyed<br>Low alloyed<br>High alloyed | 100-60<br>90-50<br>80-40 | 260-185-145<br>230-160-120<br>190-130-95 | 130-90<br>115-75<br>100-60 | 100-60<br>90-50<br>80-40 | 70-45<br>60-35<br>55-30 | 260-185-145<br>230-160-120<br>190-130-95 | 90-60<br>80-50<br>70-45 | 70-45<br>60-35<br>55-30 | 2000<br>2500<br>2700 |

| Material M | HB | Condition | External | | | | | Internal | | | | | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TL40 | TN15 | TN30 | PM25 | KM15 | TL40 | TN15 | TN30 | PM25 | KM15 | |
| | | | Cutting speed m/min. | | | | | | | | | | |
| Stainless steel annealed | 180 | | 130-90 | 180-150-120 | 170-120 | 130-90 | 100-60 | 90-60 | 180-150-120 | 120-85 | 90-60 | 70-45 | 2450 |
| Heat-resistant alloys | 200<br>280<br>250<br>350<br>320 | Annealed<br>Aged<br>Annealed<br>Aged<br>Cast | Iron base<br>Ni or Co base | | | | 50-30<br>40-20<br>30-20<br>20-10<br>20-10 | | | | | 50-30<br>40-20<br>30-20<br>20-10<br>20-10 | 3000<br>3050<br>3500<br>4150<br>4150 |
| Titanium alloys | 400<br>950<br>1050 | Ti<br>Cast α, almost α and α+β<br>Aged cast α+β | | | | | 175<br>72<br>65 | | | | | | 1520<br>1675<br>1690 |

| Material K | HB | Condition | External | | | | Internal | | | | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TN15 | TN30 | PM25 | KM15 | TN15 | TN30 | PM25 | KM15 | |
| | | | Cutting speed m/min. | | | | | | | | |
| Hardened steel | 220<br>250 | Hardened steel<br>Manganese steel 12% | 175-145-100<br>120-85-50 | | | | 175-145-100<br>120-85-50 | | | | 4500 |
| Malleable cast iron | 130<br>230 | Ferritic<br>Pearlitic | 225-150-90<br>155-95-55 | 140-110<br>100-70 | | 100-80<br>70-50 | 225-150-90<br>155-95-55 | 100-80<br>70-50 | | 100-80<br>70-50 | 1100<br>1100 |
| Cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | 165-110-70<br>120-90-55 | 110-85<br>100-70 | | 80-60<br>70-50 | 165-110-70<br>120-90-55 | 80-60<br>70-50 | | 80-60<br>70-50 | 1100<br>1500 |
| Nodular SG iron | 160<br>250 | Ferritic<br>Pearlitic | | 100-70<br>85-60 | | 70-50<br>60-40 | | 70-50<br>60-45 | | 70-50<br>60-40 | 1100<br>1800 |
| Aluminium alloys | 60<br>100 | Non heat treatable<br>Heat treatable | | 1500<br>500 | 1500<br>500 | 1000<br>420 | | 1050<br>350 | 1050<br>350 | 700<br>300 | 500<br>800 |
| Aluminium alloys (cast) | 75<br>90 | Non heat treatable<br>Heat treatable | | 1500<br>750 | 1500<br>750 | 1000<br>650 | | 1050<br>525 | 1050<br>525 | 700<br>460 | 750<br>900 |
| Bronze-brass alloys | 110<br>90<br>100 | Lead alloys, Pb>1%<br>Brass, red brass<br>Bronze and lead-free copper | | 300<br>200<br>150 | 300<br>200<br>150 | 300<br>200<br>150 | | 210<br>140<br>105 | 210<br>140<br>105 | 210<br>140<br>105 | 700<br>750<br>1750 |

B

## *Nennschnittgeschwindigkeit für Einstechwerkzeuge*

| Materialien P | HB | Beschaffenheit | Außen | | | | Innen | | | | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TL40 | TN15 | TN30 | PM25 | TL40 | TN15 | TN30 | PM25 | |
| | | | Schnittgeschwindigkeit m/min. | | | | | | | | |
| Unlegierter Stahl | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 160-120<br>150-110<br>130-90 | 480-345-250<br>440-315-230<br>385-275-200 | 200-150<br>190-140<br>170-120 | 160-120<br>150-110<br>130-90 | 110-85<br>105-80<br>90-60 | 480-345-250<br>440-315-230<br>385-275-200 | 140-105<br>135-100<br>120-85 | 110-85<br>105-80<br>90-60 | 1900<br>2100<br>2250 |
| Niedriglegierter Stahl | 180<br>275<br>300<br>350 | Geglüht<br>Vergütet<br>Vergütet<br>Vergütet | 140-100<br>120-80<br>110-70<br>90-60 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 180-130<br>160-110<br>150-100<br>140-90 | 140-100<br>120-80<br>110-70<br>90-60 | 100-70<br>85-55<br>80-50<br>60-45 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 125-90<br>110-80<br>105-70<br>100-60 | 100-70<br>85-55<br>80-50<br>60-45 | 2100<br>2600<br>2700<br>2850 |
| Hochlegierter Stahl | 200<br>325 | Geglüht<br>Vergütet | 70-60<br>45-30 | 350-230-170<br>170-110 | 110-90<br>70-50 | 70-60<br>45-30 | 50-45<br>32-20 | 350-230-170<br>170-110 | 80-60<br>80-35 | 50-45<br>32-20 | 2600<br>3900 |
| Rostfreier Stahl | 200 | Martensitisch / Ferritisch | 130-90 | 295-240-190 | 170-120 | 130-90 | 90-60 | 295-240-190 | 120-85 | 90-60 | 2300 |
| Stahl | 180<br>200<br>225 | Unlegiert<br>Niedriglegiert<br>Hochlegiert | 100-60<br>90-50<br>80-40 | 260-185-145<br>230-160-120<br>190-130-95 | 130-90<br>115-75<br>100-60 | 100-60<br>90-50<br>80-40 | 70-45<br>60-35<br>55-30 | 260-185-145<br>230-160-120<br>190-130-95 | 90-60<br>80-50<br>70-45 | 70-45<br>60-35<br>55-30 | 2000<br>2500<br>2700 |

| Materialien M | HB | Beschaffenheit | Außen | | | | | Innen | | | | | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TL40 | TN15 | TN30 | PM25 | KM15 | TL40 | TN15 | TN30 | PM25 | KM15 | |
| | | | Schnittgeschwindigkeit m/min. | | | | | | | | | | |
| Rostfreier Stahl, geglüht | 180 | | 130-90 | 180-150-120 | 170-120 | 130-90 | 100-60 | 90-60 | 180-150-120 | 120-85 | 90-60 | 70-45 | 2450 |
| Warmfeste Legierungen | 200<br>280<br>250<br>350<br>320 | Geglüht<br>Verältet<br>Geglüht<br>Verältet<br>Gegossen | Eisenbasis<br>Ni- oder Co-Basis | | | | 50-30<br>40-20<br>30-20<br>20-10<br>20-10 | | | | | 50-30<br>40-20<br>30-20<br>20-10<br>20-10 | 3000<br>3050<br>3500<br>4150<br>4150 |
| Titan-Legierungen | 400<br>950<br>1050 | Ti α-Legierungen, fast α-Legierungen und α+β-Legierungen<br>Verältete α+β-Legierungen | | | | | 175<br>72<br>65 | | | | | | 1520<br>1675<br>1690 |

| Materialien K | HB | Beschaffenheit | Außen | | | | Innen | | | | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TN15 | TN30 | PM25 | KM15 | TN15 | TN30 | PM25 | KM15 | |
| | | | Schnittgeschwindigkeit m/min. | | | | | | | | |
| Gehärteter Stahl | 220<br>250 | Vergüteter Stahl<br>Mangan-Stahl 12% | 175-145-100<br>120-85-50 | | | | 175-145-100<br>120-85-50 | | | | 4500 |
| Temperguß | 130<br>230 | Ferritisch<br>Perlitisch | 225-150-90<br>155-95-55 | 140-110<br>100-70 | | 100-80<br>70-50 | 225-150-90<br>155-95-55 | 100-80<br>70-50 | | 100-80<br>70-50 | 1100<br>1100 |
| Guß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 165-110-70<br>120-90-55 | 110-85<br>100-70 | | 80-60<br>70-50 | 165-110-70<br>120-90-55 | 80-60<br>70-50 | | 80-60<br>70-50 | 1100<br>1500 |
| SG-Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | | 100-70<br>85-60 | | 70-50<br>60-40 | | 70-50<br>60-45 | | 70-50<br>60-40 | 1100<br>1800 |
| Aluminium-Legierungen | 60<br>100 | Nicht warmbehandelbar<br>Warmbehandelbar | | 1500<br>500 | 1500<br>500 | 1000<br>420 | | 1050<br>350 | 1050<br>350 | 700<br>300 | 500<br>800 |
| Gegossene Aluminium-Legierungen | 75<br>90 | Nicht warmbehandelbar<br>Warmbehandelbar | | 1500<br>750 | 1500<br>750 | 1000<br>650 | | 1050<br>525 | 1050<br>525 | 700<br>460 | 750<br>900 |
| Bronze- und Messinglegierungen | 110<br>90<br>100 | Bleilegierungen, Pb>1%<br>Messing, rotes Messing<br>Bronze und bleifreies Kupfer | | 300<br>200<br>150 | 300<br>200<br>150 | 300<br>200<br>150 | | 210<br>140<br>105 | 210<br>140<br>105 | 210<br>140<br>105 | 700<br>750<br>1750 |

## *Nominal cutting speed for profiling*

| Material P | HB | Condition | Basic grades TL40 | TN15 | TN30 | PM25 | KM15 | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Cutting speed m/min. | | | | | |
| Unalloyed steel | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 160<br>150<br>130 | 480-345-250<br>440-315-230<br>385-275-200 | 200<br>190<br>170 | 160<br>150<br>130 | | 1900<br>2100<br>2250 |
| Low alloyed steel | 180<br>275<br>300<br>350 | Annealed<br>Hardened<br>Hardened<br>Hardened | 140<br>120<br>110<br>90 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 180<br>160<br>150<br>140 | 140<br>120<br>110<br>90 | | 2100<br>2600<br>2700<br>2850 |
| High alloyed steel | 200<br>325 | Annealed<br>Hardened | 100<br>60 | 350-230-170<br>170-110 | 130<br>100 | 100<br>60 | | 2600<br>3900 |
| Stainless steel | 200 | Martensitic / ferritic | 130 | 295-240-190 | 170 | 130 | | 2300 |
| Steel | 180<br>200<br>225 | Unalloyed<br>Low alloyed<br>High alloyed | 100<br>90<br>70 | 260-185-145<br>230-160-120<br>190-130-95 | 130<br>115<br>100 | 100<br>90<br>70 | | 2000<br>2500<br>2700 |

| Material M | HB | Condition | Basic grades TL40 | TN15 | TN30 | PM25 | KM15 | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Cutting speed m/min. | | | | | |
| Stainless steel annealed | 180 | | 120 | 180-150-120 | 170 | 120 | 100 | 2450 |
| Heat-resistant alloys | 200<br>280<br>250<br>350<br>320 | Annealed<br>Aged<br>Annealed<br>Aged<br>Cast | Iron base<br>Iron base<br>Ni or Co base<br>Ni or Co base<br>Ni or Co base | | | | 60<br>50<br>30<br>20<br>20 | 3000<br>3050<br>3500<br>4150<br>4150 |
| Titanium alloys | 400<br>950<br>1050 | Ti<br>Cast $\alpha$, almost $\alpha$ and $\alpha+\beta$<br>Aged cast $\alpha+\beta$ | | | | | 175<br>72<br>65 | 1520<br>1675<br>1690 |

| Material K | HB | Condition | Basic grades TN15 | TN30 | PM25 | KM15 | Specific cutting force N/mm² |
|---|---|---|---|---|---|---|---|
| | | | Cutting speed m/min. | | | | |
| Hardened steel | 220<br>250 | Hardened steel<br>Manganese steel 12% | 175-145-100<br>120-85-50 | | | | 4500 |
| Malleable cast iron | 130<br>230 | Ferritic<br>Pearlitic | 225-150-90<br>155-95-55 | 140<br>110 | | 100<br>70 | 1100<br>1100 |
| Cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | 165-110-70<br>120-90-55 | 110<br>100 | | 100<br>70 | 1100<br>1500 |
| Nodular SG iron | 160<br>250 | Ferritic<br>Pearlitic | | 100<br>85 | | 100<br>70 | 1100<br>1800 |
| Aluminium alloys | 60<br>100 | Non heat treatable<br>Heat treatable | | 1500<br>500 | 1500<br>500 | 1000<br>420 | 500<br>800 |
| Aluminium alloys (cast) | 75<br>90 | Non heat treatable<br>Heat treatable | | 1500<br>750 | 1500<br>750 | 450<br>300 | 750<br>900 |
| Bronze-brass alloys | 110<br>90<br>100 | Lead alloys, Pb>1%<br>Brass, red brass<br>Bronze and lead-free copper | | 300<br>200<br>150 | 300<br>200<br>150 | 300<br>200<br>150 | 700<br>750<br>1750 |

## *Nennschnittgeschwindigkeit für Profildrehen*

| Materialien P | HB | Beschaffenheit | Hauptsorten TL40 | TN15 | TN30 | PM25 | KM15 | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Schnittgeschwindigkeit m/min. | | | | | |
| Unlegierter Stahl | 125<br>150<br>200 | C=0.15%<br>C=0.35%<br>C=0.60% | 160<br>150<br>130 | 480-345-250<br>440-315-230<br>385-275-200 | 200<br>190<br>170 | 160<br>150<br>130 | | 1900<br>2100<br>2250 |
| Niedriglegierter Stahl | 180<br>275<br>300<br>350 | Geglüht<br>Vergütet<br>Vergütet<br>Vergütet | 140<br>120<br>110<br>90 | 380-265-195<br>260-180-130<br>240-165-120<br>210-145-105 | 180<br>160<br>150<br>140 | 140<br>120<br>110<br>90 | | 2100<br>2600<br>2700<br>2850 |
| Hochlegierter Stahl | 200<br>325 | Geglüht<br>Vergütet | 100<br>60 | 350-230-170<br>170-110 | 130<br>100 | 100<br>60 | | 2600<br>3900 |
| Rostfreier Stahl | 200 | Martensitisch / Ferritisch | 130 | 295-240-190 | 170 | 130 | | 2300 |
| Stahl | 180<br>200<br>225 | Unlegiert<br>Niedriglegiert<br>Hochlegiert | 100<br>90<br>70 | 260-185-145<br>230-160-120<br>190-130-95 | 130<br>115<br>100 | 100<br>90<br>70 | | 2000<br>2500<br>2700 |

| Materialien M | HB | Beschaffenheit | Hauptsorten TL40 | TN15 | TN30 | PM25 | KM15 | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|---|
| | | | Schnittgeschwindigkeit m/min. | | | | | |
| Rostfreier Stahl, geglüht | 180 | | 120 | 180-150-120 | 170 | 120 | 100 | 2450 |
| Warmfeste Legierungen | 200<br>280<br>250<br>350<br>320 | Geglüht<br>Verältet<br>Geglüht<br>Verältet<br>Gegossen | Eisenbasis<br>Eisenbasis<br>Ni- oder Co-Basis<br>Ni- oder Co-Basis<br>Ni- oder Co-Basis | | | | 60<br>50<br>30<br>20<br>20 | 3000<br>3050<br>3500<br>4150<br>4150 |
| Titan-Legierungen | 400<br>950<br>1050 | Ti $\alpha$-Legierungen, fast $\alpha$-Legierungen<br>und $\alpha+\beta$ -Legierungen<br>Verältete $\alpha+\beta$ -Legierungen | | | | | 175<br>72<br>65 | 1520<br>1675<br>1690 |

| Materialien K | HB | Beschaffenheit | Hauptsorten TN15 | TN30 | PM25 | KM15 | Spezifische Schnittkraft N/mm² |
|---|---|---|---|---|---|---|---|
| | | | Schnittgeschwindigkeit m/min. | | | | |
| Gehärteter Stahl | 220<br>250 | Vergüteter Stahl<br>Mangan-Stahl 12% | 175-145-100<br>120-85-50 | | | | 4500 |
| Temperguß | 130<br>230 | Ferritisch<br>Perlitisch | 225-150-90<br>155-95-55 | 140<br>110 | | 100<br>70 | 1100<br>1100 |
| Guß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 165-110-70<br>120-90-55 | 110<br>100 | | 100<br>70 | 1100<br>1500 |
| SG-Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | | 100<br>85 | | 100<br>70 | 1100<br>1800 |
| Aluminium-Legierungen | 60<br>100 | Nicht warmbehandelbar<br>Warmbehandelbar | | 1500<br>500 | 1500<br>500 | 1000<br>420 | 500<br>800 |
| Gegossene Aluminium-Legierungen | 75<br>90 | Nicht warmbehandelbar<br>Warmbehandelbar | | 1500<br>750 | 1500<br>750 | 450<br>300 | 750<br>900 |
| Bronze- und Messinglegierungen | 110<br>90<br>100 | Bleilegierungen, Pb>1%<br>Messing, rotes Messing<br>Bronze und bleifreies Kupfer | | 300<br>200<br>150 | 300<br>200<br>150 | 300<br>200<br>150 | 700<br>750<br>1750 |



C

# THREADING
# GEWINDEDREHEN

Code system (ISO) C02
Kodifizierung (ISO)

Threading inserts C03-10
Wendeschneidplatten zum Gewindedrehen

Applications index C11
Anwendungen

External threading C12-16
Außengewindedrehen

Internal threading C17-20
Innengewindedrehen

Cutting data C21-24
Schnittdaten

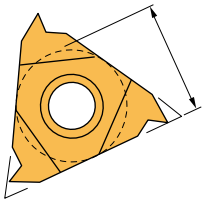
Technical information C25-26
Technische Auskünfte

C

# Code system / Kodifizierung (ISO)

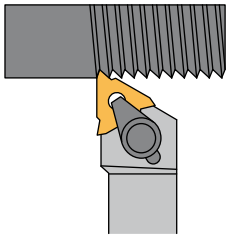
| 16 | E | L | - | AG | 55 |
|---|---|---|---|---|---|
| 1 | 2 | 3 | | 4 | 5 |

## 1 Insert size / Wendeplattengröße

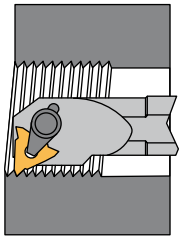


| | IC=inch / Zoll | D=mm. |
|---|---|---|
| 06 | 5/32 | 3,96 |
| 08 | 3/16 | 4,76 |
| 11 | 1/4 | 6,35 |
| 16 | 3/8 | 9,52 |
| 22 | 1/2 | 12,70 |
| 27 | 5/8 | 15,87 |

## 2 Insert type / Wendeplattentyp

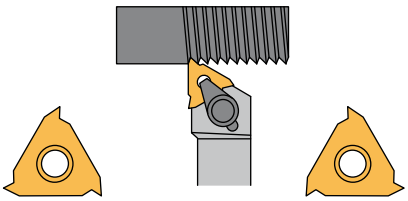


**E**
External thread
Außengewinde

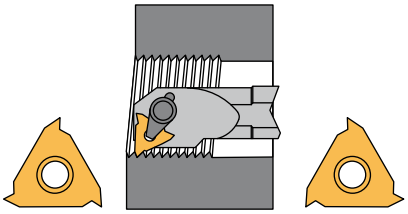


**N**
Internal thread
Innengewinde

## 3 Hand of insert / Wendeplattenausführung

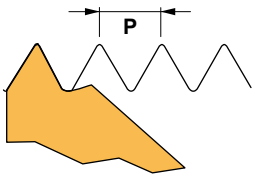


**R** **L**



**R** **L**

## 4 Pitch / Steigung




p-mm. x 100
p-inch / Zoll x 10

| | mm. | TPI |
|---|---|---|
| A | 0,5-1,5 | 48-16 |
| AG | 0,5-3,0 | 48-8 |
| G | 1,75-3,0 | 14-8 |
| N | 3,5-5,0 | 7-5 |

## 5 Standard / Standard

| | |
|---|---|
| 55 | Partial profile 55° / Teilprofil 55° |
| 60 | Partial profile 60° / Teilprofil 60° |
| ISO | ISO metric / ISO metrisch |
| W | Whitworth, BSW / Whitworth, BSW |
| LG | Groove type LG / Nutentyp LG |

# Grade characteristics / Sorteneigenschaften

| Grades Sorten | General use / Allgemeine Verwendung |
|---|---|
| TL20 | General purpose grade with tough submicron substrate. Provides good fracture toughness in non-rigid cutting conditions. TiAlN coated.<br>Universal-Beschichtung mit zähem Feinstkornsubstrat. Bietet gute Bruchfestigkeit bei unterschiedlichen Schnittbedingungen. TiALN-beschichtet. |
| TIN25 | General purpose grade, excellent in steel and stainless steel, recommended for rigid cutting conditions. Ground or sintered chipbreaker styles. TiN coated.<br>Universal-Beschichtung hervorragend bei Stahl und rostfreiem Stahl, besonders bei unterschiedlichen Schnittbedingungen empfohlen. TiN-beschichtet. |



ER



ER TD

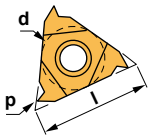
## ER-60º

Partial profile thread forms - External inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Außengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 11ER-A60 | 11,00 | 6,35 | 60° | ○ | |
| 16ER-A60 | 16,00 | 9,52 | 60° | ○ | |
| 16ER-AG60 | 16,00 | 9,52 | 60° | ● | ○ |
| 16ER-G60 | 16,00 | 9,52 | 60° | ● | ○ |
| 22ER-N60 | 22,00 | 12,70 | 60° | ● | ○ |
| 27ER-S60 | 27,00 | 15,87 | 60° | ○ | |

## EL-60°

Partial profile thread forms - External inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Außengewindedrehen

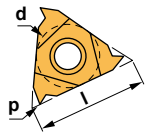



ER

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 11EL-A60 | 11,00 | 6,35 | 60° | ○ | |
| 16EL-A60 | 16,00 | 9,52 | 60° | ○ | |
| 16EL-AG60 | 16,00 | 9,52 | 60° | ○ | |
| 16EL-G60 | 16,00 | 9,52 | 60° | ○ | |
| 22EL-N60 | 22,00 | 12,70 | 60° | ○ | |
| 27EL-S60 | 27,00 | 15,87 | 60° | ○ | |

## ER-55°

Partial profile thread forms - External inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Außengewindedrehen




EL

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 11ER-A55 | 11,00 | 6,35 | 55° | ○ | |
| 16ER-A55 | 16,00 | 9,52 | 55° | ○ | |
| 16ER-AG55 | 16,00 | 9,52 | 55° | ● | ○ |
| 16ER-G55 | 16,00 | 9,52 | 55° | ○ | |
| 22ER-N55 | 22,00 | 12,70 | 55° | ○ | |
| 27ER-S55 | 27,00 | 15,87 | 55° | ○ | |

## EL-55°

Partial profile thread forms - External inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Außengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 11EL-A55 | 11,00 | 6,35 | 55° | ○ | |
| 16EL-A55 | 16,00 | 9,52 | 55° | ○ | |
| 16EL-AG55 | 16,00 | 9,52 | 55° | ○ | |
| 16EL-G55 | 16,00 | 9,52 | 55° | ○ | |
| 22EL-N55 | 22,00 | 12,70 | 55° | ○ | |
| 27EL-S55 | 27,00 | 15,87 | 55° | ○ | |

## ER-60° TD

Partial profile thread forms - External inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Außengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16ER-AG60 TD | 16,00 | 9,52 | 60° | ● | |

## ER-55° TD

Partial profile thread forms - External inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Außengewindedrehen

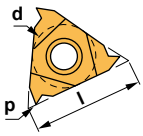
| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16ER-AG55 TD | 16,00 | 9,52 | 55° | ● | |

C

C



NR




NR

## NR-60°

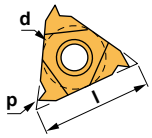
Partial profile thread forms - Internal inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Innengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NR-A60 | 6,00 | 3,96 | 60° | ○ | |
| 08NR-A60 | 8,00 | 4,76 | 60° | ○ | |
| 11NR-A60 | 11,00 | 6,35 | 60° | ● | ○ |
| 16NR-A60 | 16,00 | 9,52 | 60° | ○ | |
| 16NR-AG60 | 16,00 | 9,52 | 60° | ● | ○ |
| 16NR-G60 | 16,00 | 9,52 | 60° | ○ | |
| 22NR-N60 | 22,00 | 12,70 | 60° | ● | ○ |
| 27NR-S60 | 27,00 | 15,87 | 60° | ○ | |

## NL-60°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Innengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NL-A60 | 6,00 | 3,96 | 60° | ○ | |
| 08NL-A60 | 8,00 | 4,76 | 60° | ○ | |
| 11NL-A60 | 11,00 | 6,35 | 60° | ○ | |
| 16NL-A60 | 16,00 | 9,52 | 60° | ○ | |
| 16NL-AG60 | 16,00 | 9,52 | 60° | ○ | |
| 16NL-G60 | 16,00 | 9,52 | 60° | ○ | |
| 22NL-N60 | 22,00 | 12,70 | 60° | ○ | |
| 27NL-S60 | 27,00 | 15,87 | 60° | ○ | |




NL

## NR-55°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Innengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NR-A55 | 6,00 | 3,96 | 55° | ○ | |
| 08NR-A55 | 8,00 | 4,76 | 55° | ○ | |
| 11NR-A55 | 11,00 | 6,35 | 55° | ○ | |
| 16NR-A55 | 16,00 | 9,52 | 55° | ○ | |
| 16NR-AG55 | 16,00 | 9,52 | 55° | ● | ○ |
| 16NR-G55 | 16,00 | 9,52 | 55° | ● | |
| 22NR-N55 | 22,00 | 12,70 | 55° | ○ | |
| 27NR-S55 | 27,00 | 15,87 | 55° | ○ | |

## NL-55°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Innengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NL-A55 | 6,00 | 3,96 | 55° | | |
| 08NL-A55 | 8,00 | 4,76 | 55° | | |
| 11NL-A55 | 11,00 | 6,35 | 55° | ○ | |
| 16NL-A55 | 16,00 | 9,52 | 55° | ○ | |
| 16NL-AG55 | 16,00 | 9,52 | 55° | ○ | |
| 16NL-G55 | 16,00 | 9,52 | 55° | ○ | |
| 22NL-N55 | 22,00 | 12,70 | 55° | ○ | |
| 27NL-S55 | 27,00 | 15,87 | 55° | | |

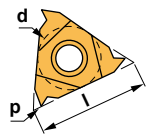


NR-TD

## NR-60° TD

Partial profile thread forms - Internal inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Innengewindedrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16NR-AG60 TD | 16,00 | 9,52 | 60° | ● | |



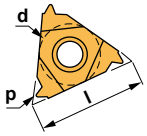

## NR-55° TD

Partial profile thread forms - Internal inserts **60º-55º (non topping)**
Wendeschneidplatten **(Teilprofil) 60º/55º** zum Innengewindedrehen

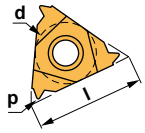
| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16NR-AG55 TD | 16,00 | 9,52 | 55° | ● | |



ER




ER




EL

## ER-ISO

Mechanical thread forms - External inserts **ISO (full form) BS36**
Mechanische Gewindeformen / **ISO (Vollprofil) BS36** Wendeschneidplatten zum Außendrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 11ER-030ISO | 11,00 | 6,35 | 0,30 | ○ | |
| 11ER-040ISO | 11,00 | 6,35 | 0,40 | ○ | |
| 11ER-045ISO | 11,00 | 6,35 | 0,45 | ○ | |
| 11ER-050ISO | 11,00 | 6,35 | 0,50 | ○ | |
| 11ER-060ISO | 11,00 | 6,35 | 0,60 | ○ | |
| 11ER-070ISO | 11,00 | 6,35 | 0,70 | ○ | |
| 11ER-075ISO | 11,00 | 6,35 | 0,75 | ○ | |
| 11ER-080ISO | 11,00 | 6,35 | 0,80 | ○ | |
| 11ER-100ISO | 11,00 | 6,35 | 1,00 | ○ | |
| 11ER-125ISO | 11,00 | 6,35 | 1,25 | ○ | |
| 11ER-150ISO | 11,00 | 6,35 | 1,50 | ○ | |
| 11ER-175ISO | 11,00 | 6,35 | 1,75 | ○ | |
| 16ER-075ISO | 16,00 | 9,52 | 0,75 | ○ | |
| 16ER-100ISO | 16,00 | 9,52 | 1,00 | ○ | |
| 16ER-125ISO | 16,00 | 9,52 | 1,25 | ○ | |
| 16ER-150ISO | 16,00 | 9,52 | 1,50 | ○ | |
| 16ER-175ISO | 16,00 | 9,52 | 1,75 | ○ | |
| 16ER-200ISO | 16,00 | 9,52 | 2,00 | ○ | |
| 16ER-250ISO | 16,00 | 9,52 | 2,50 | ○ | |
| 16ER-300ISO | 16,00 | 9,52 | 3,00 | ○ | |
| 22ER-350ISO | 22,00 | 12,70 | 3,50 | ○ | |
| 22ER-400ISO | 22,00 | 12,70 | 4,00 | ○ | |
| 22ER-450ISO | 22,00 | 12,70 | 4,50 | ○ | |
| 22ER-500ISO | 22,00 | 12,70 | 5,00 | ○ | |
| 27ER-500ISO | 27,00 | 15,87 | 5,00 | ○ | |
| 27ER-550ISO | 27,00 | 15,87 | 5,50 | ○ | |
| 27ER-600ISO | 27,00 | 15,87 | 6,00 | ○ | |
| 27ER-800ISO | 27,00 | 15,87 | 8,00 | ○ | |

## EL-ISO

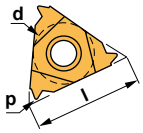
Mechanical thread forms - External inserts **ISO (full form) BS36**
Mechanische Gewindeformen / **ISO (Vollprofil) BS36** Wendeschneidplatten zum Außendrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16EL-100ISO | 16,00 | 9,52 | 1,00 | ○ | |
| 16EL-125ISO | 16,00 | 9,52 | 1,25 | ○ | |
| 16EL-150ISO | 16,00 | 9,52 | 1,50 | ○ | |
| 16EL-175ISO | 16,00 | 9,52 | 1,75 | ○ | |
| 16EL-200ISO | 16,00 | 9,52 | 2,00 | ○ | |
| 16EL-250ISO | 16,00 | 9,52 | 2,50 | ○ | |
| 16EL-300ISO | 16,00 | 9,52 | 3,00 | ○ | |
| 22EL-400ISO | 22,00 | 12,70 | 4,00 | ○ | |

C

C





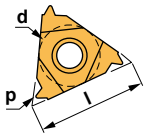

## NR-ISO

Mechanical thread forms - Internal inserts **ISO (full form) BS36**
Mechanische Gewindeformen / **ISO (Vollprofil) BS36** Wendeschneidplatten zum Innendrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NR-050ISO | 6,00 | 3,96 | 0,50 | ○ | |
| 06NR-075ISO | 6,00 | 3,96 | 0,75 | ○ | |
| 06NR-100ISO | 6,00 | 3,96 | 1,00 | ○ | |
| 06NR-125ISO | 6,00 | 3,96 | 1,25 | ○ | |
| 08NR-050ISO | 8,00 | 4,76 | 0,50 | ○ | |
| 08NR-075ISO | 8,00 | 4,76 | 0,75 | ○ | |
| 08NR-100ISO | 8,00 | 4,76 | 1,00 | ○ | |
| 08NR-125ISO | 8,00 | 4,76 | 1,25 | ○ | |
| 08NR-150ISO | 8,00 | 4,76 | 1,50 | ○ | |
| 08NR-175ISO | 8,00 | 4,76 | 1,75 | ○ | |
| 11NR-035ISO | 11,00 | 6,35 | 0,35 | ○ | |
| 11NR-040ISO | 11,00 | 6,35 | 0,40 | ○ | |
| 11NR-045ISO | 11,00 | 6,35 | 0,45 | ○ | |
| 11NR-050ISO | 11,00 | 6,35 | 0,50 | ○ | |
| 11NR-060ISO | 11,00 | 6,35 | 0,60 | ○ | |
| 11NR-070ISO | 11,00 | 6,35 | 0,70 | ○ | |
| 11NR-075ISO | 11,00 | 6,35 | 0,75 | ○ | |
| 11NR-080ISO | 11,00 | 6,35 | 0,80 | ○ | |
| 11NR-100ISO | 11,00 | 6,35 | 1,00 | ○ | |
| 11NR-125ISO | 11,00 | 6,35 | 1,25 | ○ | |
| 11NR-150ISO | 11,00 | 6,35 | 1,50 | ○ | |
| 11NR-175ISO | 11,00 | 6,35 | 1,75 | ○ | |
| 11NR-200ISO | 11,00 | 6,35 | 2,00 | ○ | |
| 11NR-250ISO | 11,00 | 6,35 | 2,50 | ○ | |
| 16NR-075ISO | 16,00 | 9,52 | 0,75 | ○ | |
| 16NR-100ISO | 16,00 | 9,52 | 1,00 | ○ | |
| 16NR-125ISO | 16,00 | 9,52 | 1,25 | ○ | |
| 16NR-150ISO | 16,00 | 9,52 | 1,50 | ○ | |
| 16NR-175ISO | 16,00 | 9,52 | 1,75 | ○ | |
| 16NR-200ISO | 16,00 | 9,52 | 2,00 | ○ | |
| 16NR-250ISO | 16,00 | 9,52 | 2,50 | ○ | |
| 16NR-300ISO | 16,00 | 9,52 | 3,00 | ○ | |
| 22NR-350ISO | 22,00 | 12,70 | 3,50 | ○ | |
| 22NR-400ISO | 22,00 | 12,70 | 4,00 | ○ | |
| 22NR-450ISO | 22,00 | 12,70 | 4,50 | ○ | |
| 22NR-500ISO | 22,00 | 12,70 | 5,00 | ○ | |
| 27NR-500ISO | 27,00 | 15,87 | 5,00 | ○ | |
| 27NR-550ISO | 27,00 | 15,87 | 5,50 | ○ | |
| 27NR-600ISO | 27,00 | 15,87 | 6,00 | ○ | |
| 27NR-800ISO | 27,00 | 15,87 | 8,00 | ○ | |



**NL ISO**




**NL**

## NL-ISO

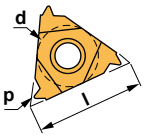
Mechanical thread forms - Internal inserts **ISO (full form) BS36**
Mechanische Gewindeformen / **ISO (Vollprofil) BS36** Wendeschneidplatten zum Innendrehen

| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NL-050ISO | 6,00 | 3,96 | 0,50 | ○ | |
| 06NL-075ISO | 6,00 | 3,96 | 0,75 | ○ | |
| 06NL-100ISO | 6,00 | 3,96 | 1,00 | ○ | |
| 06NL-125ISO | 6,00 | 3,96 | 1,25 | ○ | |
| 08NL-050ISO | 8,00 | 4,76 | 0,50 | ○ | |
| 08NL-075ISO | 8,00 | 4,76 | 0,75 | ○ | |
| 08NL-100ISO | 8,00 | 4,76 | 1,00 | ○ | |
| 08NL-125ISO | 8,00 | 4,76 | 1,25 | ○ | |
| 08NL-150ISO | 8,00 | 4,76 | 1,50 | ○ | |
| 08NL-175ISO | 8,00 | 4,76 | 1,75 | ○ | |
| 11NL-100ISO | 11,00 | 6,35 | 1,00 | ○ | |
| 11NL-150ISO | 11,00 | 6,35 | 1,50 | ○ | |
| 16NL-100ISO | 16,00 | 9,52 | 1,00 | ○ | |
| 16NL-125ISO | 16,00 | 9,52 | 1,25 | ○ | |
| 16NL-150ISO | 16,00 | 9,52 | 1,50 | ○ | |
| 16NL-175ISO | 16,00 | 9,52 | 1,75 | ○ | |
| 16NL-200ISO | 16,00 | 9,52 | 2,00 | ○ | |
| 16NL-250ISO | 16,00 | 9,52 | 2,50 | ○ | |
| 16NL-300ISO | 16,00 | 9,52 | 3,00 | ○ | |
| 22NL-400ISO | 22,00 | 12,70 | 4,00 | ○ | |

C

C






ER

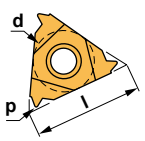
## ER-W

Mechanical thread forms - External and internal inserts **WHITWORTH (full form) BS84**
Mechanische Gewindeformen / **WHITWORTH (Vollprofil) BS84** Wendeschneidplatten zum Außen-und Innendrehen

| Reference / Bezeichnung | l | d | p | TiN25 | TL20 |
|---|---|---|---|---|---|
| 11ER-14W | 11,00 | 6,35 | 14,0 | ○ | |
| 11ER-16W | 11,00 | 6,35 | 16,0 | ○ | |
| 11ER-18W | 11,00 | 6,35 | 18,0 | ○ | |
| 11ER-19W | 11,00 | 6,35 | 19,0 | ○ | |
| 11ER-22W | 11,00 | 6,35 | 22,0 | ○ | |
| 11ER-24W | 11,00 | 6,35 | 24,0 | ○ | |
| 11ER-26W | 11,00 | 6,35 | 26,0 | ○ | |
| 11ER-28W | 11,00 | 6,35 | 28,0 | ○ | |
| 11ER-40W | 11,00 | 6,35 | 40,0 | ○ | |
| 11ER-50W | 11,00 | 6,35 | 50,0 | ○ | |
| 11ER-56W | 11,00 | 6,35 | 56,0 | ○ | |
| 16ER-8W | 16,00 | 9,52 | 8,0 | ○ | |
| 16ER-9W | 16,00 | 9,52 | 9,0 | ○ | |
| 16ER-10W | 16,00 | 9,52 | 10,0 | ○ | |
| 16ER-11W | 16,00 | 9,52 | 11,0 | ○ | |
| 16ER-12W | 16,00 | 9,52 | 12,0 | ○ | |
| 16ER-14W | 16,00 | 9,52 | 14,0 | ○ | |
| 16ER-16W | 16,00 | 9,52 | 16,0 | ○ | |
| 16ER-18W | 16,00 | 9,52 | 18,0 | ○ | |
| 16ER-19W | 16,00 | 9,52 | 19,0 | ○ | |
| 16ER-20W | 16,00 | 9,52 | 20,0 | ○ | |
| 16ER-22W | 16,00 | 9,52 | 22,0 | ○ | |
| 16ER-24W | 16,00 | 9,52 | 24,0 | ○ | |
| 16ER-26W | 16,00 | 9,52 | 26,0 | ○ | |
| 16ER-28W | 16,00 | 9,52 | 28,0 | ○ | |
| 22ER-4W | 22,00 | 12,70 | 4,0 | ○ | |
| 22ER-4.5W | 22,00 | 12,70 | 4,5 | ○ | |
| 22ER-5W | 22,00 | 12,70 | 5,0 | ○ | |
| 22ER-6W | 22,00 | 12,70 | 6,0 | ○ | |
| 22ER-7W | 22,00 | 12,70 | 7,0 | ○ | |
| 22ER-8W | 22,00 | 12,70 | 8,0 | ○ | |
| 27ER-4W | 27,00 | 15,87 | 4,0 | ○ | |
| 27ER-4.5W | 27,00 | 15,87 | 4,5 | ○ | |



EL-W



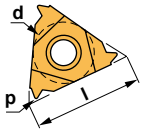

EL

## EL-W

Mechanical thread forms - External and internal inserts **WHITWORTH (full form) BS84**
Mechanische Gewindeformen / **WHITWORTH (Vollprofil) BS84** Wendeschneidplatten zum Außen-und Innendrehen

| Reference / Bezeichnung | l | d | p | TiN25 | TL20 |
|---|---|---|---|---|---|
| 16EL-11W | 16,00 | 9,52 | 11,0 | ○ | |
| 16EL-14W | 16,00 | 9,52 | 14,0 | ○ | |
| 16EL-20W | 16,00 | 9,52 | 20,0 | ○ | |






NR

## NR-W

Mechanical thread forms - Internal inserts **WHITWORTH (full form) BS84**
Mechanische Gewindeformen / **WHITWORTH (Vollprofil) BS84** Wendeschneidplatten zum Innendrehen

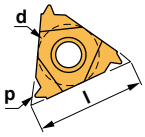
| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NR-18W | 6,00 | 3,96 | 18,0 | ○ | |
| 06NR-19W | 6,00 | 3,96 | 19,0 | ○ | |
| 06NR-20W | 6,00 | 3,96 | 20,0 | ○ | |
| 06NR-22W | 6,00 | 3,96 | 22,0 | ○ | |
| 06NR-26W | 6,00 | 3,96 | 26,0 | ○ | |
| 08NR-16W | 8,00 | 4,76 | 16,0 | ○ | |
| 08NR-18W | 8,00 | 4,76 | 18,0 | ○ | |
| 08NR-19W | 8,00 | 4,76 | 19,0 | ○ | |
| 08NR-20W | 8,00 | 4,76 | 20,0 | ○ | |
| 08NR-24W | 8,00 | 4,76 | 24,0 | ○ | |
| 08NR-28W | 8,00 | 4,76 | 28,0 | ○ | |
| 11NR-11W | 11,00 | 6,35 | 11,0 | ○ | |
| 11NR-12W | 11,00 | 6,35 | 12,0 | ○ | |
| 11NR-14W | 11,00 | 6,35 | 14,0 | ○ | |
| 11NR-16W | 11,00 | 6,35 | 16,0 | ○ | |
| 11NR-18W | 11,00 | 6,35 | 18,0 | ○ | |
| 11NR-19W | 11,00 | 6,35 | 19,0 | ○ | |
| 11NR-20W | 11,00 | 6,35 | 20,0 | ○ | |
| 11NR-22W | 11,00 | 6,35 | 22,0 | ○ | |
| 11NR-24W | 11,00 | 6,35 | 24,0 | ○ | |
| 11NR-26W | 11,00 | 6,35 | 26,0 | ○ | |
| 11NR-28W | 11,00 | 6,35 | 28,0 | ○ | |
| 11NR-32W | 11,00 | 6,35 | 32,0 | ○ | |
| 11NR-36W | 11,00 | 6,35 | 36,0 | ○ | |
| 11NR-40W | 11,00 | 6,35 | 40,0 | ○ | |
| 11NR-48W | 11,00 | 6,35 | 48,0 | ○ | |
| 16NR-8W | 16,00 | 9,52 | 8,0 | ○ | |
| 16NR-9W | 16,00 | 9,52 | 9,0 | ○ | |
| 16NR-10W | 16,00 | 9,52 | 10,0 | ○ | |
| 16NR-11W | 16,00 | 9,52 | 11,0 | ○ | |
| 16NR-12W | 16,00 | 9,52 | 12,0 | ○ | |
| 16NR-14W | 16,00 | 9,52 | 14,0 | ○ | |
| 16NR-16W | 16,00 | 9,52 | 16,0 | ○ | |
| 16NR-18W | 16,00 | 9,52 | 18,0 | ○ | |
| 16NR-19W | 16,00 | 9,52 | 19,0 | ○ | |
| 16NR-20W | 16,00 | 9,52 | 20,0 | ○ | |
| 16NR-22W | 16,00 | 9,52 | 22,0 | ○ | |
| 16NR-24W | 16,00 | 9,52 | 24,0 | ○ | |
| 16NR-26W | 16,00 | 9,52 | 26,0 | ○ | |
| 16NR-28W | 16,00 | 9,52 | 28,0 | ○ | |
| 22NR-4W | 22,00 | 12,70 | 4,0 | ○ | |
| 22NR-4.5W | 22,00 | 12,70 | 4,5 | ○ | |
| 22NR-5W | 22,00 | 12,70 | 5,0 | ○ | |
| 22NR-6W | 22,00 | 12,70 | 6,0 | ○ | |
| 22NR-7W | 22,00 | 12,70 | 7,0 | ○ | |

C

C



NL-W




NL

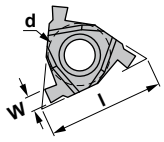
## NL-W

Mechanical thread forms - Internal inserts **WHITWORTH (full form) BS84**
Mechanische Gewindeformen / **WHITWORTH (Vollprofil) BS84** Wendeschneidplatten zum Innendrehen

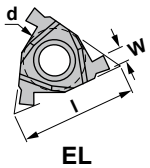
| Reference / Bezeichnung | l | d | p | TIN25 | TL20 |
|---|---|---|---|---|---|
| 06NL-18W | 6,00 | 3,96 | 18,0 | ○ | |
| 06NL-20W | 6,00 | 3,96 | 20,0 | ○ | |
| 06NL-22W | 6,00 | 3,96 | 22,0 | ○ | |
| 06NL-26W | 6,00 | 3,96 | 26,0 | ○ | |
| 08NL-16W | 8,00 | 4,76 | 16,0 | ○ | |
| 08NL-18W | 8,00 | 4,76 | 18,0 | ○ | |
| 08NL-19W | 8,00 | 4,76 | 19,0 | ○ | |
| 08NL-20W | 8,00 | 4,76 | 20,0 | ○ | |
| 08NL-24W | 8,00 | 4,76 | 24,0 | ○ | |
| 08NL-28W | 8,00 | 4,76 | 28,0 | ○ | |
| 16NL-11W | 16,00 | 9,52 | 11,0 | ○ | |
| 16NL-14W | 16,00 | 9,52 | 14,0 | ○ | |
| 16NL-16W | 16,00 | 9,52 | 16,0 | ○ | |



ER-LG




ER




EL

## ER-LG

External lock ring grooving inserts - **Type LG**
Außeneinstechplatten für **Sicherungsringnuten Typ LG**

| Reference / Bezeichnung | l | d | W | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16ER-100LG | 16,00 | 9,52 | 1,15 | | ● |
| 16ER-120LG | 16,00 | 9,52 | 1,35 | | ● |
| 16ER-150LG | 16,00 | 9,52 | 1,65 | | ● |
| 16ER-175LG | 16,00 | 9,52 | 1,90 | | ● |
| 16ER-200LG | 16,00 | 9,52 | 2,15 | | ● |
| 16ER-250LG | 16,00 | 9,52 | 2,65 | | ● |

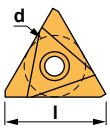
## EL-LG

External lock ring grooving inserts - **Type LG**
Außeneinstechplatten für **Sicherungsringnuten Typ LG**

| Reference / Bezeichnung | l | d | W | TIN25 | TL20 |
|---|---|---|---|---|---|
| 16EL-100LG | 16,00 | 9,52 | 1,15 | | ● |
| 16EL-120LG | 16,00 | 9,52 | 1,35 | | ● |
| 16EL-150LG | 16,00 | 9,52 | 1,65 | | ● |
| 16EL-175LG | 16,00 | 9,52 | 1,90 | | ● |
| 16EL-200LG | 16,00 | 9,52 | 2,15 | | ● |



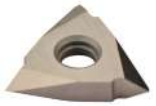


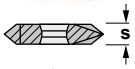



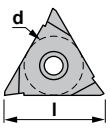

## TNMC

Triangular negative insert for threading.
Dreikantige negative Wendeschneidplatte zum Gewindedrehen.

| Reference / Bezeichnung | l | s | d | PM25 | TN15 |
|---|---|---|---|---|---|
| TNMC 1603XX | 16,50 | 3,18 | 9,52 | | ○ |
| TNMC 2204XX | 22,00 | 4,76 | 12,70 | ● | ○ |





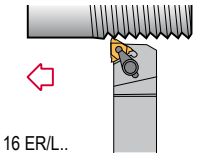

## TPMC

Triangular positive insert for threading.
Dreikantige positive Wendeschneidplatte zum Gewindedrehen.

| Reference / Bezeichnung | l | s | d | PM25 | TN15 |
|---|---|---|---|---|---|
| TPMC 1603XX | 16,50 | 3,18 | 9,52 | ○ | |
| TPMC 2204XX | 22,00 | 4,76 | 12,70 | ○ | |

## External threading
## Außengewindedrehen

### CTAN 90º



16 ER/L..
22 ER/L..
27 ER/L..

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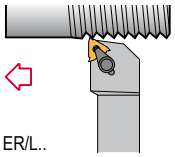
Seite C12

### CTXN 90º



16 ER/L..
22 ER/L..
27 ER/L..

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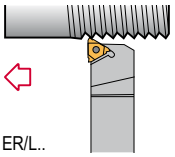
Seite C13

### STAN 90º



16 ER/L..
22 ER/L..
27 ER/L..

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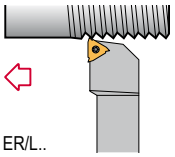
Seite C14

### STXN 90º



16 ER/L..
22 ER/L..
27 ER/L..

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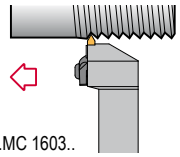
Seite C15

### STCN 90º

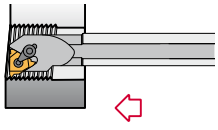


T..MC 1603..
T..MC 2204..
T..MC 2706..

Page
Seite C16

## Internal threading
## Innengewindedrehen

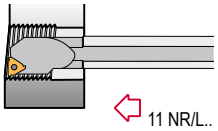
### CTXN 90º



16 NR/L..
22 NR/L..
27 NR/L..

Page
Seite C17

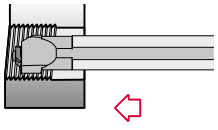
### STXN 90º



11 NR/L..
16 NR/L..
22 NR/L..
27 NR/L..

Page
Seite C18

### STGN 90º



TNMC 1603..
TNMC 2204..
TNMC 2706..

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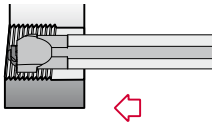
Seite C19

### STGP 90º



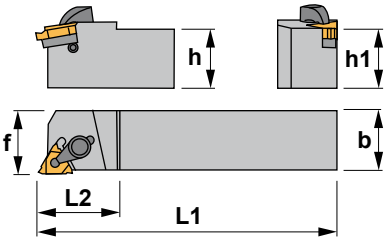
TPMC 1603..
TPMC 2204..

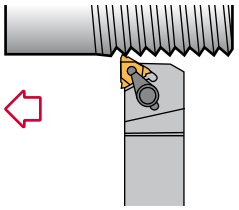
Page
Seite C20



Characteristics:
Multipurpose top clamp threading toolholder for negative lay down inserts.

Eigenschaften:
Multifunktionaler Klemmhalter mit oberer Klemmung zum Außengewindedrehen für negative Gewindeplatten.



# CTAN 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTAN R/L 2020 K16 | 20 | 20 | 125 | 28 | 20 | 16 ER/L.. | 0,400 |
| CTAN R/L 2525 M16 | 25 | 25 | 150 | 28 | 25 | 16 ER/L.. | 0,700 |
| CTAN R/L 3232 P16 | 32 | 32 | 170 | 28 | 32 | 16 ER/L.. | 1,050 |
| CTAN R/L 2525 M22 | 25 | 25 | 150 | 34 | 25 | 22 ER/L.. | 0,700 |
| CTAN R/L 3232 P22 | 32 | 32 | 170 | 34 | 32 | 22 ER/L.. | 1,300 |
| CTAN R/L 4040 R22 | 40 | 40 | 200 | 36 | 40 | 22 ER/L.. | 3,000 |
| CTAN R/L 3232 P27 | 32 | 32 | 170 | 34 | 32 | 27 ER/L.. | 1,300 |
| CTAN R/L 4040 R27 | 40 | 40 | 200 | 40 | 40 | 27 ER/L.. | 3,000 |
| CTAN R/L 5050 S27 | 50 | 50 | 250 | 40 | 50 | 27 ER/L.. | 5,800 |

**WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofils eine Änderung im Klemmhalter könnte erforderlich sein,um die volle Gewindetiefe zu erreichen.**

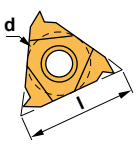
| Reference<br>Bezeichnung | | | | R | L | | | Nm |
|---|---|---|---|---|---|---|---|---|
| CTAN R/L 2020 K16 | 2516 | 5515 | 5510 | YE3 | YI3 | SY3 | SA3 | 2.0 |
| CTAN R/L 2525 M16 | 2516 | 5515 | 5510 | YE3 | YI3 | SY3 | SA3 | 2.0 |
| CTAN R/L 3232 P16 | 2516 | 5515 | - | YE3 | YI3 | SY3 | SA3 | - |
| CTAN R/L 2525 M22 | 2522 | 5515 | 5520 | YE4 | YI4 | SY4 | SA4 | 4.0 |
| CTAN R/L 3232 P22 | 2522 | 5515 | 5520 | YE4 | YI4 | SY4 | SA4 | 4.0 |
| CTAN R/L 4040 R22 | 2522 | 5515 | 5520 | YE4 | YI4 | SY4 | SA4 | 4.0 |
| CTAN R/L 3232 P27 | 2527 | 5525 | - | YE5 | YI5 | SY5 | SA5 | - |
| CTAN R/L 4040 R27 | 2527 | 5525 | - | YE5 | YI5 | SY5 | SA5 | - |
| CTAN R/L 5050 S27 | 2527 | 5525 | - | YE5 | YI5 | SY5 | SA5 | - |

Optional

## E R/L

Triangular negative inserts for external threading.
Dreikantige negative Wendeschneidplatten zum Außengewindedrehen. C03,05,08,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |




E R/L



E R/L TD



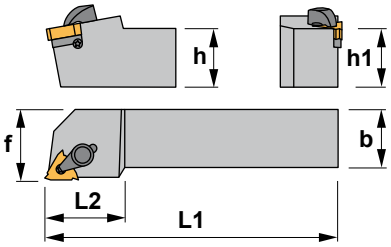
ER/L-LG

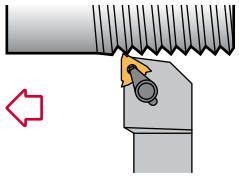




Characteristics:
Multipurpose top clamp threading toolholder for negative lay down inserts.

Eigenschaften:
Multifunktionaler Klemmhalter mit oberer Klemmung zum Außengewindedrehen für negative Gewindeplatten.



C

# CTXN 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTXN R/L 1212 F16 | 12 | 12 | 80 | 25 | 16 | 16 ER/L.. | 0,100 |
| CTXN R/L 1616 H16 | 16 | 16 | 100 | 25 | 20 | 16 ER/L.. | 0,200 |
| CTXN R/L 2020 K16 | 20 | 20 | 125 | 28 | 25 | 16 ER/L.. | 0,400 |
| CTXN R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | 16 ER/L.. | 0,700 |
| CTXN R/L 3232 P16 | 32 | 32 | 170 | 28 | 40 | 16 ER/L.. | 1,050 |
| CTXN R/L 2525 M22 | 25 | 25 | 150 | 34 | 32 | 22 ER/L.. | 0,700 |
| CTXN R/L 3232 P22 | 32 | 32 | 170 | 34 | 40 | 22 ER/L.. | 1,300 |
| CTXN R/L 4040 R22 | 40 | 40 | 200 | 36 | 50 | 22 ER/L.. | 3,000 |
| CTXN R/L 2525 M27 | 25 | 25 | 150 | 34 | 32 | 27 ER/L.. | 0,700 |
| CTXN R/L 3232 P27 | 32 | 32 | 170 | 34 | 40 | 27 ER/L.. | 1,300 |
| CTXN R/L 4040 R27 | 40 | 40 | 200 | 40 | 50 | 27 ER/L.. | 3,000 |
| CTXN R/L 5050 S27 | 50 | 50 | 250 | 50 | 60 | 27 ER/L.. | 5,800 |

**WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofils eine Änderung im Klemmhalter könnte erforderlich sein,um die volle Gewindetiefe zu erreichen.**

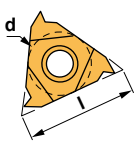
| Reference<br>Bezeichnung | | | R | L | | | Nm |
|---|---|---|---|---|---|---|---|
| CTXN R/L 1212 F16 | 2516 | 5515 | YE3 | YI3 | SY3 | SA3 | 3.0 |
| CTXN R/L 1616 H16 | 2516 | 5515 | YE3 | YI3 | SY3 | SA3 | 3.0 |
| CTXN R/L 2020 K16 | 2516 | 5515 | YE3 | YI3 | SY3 | SA3 | 3.0 |
| CTXN R/L 2525 M16 | 2516 | 5515 | YE3 | YI3 | SY3 | SA3 | 3.0 |
| CTXN R/L 3232 P16 | 2516 | 5515 | YE3 | YI3 | SY3 | SA3 | 3.0 |
| CTXN R/L 2525 M22 | 2522 | 5515 | YE4 | YI4 | SY4 | SA4 | 3.0 |
| CTXN R/L 3232 P22 | 2522 | 5515 | YE4 | YI4 | SY4 | SA4 | 3.0 |
| CTXN R/L 4040 R22 | 2522 | 5515 | YE4 | YI4 | SY4 | SA4 | 3.0 |
| CTXN R/L 2525 M27 | 2527 | 5525 | YE5 | YI5 | SY5 | SA5 | 5.0 |
| CTXN R/L 3232 P27 | 2527 | 5525 | YE5 | YI5 | SY5 | SA5 | 5.0 |
| CTXN R/L 4040 R27 | 2527 | 5525 | YE5 | YI5 | SY5 | SA5 | 5.0 |
| CTXN R/L 5050 S27 | 2527 | 5525 | YE5 | YI5 | SY5 | SA5 | 5.0 |

Optional

## E R/L

Triangular negative inserts for external threading.
Dreikantige negative Wendeschneidplatten zum Außengewindedrehen. C03,05,08,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |




E R/L



E R/L TD



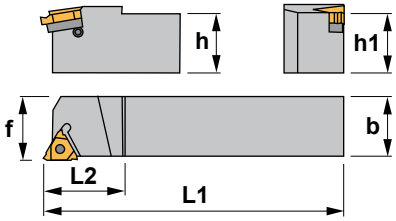
ER/L-LG

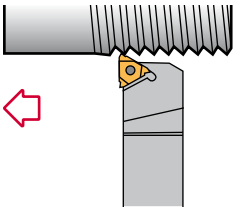




Characteristics:
Multipurpose threading toolholder for negative lay down inserts.

Eigenschaften:
Multifunktionaler Klemmhalter zum Gewindedrehen für negative Gewindeplatten.



# STAN 90º

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STAN R/L 1616 H16 | 16 | 16 | 100 | 22 | 16 | 16 ER/L.. | 0,070 |
| STAN R/L 2020 K16 | 20 | 20 | 125 | 28 | 20 | 16 ER/L.. | 0,100 |
| STAN R/L 2525 M16 | 25 | 25 | 150 | 28 | 25 | 16 ER/L.. | 0,140 |
| STAN R/L 3232 P16 | 32 | 32 | 170 | 28 | 32 | 16 ER/L.. | 0,200 |
| STAN R/L 2525 M22 | 25 | 25 | 150 | 34 | 25 | 22 ER/L.. | 0,270 |
| STAN R/L 3232 P22 | 32 | 32 | 175 | 34 | 32 | 22 ER/L.. | 0,400 |
| STAN R/L 4040 R22 | 40 | 40 | 200 | 34 | 40 | 22 ER/L.. | 0,700 |
| STAN R/L 3232 P27 | 32 | 32 | 170 | 34 | 32 | 27 ER/L.. | 1,300 |
| STAN R/L 4040 R27 | 40 | 40 | 200 | 34 | 40 | 27 ER/L.. | 0,700 |
| STAN R/L 5050 S27 | 50 | 50 | 250 | 34 | 50 | 27 ER/L.. | 1,300 |

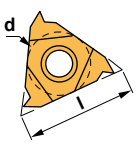
**WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofils eine Änderung im Klemmhalter könnte erforderlich sein,um die volle Gewindetiefe zu erreichen.**

| Reference<br>Bezeichnung | | | R | L | | Nm |
|---|---|---|---|---|---|---|
| STAN R/L 1616 H16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STAN R/L 2020 K16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STAN R/L 2525 M16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STAN R/L 3232 P16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STAN R/L 2525 M22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| STAN R/L 3232 P22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| STAN R/L 4040 R22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| STAN R/L 3232 P27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |
| STAN R/L 4040 R27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |
| STAN R/L 5050 S27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |

## E R/L

Triangular negative inserts for external threading.
Dreikantige negative Wendeschneidplatten zum Außengewindedrehen. C03,05,08,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |




E R/L



E R/L TD



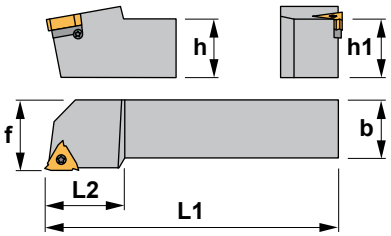
ER/L-LG

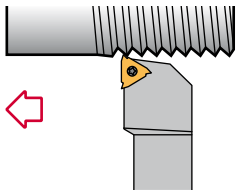




Characteristics:
Multipurpose threading toolholder for negative lay down inserts.

Eigenschaften:
Multifunktionaler Klemmhalter zum Gewindedrehen für negative Gewindeplatten.



C

# STXN 90°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| STXN R/L 1212 F16 | 12 | 12 | 80 | 25 | 16 | 16 ER/L.. | 0,100 |
| STXN R/L 1616 H16 | 16 | 16 | 100 | 25 | 20 | 16 ER/L.. | 0,200 |
| STXN R/L 2020 K16 | 20 | 20 | 125 | 28 | 25 | 16 ER/L.. | 0,400 |
| STXN R/L 2525 M16 | 25 | 25 | 150 | 28 | 32 | 16 ER/L.. | 0,700 |
| STXN R/L 3232 P16 | 32 | 32 | 170 | 28 | 40 | 16 ER/L.. | 1,050 |
| STXN R/L 2525 M22 | 25 | 25 | 150 | 34 | 32 | 22 ER/L.. | 0,700 |
| STXN R/L 3232 P22 | 32 | 32 | 170 | 34 | 40 | 22 ER/L.. | 1,300 |
| STXN R/L 4040 R22 | 40 | 40 | 200 | 34 | 50 | 22 ER/L.. | 3,000 |
| STXN R/L 2525 M27 | 25 | 25 | 150 | 34 | 32 | 27 ER/L.. | 0,700 |
| STXN R/L 3232 P27 | 32 | 32 | 170 | 34 | 40 | 27 ER/L.. | 1,300 |
| STXN R/L 4040 R27 | 40 | 40 | 200 | 34 | 50 | 27 ER/L.. | 3,000 |
| STXN R/L 5050 S27 | 50 | 50 | 250 | 34 | 60 | 27 ER/L.. | 5,800 |

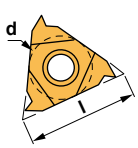
**WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofils eine Änderung im Klemmhalter könnte erforderlich sein,um die volle Gewindetiefe zu erreichen.**

| Reference<br>Bezeichnung |  |  |  R |  L |  | Nm |
|---|---|---|---|---|---|---|
| STXN R/L 1212 F16 | SA3T | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STXN R/L 1616 H16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STXN R/L 2020 K16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STXN R/L 2525 M16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STXN R/L 3232 P16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| STXN R/L 2525 M22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| STXN R/L 3232 P22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| STXN R/L 4040 R22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| STXN R/L 2525 M27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |
| STXN R/L 3232 P27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |
| STXN R/L 4040 R27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |
| STXN R/L 5050 S27 | SA5 | 5525 | YE5 | YI5 | SY5 | 5.0 |

## E R/L

Triangular negative inserts for external threading.
Dreikantige negative Wendeschneidplatten zum Außengewindedrehen. C03,05,08,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |




E R/L



E R/L TD



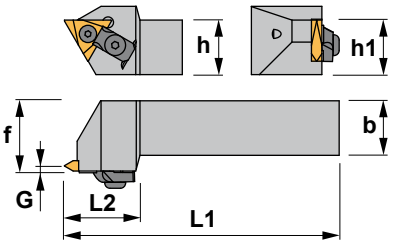
ER/L-LG

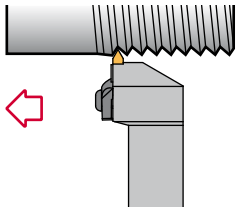




Characteristics:
Vertical on edge threading toolholder.

Eigenschaften:
Klemmhalter zum Vertikal-Gewindedrehen auf der Kante.



# STCN 90°

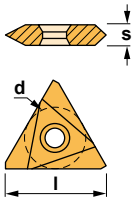
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | G | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| STCN R/L 1212 F16 | 12 | 12 | 80 | 25 | 16 | 1,59 | TNMC/TPMC 1603.. | 0,100 |
| STCN R/L 1616 H16 | 16 | 16 | 100 | 25 | 19 | 1,59 | TNMC/TPMC 1603.. | 0,200 |
| STCN R/L 2020 K16 | 20 | 20 | 125 | 28 | 22 | 1,59 | TNMC/TPMC 1603.. | 0,400 |
| STCN R/L 2525 M16 | 25 | 25 | 150 | 34 | 32 | 1,59 | TNMC/TPMC 1603.. | 0,700 |
| STCN R/L 3232 P16 | 32 | 32 | 170 | 34 | 38 | 1,59 | TNMC/TPMC 1603.. | 1,050 |
| STCN R/L 2020 K22 | 20 | 20 | 125 | 34 | 22 | 2,38 | TNMC/TPMC 2204.. | 0,400 |
| STCN R/L 2525 M22 | 25 | 25 | 150 | 34 | 32 | 2,38 | TNMC/TPMC 2204.. | 0,700 |
| STCN R/L 3225 P22 | 32 | 25 | 170 | 34 | 32 | 2,38 | TNMC/TPMC 2204.. | 1,025 |
| STCN R/L 3232 P22 | 32 | 32 | 170 | 34 | 38 | 2,38 | TNMC/TPMC 2204.. | 1,050 |
| STCN R/L 2525 M27 | 25 | 25 | 150 | 38 | 32 | 2,38 | TNMC/TPMC 2706.. | 0,700 |
| STCN R/L 3232 P27 | 32 | 32 | 170 | 42 | 38 | 2,38 | TNMC/TPMC 2706.. | 1,050 |

| Reference<br>Bezeichnung | | | | 1 | 2 | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|
| STCN R/L 1212 F16 | 1935 | - | - | - | - | - | - |
| STCN R/L 1616 H16 | 1935 | - | - | - | - | - | - |
| STCN R/L 2020 K16 | 1935 | 2101 | 1815 | 5003 | 5002 | 3.0 | 1.4 |
| STCN R/L 2525 M16 | 1935 | 2101 | 1815 | 5003 | 5002 | 3.0 | 1.4 |
| STCN R/L 3232 P16 | 1935 | 2101 | 1815 | 5003 | 5002 | 3.0 | 1.4 |
| STCN R/L 2020 K22 | 1950 | 2101 | 1815 | 5003 | 5025 | 3.0 | 2.0 |
| STCN R/L 2525 M22 | 1950 | 2101 | 1815 | 5003 | 5025 | 3.0 | 2.0 |
| STCN R/L 3225 P22 | 1950 | 2101 | 1815 | 5003 | 5025 | 3.0 | 2.0 |
| STCN R/L 3232 P22 | 1950 | 2101 | 1815 | 5003 | 5025 | 3.0 | 2.0 |
| STCN R/L 2525 M27 | 1955 | 2101 | 1815 | - | 5003 | 3.0 | 3.0 |
| STCN R/L 3232 P27 | 1955 | 2101 | 1815 | - | 5003 | 3.0 | 3.0 |

## TNMC/TPMC

Triangular negative and positive inserts for external threading.
Dreikantige negative und positive WSP zum Außengewindedrehen. C10

| Reference / Bez. | l | s | d |
|---|---|---|---|
| T..MC 1603.. | 16,50 | 3,18 | 9,52 |
| T..MC 2204.. | 22,00 | 4,76 | 12,70 |
| T..MC 2706.. | 27,00 | 6,35 | 15,88 |




TNMC



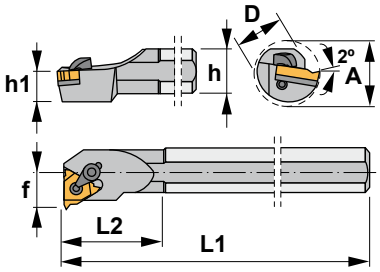
TPMC

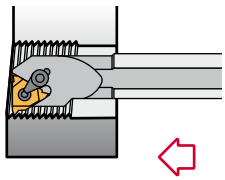




Characteristics:
Multipurpose top clamp threading boring bar for negative lay down inserts.

Eigenschaften:
Multifunktionale Bohrstange mit oberer Klemmung zum Innengewindedrehen für negative Gewindeplatten.



C

# CTXN 90°

| Reference<br>Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S20Q CTXN R/L 16 | 20 | 18 | 9,0 | 180 | 35 | 13,0 | 24 | 16 NR/L.. | 0,400 |
| S25R CTXN R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 17,0 | 29 | 16 NR/L.. | 0,700 |
| S32S CTXN R/L 16 | 32 | 30 | 15,0 | 250 | 45 | 22,0 | 36 | 16 NR/L.. | 1,500 |
| S40T CTXN R/L 16 | 40 | 37 | 18,5 | 300 | 50 | 27,0 | 44 | 16 NR/L.. | 2,850 |
| S25R CTXN R/L 22 | 25 | 23 | 11,5 | 200 | 40 | 17,0 | 32 | 22 NR/L.. | 0,700 |
| S32S CTXN R/L 22 | 32 | 30 | 15,0 | 250 | 45 | 22,0 | 39 | 22 NR/L.. | 1,500 |
| S40T CTXN R/L 22 | 40 | 37 | 18,5 | 300 | 50 | 27,0 | 47 | 22 NR/L.. | 2,850 |
| S32S CTXN R/L 27 | 32 | 30 | 15,0 | 250 | 45 | 22,4 | 40 | 27 NR/L.. | 1,500 |
| S40T CTXN R/L 27 | 40 | 37 | 18,5 | 300 | 50 | 26,4 | 48 | 27 NR/L.. | 2,850 |
| S50U CTXN R/L 27 | 50 | 47 | 23,5 | 350 | 60 | 31,4 | 58 | 27 NR/L.. | 5,200 |
| S60V CTXN R/L 27 | 60 | 58 | 29,0 | 400 | 60 | 36,4 | 69 | 27 NR/L.. | 8,550 |

**WARNING!! Because of large thread profile, modification may have to be made to the boring bar to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofils eine Änderung in der Bohrstange könnte erforderlich sein,um die volle Gewindetiefe zu erreichen.**

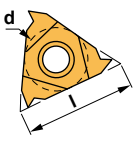
| Reference<br>Bezeichnung | | | R | L | | | Nm |
|---|---|---|---|---|---|---|---|
| S20Q CTXN R/L 16 | 2516 | 5515 | YI3 | YE3 | SY3 | SN3 | 3.0 |
| S25R CTXN R/L 16 | 2516 | 5515 | YI3 | YE3 | SY3 | SA3 | 3.0 |
| S32S CTXN R/L 16 | 2516 | 5515 | YI3 | YE3 | SY3 | SA3 | 3.0 |
| S40T CTXN R/L 16 | 2516 | 5515 | YI3 | YE3 | SY3 | SA3 | 3.0 |
| S25R CTXN R/L 22 | 2522 | 5515 | YI4 | YE4 | SY4 | SA4 | 3.0 |
| S32S CTXN R/L 22 | 2522 | 5515 | YI4 | YE4 | SY4 | SA4 | 3.0 |
| S40T CTXN R/L 22 | 2522 | 5515 | YI4 | YE4 | SY4 | SA4 | 3.0 |
| S32S CTXN R/L 27 | 2527 | 5525 | YI5 | YE5 | SY5 | SA5 | 5.0 |
| S40T CTXN R/L 27 | 2527 | 5525 | YI5 | YE5 | SY5 | SA5 | 5.0 |
| S50U CTXN R/L 27 | 2527 | 5525 | YI5 | YE5 | SY5 | SA5 | 5.0 |
| S60V CTXN R/L 27 | 2527 | 5525 | YI5 | YE5 | SY5 | SA5 | 5.0 |

Optional

## N R/L

Triangular negative inserts for internal threading.
Dreikantige negative Wendeschneidplatten zum Innengewindedrehen. C04,06,07,09,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |
| 27 NR/L.. | 27,00 | 15,87 |




N R/L



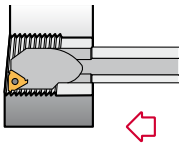
N R/L TD

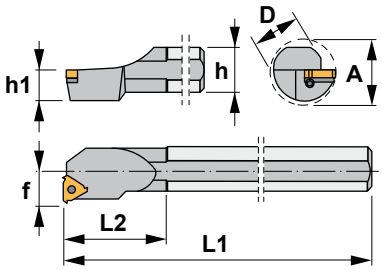




Characteristics:
Multipurpose threading boring bar for negative lay down inserts.

Eigenschaften:
Multifunktionale Bohrstange zum Gewindedrehen für negative Gewindeplatten.






# STXN 90°

| Reference Bezeichnung | D | h | h1 | L1 | L2 | f | A | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S10K STXN R/L 11 | 10 | 9 | 4,5 | 125 | 16 | 7,3 | 13 | 11 NR/L.. | 0,070 |
| S16M STXN R/L 11 | 16 | 15 | 7,5 | 150 | 25 | 8,9 | 16 | 11 NR/L.. | 0,200 |
| S16M STXN R/L 16 | 16 | 15 | 7,5 | 150 | 30 | 11,5 | 20 | 16 NR/L.. | 0,200 |
| S20Q STXN R/L 16 | 20 | 18 | 9,0 | 180 | 35 | 13,4 | 24 | 16 NR/L.. | 0,400 |
| S25R STXN R/L 16 | 25 | 23 | 11,5 | 200 | 40 | 16,3 | 29 | 16 NR/L.. | 0,700 |
| S32S STXN R/L 16 | 32 | 30 | 15,0 | 250 | 45 | 19,6 | 36 | 16 NR/L.. | 1,500 |
| S40T STXN R/L 16 | 40 | 37 | 18,5 | 300 | 50 | 23,8 | 44 | 16 NR/L.. | 2,850 |
| S20Q STXN R/L 22 | 20 | 18 | 9,0 | 180 | 35 | 15,6 | 27 | 22 NR/L.. | 0,400 |
| S25R STXN R/L 22 | 25 | 23 | 11,5 | 200 | 40 | 17,2 | 32 | 22 NR/L.. | 0,700 |
| S32S STXN R/L 22 | 32 | 30 | 15,0 | 250 | 45 | 21,5 | 39 | 22 NR/L.. | 1,500 |
| S40T STXN R/L 22 | 40 | 37 | 18,5 | 300 | 50 | 25,8 | 47 | 22 NR/L.. | 2,850 |
| S32S STXN R/L 27 | 32 | 30 | 15,0 | 250 | 45 | 22,4 | 40 | 27 NR/L.. | 1,500 |
| S40T STXN R/L 27 | 40 | 37 | 18,5 | 300 | 50 | 26,4 | 48 | 27 NR/L.. | 2,850 |
| S50U STXN R/L 27 | 50 | 47 | 23,5 | 350 | 60 | 31,4 | 58 | 27 NR/L.. | 5,200 |
| S60V STXN R/L 27 | 60 | 57 | 28,5 | 400 | 60 | 36,4 | 69 | 27 NR/L.. | 8,550 |

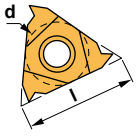
**WARNING!! Because of large thread profile, modification may have to be made to the boring bar to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofils eine Änderung in der Bohrstange könnte erforderlich sein,um die volle Gewindetiefe zu erreichen.**

| Reference Bezeichnung | | | R | L | | Nm |
|---|---|---|---|---|---|---|
| S10K STXN R/L 11 | 1225 | 5507 | - | - | - | 0.9 |
| S16M STXN R/L 11 | 1225 | 5507 | - | - | - | 0.9 |
| S16M STXN R/L 16 | SN3 | 5510 | - | - | - | 2.0 |
| S20Q STXN R/L 16 | SA3T | 5510 | YI3 | YE3 | SY3 | 2.0 |
| S25R STXN R/L 16 | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 |
| S32S STXN R/L 16 | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 |
| S40T STXN R/L 16 | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 |
| S20Q STXN R/L 22 | SN4 | 5520 | - | - | - | 4.0 |
| S25R STXN R/L 22 | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 |
| S32S STXN R/L 22 | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 |
| S40T STXN R/L 22 | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 |
| S32S STXN R/L 27 | SA5 | 5525 | YI5 | YE5 | SY5 | 5.0 |
| S40T STXN R/L 27 | SA5 | 5525 | YI5 | YE5 | SY5 | 5.0 |
| S50U STXN R/L 27 | SA5 | 5525 | YI5 | YE5 | SY5 | 5.0 |
| S60V STXN R/L 27 | SA5 | 5525 | YI5 | YE5 | SY5 | 5.0 |

## N R/L

Triangular negative inserts for internal threading.
Dreikantige negative Wendeschneidplatten zum Innengewindedrehen. C04,06,07,09,10

| Reference / Bez. | l | d |
|---|---|---|
| 11 NR/L.. | 11,00 | 6,35 |
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |
| 27 NR/L.. | 27,00 | 15,87 |




N R/L



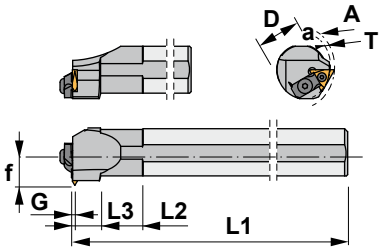
N R/L TD

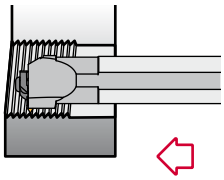




Characteristics:
Vertical on edge threading boring bar.

Eigenschaften:
Bohrstange zum Vertikal-Gewindedrehen auf der Kante.



C

# STGN 90°

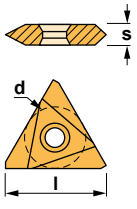
| Reference<br>Bezeichnung | D | L1 | L2 | L3 | f | A | a | T | G | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S32U STGN R/L 16 | 32 | 350 | 45 | 19 | 21,0 | 50,4 | 45 | 2,7 | 1,59 | TNMC 1603.. | 2,100 |
| S40V STGN R/L 16 | 40 | 400 | 50 | 19 | 25,0 | 60,4 | 55 | 2,7 | 1,59 | TNMC 1603.. | 3,650 |
| S32U STGN R/L 22 | 32 | 350 | 45 | 28 | 21,0 | 78,2 | 70 | 4,1 | 2,38 | TNMC 2204.. | 2,100 |
| S40V STGN R/L 22 | 40 | 400 | 50 | 28 | 25,0 | 50,4 | 45 | 4,1 | 2,38 | TNMC 2204.. | 3,650 |
| S50W STGN R/L 22 | 50 | 450 | 60 | 28 | 36,5 | 60,4 | 55 | 4,1 | 2,38 | TNMC 2204.. | 6,700 |
| S40V STGN R/L 27 | 40 | 400 | 50 | 28 | 25,0 | 60,4 | 55 | 6,0 | 3,18 | TNMC 2706.. | 3,650 |
| S50W STGN R/L 27 | 50 | 450 | 60 | 28 | 36,5 | 78,2 | 70 | 6,0 | 3,18 | TNMC 2706.. | 6,700 |

| Reference<br>Bezeichnung | | | | 1 | 2 | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|
| S32U STGN R/L 16 | 1935 | 2101 | 1815 | 5002 | 5003 | 1.4 | 3.0 |
| S40V STGN R/L 16 | 1935 | 2101 | 1815 | 5002 | 5003 | 1.4 | 3.0 |
| S32U STGN R/L 22 | 1950 | 2101 | 1815 | 5025 | 5003 | 2.0 | 3.0 |
| S40V STGN R/L 22 | 1950 | 2101 | 1815 | 5025 | 5003 | 2.0 | 3.0 |
| S50W STGN R/L 22 | 1950 | 2101 | 1815 | 5025 | 5003 | 2.0 | 3.0 |
| S40V STGN R/L 27 | 1955 | 2101 | 1815 | 5003 | 5003 | 3.0 | 3.0 |
| S50W STGN R/L 27 | 1955 | 2101 | 1815 | 5003 | 5003 | 3.0 | 3.0 |

## TNMC

Triangular negative insert for internal threading.
Dreikantige negative Wendeschneidplatte zum Innengewindedrehen. C10

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNMC 1603.. | 16,50 | 3,18 | 9,52 |
| TNMC 2204.. | 22,00 | 4,76 | 12,70 |
| TNMC 2706.. | 27,00 | 6,35 | 15,88 |



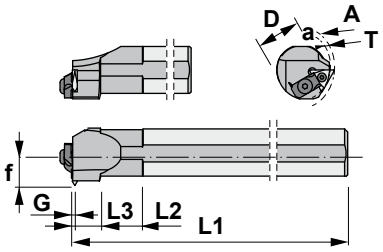

TNMC

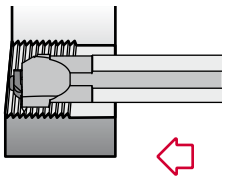




Characteristics:
Vertical on edge threading boring bar.

Eigenschaften:
Bohrstange zum Vertikal-Gewindedrehen auf der Kante.



# STGP 90°

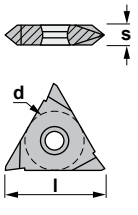
| Reference<br>Bezeichnung | D | L1 | L2 | L3 | f | A | a | T | G | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S25T STGP R/L 16 | 25 | 300 | 40 | 19 | 17,5 | 50,4 | 45 | 2,7 | 1,59 | TPMC 1603.. | 1,100 |
| S32U STGP R/L 16 | 32 | 350 | 45 | 19 | 20,5 | 50,4 | 45 | 2,7 | 1,59 | TPMC 1603.. | 2,100 |
| S40V STGP R/L 22 | 40 | 400 | 50 | 28 | 25,0 | 78,2 | 70 | 4,1 | 2,38 | TPMC 2204.. | 3,650 |
| S50W STGP R/L 22 | 50 | 450 | 60 | 28 | 36,5 | 78,2 | 70 | 4,1 | 2,38 | TPMC 2204.. | 6,700 |

| Reference<br>Bezeichnung | | | | 1 | 2 | Nm¹ | Nm² |
|---|---|---|---|---|---|---|---|
| S25T STGP R/L 16 | 1935 | 2101 | 1815 | 5002 | 5003 | 1.4 | 3.0 |
| S32U STGP R/L 16 | 1935 | 2101 | 1815 | 5002 | 5003 | 1.4 | 3.0 |
| S40V STGP R/L 22 | 1950 | 2101 | 1815 | 5025 | 5003 | 2.0 | 3.0 |
| S50W STGP R/L 22 | 1950 | 2101 | 1815 | 5025 | 5003 | 2.0 | 3.0 |

## TPMC

Triangular positive insert for internal threading.
Dreikantige positive Wendeschneidplatte zum Innengewindedrehen.
C10

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TPMC 1603.. | 16,50 | 3,18 | 9,52 |
| TPMC 2204.. | 22,00 | 4,76 | 12,70 |




TPMC



## Cutting data

| Material | Cutting speed m/min. (Ft/min) Insert grade | | |
|---|---|---|---|
| | PM25 | KM15 | TIN25 |
| Low and medium carbon steel | 120-80 (390-260) | | 250-210 (820-690) |
| High carbon steel | 110-70 (360-230) | | 210-150 (690-490) |
| Alloyed tool steel and heat-treated steels | 100-70 (360-230) | | 180-140 (590-460) |
| Stainless steels | 100-70 (360-230) | 90-70 (295-230) | 140-110 (460-360) |
| Cast-iron HB 180-250 | | 90-70 (295-230) | |
| Non-ferrous metals | | 180-120 (590-390) | |

| Nº of passes | | |
|---|---|---|
| P mm | TPI | Nº of passes |
| 0,50 | 48,0 | 4 - 6 |
| 0,75 | 32,0 | 4 - 7 |
| 1,00 | 24,0 | 4 - 8 |
| 1,25 | 20,0 | 5 - 9 |
| 1,50 | 16,0 | 6 - 10 |
| 1,75 | 14,0 | 7 - 12 |
| 2,00 | 12,0 | 7 - 12 |
| 2,50 | 10,0 | 8 - 14 |
| 3,00 | 8,0 | 10 - 18 |
| 3,50 | 7,0 | 11 - 18 |
| 4,00 | 6,0 | 11 - 18 |
| 4,50 | 5,5 | 11 - 19 |
| 5,00 | 5,0 | 12 - 20 |
| 5,50 | 4,5 | 12 - 20 |
| 6,00 | 4,0 | 12 - 20 |
| 8,00 | 3,0 | 15 - 24 |

**General recommendations:**

- Threading speeds should normally be a minimum of 80% to 90% of turning speeds being used to machine the same component (assuming grades are compatible).
- Check helix angle and number of passes shown in charts before starting.
- Ensure centre height is correct.
- When there is a problem consult the following recommendations and change only one variable at a time. This will help to be sure of the original problem.
- Do not use flank infeed on work hardening materials.

## Component problems

| | Problem | Remedy |
|---|---|---|
| **Pitch error (on CNC machines)** | ▼ Starting too close to workpiece.<br>▼ Saddle speed towards chuck is excessive. | ▲ Start cycle further back from workpiece.<br>▲ Reduce speed by 10% until correct. |
| **Thread torn on one side only** | ▼ Incorrect helix angle in toolholder. | ▲ Check helix chart.<br>▲ Reassemble with correct anvil.<br>▲ Check centre height. |
| **Thread torn on both sides** | ▼ Running too slow.<br>▼ Built up edge. | ▲ Increase cutting speed.<br>▲ Check center height.<br>▲ Use coated grade.<br>▲ Compare thread speed with turning speed. |
| **Long dangerous swarf** | ▼ Incorrect chipbreaker geometry.<br>▼ Incorrect method of infeed. | ▲ Use Canela (TD) chipbreaker.<br>▲ Use different infeed method. |
| **Vibration chatter marks on both flanks** | ▼ Poor stability.<br>▼ Excessive overhang. | ▲ Renew anvil to support insert.<br>▲ Check tool clamping.<br>▲ Reduce tool overhang.<br>▲ Check rigidity of setup. |
| **Shallow threads Problem with gauging** | ▼ Insert not cresting.<br>▼ Incorrect effective diameter. | ▲ Check machined diameters.<br>▲ Excessive tool wear or chipped on nose see remedies above. |

C

## Schnittdaten

| Materialien | Schnittgeschwindigkeit m/min.(Ft/min) Wendeplattensorte | | |
|---|---|---|---|
| | PM25 | KM15 | TIN25 |
| Stahl mit niedrigem und mittlerem Kohlenstoffgehalt | 120-80 (390-260) | | 250-210 (820-690) |
| Stahl mit hohem Kohlenstoffgehalt | 110-70 (360-230) | | 210-150 (690-490) |
| Legierter Werkzeugstahl und Vergütungsstähle | 100-70 (360-230) | | 180-140 (590-460) |
| Rostfreie Stähle | 100-70 (360-230) | 90-70 (295-230) | 140-110 (460-360) |
| Guß HB 180-250 | | 90-70 (295-230) | |
| Nichteisenmetalle | | 180-120 (590-390) | |

| Anzahl von Steigungen | | |
|---|---|---|
| P mm | TPI | Anzahl von Steigungen |
| 0,50 | 48,0 | 4 - 6 |
| 0,75 | 32,0 | 4 - 7 |
| 1,00 | 24,0 | 4 - 8 |
| 1,25 | 20,0 | 5 - 9 |
| 1,50 | 16,0 | 6 - 10 |
| 1,75 | 14,0 | 7 - 12 |
| 2,00 | 12,0 | 7 - 12 |
| 2,50 | 10,0 | 8 - 14 |
| 3,00 | 8,0 | 10 - 18 |
| 3,50 | 7,0 | 11 - 18 |
| 4,00 | 6,0 | 11 - 18 |
| 4,50 | 5,5 | 11 - 19 |
| 5,00 | 5,0 | 12 - 20 |
| 5,50 | 4,5 | 12 - 20 |
| 6,00 | 4,0 | 12 - 20 |
| 8,00 | 3,0 | 15 - 24 |

**Allgemeine Empfehlungen:**

- Die Gewindedreh-Geschwindigkeiten sollten normalerweise minimum 80 bis 90% der Drehgeschwindigkeiten haben, die zur Bearbeitung derselben Teile verwendet werden (wenn die Sorten kompatibel sind).
- Bevor man beginnt, sollte man den Spiralwinkel und die Anzahl der auf den Tabellen gezeigten Steigungen kontrollieren.
- Kontrollieren, daß die Spitzenhöhe stimmt.
- Falls es ein Problem gibt, bitte folgende Empfehlungen beachten und nur eine Variable auf einmal ändern. Das hilft, Probleme zu lösen.
- Keine Flankenzustellung bei Materialien, die bei der Bearbeitung härter werden.

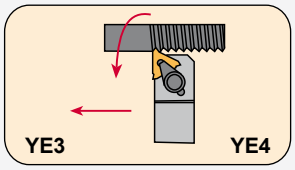
## Problemen mit dem Werkstück

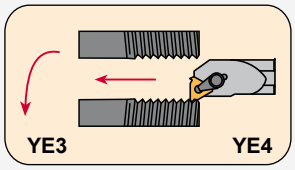
| | Problem | Ursache/Maßnahme |
|---|---|---|
| **Steigungsfehler (bei CNC-Maschinen)** | ▼ Man hat zu nah am Werkstück angefangen.<br>▼ Die Geschwindigkeit in Richtung auf den Antritt ist zu hoch. | ▲ Zyklus weiter von dem Werkstück entfernt anfangen.<br>▲ Geschwindigkeit um 10% reduzieren, bis sie korrekt ist. |
| **Gewinde, die nur auf einer Seite gebrochen sind** | ▼ Nicht korrekter Steigungswinkel im Werkzeug. | ▲ Steigungstabelle kontrollieren.<br>▲ Nochmal montieren aber mit der richtigen Unterlegplatte.<br>▲ Spitzenhöhe kontrollieren. |
| **Gewinde, die auf beide Seiten gebrochen sind** | ▼ Zu langsame Bearbeitung.<br>▼ Schneidenaufbau. | ▲ Oberflächen-Geschwindigkeit erhöhen.<br>▲ Spitzenhöhe kontrollieren.<br>▲ Eine beschichtete Sorte verwenden.<br>▲ Gewindedreh-Geschwindigkeit mit Drehgeschwindigkeit vergleichen. |
| **Lange und gefährliche Späne** | ▼ Nicht korrekte Spanbrecher-Geometrie.<br>▼ Nicht korrekte Zustellungsmethode. | ▲ Canela TD-Spanbrecher verwenden.<br>▲ Eine andere Zustellungsmethode verwenden. |
| **Vibrationsmarken auf beiden Flanken** | ▼ Geringe Stabilität.<br>▼ Zu große Auskragung. | ▲ Unterlegplatte wechseln, um die Wendeschneidplatte zu verstärken.<br>▲ Klemmung des Werkzeuges kontrollieren.<br>▲ Die Auskragung reduzieren.<br>▲ Die Stabilität des Aufbaues kontrollieren. |
| **Ungenaue Gewinde / Probleme mit den Abmessungen** | ▼ Die Wendeschneidplatte macht eine schlechte Oberflächengüte.<br>▼ Nicht korrekter effektiver Durchmesser. | ▲ Den bearbeiteten Durchmesser kontrollieren.<br>▲ Bei zuviel Verschleiß oder Ansammlung von Spänen in der Spitze, siehe obengenannte Maßnahmen. |

## Helix chart

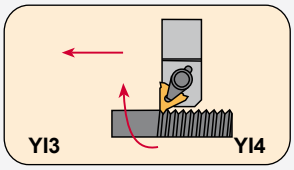
### Feed direction towards the chuck

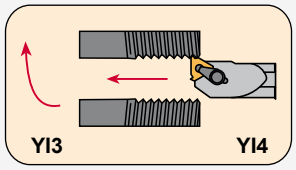
RH Thread - RH Tool



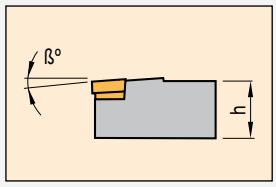

LH Thread - LH Tool

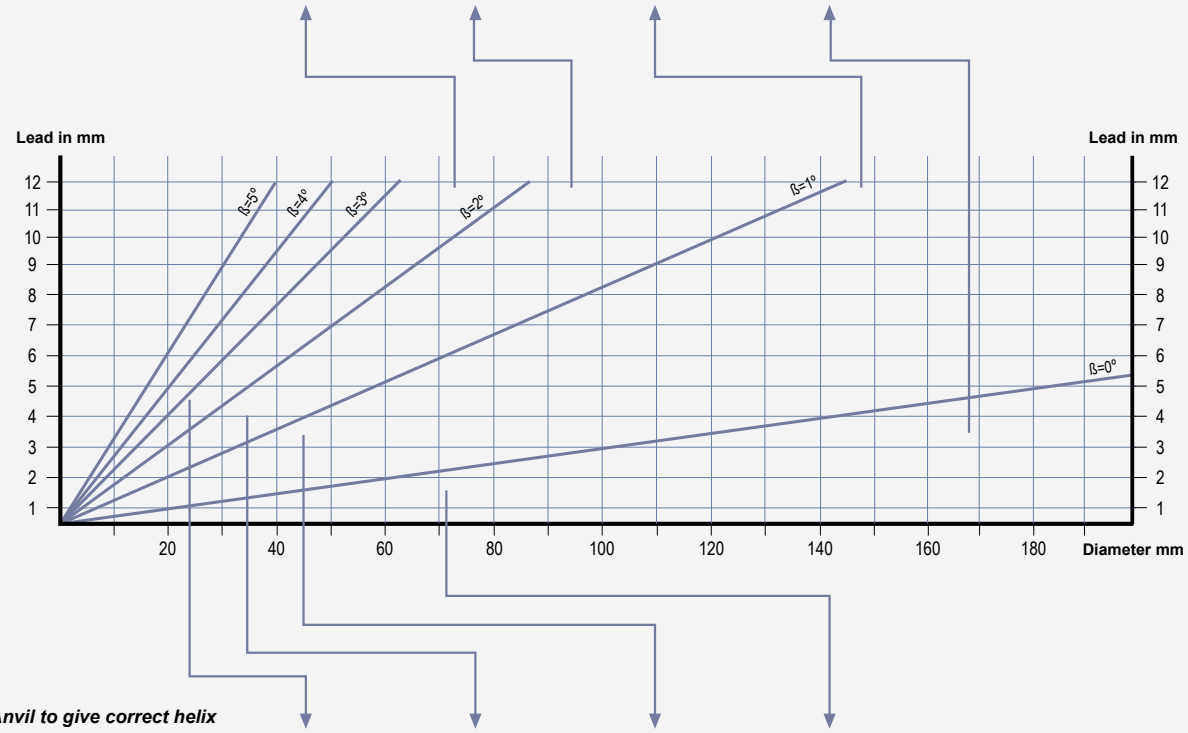



*Anvil to give correct helix*

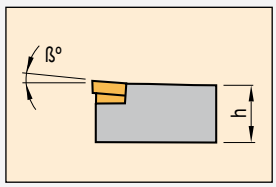
| Insert size | +3º | +2º | +1º | 0º |
|---|---|---|---|---|
| 16R | 3424+3 | 3424+2 | 3424+1 | YE3 |
| 16L | 3425+3 | 3425+2 | 3425+1 | YI3 |
| 22R | 3430+3 | 3430+2 | 3430+1 | YE4 |
| 22L | 3431+3 | 3431+2 | 3431+1 | YI4 |



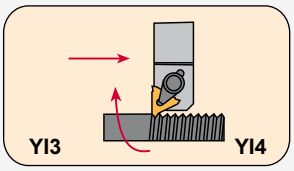

*Anvil to give correct helix*

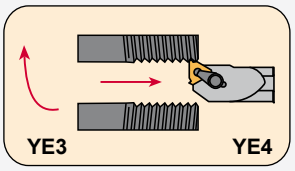
| Insert size | -3º | -2º | -1º | 0º |
|---|---|---|---|---|
| 16R | 3424-3 | 3424-2 | 3424-1 | YE3 |
| 16L | 3425-3 | 3425-2 | 3425-1 | YI3 |
| 22R | 3430-3 | 3430-2 | 3430-1 | YE4 |
| 22L | 3431-3 | 3431-2 | 3431-1 | YI4 |



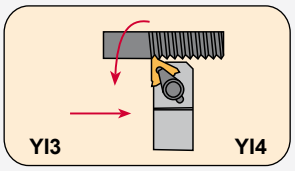

### Feed direction away from the chuck

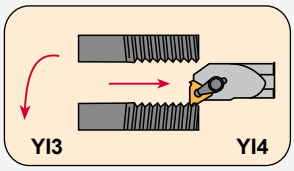
RH Thread - RH chuck




LH Thread - LH Tool



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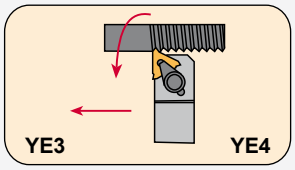
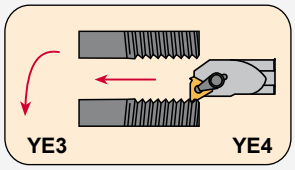
## Steigungs-Tabelle

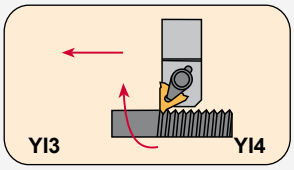
### Vorschubrichtung in Richtung Antrieb

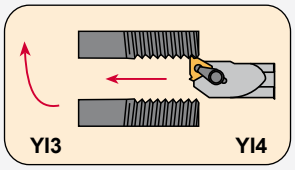
**Gewinde rechts – Werkzeug rechts**



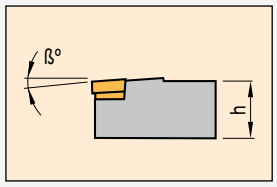

**Gewinde links – Werkzeug links**

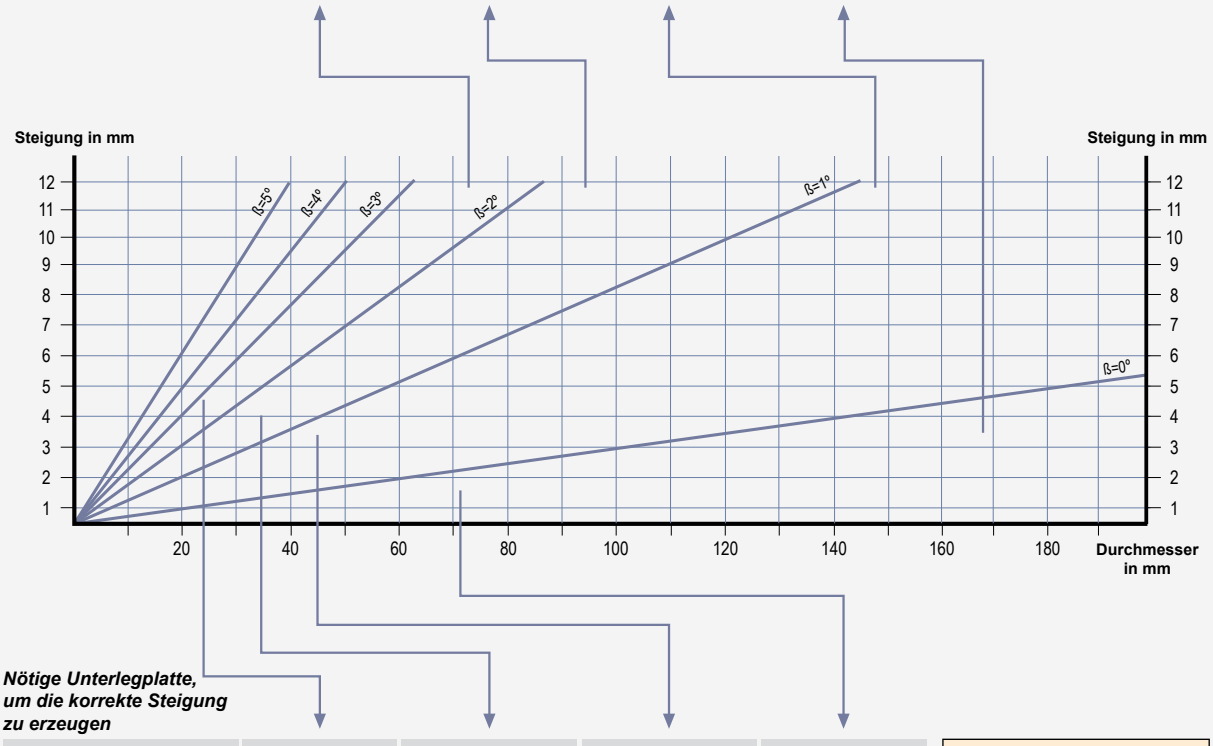



***Nötige Unterlegplatte, um die korrekte Steigung zu erzeugen***

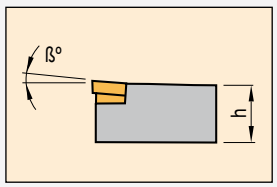
| Wendeplattengröße | +3° | +2° | +1° | 0° |
|---|---|---|---|---|
| 16R | 3424+3 | 3424+2 | 3424+1 | YE3 |
| 16L | 3425+3 | 3425+2 | 3425+1 | YI3 |
| 22R | 3430+3 | 3430+2 | 3430+1 | YE4 |
| 22L | 3431+3 | 3431+2 | 3431+1 | YI4 |



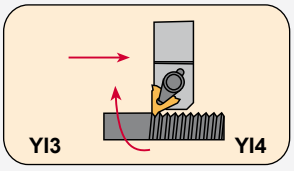

***Nötige Unterlegplatte, um die korrekte Steigung zu erzeugen***

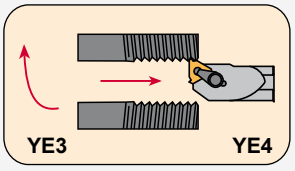
| Wendeplattengröße | -3° | -2° | -1° | 0° |
|---|---|---|---|---|
| 16R | 3424-3 | 3424-2 | 3424-1 | YE3 |
| 16L | 3425-3 | 3425-2 | 3425-1 | YI3 |
| 22R | 3430-3 | 3430-2 | 3430-1 | YE4 |
| 22L | 3431-3 | 3431-2 | 3431-1 | YI4 |



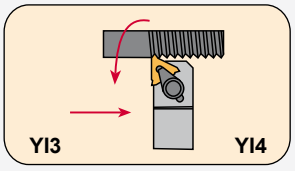

### Vorschubrichtung ab dem Antrieb

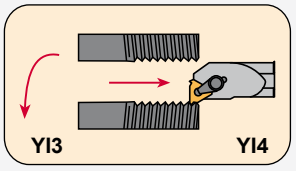
**Gewinde rechts – Werkzeug rechts**



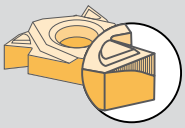
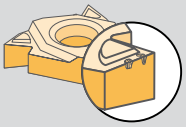
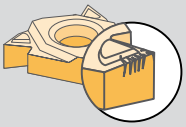
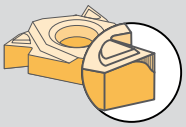
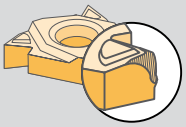
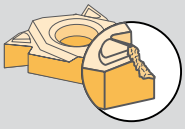




**Gewinde links – Werkzeug links**



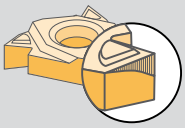
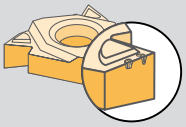
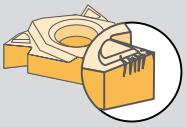
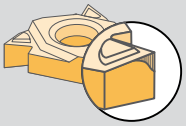
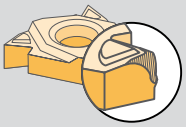
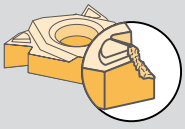



## *Threading insert wear and tool life*

| | Problem | Remedy |
|---|---|---|
| **Rapid flank wear**  | ▼ Cutting speed too high.<br>▼ Lack of coolant.<br>▼ Infeed per pass too small - too many passes.<br>▼ Incorrect grade. | ▲ Reduce the cutting speed.<br>▲ Increase the coolant supply.<br>▲ Increase the depth of infeed for the smallest infeed depths - reduce the number of passes.<br>▲ Select a more wear resistant grade. |
| **Edge frittering**  | ▼ Instability of workholding and/or tool set-up. | ▲ Check rigidity of operation.<br>▲ Select a tougher grade. |
| **Edge spalling**  | ▼ Intermittent coolant supply. | ▲ Position coolant flow and/or increase coolant supply. |
| **Uneven flank wear**  | ▼ Incorrect method of infeed.<br>▼ Incorrect angle of inclination. | ▲ In case of flank infeed use modified flank infeed. Decrease infeed angle 3-5°.<br>▲ Correct the angle on inclination according to the diagram. |
| **Excessive plastic deformation**  | ▼ Infeed per pass too big - too few passes.<br>▼ Lack of coolant.<br>▼ Cutting speed too high.<br>▼ Incorrect grade.<br>▼ Excessive stock removal from crest. | ▲ Decrease the depth of infeed for the biggest depths. - Increase the number of passes.<br>▲ Increase coolant supply.<br>▲ Reduce the cutting speed.<br>▲ Select a harder grade.<br>▲ Check the volume of the material above the crest. |
| **Insert breakage**  | ▼ Instability.<br>▼ Lack of chip control.<br>▼ Excessive plastic deformation.<br>▼ Intermittent or inadequate coolant supply.<br>▼ Incorrect preparation of the operation. | ▲ Check rigidity of operation.<br>▲ Select a tougher grade. Select modified flank infeed.<br>▲ Machine with same infeed per pass.<br>▲ Direct coolant flow and/or increase coolant supply.<br>▲ Check dimension of blank. |
| **Shallow thread profile** | ▼ Wrong centre height.<br>▼ Insert not cresting.<br>▼ Excessive tool wear. | ▲ Adjust cutting edge height.<br>▲ Check dimension of blank.<br>▲ Change insert earlier. |
| **Incorrect thread profile** | ▼ Incorrect tool setting. | ▲ Correct tool setting. |
| **Lack of chip control** | ▼ Incorrect depth of infeed per pass.<br>▼ Radial infeed. | ▲ For modified flank infeed use 3-5°.<br>▲ Use geometry with modified flank infeed 1°. |
| **Bad surface finish** | ▼ Cutting speed too low.<br>▼ Incorrect angle of inclination.<br>▼ Flank infeed. | ▲ Increase the cutting speed.<br>▲ Correct the angle of inclination according to diagram.<br>▲ Use modified flank infeed or radial infeed. |

C

## *Verschleiß und Standzeit der Wendeplatte zum Gewindedrehen*

| | Problem | Ursache und Maßnahmen |
|---|---|---|
| **Schneller Freiflächenverschleiß**  | ▼ Zu hohe Schnittgeschwindigkeit.<br>▼ Mangel an Kühlmittel.<br>▼ Zustellungstiefe pro Durchgang zu niedrig – zu viele Durchgänge.<br>▼ Nicht korrekte Plattensorte. | ▲ Schnittgeschwindigkeit reduzieren.<br>▲ Kühlmittelzufuhr erhöhen.<br>▲ Für kleine Zustellungen, die Zustellungstiefe erhöhen – Anzahl der Durchgänge reduzieren.<br>▲ Eine Sorte mit höherem Widerstand gegen Verschleißfestigkeit wählen. |
| **Absplittern der Schneidkante**  | ▼ Instabilität des Werkstückes und/oder des Werkzeuges | ▲ Stabilität der Operation kontrollieren.<br>▲ Eine härtere Sorte wählen. |
| **Kammrisse**  | ▼ Unterbrochene Kühlmittelzufuhr. | ▲ Kühlmittel kontrollieren und/oder Zufuhr erhöhen. |
| **Ungleichmäßiger Freiflächenverschleiß**  | ▼ Falsche Methode der Flankenzustellung.<br>▼ Falscher Neigungswinkel der Wendeplatte. | ▲ Zustellmethode ändern. Zustellwinkel 3-5º vermindern.<br>▲ Neigungswinkel gemäß Diagramm ändern. |
| **Übermäßige plastische Verformung**  | ▼ Zustellungstiefe pro Durchgang zu groß – zu wenige Durchgänge.<br>▼ Mangel an Kühlmittel.<br>▼ Zu hohe Schnittgeschwindigkeit.<br>▼ Nicht korrekte Plattensorte.<br>▼ Zuviel Materialabnahme an der Wendeplattenspitze. | ▲ Zustellungstiefe reduzieren - Anzahl der Durchgänge erhöhen.<br>▲ Kühlmittelzufuhr erhöhen.<br>▲ Schnittgeschwindigkeit reduzieren.<br>▲ Eine härtere Sorte wählen.<br>▲ Materialmenge an der Wendeplattenspitze kontrollieren. |
| **Plattenbruch**  | ▼ Instabilität.<br>▼ Unkontrollierte Späne.<br>▼ Übermäßige plastische Verformung.<br>▼ Unterbrochene oder ungeeignete Kühlmittelzufuhr.<br>▼ Falsche Vorbereitung des Vorgangs. | ▲ Stabilität der Operation kontrollieren.<br>▲ Eine härtere Sorte wählen. Modifizierte Flankenzustellung wählen.<br>▲ Mit derselben Zustellung per Steigung bearbeiten.<br>▲ Kühlmittelzufuhr kontrollieren und/oder Zufuhr erhöhen.<br>▲ Die Abmessung der Wendeplatte kontrollieren. |
| **Zu kleines Gewindeprofil** | ▼ Falsche Spitzenhöhe.<br>▼ Plattenbruch.<br>▼ Übermäßiger Verschleiß. | ▲ Schneidkantenhöhe einstellen.<br>▲ Die Abmessung der Wendeplatte kontrollieren.<br>▲ Wendeplatte früher wechseln. |
| **Mangelhaftes Gewindeprofil** | ▼ Falsche Werkzeug/Wendeplattenkombination. | ▲ Richtige Werkzeug/Wendeplattenkombination wählen. |
| **Schlechte Spankontrolle** | ▼ Falsche Tiefe der Zustellung per Steigung.<br>▼ Radiale Zustellung. | ▲ Modifizierte Flankenzustellung von 3-5º verwenden.<br>▲ Geometrien mit modifizierter Flankenzustellung von 1º wählen. |
| **Schlechte Oberflächengüte** | ▼ Zu niedrige Schnittgeschwindigkeit.<br>▼ Nicht korrekter Neigungswinkel.<br>▼ Flankenzustellung. | ▲ Schnittgeschwindigkeit erhöhen.<br>▲ Neigungswinkel gemäß Diagramm korrigieren.<br>▲ Modifizierte Flankenzustellung oder radiale Zustellung verwenden. |



# CERAMIC
# KERAMIK

D

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## *Ceramic inserts*
## *Keramik-Wendeschneidplatten*


**CNGA**



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**CNGN**



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*Seite D03* 0°

**CNGX**



*Page*
*Seite D03* 0°

**DNGA**



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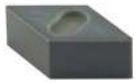
*Seite D03* 0°

**DNGN**



*Page*
*Seite D03* 0°

**DNGX**



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**ENGN**



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*Seite D04* 0°

**GWG**



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*Seite D04* 3°

**RCGX**



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*Seite D04* 7°

**RNGN**



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*Seite D04* 0°

**RPGN**



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**SNGA**



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*Seite D05* 0°

**SNGN**



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**SNGN**



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**SNGX**



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**TNGA**



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**TNGN**



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**VNGA**



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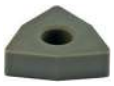
**WNGA**



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# Ceramic inserts
# Keramik-Wendeschneidplatten

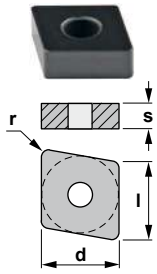
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

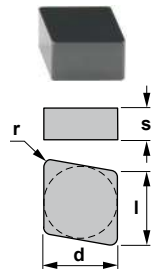
| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | | | |
| | | CX6 | | | |
| | | CW1 | | | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | | | |
| | | CW1 | | | |
| H | Hard materials Harte Materialien | CC7 | | | |




## CNGA

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte.

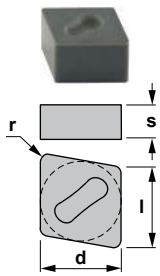
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| CNGA 120404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | ● | |
| CNGA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | ● | |
| CNGA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | ● | | | ● | |




## CNGN

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte.

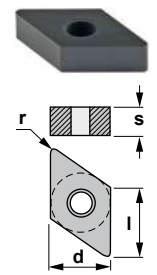
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| CNGN 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | ● | | ● |
| CNGN 120412 | 12,90 | 4,76 | 12,70 | 1,2 | | | ● | | ● |
| CNGN 120708 | 12,90 | 7,94 | 12,70 | 0,8 | | | ● | | ● |
| CNGN 120712 | 12,90 | 7,94 | 12,70 | 1,2 | | | ● | | ● |
| CNGN 120716 | 12,90 | 7,94 | 12,70 | 1,6 | | | | | ● |




## CNGX

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte.

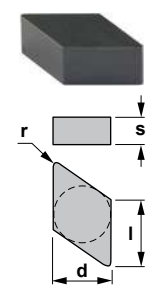
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| CNGX 120708 | 12,90 | 7,94 | 12,70 | 0,8 | ● | ● | | | |
| CNGX 120712 | 12,90 | 7,94 | 12,70 | 1,2 | ● | ● | | | |
| CNGX 120716 | 12,90 | 7,94 | 12,70 | 1,6 | ● | ● | | | |
| CNGX 160712 | 16,10 | 7,94 | 15,87 | 1,2 | ● | | | | |
| CNGX 160716 | 16,10 | 7,94 | 15,87 | 1,6 | ● | ● | | | |




## DNGA

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| DNGA 150404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | ● | |
| DNGA 150408 | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | ● | |
| DNGA 150412 | 12,90 | 4,76 | 12,70 | 1,2 | ● | | | ● | |




## DNGN

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| DNGN 150708 | 15,50 | 7,94 | 12,70 | 0,8 | | | ● | | ● |
| DNGN 150712 | 15,50 | 7,94 | 12,70 | 1,2 | | | ● | | ● |
| DNGN 150716 | 15,50 | 7,94 | 12,70 | 1,6 | | | ● | | |

# Ceramic inserts
# Keramik-Wendeschneidplatten

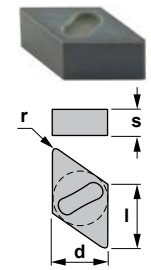
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

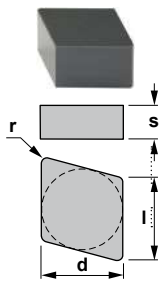
| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | | | |
| | | CX6 | | | |
| | | CW1 | | | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | | | |
| | | CW1 | | | |
| H | Hard materials Harte Materialien | CC7 | | | |




## DNGX

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte.

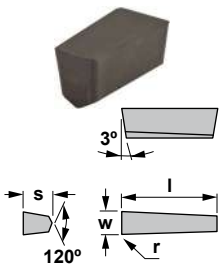
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| DNGX 120708 | 12,20 | 7,94 | 10,00 | 0,8 | ● | | | | |
| DNGX 120712 | 12,20 | 7,94 | 10,00 | 1,2 | ● | | | | |
| DNGX 120716 | 12,20 | 7,94 | 10,00 | 1,6 | ● | | | | |
| DNGX 150708 | 15,50 | 7,94 | 12,70 | 0,8 | ● | | | | |
| DNGX 150712 | 15,50 | 7,94 | 12,70 | 1,2 | ● | ● | | | |
| DNGX 150716 | 15,50 | 7,94 | 12,70 | 1,6 | ● | ● | | | |




## ENGN

75° rhombic negative insert.
75° rhombische negative Wendeschneidplatte.

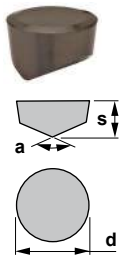
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| ENGN 130708 | 13,15 | 7,94 | 12,70 | 0,8 | | | ● | | |
| ENGN 130712 | 13,15 | 7,94 | 12,70 | 1,2 | | | ● | | |
| ENGN 130716 | 13,15 | 7,94 | 12,70 | 1,6 | | | ● | | |
| ENGN 130720 | 13,15 | 7,94 | 12,70 | 2,0 | | | ● | | |




## GWG

Positive insert.
Positive Wendeschneidplatte.

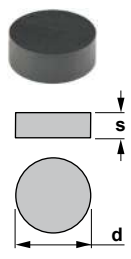
| Reference / Bezeichnung | l | s | w | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| GWG 04 M | 12,00 | 5,00 | 4,00 | 0,5 | ○ | | | | |
| GWG 05 M | 12,00 | 5,00 | 5,00 | 0,8 | ○ | | | | |
| GWG 06 M | 15,00 | 7,50 | 6,00 | 0,8 | ○ | | | | |
| GWG 07 | 15,00 | 7,50 | 7,00 | 0,8 | ○ | | | | |
| GWG 08 | 15,00 | 7,50 | 8,00 | 0,8 | ○ | | | | |
| GWG 10 | 15,00 | 7,50 | 10,00 | 0,8 | ○ | | | | |




## RCGX

Round positive insert.
Runde positive Wendeschneidplatte.

| Reference / Bezeichnung | s | d | a | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|
| RCGX 060700 | 7,94 | 6,35 | 120° | | | ● | | ● |
| RCGX 090700 | 7,94 | 9,52 | 120° | | ● | ● | | ● |
| RCGX 120700 | 7,94 | 12,70 | 120° | | ● | ● | | ● |
| RCGX 151000 | 10,00 | 15,87 | 120° | | | ● | | ● |
| RCGX 191000 | 10,00 | 19,05 | 120° | | ● | ● | | ● |
| RCGX 251200 | 12,00 | 25,40 | 140° | | | ● | | |




## RNGN

Round negative insert.
Runde negative Wendeschneidplatte.

| Reference / Bezeichnung | s | d | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|
| RNGN 120400 | 4,76 | 12,70 | | ● | | ● | ● |
| RNGN 120700 | 7,94 | 12,70 | | ● | | ● | ● |

# Ceramic inserts
# Keramik-Wendeschneidplatten

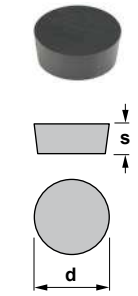
**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

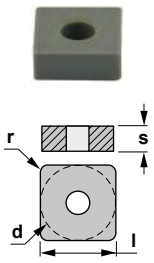
| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | | | |
| | | CX6 | | | |
| | | CW1 | | | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | | | |
| | | CW1 | | | |
| H | Hard materials Harte Materialien | CC7 | | | |




## RPGN

Round negative insert.
Runde negative Wendeschneidplatte.

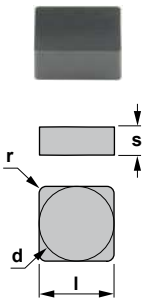
| Reference / Bezeichnung | s | d | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|
| RPGN 060200 | 2,38 | 6,35 | | ● | | | |
| RPGN 090300 | 3,18 | 9,52 | | ● | | | |
| RPGN 120400 | 4,76 | 12,70 | | ● | | | |




## SNGA

Square negative insert.
Vierkantige negative Wendeschneidplatte.

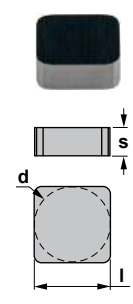
| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| SNGA 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | ● | |
| SNGA 120412 | 12,70 | 4,76 | 12,70 | 1,2 | ● | | | ● | |
| SNGA 120416 | 12,70 | 4,76 | 12,70 | 1,6 | ● | | | ● | |




## SNGN

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| SNGN 120404 | 12,70 | 4,76 | 12,70 | 0,4 | | | ● | | |
| SNGN 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | ● | | |
| SNGN 120412 | 12,70 | 4,76 | 12,70 | 1,2 | ● | | ● | | |
| SNGN 120416 | 12,70 | 4,76 | 12,70 | 1,6 | | | ● | | |
| SNGN 120420 | 12,70 | 4,76 | 12,70 | 2,0 | | | ○ | | |
| SNGN 120424 | 12,70 | 4,76 | 12,70 | 2,4 | | | ○ | | |
| SNGN 120708 | 12,70 | 7,94 | 12,70 | 0,8 | | ● | ● | | ● |
| SNGN 120712 | 12,70 | 7,94 | 12,70 | 1,2 | | ● | ● | | ● |
| SNGN 120716 | 12,70 | 7,94 | 12,70 | 1,6 | | ● | ● | | ● |
| SNGN 120720 | 12,70 | 7,94 | 12,70 | 2,0 | | | ○ | | |




## SNGN

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|
| SNGN 1204ENT | 12,70 | 4,76 | 12,70 | | ● | | | |

# Ceramic inserts
# Keramik-Wendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

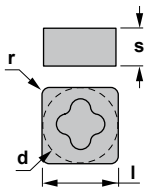
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | ● | | |
| | | CX6 | ● | ● | ● |
| | | CW1 | ● | ● | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | ● | ● | ● |
| | | CW1 | ● | ● | |
| H | Hard materials Harte Materialien | CC7 | ● | | |



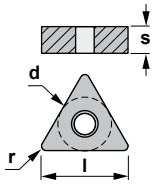



## SNGX

Square negative insert.
Vierkantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| SNGX 120708 | 12,70 | 7,94 | 12,70 | 0,8 | ● | | | | |
| SNGX 120712 | 12,70 | 7,94 | 12,70 | 1,2 | ● | | | | |
| SNGX 120716 | 12,70 | 7,94 | 12,70 | 1,6 | ● | | | | |
| SNGX 150708 | 15,87 | 7,94 | 15,87 | 0,8 | ○ | | | | |
| SNGX 150712 | 15,87 | 7,94 | 15,87 | 1,2 | ● | ● | | | |
| SNGX 150716 | 15,87 | 7,94 | 15,87 | 1,6 | ● | ● | | | |



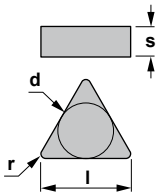



## TNGA

Triangular negative insert.
Dreikantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| TNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | |
| TNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | |
| TNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | | ● | |
| TNGA 160416 | 16,50 | 4,76 | 9,52 | 1,6 | | | | ○ | |






## TNGN

Triangular negative insert.
Dreikantige negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| TNGN 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | ● | | |
| TNGN 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | ● | | |
| TNGN 160416 | 16,50 | 4,76 | 9,52 | 1,6 | | | ● | | |
| TNGN 160708 | 16,50 | 7,94 | 9,52 | 0,8 | | | ● | | |
| TNGN 160712 | 16,50 | 7,94 | 9,52 | 1,2 | | | ○ | | |

# Ceramic inserts
# Keramik-Wendeschneidplatten

**USE CLASSIFICATION**
- Continuous
- Slight interruption
- Interruption

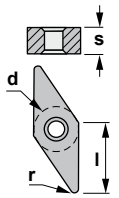
**EINSATZBEREICH**
- Ununterbrochen
- Leicht unterbrochen
- Unterbrochen

**AVAILABILITY**
- Standard item
- Check availability

**VERFÜGBARKEIT**
- Standard-Artikel
- Verfügbarkeit prüfen

| Material Werkstoff | | Grade Sorte | ● Continuous Ununterbrochen | ◕ Slight interruption Leicht unterbrochen | ✣ Interruption Unterbrochen |
|---|---|---|---|---|---|
| K | Cast iron Guß | CC2 | | | |
| | | CX6 | | | |
| | | CW1 | | | |
| S | Heat-resistant alloys Hitzebeständige Legierungen | CX9 | | | |
| | | CW1 | | | |
| H | Hard materials Harte Materialien | CC7 | | | |

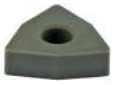


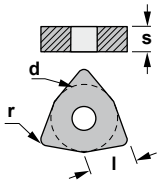



## VNGA

35° rhombic negative insert.
35° rhombische negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| VNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | ● | |
| VNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | ● | |
| VNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | | ● | |






## WNGA

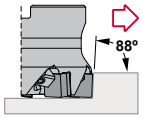
80° trigon negative insert.
80° trigon negative Wendeschneidplatte.

| Reference / Bezeichnung | l | s | d | r | CX6 | CX9 | CC2 | CC7 | CW1 |
|---|---|---|---|---|---|---|---|---|---|
| WNGA 080408 | 8,14 | 4,76 | 12,70 | 0,8 | ● | | | ● | |
| WNGA 080412 | 8,14 | 4,76 | 12,70 | 1,2 | ● | | | ● | |

D

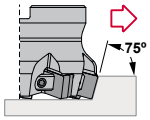
## *Ceramic milling cutters*
## *Fräser für Keramik-Wendeschneidplatten*

**1242.90 88º**
Square and facing 88º
Eck- und Planfräser 88º



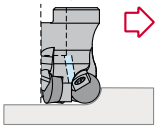

*Page* *Seite D10* SN.. 1204..

**1442.90 75º**
Facing 75º
Planfräser 75º



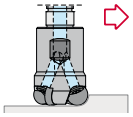

*Page* *Seite D11* SN.. 1204..

**5540.90**
Facing and copying
Plan- und Kopierfräser



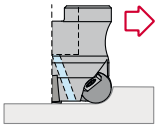
*Page* *Seite D12* RPGN 1204..

**55$\frac{2}{4}$0.06**
Facing and copying
Plan- und Kopierfräser



*Page* *Seite D13* RPGN 0602.. RPGN 1204..

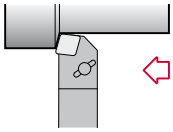
**5542.90**
Facing and copying
Plan- und Kopierfräser



*Page* *Seite D14* RNGN 1207..

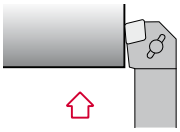
## *Toolholders*
## *Klemmhalter*

**CCBN 75º**



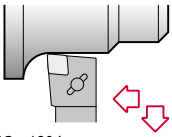
*Page* *Seite D16* CNG.. 1204.. CNG.. 1207.. CNG.. 1607..

**CCKN 75º**



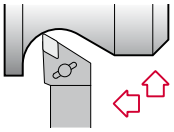
*Page* *Seite D17* CNG.. 1204.. CNG.. 1207..

**CCLN 95º**



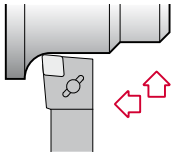
CNG.. 1204.. CNG.. 1207.. CNG.. 1607.. *Page* *Seite D18*

**CDJN 93º**



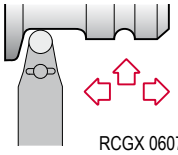
*Page* *Seite D19* DNG.. 1204.. DNG.. 1207.. DNG.. 1507..

**CELN 97º30'**



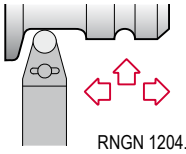
*Page* *Seite D20* ENGN 1307..

**CRDC**



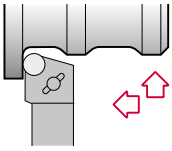
RCGX 0607.. *Page* *Seite D21* .. RCGX 2512..

**CRDN**



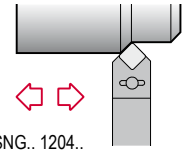
RNGN 1204.. *Page* *Seite D22* .. RNGN 2507..

**CRSN**



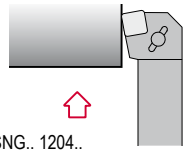
*Page* *Seite D23* RNGN 1204.. RNGN 1207..

**CSDN 45º**



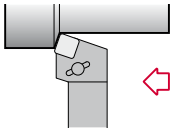
SNG.. 1204.. SNG.. 1207.. SNG.. 1507.. *Page* *Seite D24*

**CSKN 75º**



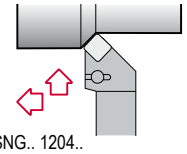
SNG.. 1204.. SNG.. 1207.. SNG.. 1507.. *Page* *Seite D25*

**CSRN 75º**



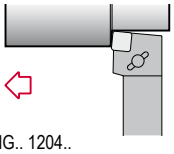
SNG.. 1204.. SNG.. 1207.. SNG.. 1507.. *Page* *Seite D26*

**CSSN 45º**



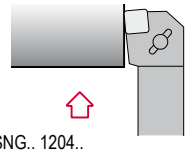
SNG.. 1204.. SNG.. 1207.. SNG.. 1507.. *Page* *Seite D27*

**CSXN 85º**



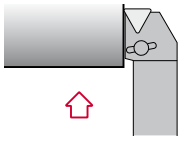
SNG.. 1204.. SNG.. 1207.. SNG.. 1507.. *Page* *Seite D28*

**CSYN 85º**



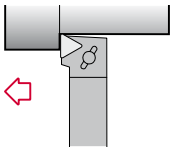
SNG.. 1204.. SNG.. 1207.. SNG.. 1507.. *Page* *Seite D29*

**CTFN 90º**



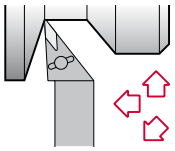
TNGN 1604.. TNGN 1607.. *Page* *Seite D30*

**CTGN 90º**



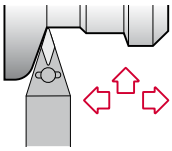
*Page* *Seite D31* TNGN 1604.. TNGN 1607..

**CVJN 93º**



*Page* *Seite D32* VNG.. 1604.. VNG.. 1607..

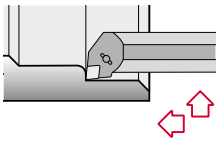
**CVVN 62º30'**



*Page* *Seite D33* VNG.. 1604.. VNG.. 1607..

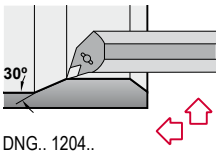
## *Boring bars*
## *Bohrstangen*

### CCLN 95º



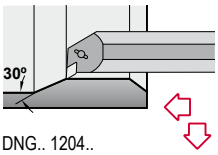
*Page* CNG.. 1204..
*Seite D34* CNG.. 1207..

### CDQN 107º30'



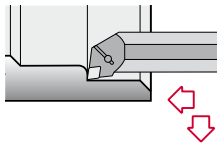

DNG.. 1204..
..
DNG.. 1507..
*Page*
*Seite D35*

### CDUN 93º



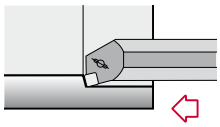

DNG.. 1204..
..
DNG.. 1507..
*Page*
*Seite D36*

### CELN 97º30'



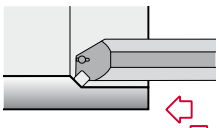
*Page*
*Seite D37*
ENGN 1307..

### CSKN 75º



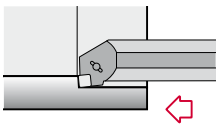
*Page* SNG.. 1204..
*Seite D38* SNG.. 1207..

### CSSN 45º



SNG.. 1204..
SNG.. 1207..
SNG.. 1507..
*Page*
*Seite D39*

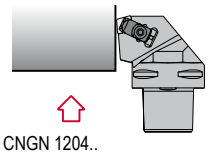
### CSYN 85º



*Page* SNG.. 1204..
*Seite D40* SNG.. 1207..

## *Top clamp ceramic PSC*
## *PSC Keramikhalter mit oberer Klemmung*

### CCKN 75º



CNGN 1204..
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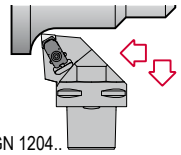
CNGN 1907..
*Page*
*Seite D42*

### CCLN 95º



CNGN 1204..
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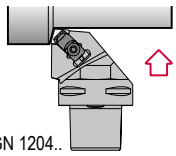
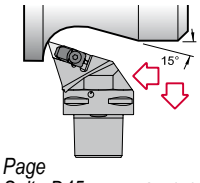
CNGN 1907..
*Page*
*Seite D43*

### CCRN 75º



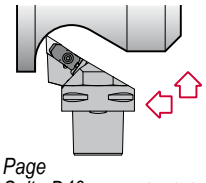
CNGN 1204..
..
CNGN 1907..
*Page*
*Seite D44*

### CDHN 107º30'



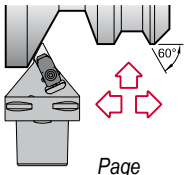

*Page*
*Seite D45*
DNGN 1507..

### CDJN 93º



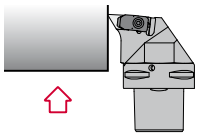
*Page*
*Seite D46*
DNGN 1507..

### CDNN 63º



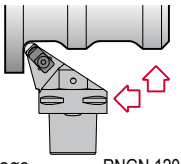

*Page*
DNGN 1507..
*Seite D47*

### CDUN 93º



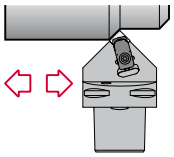
*Page*
*Seite D48*
DNGN 1507..

### CRSN



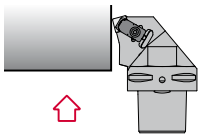
*Page* RNGN 1204..
*Seite D49* RNGN 1207..

### CSDN 45º



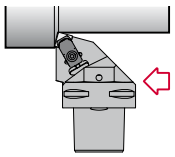
SNGN 1204..
SNGN 1207..
*Page*
*Seite D50*

### CSKN 75º



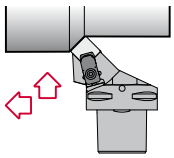
*Page* SNGN 1204..
*Seite D51* SNGN 1207..

### CSRN 75º

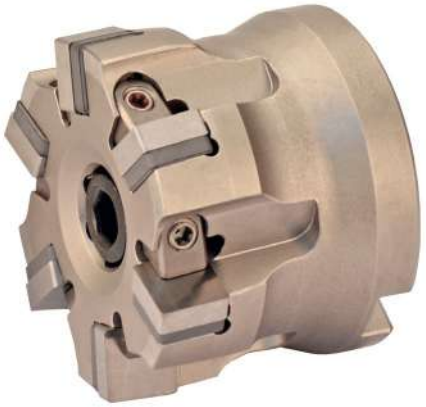


*Page* SNGN 1204..
*Seite D52* SNGN 1207..

### CSSN 45º



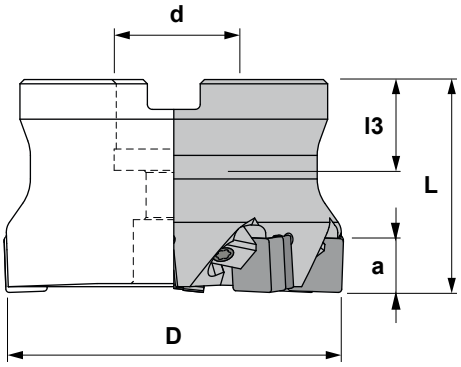
*Page* SNGN 1204..
*Seite D53* SNGN 1207..



Characteristics:

Negative milling cutter with 88° entering angle. Its strong inserts accept high cutting depths and high feed per teeth.

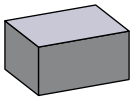
First option for cast iron milling.

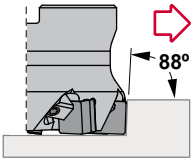



Eigenschaften:

Negativer Fräser mit 88° Einstellwinkel. Seine starken Wendeschneidplatten akzeptieren einen hohen Vorschub pro Zahn.

Erste Wahl zum Fräsen von Guß.






# 1242.90 88°

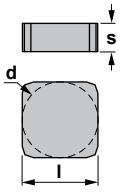
| Reference Bezeichnung | | D | L | l3 | a | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1242.90.063 | 6 | 63 | 50 | 22 | 12 | 27 | SN.. 1204.. | 0,980 |
| 1242.90.080 | 8 | 80 | 50 | 22 | 12 | 27 | SN.. 1204.. | 1,240 |
| 1242.90.100 | 10 | 100 | 50 | 25 | 12 | 32 | SN.. 1204.. | 1,920 |
| 1242.90.125 | 12 | 125 | 63 | 29 | 12 | 40 | SN.. 1204.. | 3,360 |

| Reference Bezeichnung | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|
| 1242.90.063 | 1630 | 3212 | 6226 | 1266 | 5515 | - | 912,10 | 3.0 |
| 1242.90.080 | 1630 | 3212 | 6226 | 1266 | 5515 | - | 912,12 | 3.0 |
| 1242.90.100 | 1630 | 3212 | 6226 | 1266 | - | 5615 | 912,16 | 3.0 |
| 1242.90.125 | 1630 | 3212 | 6226 | 1266 | - | 5615 | - | 3.0 |

## SN..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. D05

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |




SNGN

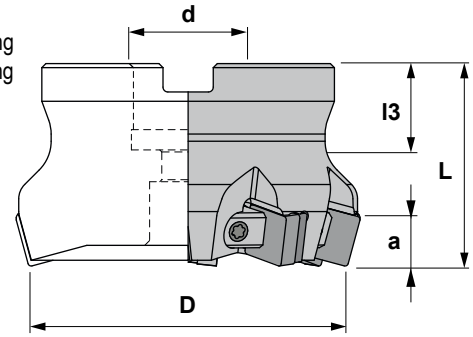


SNGN

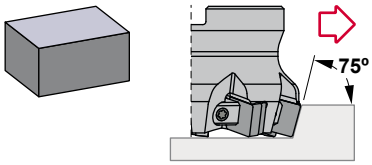




Characteristics:
Negative milling cutter with 75° entering angle. Its strong inserts accept high cutting depths and high feed per teeth.
First option for cast iron milling.




Eigenschaften:
Negativer Fräser mit 75° Einstellwinkel. Seine starken Wendeschneidplatten akzeptieren einen hohen Vorschub pro Zahn.
Erste Wahl zum Fräsen von Guß.




D

# 1442.90 75°

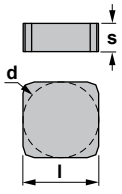
| Reference Bezeichnung | | D | L | l3 | a | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1442.90.063 | 6 | 63 | 50 | 22 | 11 | 27 | SN.. 1204.. | 0,980 |
| 1442.90.080 | 8 | 80 | 50 | 22 | 11 | 27 | SN.. 1204.. | 1,240 |
| 1442.90.100 | 10 | 100 | 50 | 25 | 11 | 32 | SN.. 1204.. | 1,920 |
| 1442.90.125 | 12 | 125 | 63 | 29 | 11 | 40 | SN.. 1204.. | 3,360 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| 1442.90.063 | 1630 | 3212 | 6226 | 1266 | 5515 | - | 3.0 |
| 1442.90.080 | 1630 | 3212 | 6226 | 1266 | 5515 | - | 3.0 |
| 1442.90.100 | 1630 | 3212 | 6226 | 1266 | - | 5615 | 3.0 |
| 1442.90.125 | 1630 | 3212 | 6226 | 1266 | - | 5615 | 3.0 |

## SN..

Square negative inserts. D05
Vierkantige negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |




SNGN

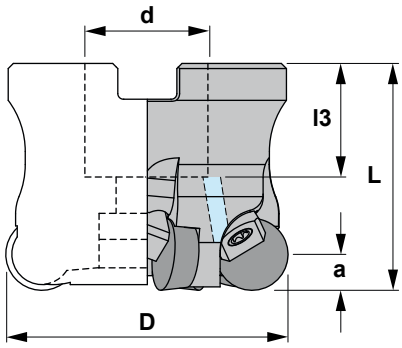


SNGN

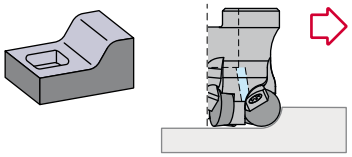




Characteristics:
Round insert cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing).




Eigenschaften:
Fräser mit runden Wendeschneidplatten zum Nutenfräsen, Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).



## 5540.90

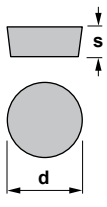
| Reference Bezeichnung | | D | L | l3 | a | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 5540.90.040 | 4 | 40 | 40 | 18 | 6,35 | 16 | RPGN 1204.. | 0,200 |
| 5540.90.050 | 5 | 50 | 40 | 20 | 6,35 | 22 | RPGN 1204.. | 0,330 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 5540.90.040 | 1058 | 6226 | 1166 | 5515 | 3.0 |
| 5540.90.050 | 912,10 | 6226 | 1166 | 5515 | 3.0 |

## RPGN

Round negative insert. D05
Runde negative Wendeschneidplatte.

| Reference / Bez. | s | d |
|---|---|---|
| RPGN 1204.. | 4,76 | 12,70 |

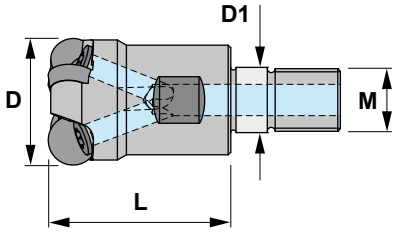



RPGN

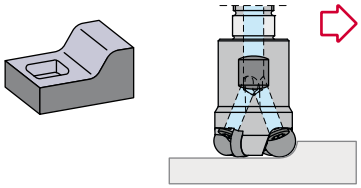




Characteristics:
Round insert end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing)




Eigenschaften:
Modularfräser mit runden Wendeschneidplatten zum Nutenfräsen, Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).



D

## 55 2/4 0.06

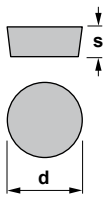
| Reference Bezeichnung | | L | M | D | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 5520.06.016 | 2 | 23 | M8 | 16 | 8,5 | RPGN 0602.. | 0,030 |
| 5520.06.020 | 3 | 30 | M10 | 20 | 10,5 | RPGN 0602.. | 0,060 |
| 5530.06.025 | 3 | 35 | M12 | 25 | 12,5 | RPGN 0903.. | 0,100 |
| 5530.06.032 | 4 | 43 | M16 | 32 | 16,5 | RPGN 0903.. | 0,210 |
| 5540.06.032 | 3 | 43 | M16 | 32 | 16,5 | RPGN 1204.. | 0,220 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 5520.06.016 | 1240 | 5515 | 3.0 |
| 5520.06.020 | 1240 | 5515 | 3.0 |
| 5530.06.025 | 1250 | 5520 | 4.0 |
| 5530.06.032 | 1250 | 5520 | 4.0 |
| 5540.06.032 | 1260 | 5525 | 5.0 |

## RPGN

Round negative insert. D05
Runde negative Wendeschneidplatte.

| Reference / Bez. | s | d |
|---|---|---|
| RPGN 0602.. | 2,38 | 6,35 |
| RPGN 0903.. | 3,18 | 9,52 |
| RPGN 1204.. | 4,76 | 12,70 |




RPGN

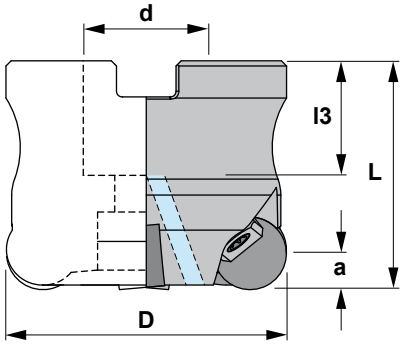




Characteristics:

Round negative insert cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.

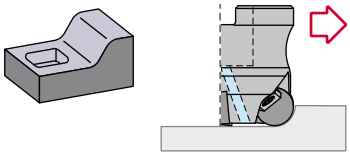
It can be used in only one pass (roughing and finishing).




Eigenschaften:

Fräser mit runden negativen Wendeschneidplatten zum Nutenfräsen, Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.

Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).



## 5542.90

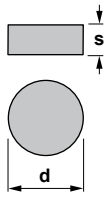
| Reference Bezeichnung | | D | L | l3 | a | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 5542.90.050 | 4 | 50 | 40 | 20 | 6,35 | 22 | RNGN 1207.. | 0,350 |
| 5542.90.063 | 5 | 63 | 50 | 20 | 6,35 | 22 | RNGN 1207.. | 0,800 |
| 5542.90.080 | 6 | 80 | 50 | 22 | 6,35 | 27 | RNGN 1207.. | 1,250 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 5542.90.050 | 912,10 | 6226 | 1166 | 5515 | 3.0 |
| 5542.90.063 | 912,10 | 6226 | 1266 | 5515 | 3.0 |
| 5542.90.080 | 912,12 | 6226 | 1266 | 5515 | 3.0 |

## RNGN

Round negative insert. D04
Runde negative Wendeschneidplatte.

| Reference / Bez. | s | d |
|---|---|---|
| RNGN 1207.. | 7,94 | 12,70 |




RNGN





## Ceramic milling cutters

*Ceramic inserts run faster than carbide inserts, so productivity is highly increased in high-temperature machining.*

## Fräser für Keramik-Wendeschneidplatten

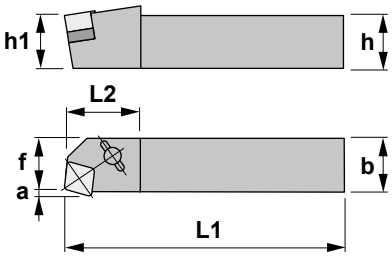
*Die Keramik-Wendeschneidplatten arbeiten schneller als die Hartmetall-Wendeschneidplatten. Auf dieser Weise erhöht sich die Produktivität bei hohen Temperaturen.*



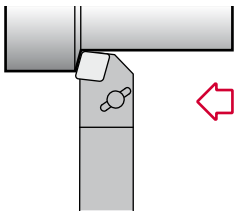




Characteristics:
Toolholder for external turning applications equipped with rhombic negative inserts (angle 80°).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer rhombischen negativen Wendeschneidplatte (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CCBN 75°

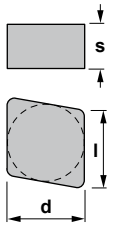
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CCBN R/L 2525 M12-4CD | 25 | 25 | 150 | 34 | 22 | 3,10 | CNGN 1204.. | 0,750 |
| CCBN R/L 2525 M12-7CD | 25 | 25 | 150 | 34 | 22 | 3,10 | CNGN 1207.. | 0,750 |
| CCBN R/L 3225 P12-4CD | 32 | 25 | 170 | 34 | 22 | 3,10 | CNGN 1204.. | 1,050 |
| CCBN R/L 3225 P12-7CD | 32 | 25 | 170 | 34 | 22 | 3,10 | CNGN 1207.. | 1,050 |
| CCBN R/L 2525 M16-CD | 25 | 25 | 150 | 34 | 27 | 3,82 | CNGN 1607.. | 0,750 |
| CCBN R/L 3225 P16-CD | 32 | 25 | 170 | 34 | 27 | 3,82 | CNGN 1607.. | 1,050 |
| CCBN R/L 2525 M12-4CX | 25 | 25 | 150 | 34 | 22 | 3,10 | CNGX 1204.. | 0,750 |
| CCBN R/L 2525 M12-7CX | 25 | 25 | 150 | 34 | 22 | 3,10 | CNGX 1207.. | 0,750 |
| CCBN R/L 3225 P12-4CX | 32 | 25 | 170 | 34 | 22 | 3,10 | CNGX 1204.. | 1,050 |
| CCBN R/L 3225 P12-7CX | 32 | 25 | 170 | 34 | 22 | 3,10 | CNGX 1207.. | 1,050 |
| CCBN R/L 2525 M16-CX | 25 | 25 | 150 | 34 | 27 | 3,82 | CNGX 1607.. | 0,750 |
| CCBN R/L 3225 P16-CX | 32 | 25 | 170 | 34 | 27 | 3,82 | CNGX 1607.. | 1,050 |

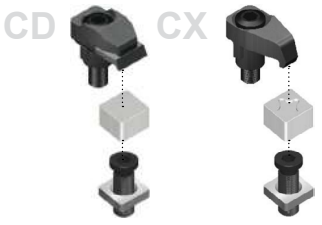
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| CCBN R/L 2525 M12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCBN R/L 2525 M12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCBN R/L 3225 P12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCBN R/L 3225 P12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCBN R/L 2525 M16-CD | ICSN 533 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CCBN R/L 3225 P16-CD | ICSN 533 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CCBN R/L 2525 M12-4CX | ICSN 454 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCBN R/L 2525 M12-7CX | ICSN 434 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCBN R/L 3225 P12-4CX | ICSN 454 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCBN R/L 3225 P12-7CX | ICSN 434 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCBN R/L 2525 M16-CX | ICSN 533 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CCBN R/L 3225 P16-CX | ICSN 533 | 1180 | - | - | 2415 | 5004 | 3.5 |

## CNG..

80° rhombic negative inserts. D03
80° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNG.. 1204.. | 12,90 | 4,76 | 12,70 |
| CNG.. 1207.. | 12,90 | 7,94 | 12,70 |
| CNG.. 1607.. | 16,10 | 7,94 | 15,88 |




CNGN

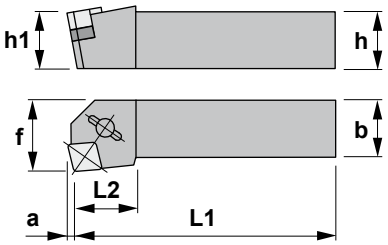


CNGX

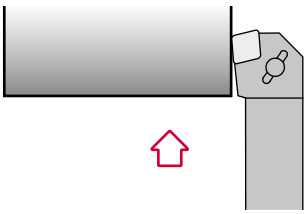




Characteristics:
Toolholder for face turning applications equipped with rhombic negative inserts (angle 80º).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer rhombischen negativen Wendeschneidplatte (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CCKN 75°

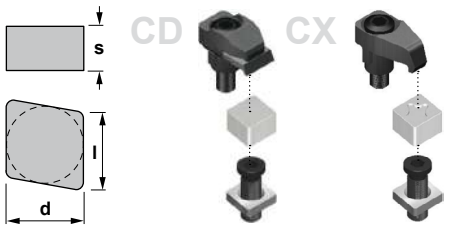
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CCKN R/L 2525 M12-4CD | 25 | 25 | 150 | 29 | 32 | 3,10 | CNGN 1204.. | 0,750 |
| CCKN R/L 2525 M12-7CD | 25 | 25 | 150 | 29 | 32 | 3,10 | CNGN 1207.. | 0,750 |
| CCKN R/L 3225 P12-4CD | 32 | 25 | 170 | 29 | 32 | 3,10 | CNGN 1204.. | 1,050 |
| CCKN R/L 3225 P12-7CD | 32 | 25 | 170 | 29 | 32 | 3,10 | CNGN 1207.. | 1,050 |
| CCKN R/L 2525 M12-4CX | 25 | 25 | 150 | 29 | 32 | 3,10 | CNGX 1204.. | 0,750 |
| CCKN R/L 2525 M12-7CX | 25 | 25 | 150 | 29 | 32 | 3,10 | CNGX 1207.. | 0,750 |
| CCKN R/L 3225 P12-4CX | 32 | 25 | 170 | 29 | 32 | 3,10 | CNGX 1204.. | 1,050 |
| CCKN R/L 3225 P12-7CX | 32 | 25 | 170 | 29 | 32 | 3,10 | CNGX 1207.. | 1,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| CCKN R/L 2525 M12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCKN R/L 2525 M12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCKN R/L 3225 P12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCKN R/L 3225 P12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCKN R/L 2525 M12-4CX | ICSN 454 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCKN R/L 2525 M12-7CX | ICSN 434 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCKN R/L 3225 P12-4CX | ICSN 454 | 1160 | - | - | 2471 | 5004 | 3.5 |
| CCKN R/L 3225 P12-7CX | ICSN 434 | 1160 | - | - | 2471 | 5004 | 3.5 |

## CNG..

80° rhombic negative inserts.
80° rhombische negative Wendeschneidplatten. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNG.. 1204.. | 12,90 | 4,76 | 12,70 |
| CNG.. 1207.. | 12,90 | 7,94 | 12,70 |




CNGN

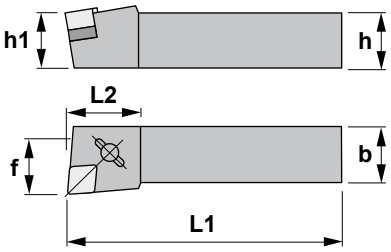


CNGX

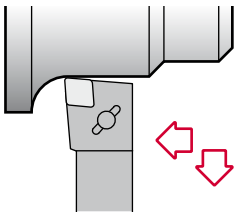




Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CCLN 95°

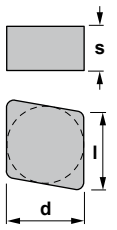
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CCLN R/L 2525 M12-4CD | 25 | 25 | 150 | 34 | 32 | CNGN 1204.. | 0,750 |
| CCLN R/L 2525 M12-7CD | 25 | 25 | 150 | 34 | 32 | CNGN 1207.. | 0,750 |
| CCLN R/L 3225 P12-4CD | 32 | 25 | 170 | 34 | 32 | CNGN 1204.. | 1,050 |
| CCLN R/L 3225 P12-7CD | 32 | 25 | 170 | 34 | 32 | CNGN 1207.. | 1,050 |
| CCLN R/L 2525 M16-CD | 25 | 25 | 150 | 34 | 32 | CNGN 1607.. | 0,750 |
| CCLN R/L 3225 P16-CD | 32 | 25 | 170 | 38 | 32 | CNGN 1607.. | 1,050 |
| CCLN R/L 2525 M12-4CX | 25 | 25 | 150 | 34 | 32 | CNGX 1204.. | 0,750 |
| CCLN R/L 2525 M12-7CX | 25 | 25 | 150 | 34 | 32 | CNGX 1207.. | 0,750 |
| CCLN R/L 3225 P12-4CX | 32 | 25 | 170 | 34 | 32 | CNGX 1204.. | 1,050 |
| CCLN R/L 3225 P12-7CX | 32 | 25 | 170 | 34 | 32 | CNGX 1207.. | 1,050 |
| CCLN R/L 2525 M16-CX | 25 | 25 | 150 | 34 | 32 | CNGX 1607.. | 0,750 |
| CCLN R/L 3225 P16-CX | 32 | 25 | 170 | 38 | 32 | CNGX 1607.. | 1,050 |

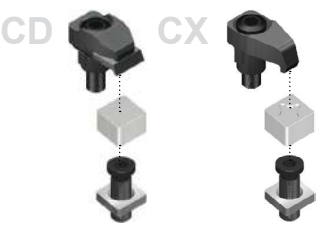
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| CCLN R/L 2525 M12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCLN R/L 2525 M12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCLN R/L 3225 P12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCLN R/L 3225 P12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CCLN R/L 2525 M16-CD | ICSN 533 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CCLN R/L 3225 P16-CD | ICSN 533 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CCLN R/L 2525 M12-4CX | ICSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CCLN R/L 2525 M12-7CX | ICSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CCLN R/L 3225 P12-4CX | ICSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CCLN R/L 3225 P12-7CX | ICSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CCLN R/L 2525 M16-CX | ICSN 533 | 1180 | - | - | 2432 | 5004 | 3.5 |
| CCLN R/L 3225 P16-CX | ICSN 533 | 1180 | - | - | 2432 | 5004 | 3.5 |

## CNG..

80° rhombic negative inserts. D03
80° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNG.. 1204.. | 12,90 | 4,76 | 12,70 |
| CNG.. 1207.. | 12,90 | 7,94 | 12,70 |
| CNG.. 1607.. | 16,10 | 7,94 | 15,88 |




CNGN

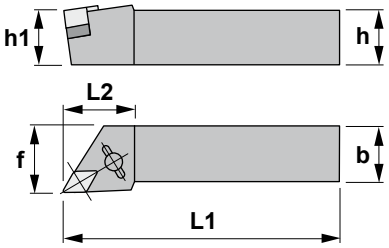


CNGX

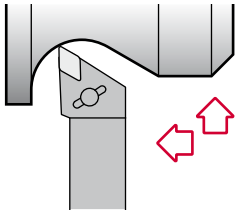




Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (55° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CDJN 93°

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CDJN R/L 2525 M12-4CD | 25 | 25 | 150 | 34 | 32 | DNGN 1204.. | 0,750 |
| CDJN R/L 2525 M12-7CD | 25 | 25 | 150 | 34 | 32 | DNGN 1207.. | 0,750 |
| CDJN R/L 3225 P12-4CD | 32 | 25 | 170 | 34 | 32 | DNGN 1204.. | 1,050 |
| CDJN R/L 3225 P12-7CD | 32 | 25 | 170 | 34 | 32 | DNGN 1207.. | 1,050 |
| CDJN R/L 2525 M15-CD | 25 | 25 | 150 | 38 | 32 | DNGN 1507.. | 0,750 |
| CDJN R/L 3225 P15-CD | 32 | 25 | 170 | 38 | 32 | DNGN 1507.. | 1,050 |
| CDJN R/L 2525 M12-4CX | 25 | 25 | 150 | 34 | 32 | DNGX 1204.. | 0,750 |
| CDJN R/L 2525 M12-7CX | 25 | 25 | 150 | 34 | 32 | DNGX 1207.. | 0,750 |
| CDJN R/L 3225 P12-4CX | 32 | 25 | 170 | 34 | 32 | DNGX 1204.. | 1,050 |
| CDJN R/L 3225 P12-7CX | 32 | 25 | 170 | 34 | 32 | DNGX 1207.. | 1,050 |
| CDJN R/L 2525 M15-CX | 25 | 25 | 150 | 38 | 32 | DNGX 1507.. | 0,750 |
| CDJN R/L 3225 P15-CX | 32 | 25 | 170 | 38 | 32 | DNGX 1507.. | 1,050 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| CDJN R/L 2525 M12-4CD | IDSN 354 | 1150 | 9416 | 2413 | - | 5004 | 3.5 |
| CDJN R/L 2525 M12-7CD | IDSN 334 | 1150 | 9416 | 2413 | - | 5004 | 3.5 |
| CDJN R/L 3225 P12-4CD | IDSN 354 | 1150 | 9416 | 2413 | - | 5004 | 3.5 |
| CDJN R/L 3225 P12-7CD | IDSN 334 | 1150 | 9416 | 2413 | - | 5004 | 3.5 |
| CDJN R/L 2525 M15-CD | IDSN 434 | 1160 | 9416 | 2417 | - | 5004 | 3.5 |
| CDJN R/L 3225 P15-CD | IDSN 434 | 1160 | 9416 | 2417 | - | 5004 | 3.5 |
| CDJN R/L 2525 M12-4CX | IDSN 354 | 1150 | - | - | 2415 | 5004 | 3.5 |
| CDJN R/L 2525 M12-7CX | IDSN 334 | 1150 | - | - | 2415 | 5004 | 3.5 |
| CDJN R/L 3225 P12-4CX | IDSN 354 | 1150 | - | - | 2415 | 5004 | 3.5 |
| CDJN R/L 3225 P12-7CX | IDSN 334 | 1150 | - | - | 2415 | 5004 | 3.5 |
| CDJN R/L 2525 M15-CX | IDSN 434 | 1160 | - | - | 2432 | 5004 | 3.5 |
| CDJN R/L 3225 P15-CX | IDSN 434 | 1160 | - | - | 2432 | 5004 | 3.5 |

**DNG..** 55° rhombic negative inserts. 55° rhombische negative Wendeschneidplatten. D03-04

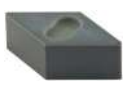
| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNG.. 1204.. | 12,20 | 4,76 | 10,00 |
| DNG.. 1207.. | 12,20 | 7,94 | 10,00 |
| DNG.. 1507.. | 15,50 | 7,94 | 12,70 |




DNGN

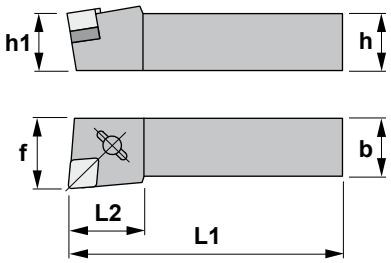


DNGX

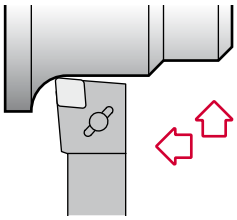




Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 75º).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (75º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CELN 97°30’

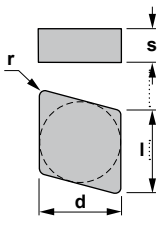
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CELN R/L 2020 K13-CD | 20 | 20 | 125 | 34 | 25 | ENGN 1307.. | 0,400 |
| CELN R/L 2525 M13-CD | 25 | 25 | 150 | 34 | 32 | ENGN 1307.. | 0,750 |
| CELN R/L 3225 P13-CD | 32 | 25 | 170 | 34 | 32 | ENGN 1307.. | 1,050 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| CELN R/L 2020 K13-CD | IESN 432 | 1161 | 9414 | 2417 | 5004 | 3.5 |
| CELN R/L 2525 M13-CD | IESN 432 | 1160 | 9414 | 2417 | 5004 | 3.5 |
| CELN R/L 3225 P13-CD | IESN 432 | 1160 | 9414 | 2417 | 5004 | 3.5 |

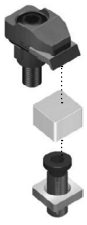
## ENGN

75º rhombic negative insert.
75° rhombische negative Wendeschneidplatte. D04

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ENGN 1307.. | 13,12 | 7,94 | 12,70 |

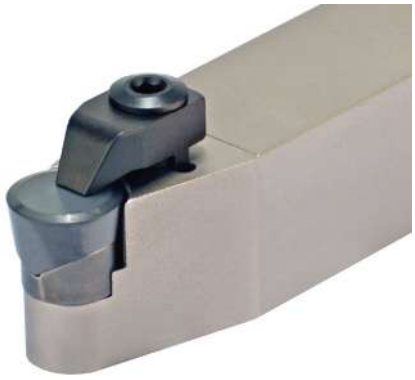



CD

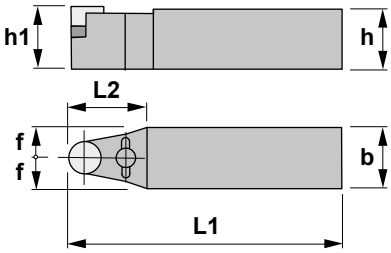


ENGN

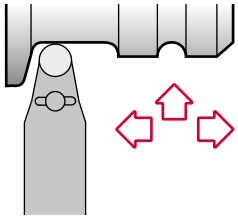




Characteristics:
Profiling toolholder equipped with round positive insert.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer runden positiven Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CRDC

| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CRDC N 2525 M06 | 25 | 25 | 150 | 28 | 12,5 | RCGX 0607.. | 0,750 |
| CRDC N 2525 M09 | 25 | 25 | 150 | 20 | 12,5 | RCGX 0907.. | 0,750 |
| CRDC N 3225 P09 | 32 | 25 | 170 | 20 | 12,5 | RCGX 0907.. | 0,750 |
| CRDC N 2525 M12 | 25 | 25 | 150 | 25 | 12,5 | RCGX 1207.. | 0,750 |
| CRDC N 3225 P12 | 32 | 25 | 170 | 25 | 12,5 | RCGX 1207.. | 1,050 |
| CRDC N 2525 M15 | 25 | 25 | 150 | 30 | 12,5 | RCGX 1507.. | 0,750 |
| CRDC N 3225 P15 | 32 | 25 | 170 | 30 | 12,5 | RCGX 1507.. | 1,050 |
| CRDC N 3225 P19 | 32 | 25 | 170 | 42 | 12,5 | RCGX 1910.. | 1,050 |
| CRDC N 3232 P19 | 32 | 32 | 170 | 42 | 16,0 | RCGX 1910.. | 1,300 |
| CRDC N 3232 P25 | 32 | 32 | 170 | 45 | 16,0 | RCGX 2512.. | 1,300 |

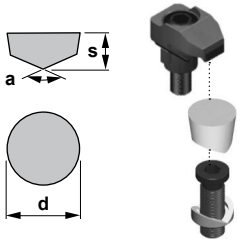
| Reference<br>Bezeichnung | | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CRDC N 2525 M06 | 3806 | - | - | 1392 | 2120 | 1335 | - | 5515 | 3807 | 3808 | 3.0 |
| CRDC N 2525 M09 | 3849 | - | - | 1335 | 2121 | 1250 | - | 5520 | - | - | 4.0 |
| CRDC N 3225 P09 | 3849 | - | - | 1335 | 2121 | 1250 | - | 5520 | - | - | 4.0 |
| CRDC N 2525 M12 | 3852 | - | - | 1350 | 2122 | 1260 | - | 5525 | - | - | 5.0 |
| CRDC N 3225 P12 | 3852 | - | - | 1350 | 2122 | 1260 | - | 5525 | - | - | 5.0 |
| CRDC N 2525 M15 | - | 3817 | - | 1230 (2) | 2414 | - | 5004 | - | - | - | 3.5 |
| CRDC N 3225 P15 | - | 3817 | - | 1230 (2) | 2414 | - | 5004 | - | - | - | 3.5 |
| CRDC N 3225 P19 | - | 3819 | - | 1230 (2) | 2414 | - | 5004 | - | - | - | 3.5 |
| CRDC N 3232 P19 | - | 3819 | 9414 | 1230 (2) | 2414 | - | 5004 | - | - | - | 3.5 |
| CRDC N 3232 P25 | - | 3835 | 9414 | 1230 (2) | 2417 | - | 5004 | - | - | - | 3.5 |

RCGX 0606.. inserts Wendeplatten | RCGX 0604.. inserts Wendeplatten

## RCGX

Round positive insert with 7° clearance.
Runde positive Wendeschneidplatte mit 7° Freiwinkel. D04

| Reference / Bez. | a | s | d |
|---|---|---|---|
| RCGX 0607.. | 120° | 7,94 | 6,35 |
| RCGX 0907.. | 120° | 7,94 | 9,52 |
| RCGX 1207.. | 120° | 7,94 | 12,70 |
| RCGX 1507.. | 120° | 7,94 | 15,87 |
| RCGX 1910.. | 120° | 10,00 | 19,05 |
| RCGX 1910.. | 120° | 10,00 | 19,05 |
| RCGX 2512.. | 140° | 12,00 | 25,40 |

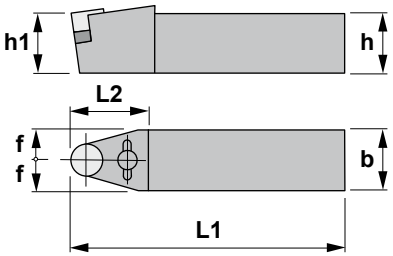



RCGX

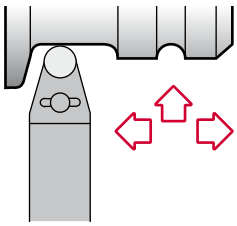




Characteristics:
Profiling multipurpose turning toolholder equipped with round negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer runden negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CRDN

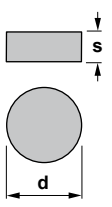
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CRDN N 2525 M12-4CD | 25 | 25 | 150 | 34 | 12,5 | RNGN 1204.. | 0,750 |
| CRDN N 2525 M12-7CD | 25 | 25 | 150 | 34 | 12,5 | RNGN 1207.. | 0,750 |
| CRDN N 3225 P12-4CD | 32 | 25 | 170 | 34 | 12,5 | RNGN 1204.. | 1,050 |
| CRDN N 3225 P12-7CD | 32 | 25 | 170 | 34 | 12,5 | RNGN 1207.. | 1,050 |
| CRDN N 2525 M15-7CD | 25 | 25 | 150 | 34 | 12,5 | RNGN 1507.. | 0,750 |
| CRDN N 3225 P15-7CD | 32 | 25 | 170 | 42 | 12,5 | RNGN 1507.. | 1,050 |
| CRDN N 3225 P19-7CD | 32 | 25 | 170 | 42 | 12,5 | RNGN 1907.. | 1,050 |
| CRDN N 3232 P25-7CD | 32 | 32 | 170 | 42 | 16,0 | RNGN 2507.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| CRDN N 2525 M12-4CD | IRSN 45 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRDN N 2525 M12-7CD | IRSN 43 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRDN N 3225 P12-4CD | IRSN 45 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRDN N 3225 P12-7CD | IRSN 43 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRDN N 2525 M15-7CD | IRSN 53 | 1180 | 2417 | 9414 | 5004 | 3.5 |
| CRDN N 3225 P15-7CD | IRSN 53 | 1180 | 2417 | 9414 | 5004 | 3.5 |
| CRDN N 3225 P19-7CD | 3919 | 1182 | 2417 | 9414 | 5004 | 3.5 |
| CRDN N 3232 P25-7CD | 3925 | 1192 | 2417 | 9414 | 5004 | 3.5 |

## RNGN

Round negative insert.
Runde negative Wendeschneidplatte. D04

| Reference / Bez. | s | d |
|---|---|---|
| RNGN 1204.. | 4,76 | 12,70 |
| RNGN 1207.. | 7,94 | 12,70 |
| RNGN 1507.. | 7,94 | 15,88 |
| RNGN 1907.. | 7,94 | 19,05 |
| RNGN 2507.. | 7,94 | 25,40 |




CD

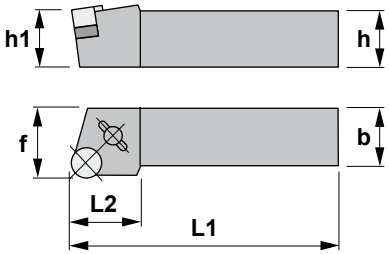


RNGN

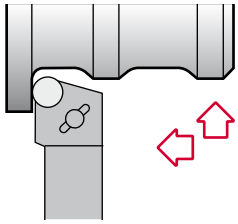




Characteristics:
Profiling multipurpose turning toolholder equipped with round negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer runden negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CRSN

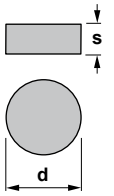
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CRSN R/L 2525 M12-4CD | 25 | 25 | 150 | 34 | 32 | RNGN 1204.. | 0,750 |
| CRSN R/L 2525 M12-7CD | 25 | 25 | 150 | 34 | 32 | RNGN 1207.. | 0,750 |
| CRSN R/L 3225 P12-4CD | 32 | 25 | 170 | 34 | 32 | RNGN 1204.. | 1,050 |
| CRSN R/L 3225 P12-7CD | 32 | 25 | 170 | 34 | 32 | RNGN 1207.. | 1,050 |

| Reference<br>Bezeichnung |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|
| CRSN R/L 2525 M12-4CD | IRSN 45 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRSN R/L 2525 M12-7CD | IRSN 43 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRSN R/L 3225 P12-4CD | IRSN 45 | 1160 | 2413 | 9414 | 5004 | 3.5 |
| CRSN R/L 3225 P12-7CD | IRSN 43 | 1160 | 2413 | 9414 | 5004 | 3.5 |

## RNGN

Round negative insert.
Runde negative Wendeschneidplatte. D04

| Reference / Bez. | s | d |
|---|---|---|
| RNGN 1204.. | 4,76 | 12,70 |
| RNGN 1207.. | 7,94 | 12,70 |




CD

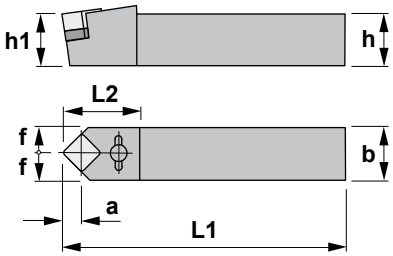


RNGN

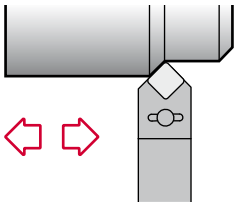




Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSDN 45°

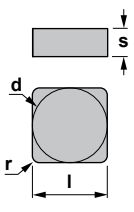
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CSDN N 2525 M12-4CD | 25 | 25 | 150 | 42 | 12,5 | 8,32 | SNGN 1204.. | 0,750 |
| CSDN N 2525 M12-7CD | 25 | 25 | 150 | 42 | 12,5 | 8,32 | SNGN 1207.. | 0,750 |
| CSDN N 3225 P12-4CD | 32 | 25 | 170 | 42 | 12,5 | 8,32 | SNGN 1204.. | 1,050 |
| CSDN N 3225 P12-7CD | 32 | 25 | 170 | 42 | 12,5 | 10,23 | SNGN 1207.. | 1,050 |
| CSDN N 2525 M15-CD | 25 | 25 | 150 | 42 | 12,5 | 8,32 | SNGN 1507.. | 0,750 |
| CSDN N 3225 P15-CD | 32 | 25 | 170 | 42 | 12,5 | 10,23 | SNGN 1507.. | 1,050 |
| CSDN N 2525 M12-4CX | 25 | 25 | 150 | 42 | 12,5 | 8,32 | SNGX 1204.. | 0,750 |
| CSDN N 2525 M12-7CX | 25 | 25 | 150 | 42 | 12,5 | 8,32 | SNGX 1207.. | 0,750 |
| CSDN N 3225 P12-4CX | 32 | 25 | 170 | 42 | 12,5 | 8,32 | SNGX 1204.. | 1,050 |
| CSDN N 3225 P12-7CX | 32 | 25 | 170 | 42 | 12,5 | 8,32 | SNGX 1207.. | 1,050 |
| CSDN N 2525 M15-CX | 25 | 25 | 150 | 42 | 12,5 | 10,23 | SNGX 1507.. | 0,750 |
| CSDN N 3225 P15-CX | 32 | 25 | 170 | 42 | 12,5 | 10,23 | SNGX 1507.. | 1,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| CSDN N 2525 M12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSDN N 2525 M12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSDN N 3225 P12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSDN N 3225 P12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSDN N 2525 M15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSDN N 3225 P15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSDN N 2525 M12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSDN N 2525 M12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSDN N 3225 P12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSDN N 3225 P12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSDN N 2525 M15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSDN N 3225 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

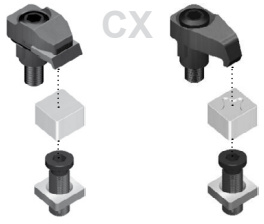
## SNG..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




CD CX



SNGN

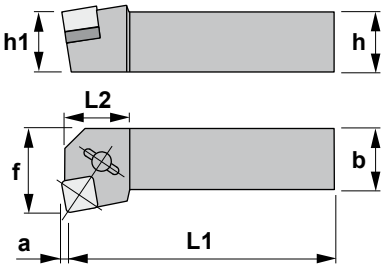


SNGX

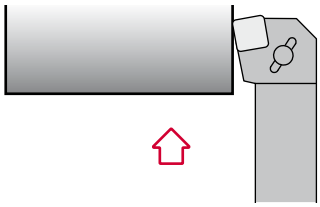




Characteristics:
Toolholder for face turning applications equipped with square negative inserts and strong cutting edges.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte mit verstärkten Schnittkanten.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSKN 75°

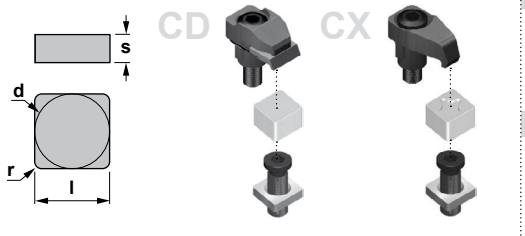
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CSKN R/L 2525 M12-4CD | 25 | 25 | 150 | 34 | 32 | 3,06 | SNGN 1204.. | 0,750 |
| CSKN R/L 2525 M12-7CD | 25 | 25 | 150 | 34 | 32 | 3,06 | SNGN 1207.. | 0,750 |
| CSKN R/L 3225 P12-4CD | 32 | 25 | 170 | 34 | 32 | 3,06 | SNGN 1204.. | 1,050 |
| CSKN R/L 3225 P12-7CD | 32 | 25 | 170 | 34 | 32 | 3,06 | SNGN 1207.. | 1,050 |
| CSKN R/L 2525 M15-CD | 25 | 25 | 150 | 34 | 32 | 3,77 | SNGN 1507.. | 0,750 |
| CSKN R/L 3225 P15-CD | 32 | 25 | 170 | 34 | 32 | 3,77 | SNGN 1507.. | 1,050 |
| CSKN R/L 2525 M12-4CX | 25 | 25 | 150 | 34 | 32 | 3,06 | SNGX 1204.. | 0,750 |
| CSKN R/L 2525 M12-7CX | 25 | 25 | 150 | 34 | 32 | 3,06 | SNGX 1207.. | 0,750 |
| CSKN R/L 3225 P12-4CX | 32 | 25 | 170 | 34 | 32 | 3,06 | SNGX 1207.. | 1,050 |
| CSKN R/L 3225 P12-7CX | 32 | 25 | 170 | 34 | 32 | 3,06 | SNGX 1207.. | 1,050 |
| CSKN R/L 2525 M15-CX | 25 | 25 | 150 | 34 | 32 | 3,77 | SNGX 1507.. | 0,750 |
| CSKN R/L 3225 P15-CX | 32 | 25 | 170 | 34 | 32 | 3,77 | SNGX 1507.. | 1,050 |
| CSKN R/L 4040 P15-CX | 40 | 40 | 170 | 34 | 50 | 3,77 | SNGX 1507.. | 1,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| CSKN R/L 2525 M12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSKN R/L 2525 M12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSKN R/L 3225 P12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSKN R/L 3225 P12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSKN R/L 2525 M15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSKN R/L 3225 P15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSKN R/L 2525 M12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSKN R/L 2525 M12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSKN R/L 3225 P12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSKN R/L 3225 P12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSKN R/L 2525 M15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSKN R/L 3225 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSKN R/L 4040 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

## SNG..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




SNGN

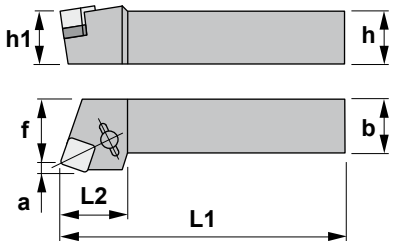


SNGX

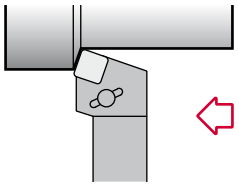




Characteristics:
Toolholder for external turning applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer vierkantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSRN 75°

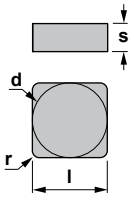
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CSRN R/L 2525 M12-4CD | 25 | 25 | 150 | 34 | 27 | 3,06 | SNGN 1204.. | 0,750 |
| CSRN R/L 2525 M12-7CD | 25 | 25 | 150 | 34 | 27 | 3,06 | SNGN 1207.. | 0,750 |
| CSRN R/L 3225 P12-4CD | 32 | 25 | 170 | 34 | 27 | 3,06 | SNGN 1204.. | 1,050 |
| CSRN R/L 3225 P12-7CD | 32 | 25 | 170 | 34 | 27 | 3,06 | SNGN 1207.. | 1,050 |
| CSRN R/L 2525 M15-CD | 25 | 25 | 150 | 34 | 27 | 3,77 | SNGN 1507.. | 0,750 |
| CSRN R/L 3225 P15-CD | 32 | 25 | 170 | 38 | 27 | 3,77 | SNGN 1507.. | 1,050 |
| CSRN R/L 3232 P19-CD | 32 | 32 | 170 | 42 | 35 | 4,50 | SNGN 1907.. | 1,150 |
| CSRN R/L 4040 P19-CD | 40 | 40 | 170 | 42 | 43 | 4,50 | SNGN 1907.. | 1,300 |
| CSRN R/L 2525 M12-4CX | 25 | 25 | 150 | 34 | 27 | 3,06 | SNGX 1204.. | 0,750 |
| CSRN R/L 2525 M12-7CX | 25 | 25 | 150 | 34 | 27 | 3,06 | SNGX 1207.. | 0,750 |
| CSRN R/L 3225 P12-4CX | 32 | 25 | 170 | 34 | 27 | 3,06 | SNGX 1204.. | 1,050 |
| CSRN R/L 3225 P12-7CX | 32 | 25 | 170 | 34 | 27 | 3,06 | SNGX 1207.. | 1,050 |
| CSRN R/L 2525 M15-CX | 25 | 25 | 150 | 34 | 27 | 3,77 | SNGX 1507.. | 0,750 |
| CSRN R/L 3225 P15-CX | 32 | 25 | 170 | 38 | 27 | 3,77 | SNGX 1507.. | 1,050 |

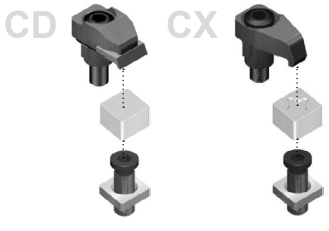
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| CSRN R/L 2525 M12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 2525 M12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 3225 P12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 3225 P12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 2525 M15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 3225 P15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 3232 P19-CD | 3519 | 1182 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 4040 P19-CD | 3519 | 1182 | 9414 | 2417 | - | 5004 | 3.5 |
| CSRN R/L 2525 M12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSRN R/L 2525 M12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSRN R/L 3225 P12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSRN R/L 3225 P12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSRN R/L 2525 M15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSRN R/L 3225 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

## SNG..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




SNGN

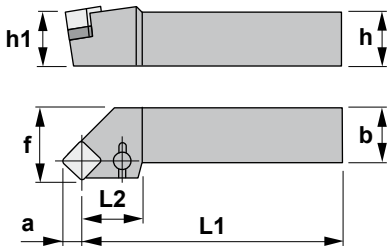


SNGX

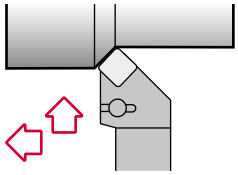




Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



# CSSN 45°

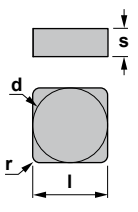
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CSSN R/L 2525 M12-4CD | 25 | 25 | 150 | 35 | 32 | 8,32 | SNGN 1204.. | 0,750 |
| CSSN R/L 2525 M12-7CD | 25 | 25 | 150 | 35 | 32 | 8,32 | SNGN 1207.. | 0,750 |
| CSSN R/L 3225 P12-4CD | 32 | 25 | 170 | 35 | 32 | 8,32 | SNGN 1204.. | 1,050 |
| CSSN R/L 3225 P12-7CD | 32 | 25 | 170 | 35 | 32 | 8,32 | SNGN 1207.. | 1,050 |
| CSSN R/L 2525 M15-CD | 25 | 25 | 150 | 37 | 32 | 10,23 | SNGN 1507.. | 0,750 |
| CSSN R/L 3225 P15-CD | 32 | 25 | 170 | 37 | 32 | 10,23 | SNGN 1507.. | 1,050 |
| CSSN R/L 3232 P19-CD | 32 | 32 | 170 | 37 | 40 | 12,50 | SNGN 1907.. | 1,150 |
| CSSN R/L 4040 P19-CD | 40 | 40 | 170 | 37 | 50 | 12,50 | SNGN 1907.. | 1,300 |
| CSSN R/L 2525 M12-4CX | 25 | 25 | 150 | 35 | 32 | 8,32 | SNGX 1204.. | 0,750 |
| CSSN R/L 2525 M12-7CX | 25 | 25 | 150 | 35 | 32 | 8,32 | SNGX 1207.. | 0,750 |
| CSSN R/L 3225 P12-4CX | 32 | 25 | 170 | 35 | 32 | 8,32 | SNGX 1204.. | 1,050 |
| CSSN R/L 3225 P12-7CX | 32 | 25 | 170 | 35 | 32 | 8,32 | SNGX 1207.. | 1,050 |
| CSSN R/L 2525 M15-CX | 25 | 25 | 150 | 37 | 32 | 10,23 | SNGX 1507.. | 0,750 |
| CSSN R/L 3225 P15-CX | 32 | 25 | 170 | 37 | 32 | 10,23 | SNGX 1507.. | 1,050 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| CSSN R/L 2525 M12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 2525 M12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 3225 P12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 3225 P12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 2525 M15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 3225 P15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 3232 P19-CD | 3519 | 1182 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 4040 P19-CD | 3519 | 1182 | 9414 | 2417 | - | 5004 | 3.5 |
| CSSN R/L 2525 M12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSSN R/L 2525 M12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSSN R/L 3225 P12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSSN R/L 3225 P12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSSN R/L 2525 M15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSSN R/L 3225 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

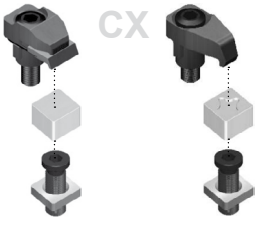
## SNG..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




CD CX



SNGN

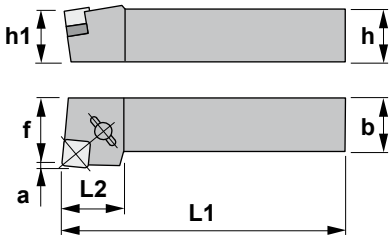


SNGX

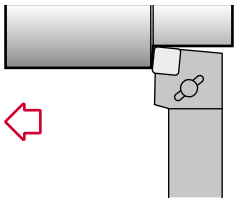




Characteristics:
Toolholder for external turning applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer vierkantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSXN 85°

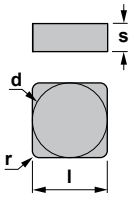
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CSXN R/L 2525 M12-4CD | 25 | 25 | 150 | 30 | 32 | 1,03 | SNGN 1204.. | 0,750 |
| CSXN R/L 2525 M12-7CD | 25 | 25 | 150 | 30 | 32 | 1,03 | SNGN 1207.. | 0,750 |
| CSXN R/L 3225 P12-4CD | 32 | 25 | 170 | 30 | 32 | 1,03 | SNGN 1204.. | 1,050 |
| CSXN R/L 3225 P12-7CD | 32 | 25 | 170 | 30 | 32 | 1,03 | SNGN 1207.. | 1,050 |
| CSXN R/L 2525 M15-CD | 25 | 25 | 150 | 33 | 32 | 1,38 | SNGN 1507.. | 0,750 |
| CSXN R/L 3225 P15-CD | 32 | 25 | 170 | 33 | 32 | 1,38 | SNGN 1507.. | 1,050 |
| CSXN R/L 2525 M12-4CX | 25 | 25 | 150 | 30 | 32 | 1,03 | SNGX 1204.. | 0,750 |
| CSXN R/L 2525 M12-7CX | 25 | 25 | 150 | 30 | 32 | 1,03 | SNGX 1207.. | 0,750 |
| CSXN R/L 3225 P12-4CX | 32 | 25 | 170 | 30 | 32 | 1,03 | SNGX 1204.. | 1,050 |
| CSXN R/L 3225 P12-7CX | 32 | 25 | 170 | 30 | 32 | 1,03 | SNGX 1207.. | 1,050 |
| CSXN R/L 2525 M15-CX | 25 | 25 | 150 | 33 | 32 | 1,38 | SNGX 1507.. | 0,750 |
| CSXN R/L 3225 P15-CX | 32 | 25 | 170 | 33 | 32 | 1,38 | SNGX 1507.. | 1,050 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| CSXN R/L 2525 M12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSXN R/L 2525 M12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSXN R/L 3225 P12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSXN R/L 3225 P12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSXN R/L 2525 M15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSXN R/L 3225 P15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSXN R/L 2525 M12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSXN R/L 2525 M12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSXN R/L 3225 P12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSXN R/L 3225 P12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSXN R/L 2525 M15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSXN R/L 3225 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

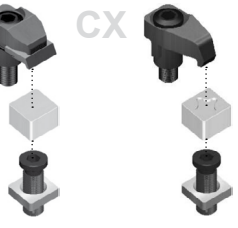
## SNG..

Square negative inserts. Vierkantige negative Wendeschneidplatten. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




CD CX



SNGN

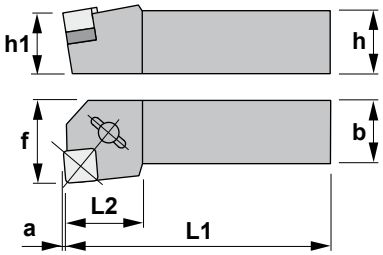


SNGX

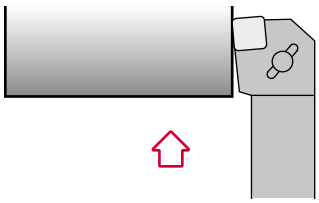




Characteristics:
Toolholder for front turning applications equipped with square negative inserts. For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte. Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSYN 85°

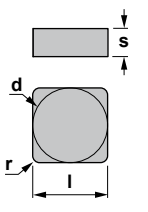
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| CSYN R/L 2525 M12-4CD | 25 | 25 | 150 | 27 | 32 | 1,03 | SNGN 1204.. | 0,750 |
| CSYN R/L 2525 M12-7CD | 25 | 25 | 150 | 27 | 32 | 1,03 | SNGN 1207.. | 0,750 |
| CSYN R/L 3225 P12-4CD | 32 | 25 | 170 | 27 | 32 | 1,03 | SNGN 1204.. | 1,050 |
| CSYN R/L 3225 P12-7CD | 32 | 25 | 170 | 27 | 32 | 1,03 | SNGN 1207.. | 1,050 |
| CSYN R/L 2525 M15-CD | 25 | 25 | 150 | 27 | 32 | 1,38 | SNGN 1507.. | 0,750 |
| CSYN R/L 3225 P15-CD | 32 | 25 | 170 | 27 | 32 | 1,38 | SNGN 1507.. | 1,050 |
| CSYN R/L 2525 M12-4CX | 25 | 25 | 150 | 27 | 32 | 1,03 | SNGX 1204.. | 0,750 |
| CSYN R/L 2525 M12-7CX | 25 | 25 | 150 | 27 | 32 | 1,03 | SNGX 1207.. | 0,750 |
| CSYN R/L 3225 P12-4CX | 32 | 25 | 170 | 27 | 32 | 1,03 | SNGX 1204.. | 1,050 |
| CSYN R/L 3225 P12-7CX | 32 | 25 | 170 | 27 | 32 | 1,03 | SNGX 1207.. | 1,050 |
| CSYN R/L 2525 M15-CX | 25 | 25 | 150 | 27 | 32 | 1,38 | SNGX 1507.. | 0,750 |
| CSYN R/L 3225 P15-CX | 32 | 25 | 170 | 27 | 32 | 1,38 | SNGX 1507.. | 1,050 |

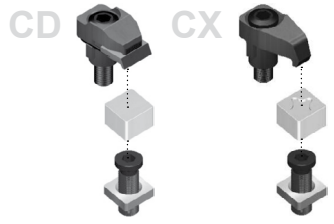
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| CSYN R/L 2525 M12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSYN R/L 2525 M12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSYN R/L 3225 P12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSYN R/L 3225 P12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| CSYN R/L 2525 M15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSYN R/L 3225 P15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| CSYN R/L 2525 M12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSYN R/L 2525 M12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSYN R/L 3225 P12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSYN R/L 3225 P12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |
| CSYN R/L 2525 M15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |
| CSYN R/L 3225 P15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

## SNG..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




SNGN

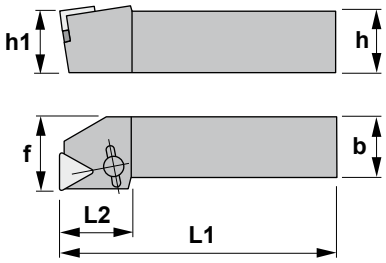


SNGX

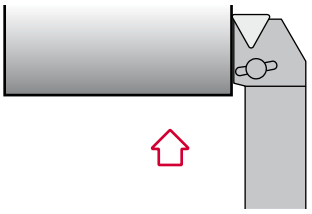




Characteristics:
Toolholder for face turning applications equipped with triangular negative inserts. For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer dreikantigen negativen Wendeschneidplatte. Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CTFN 90°

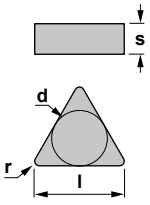
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTFN R/L 2525 M16-4CD | 25 | 25 | 150 | 29 | 32 | TNGN 1604.. | 0,750 |
| CTFN R/L 2525 M16-7CD | 25 | 25 | 150 | 29 | 32 | TNGN 1607.. | 0,750 |
| CTFN R/L 3225 P16-4CD | 32 | 25 | 170 | 29 | 32 | TNGN 1604.. | 1,050 |
| CTFN R/L 3225 P16-7CD | 32 | 25 | 170 | 29 | 32 | TNGN 1607.. | 1,050 |

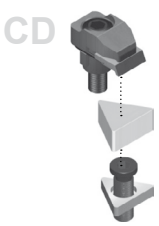
| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| CTFN R/L 2525 M16-4CD | ITSN 342 | 1150 | 9416 | 2413 | 5004 | 3.5 |
| CTFN R/L 2525 M16-7CD | ITSN 324 | 1150 | 9416 | 2413 | 5004 | 3.5 |
| CTFN R/L 3225 P16-4CD | ITSN 342 | 1150 | 9416 | 2417 | 5004 | 3.5 |
| CTFN R/L 3225 P16-7CD | ITSN 324 | 1150 | 9416 | 2417 | 5004 | 3.5 |

## TNGN

Triangular negative insert.
Dreikantige negative Wendeschneidplatte.
D06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNGN 1604.. | 16,50 | 4,76 | 9,52 |
| TNGN 1607.. | 16,50 | 7,94 | 9,52 |



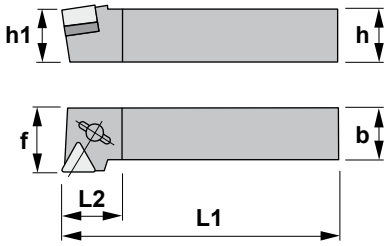




TNGN

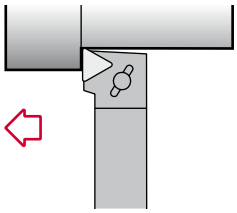




Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer dreikantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CTGN 90°

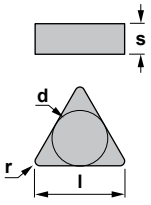
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CTGN R/L 2525 M16-4CD | 25 | 25 | 150 | 20 | 32 | TNGN 1604.. | 0,750 |
| CTGN R/L 2525 M16-7CD | 25 | 25 | 150 | 20 | 32 | TNGN 1607.. | 0,750 |
| CTGN R/L 3225 P16-4CD | 32 | 25 | 170 | 20 | 32 | TNGN 1604.. | 1,050 |
| CTGN R/L 3225 P16-7CD | 32 | 25 | 170 | 20 | 32 | TNGN 1607.. | 1,050 |

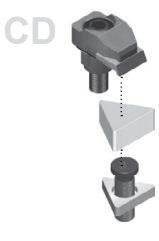
| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| CTGN R/L 2525 M16-4CD | ITSN 342 | 1150 | 9416 | 2413 | 5004 | 3.5 |
| CTGN R/L 2525 M16-7CD | ITSN 324 | 1150 | 9416 | 2413 | 5004 | 3.5 |
| CTGN R/L 3225 P16-4CD | ITSN 342 | 1150 | 9416 | 2413 | 5004 | 3.5 |
| CTGN R/L 3225 P16-7CD | ITSN 324 | 1150 | 9416 | 2413 | 5004 | 3.5 |

## TNGN

Triangular negative insert.
Dreikantige negative Wendeschneidplatte. D06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNGN 1604.. | 16,50 | 4,76 | 9,52 |
| TNGN 1607.. | 16,50 | 7,94 | 9,52 |



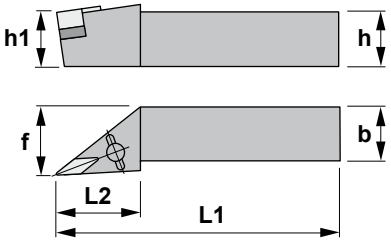




TNGN

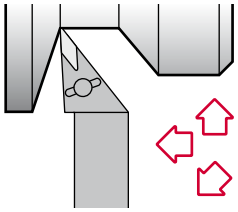




Characteristics:
External turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Klemmhalter zum Außen- und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (35º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CVJN 93°

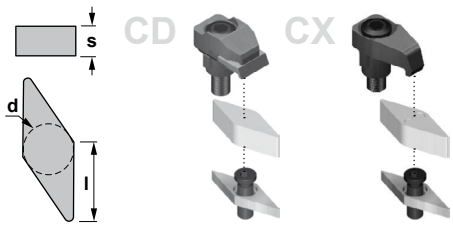
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CVJN R/L 2525 M16-4CD | 25 | 25 | 150 | 41 | 32 | VNGN 1604.. | 0,750 |
| CVJN R/L 2525 M16-7CD | 25 | 25 | 150 | 41 | 32 | VNGN 1607.. | 0,750 |
| CVJN R/L 3225 P16-4CD | 32 | 25 | 170 | 41 | 32 | VNGN 1604.. | 1,050 |
| CVJN R/L 3225 P16-7CD | 32 | 25 | 170 | 41 | 32 | VNGN 1607.. | 1,050 |
| CVJN R/L 2525 M16-4CX | 25 | 25 | 150 | 41 | 32 | VNGX 1604.. | 0,750 |
| CVJN R/L 2525 M16-7CX | 25 | 25 | 150 | 41 | 32 | VNGX 1607.. | 0,750 |
| CVJN R/L 3225 P16-4CX | 32 | 25 | 170 | 41 | 32 | VNGX 1604.. | 1,050 |
| CVJN R/L 3225 P16-7CX | 32 | 25 | 170 | 41 | 32 | VNGX 1607.. | 1,050 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| CVJN R/L 2525 M16-4CD | IVSN 342 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVJN R/L 2525 M16-7CD | IVSN 322 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVJN R/L 3225 P16-4CD | IVSN 342 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVJN R/L 3225 P16-7CD | IVSN 322 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVJN R/L 2525 M16-4CX | IVSN 342 | 1150 | - | - | 2428 | 5004 | 3.5 |
| CVJN R/L 2525 M16-7CX | IVSN 322 | 1150 | - | - | 2428 | 5004 | 3.5 |
| CVJN R/L 3225 P16-4CX | IVSN 342 | 1150 | - | - | 2428 | 5004 | 3.5 |
| CVJN R/L 3225 P16-7CX | IVSN 322 | 1150 | - | - | 2428 | 5004 | 3.5 |

## VNG..

35° rhombic negative inserts.
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VNG.. 1604.. | 16,50 | 4,76 | 9,52 |
| VNG.. 1607.. | 16,50 | 7,94 | 9,52 |




VNGN



VNGX

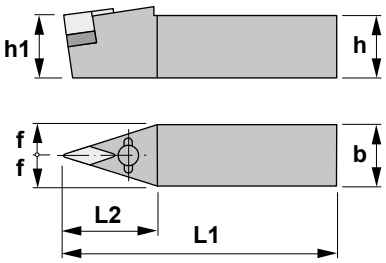




Characteristics:

External turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).

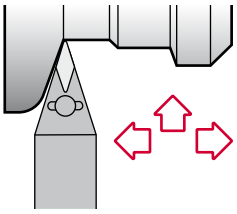
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:

Klemmhalter zum Außen- und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (35º Winkel).

Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CVVN 62°30’

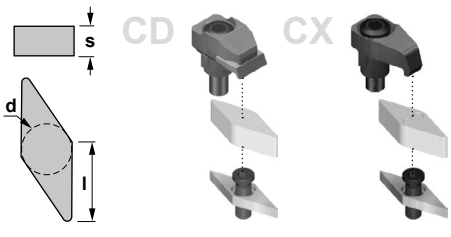
| Reference<br>Bezeichnung | h=h1 | b | L1 | L2 | f | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| CVVN N 2525 M16-4CD | 25 | 25 | 150 | 45 | 12,5 | VNGN 1604.. | 0,750 |
| CVVN N 2525 M16-7CD | 25 | 25 | 150 | 45 | 12,5 | VNGN 1607.. | 0,750 |
| CVVN N 3225 P16-4CD | 32 | 25 | 170 | 45 | 12,5 | VNGN 1604.. | 1,050 |
| CVVN N 3225 P16-7CD | 32 | 25 | 170 | 45 | 12,5 | VNGN 1607.. | 1,050 |
| CVVN N 2525 M16-4CX | 25 | 25 | 150 | 45 | 12,5 | VNGX 1604.. | 0,750 |
| CVVN N 2525 M16-7CX | 25 | 25 | 150 | 45 | 12,5 | VNGX 1607.. | 0,750 |
| CVVN N 3225 P16-4CX | 32 | 25 | 170 | 45 | 12,5 | VNGX 1604.. | 1,050 |
| CVVN N 3225 P16-7CX | 32 | 25 | 170 | 45 | 12,5 | VNGX 1607.. | 1,050 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| CVVN N 2525 M16-4CD | IVSN 342 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVVN N 2525 M16-7CD | IVSN 322 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVVN N 3225 P16-4CD | IVSN 342 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVVN N 3225 P16-7CD | IVSN 322 | 1150 | 9416 | 2417 | - | 5004 | 3.5 |
| CVVN N 2525 M16-4CX | IVSN 342 | 1150 | - | - | 2428 | 5004 | 3.5 |
| CVVN N 2525 M16-7CX | IVSN 322 | 1150 | - | - | 2428 | 5004 | 3.5 |
| CVVN N 3225 P16-4CX | IVSN 342 | 1150 | - | - | 2428 | 5004 | 3.5 |
| CVVN N 3225 P16-7CX | IVSN 322 | 1150 | - | - | 2428 | 5004 | 3.5 |

## VNG..

35° rhombic negative inserts.
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VNG.. 1604.. | 16,50 | 4,76 | 9,52 |
| VNG.. 1607.. | 16,50 | 7,94 | 9,52 |




VNGN

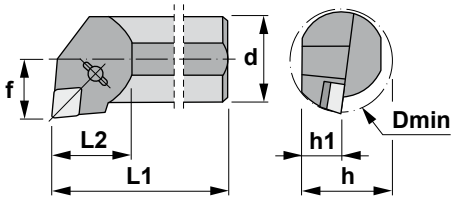


VNGX

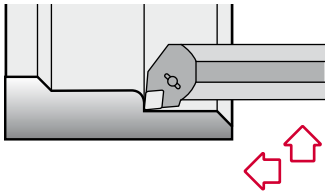




Characteristics:
Multipurpose boring bar equipped with rhombic negative double-sided insert (angle 80°).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Bohrstange mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (80° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CCLN 95°

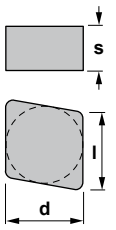
| Reference<br>Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32S CCLN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | CNGN 1207.. | 1,450 |
| S40T CCLN R/L 12-4CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | CNGN 1204.. | 2,700 |
| S40T CCLN R/L 12-7CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | CNGN 1207.. | 2,700 |
| S50U CCLN R/L 12-4CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | CNGN 1204.. | 4,950 |
| S50U CCLN R/L 12-7CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | CNGN 1207.. | 4,950 |
| S32S CCLN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | CNGX 1207.. | 1,450 |
| S40T CCLN R/L 12-4CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | CNGX 1204.. | 2,700 |
| S40T CCLN R/L 12-7CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | CNGX 1207.. | 2,700 |
| S50U CCLN R/L 12-4CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | CNGX 1204.. | 4,950 |
| S50U CCLN R/L 12-7CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | CNGX 1207.. | 4,950 |

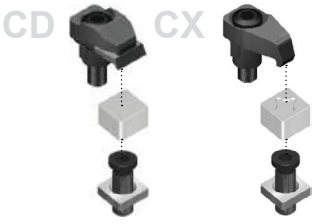
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| S32S CCLN R/L 12-7CD | - | - | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CCLN R/L 12-4CD | ICSN 454 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CCLN R/L 12-7CD | ICSN 434 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CCLN R/L 12-4CD | ICSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CCLN R/L 12-7CD | ICSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S32S CCLN R/L 12-7CX | - | - | - | - | 2415 | 5004 | 3.5 |
| S40T CCLN R/L 12-4CX | ICSN 454 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S40T CCLN R/L 12-7CX | ICSN 434 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S50U CCLN R/L 12-4CX | ICSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| S50U CCLN R/L 12-7CX | ICSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |

## CNG..

80° rhombic negative inserts.
80° rhombische negative Wendeschneidplatten. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNG.. 1204.. | 12,90 | 4,76 | 12,70 |
| CNG.. 1207.. | 12,90 | 7,94 | 12,70 |




CNGN

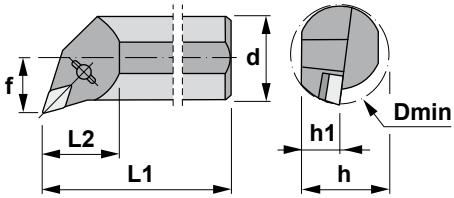


CNGX

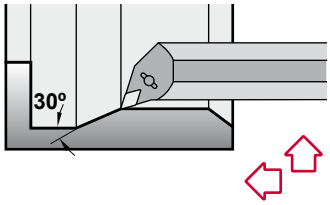




Characteristics:
Profiling boring bar equipped with rhombic negative double-sided insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Bohrstange zum Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (55° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.




D

# CDQN 107°30’

| Reference<br>Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32S CDQN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 50 | DNGN 1207.. | 1,450 |
| S40T CDQN R/L 12-4CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | DNGN 1204.. | 2,700 |
| S40T CDQN R/L 12-7CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | DNGN 1207.. | 2,700 |
| S50U CDQN R/L 15-CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | DNGN 1507.. | 4,950 |
| S32S CDQN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 50 | DNGX 1207.. | 1,450 |
| S40T CDQN R/L 12-4CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | DNGX 1204.. | 2,700 |
| S40T CDQN R/L 12-7CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | DNGX 1207.. | 2,700 |
| S50U CDQN R/L 15-CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | DNGX 1507.. | 4,950 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| S32S CDQN R/L 12-7CD | - | - | 9414 | 2413 | - | 5004 | 3.5 |
| S40T CDQN R/L 12-4CD | IDSN 354 | 1151 | 9414 | 2413 | - | 5004 | 3.5 |
| S40T CDQN R/L 12-7CD | IDSN 334 | 1151 | 9414 | 2413 | - | 5004 | 3.5 |
| S50U CDQN R/L 15-CD | IDSN 432 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S32S CDQN R/L 12-7CX | - | - | - | - | 2415 | 5004 | 3.5 |
| S40T CDQN R/L 12-4CX | IDSN 354 | 1151 | - | - | 2415 | 5004 | 3.5 |
| S40T CDQN R/L 12-7CX | IDSN 334 | 1151 | - | - | 2415 | 5004 | 3.5 |
| S50U CDQN R/L 15-CX | IDSN 432 | 1160 | - | - | 2432 | 5004 | 3.5 |

## DNG..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. D03-04

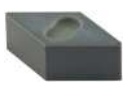
| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNG.. 1204.. | 12,20 | 4,76 | 10,00 |
| DNG.. 1207.. | 12,20 | 7,94 | 10,00 |
| DNG.. 1507.. | 15,50 | 7,94 | 12,70 |




DNGN

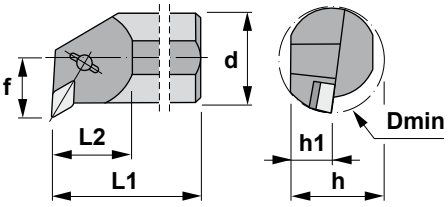


DNGX

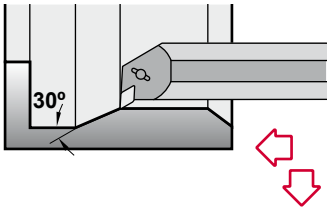




Characteristics:
Profiling boring bar equipped with rhombic negative double-sided insert (angle 55º).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Bohrstange zum Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (55º Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.




D

# CDUN 93°

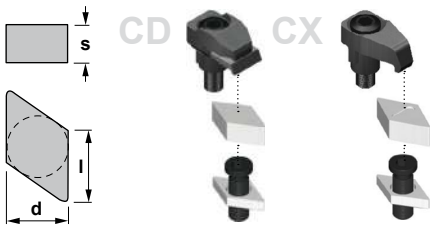
| Reference<br>Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32S CDUN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | DNGN 1207.. | 1,450 |
| S40T CDUN R/L 12-4CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | DNGN 1204.. | 2,700 |
| S40T CDUN R/L 12-7CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | DNGN 1207.. | 2,700 |
| S50U CDUN R/L 15-CD | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | DNGN 1507.. | 4,950 |
| S32S CDUN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | DNGX 1207.. | 1,450 |
| S40T CDUN R/L 12-4CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | DNGX 1204.. | 2,700 |
| S40T CDUN R/L 12-7CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | DNGX 1207.. | 2,700 |
| S50U CDUN R/L 15-CX | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | DNGX 1507.. | 4,950 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| S32S CDUN R/L 12-7CD | - | - | 9416 | 2413 | - | 5004 | 3.5 |
| S40T CDUN R/L 12-4CD | IDSN 354 | 1151 | 9416 | 2413 | - | 5004 | 3.5 |
| S40T CDUN R/L 12-7CD | IDSN 334 | 1151 | 9416 | 2413 | - | 5004 | 3.5 |
| S50U CDUN R/L 15-CD | IDSN 432 | 1160 | 9416 | 2417 | - | 5004 | 3.5 |
| S32S CDUN R/L 12-7CX | - | - | - | - | 2415 | 5004 | 3.5 |
| S40T CDUN R/L 12-4CX | IDSN 354 | 1151 | - | - | 2415 | 5004 | 3.5 |
| S40T CDUN R/L 12-7CX | IDSN 334 | 1151 | - | - | 2415 | 5004 | 3.5 |
| S50U CDUN R/L 15-CX | IDSN 432 | 1160 | - | - | 2432 | 5004 | 3.5 |

## DNG..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. D03-04

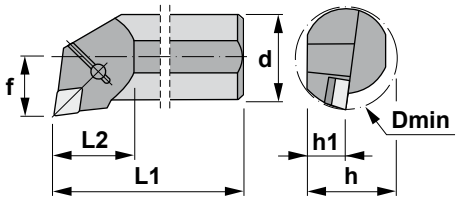
| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNG.. 1204.. | 12,20 | 4,76 | 10,00 |
| DNG.. 1207.. | 12,20 | 7,94 | 10,00 |
| DNG.. 1507.. | 15,50 | 7,94 | 12,70 |



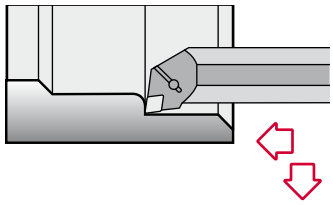





Characteristics:
Multipurpose boring bar equipped with rhombic negative double-sided insert (angle 75°).
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Multifunktions-Bohrstange mit einer doppelseitigen rhombischen Wendeschneidplatte (75° Winkel).
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CELN 97°30’

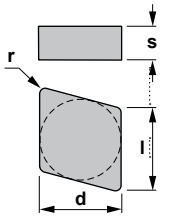
| Reference<br>Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S40T CELN R/L 13-CD | 40 | 18,5 | 300 | 32 | 27 | 37 | 50 | ENGN 1307.. | 2,700 |
| S50U CELN R/L 13-CD | 50 | 23,5 | 350 | 32 | 35 | 47 | 63 | ENGN 1307.. | 4,950 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| S40T CELN R/L 13-CD | IESN 432 | 1161 | 9414 | 2417 | 5004 | 3.5 |
| S50U CELN R/L 13-CD | IESN 432 | 1160 | 9414 | 2417 | 5004 | 3.5 |

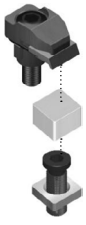
## ENGN

75° rhombic negative insert.
75° rhombische negative Wendeschneidplatte. D04

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ENGN 1307.. | 13,12 | 7,94 | 12,70 |




CD

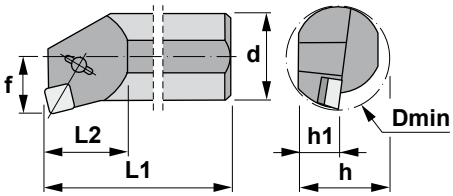


ENGN

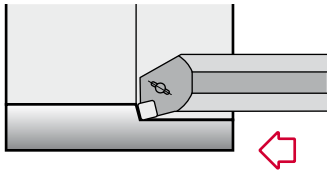




Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Bohrstange zum Innendrehen mit einer vierkantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSKN 75°

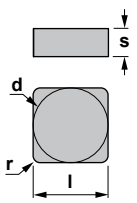
| Reference<br>Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32S CSKN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | SNGN 1207.. | 1,450 |
| S40T CSKN R/L 12-4CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGN 1204.. | 2,700 |
| S40T CSKN R/L 12-7CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGN 1207.. | 2,700 |
| S50U CSKN R/L 12-4CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGN 1204.. | 4,950 |
| S50U CSKN R/L 12-7CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGN 1207.. | 4,950 |
| S32S CSKN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | SNGX 1207.. | 1,450 |
| S40T CSKN R/L 12-4CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGX 1204.. | 2,700 |
| S40T CSKN R/L 12-7CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGX 1207.. | 2,700 |
| S50U CSKN R/L 12-4CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGX 1204.. | 4,950 |
| S50U CSKN R/L 12-7CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGX 1207.. | 4,950 |

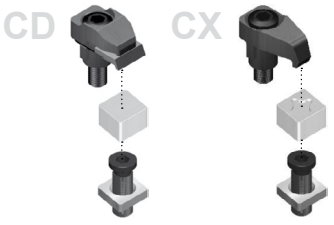
| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| S32S CSKN R/L 12-7CD | - | - | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CSKN R/L 12-4CD | ISSN 454 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CSKN R/L 12-7CD | ISSN 434 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CSKN R/L 12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CSKN R/L 12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S32S CSKN R/L 12-7CX | - | - | - | - | 2415 | 5004 | 3.5 |
| S40T CSKN R/L 12-4CX | ISSN 454 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S40T CSKN R/L 12-7CX | ISSN 434 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S50U CSKN R/L 12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| S50U CSKN R/L 12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |

## SNG..

Square negative inserts.
Vierkantige negative WSP. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |




SNGN

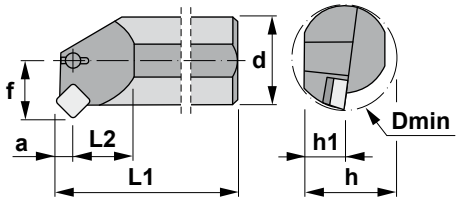


SNGX

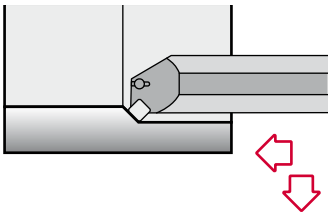




Characteristics:
Boring bar for internal turning and chamfering applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Bohrstange zum Innendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSSN 45°

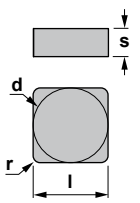
| Reference Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32S CSSN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | SNGN 1207.. | 1,450 |
| S40T CSSN R/L 12-4CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | SNGN 1204.. | 2,700 |
| S40T CSSN R/L 12-7CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | SNGN 1207.. | 2,700 |
| S50U CSSN R/L 15-CD | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | SNGN 1507.. | 4,950 |
| S32S CSSN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | SNGX 1207.. | 1,450 |
| S40T CSSN R/L 12-4CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | SNGX 1204.. | 2,700 |
| S40T CSSN R/L 12-7CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | SNGX 1207.. | 2,700 |
| S50U CSSN R/L 15-CX | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | SNGX 1507.. | 4,950 |

| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| S32S CSSN R/L 12-7CD | - | - | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CSSN R/L 12-4CD | ISSN 454 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CSSN R/L 12-7CD | ISSN 434 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CSSN R/L 15-CD | ISSN 534 | 1180 | 9414 | 2417 | - | 5004 | 3.5 |
| S32S CSSN R/L 12-7CX | - | - | - | - | 2415 | 5004 | 3.5 |
| S40T CSSN R/L 12-4CX | ISSN 454 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S40T CSSN R/L 12-7CX | ISSN 434 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S50U CSSN R/L 15-CX | ISSN 534 | 1180 | - | - | 2415 | 5004 | 3.5 |

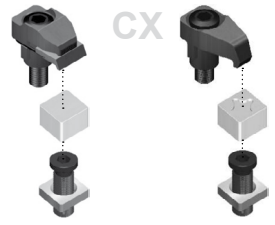
## SNG..

Square negative inserts. Vierkantige negative WSP. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |
| SNG.. 1507.. | 15,87 | 7,94 | 15,87 |




CD CX



SNGN

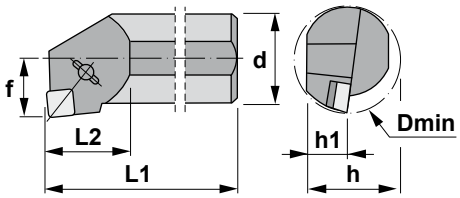


SNGX

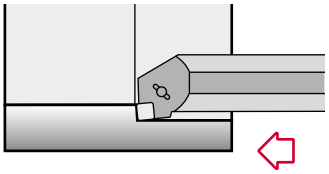




Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For general applications, roughing, semi-finishing and finishing.




Eigenschaften:
Bohrstange zum Innendrehen mit einer vierkantigen negativen Wendeschneidplatte mit verstärkten Schnittkanten.
Für allgemeine Anwendungen, Schruppen, Vorschlichten und Schlichten geeignet.



D

# CSYN 85°

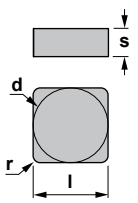
| Reference<br>Bezeichnung | d | h1 | L1 | L2 | f | h | Dmin | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| S32S CSYN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | SNGN 1207.. | 1,450 |
| S40T CSYN R/L 12-4CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGN 1204.. | 2,700 |
| S40T CSYN R/L 12-7CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGN 1207.. | 2,700 |
| S50U CSYN R/L 12-4CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGN 1204.. | 4,950 |
| S50U CSYN R/L 12-7CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGN 1207.. | 4,950 |
| S32S CSYN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | SNGX 1207.. | 1,450 |
| S40T CSYN R/L 12-4CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGX 1204.. | 2,700 |
| S40T CSYN R/L 12-7CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | SNGX 1207.. | 2,700 |
| S50U CSYN R/L 12-4CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGX 1204.. | 4,950 |
| S50U CSYN R/L 12-7CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | SNGX 1207.. | 4,950 |

| Reference<br>Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| S32S CSYN R/L 12-7CD | - | - | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CSYN R/L 12-4CD | ISSN 454 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S40T CSYN R/L 12-7CD | ISSN 434 | 1161 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CSYN R/L 12-4CD | ISSN 454 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S50U CSYN R/L 12-7CD | ISSN 434 | 1160 | 9414 | 2417 | - | 5004 | 3.5 |
| S32S CSYN R/L 12-7CX | - | - | - | - | 2415 | 5004 | 3.5 |
| S40T CSYN R/L 12-4CX | ISSN 454 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S40T CSYN R/L 12-7CX | ISSN 434 | 1161 | - | - | 2415 | 5004 | 3.5 |
| S50U CSYN R/L 12-4CX | ISSN 454 | 1160 | - | - | 2415 | 5004 | 3.5 |
| S50U CSYN R/L 12-7CX | ISSN 434 | 1160 | - | - | 2415 | 5004 | 3.5 |

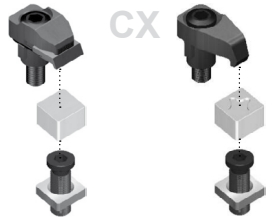
## SNG..

Square negative inserts.
Vierkantige negative WSP. D05-06

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNG.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNG.. 1207.. | 12,70 | 7,94 | 12,70 |




CD CX



SNGN

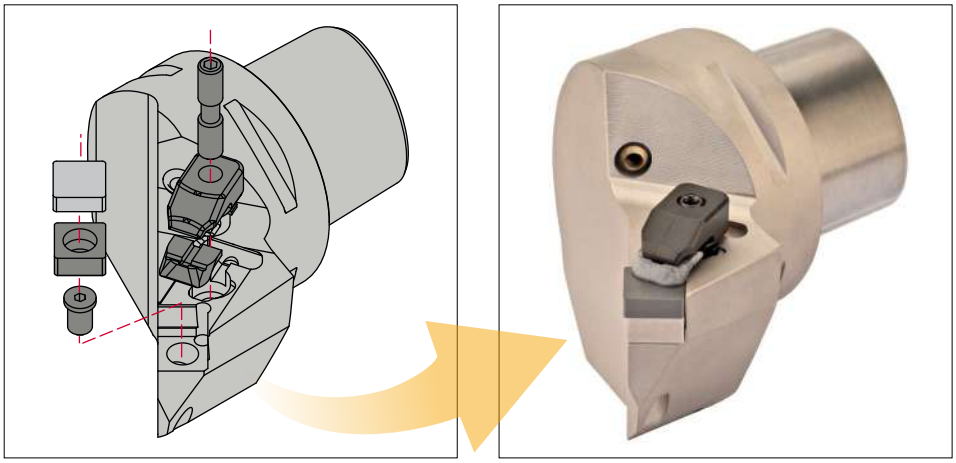


SNGX



## *(C) Top clamp / Obere Klemmung*

This classic negative insert clamping system is designed to hold ceramic flat negative inserts, both with additional or sintered chipbreaker.
Diese klassische Klemmung für negativen Wendeschneidplatten wurde so entwickelt, damit gesinterte und zusätzliche Spannbrecher mit flachen negativen Keramik-Wendeschneidplatten eingesetzt werden können.

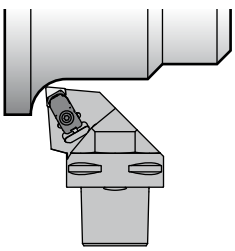
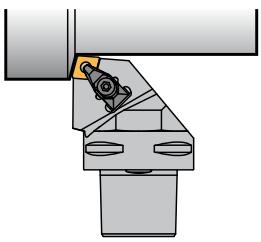
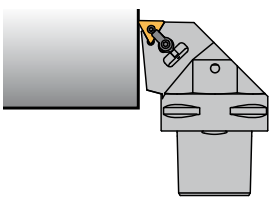






***All clamping systems***
***in the same body.***

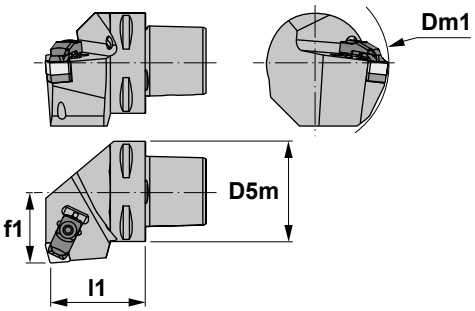
***Alle Klemmsysteme***
***in dem gleichen Körper.***

| *Top clamp*<br>*Obere Klemmung* | *Dimple Lock* | *Double lock*<br>*Doppelte Klemmung* |
|---|---|---|
| ***C*** | ***D*** | ***M*** |
|  |  |  |



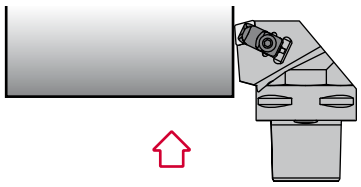
Characteristics:
Toolholder for face turning applications equipped with rhombic negative inserts (angle 80º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer rhombischen negativen Wendeschneidplatte (80º Winkel). PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

# CCKN 75º

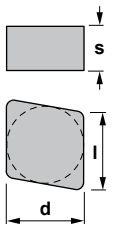
| Reference Bezeichnung | D5m | Dm1 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-CCKNR/L27050-12-4 | 40 | 110 | 27 | 50 | -6º | -6º | CNGN 1204.. | 0,420 |
| PSC40-CCKNR/L27050-12-7 | 40 | 110 | 27 | 50 | -6º | -6º | CNGN 1207.. | 0,420 |
| PSC50-CCKNR/L35060-12-4 | 50 | 110 | 35 | 60 | -6º | -6º | CNGN 1204.. | 0,800 |
| PSC50-CCKNR/L35060-12-7 | 50 | 110 | 35 | 60 | -6º | -6º | CNGN 1207.. | 0,800 |
| PSC63-CCKNR/L45065-12-4 | 63 | 110 | 45 | 65 | -6º | -6º | CNGN 1204.. | 1,100 |
| PSC63-CCKNR/L45065-12-7 | 63 | 110 | 45 | 65 | -6º | -6º | CNGN 1207.. | 1,100 |
| PSC40-CCKNR/L27050-16 | 40 | 125 | 27 | 50 | -6º | -6º | CNGN 1607.. | 0,420 |
| PSC50-CCKNR/L35060-16 | 50 | 125 | 35 | 60 | -6º | -6º | CNGN 1607.. | 0,800 |
| PSC63-CCKNR/L45065-16 | 63 | 125 | 45 | 65 | -6º | -6º | CNGN 1607.. | 1,100 |
| PSC63-CCKNR/L45065-19 | 63 | 125 | 45 | 65 | -6º | -6º | CNGN 1907.. | 1,100 |
| PSC80-CCKNR/L55080-19 | 80 | 125 | 55 | 80 | -6º | -6º | CNGN 1907.. | 2,740 |

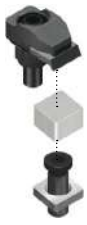
| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CCKNR/L27050-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CCKNR/L27050-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCKNR/L35060-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCKNR/L35060-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCKNR/L45065-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCKNR/L45065-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CCKNR/L27050-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCKNR/L35060-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCKNR/L45065-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCKNR/L45065-19 | 1770 | ICSN-623 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC80-CCKNR/L55080-19 | 1770 | ICSN-623 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## CNGN

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNGN 1204.. | 12,90 | 4,76 | 12,70 |
| CNGN 1207.. | 12,90 | 7,94 | 12,70 |
| CNGN 1607.. | 16,10 | 7,94 | 15,88 |
| CNGN 1907.. | 19,30 | 7,94 | 19,05 |



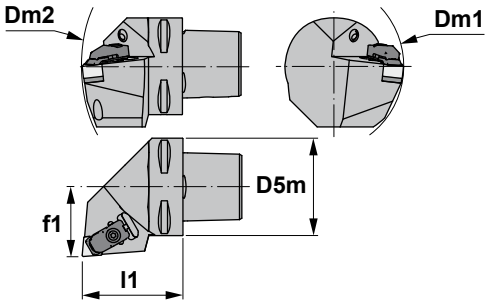
CNGN





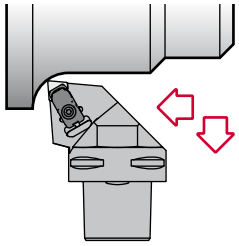
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

# CCLN 95°

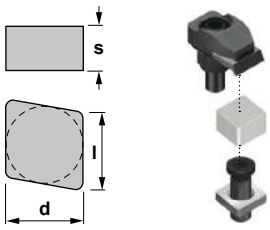
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-CCLNR/L27050-12-4 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | CNGN 1204.. | 0,420 |
| PSC40-CCLNR/L27050-12-7 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | CNGN 1207.. | 0,420 |
| PSC50-CCLNR/L35060-12-4 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | CNGN 1204.. | 0,800 |
| PSC50-CCLNR/L35060-12-7 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | CNGN 1207.. | 0,800 |
| PSC63-CCLNR/L45065-12-4 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | CNGN 1204.. | 1,100 |
| PSC63-CCLNR/L45065-12-7 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | CNGN 1207.. | 1,100 |
| PSC63-CCLNR/L45065-16 | 63 | 125 | 190 | 45 | 65 | -6° | -6° | CNGN 1607.. | 1,100 |
| PSC80-CCLNR/L55080-16 | 80 | 125 | 250 | 55 | 80 | -6° | -6° | CNGN 1607.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CCLNR/L27050-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CCLNR/L27050-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCLNR/L35060-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCLNR/L35060-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCLNR/L45065-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCLNR/L45065-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCLNR/L45065-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC80-CCLNR/L55080-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## CNGN

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNGN 1204.. | 12,90 | 4,76 | 12,70 |
| CNGN 1207.. | 12,90 | 7,94 | 12,70 |
| CNGN 1607.. | 16,10 | 7,94 | 15,88 |
| CNGN 1907.. | 19,30 | 7,94 | 19,05 |





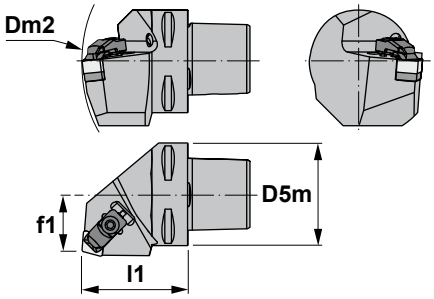

CNGN





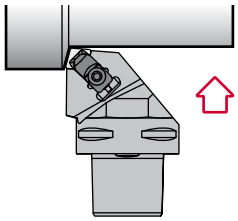
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (80° Winkel). PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

# CCRN 75°

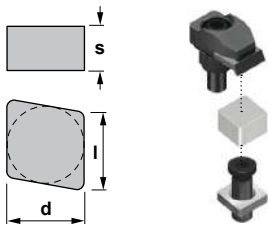
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-CCRNR/L22050-12-4 | 40 | 140 | 22 | 50 | -6° | -6° | CNGN 1204.. | 0,420 |
| PSC40-CCRNR/L22050-12-7 | 40 | 140 | 22 | 50 | -6° | -6° | CNGN 1207.. | 0,420 |
| PSC50-CCRNR/L27060-12-4 | 50 | 165 | 27 | 60 | -6° | -6° | CNGN 1204.. | 0,800 |
| PSC50-CCRNR/L27060-12-7 | 50 | 165 | 27 | 60 | -6° | -6° | CNGN 1207.. | 0,800 |
| PSC63-CCRNR/L35065-12-4 | 63 | 190 | 35 | 65 | -6° | -6° | CNGN 1204.. | 1,400 |
| PSC63-CCRNR/L35065-12-7 | 63 | 190 | 35 | 65 | -6° | -6° | CNGN 1207.. | 1,400 |
| PSC50-CCRNR/L27060-16 | 50 | 165 | 27 | 60 | -6° | -6° | CNGN 1607.. | 0,800 |
| PSC63-CCRNR/L35065-16 | 63 | 190 | 35 | 65 | -6° | -6° | CNGN 1607.. | 1,400 |
| PSC80-CCRNR/L55080-16 | 80 | 250 | 55 | 80 | -6° | -6° | CNGN 1607.. | 2,740 |
| PSC50-CCRNR/L27060-19 | 50 | 165 | 27 | 60 | -6° | -6° | CNGN 1907.. | 0,800 |
| PSC63-CCRNR/L35065-19 | 63 | 190 | 35 | 65 | -6° | -6° | CNGN 1907.. | 1,400 |
| PSC80-CCRNR/L55080-19 | 80 | 250 | 55 | 80 | -6° | -6° | CNGN 1907.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CCRNR/L22050-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CCRNR/L22050-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCRNR/L27060-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCRNR/L27060-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCRNR/L35065-12-4 | 1766 | ICSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCRNR/L35065-12-7 | 1766 | ICSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCRNR/L27060-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCRNR/L35065-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC80-CCRNR/L55080-16 | 1768 | ICSN-523 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CCRNR/L27060-19 | 1770 | ICSN-623 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CCRNR/L35065-19 | 1770 | ICSN-623 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC80-CCRNR/L55080-19 | 1770 | ICSN-623 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## CNGN

80° rhombic negative insert.
80° rhombische negative Wendeschneidplatte. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CNGN 1204.. | 12,90 | 4,76 | 12,70 |
| CNGN 1207.. | 12,90 | 7,94 | 12,70 |
| CNGN 1607.. | 16,10 | 7,94 | 15,88 |
| CNGN 1907.. | 19,30 | 7,94 | 19,05 |





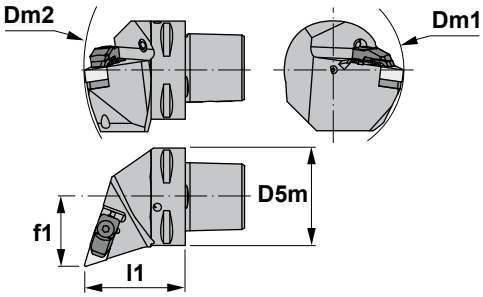

CNGN





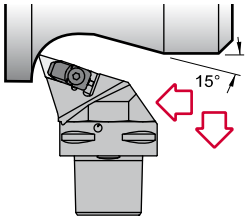
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Kopierdrehen mit einer doppelseitigen rhombischen negativen Wendeschneiplatten (Winkel 55°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




D

# CDHN 107° 30’

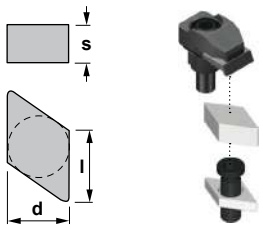
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-CDHNR/L27055-15 | 40 | 110 | 145 | 27 | 50 | -6° | -7° | DNGN 1507.. | 0,430 |
| PSC50-CDHNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6° | -7° | DNGN 1507.. | 0,800 |
| PSC63-CDHNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6° | -7° | DNGN 1507.. | 1,100 |
| PSC80-CDHNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6° | -7° | DNGN 1507.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CDHNR/L27055-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC50-CDHNR/L35060-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC63-CDHNR/L45065-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC80-CDHNR/L55080-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |

## DNGN

55° rhombic negative insert. D03
55° rhombische negative Wendeschneidplatte.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNGN 1507.. | 15,50 | 7,94 | 12,70 |



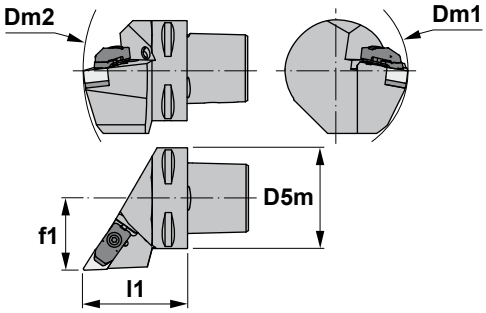

DNGN





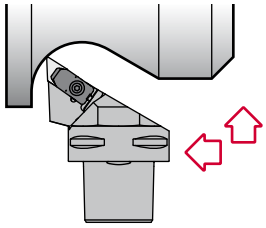
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (55° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# CDJN 93º

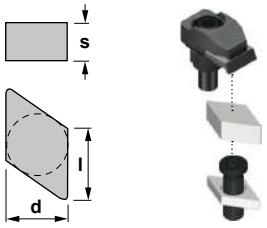
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-CDJNR/L27055-15 | 40 | 110 | 145 | 27 | 50 | -6º | -7º | DNGN 1507.. | 0,430 |
| PSC50-CDJNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DNGN 1507.. | 0,800 |
| PSC63-CDJNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DNGN 1507.. | 1,100 |
| PSC80-CDJNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DNGN 1507.. | 2,740 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CDJNR/L27055-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC50-CDJNR/L35060-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC63-CDJNR/L45065-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC80-CDJNR/L55080-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |

## DNGN

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNGN 1507.. | 15,50 | 7,94 | 12,70 |





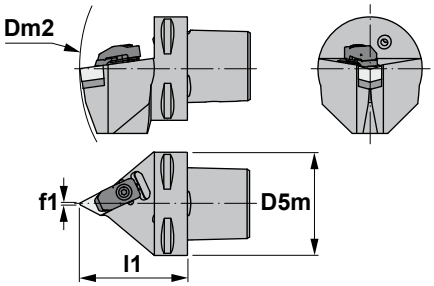

DNGN





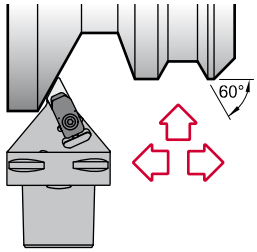
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




D

## CDNN 63°

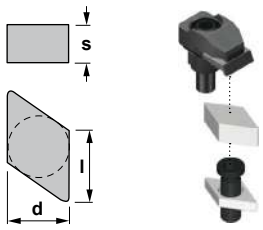
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-CDNNN00055-15 | 40 | 145 | 0.5 | 50 | -5° | -9° | DNGN 1507.. | 0,370 |
| PSC50-CDNNN00060-15 | 50 | 165 | 0.5 | 60 | -5° | -9° | DNGN 1507.. | 0,750 |
| PSC63-CDNNN00065-15 | 63 | 190 | 0.5 | 65 | -5° | -9° | DNGN 1507.. | 1,070 |
| PSC80-CDNNN00080-15 | 80 | 250 | 0.5 | 80 | -5° | -9° | DNGN 1507.. | 2,320 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CDNNN00055-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC50-CDNNN00060-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC63-CDNNN00065-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC80-CDNNN00080-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |

### DNGN

55° rhombic negative insert.
55° rhombische negative Wendeschneidplatte. D03

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNGN 1507.. | 15,50 | 7,94 | 12,70 |



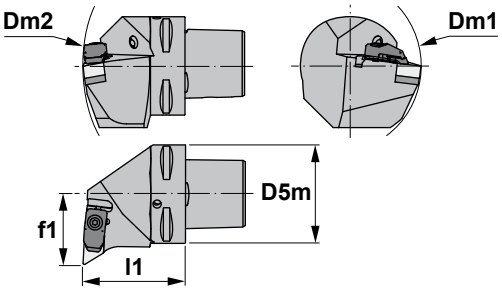

DNGN





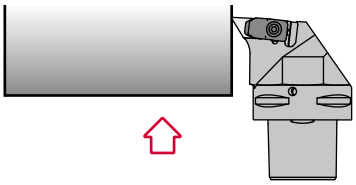
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Kopierdrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# CDUN 93º

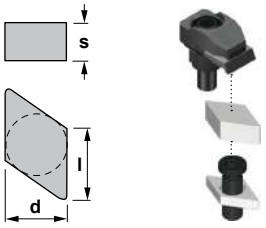
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-CDUNR/L27050-15 | 40 | 110 | 140 | 27 | 50 | -6º | -7º | DNGN 1507.. | 0,420 |
| PSC50-CDUNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DNGN 1507.. | 0,800 |
| PSC63-CDUNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DNGN 1507.. | 1,100 |
| PSC80-CDUNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DNGN 1507.. | 2,740 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CDUNR/L27050-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC50-CDUNR/L35060-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC63-CDUNR/L45065-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |
| PSC80-CDUNR/L55080-15 | 1766 | IDSN-422 | 9416 | 2717 | 1086 | 5003 | 3.0 |

## DNGN

55° rhombic negative insert. D03
55° rhombische negative Wendeschneidplatte.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DNGN 1507.. | 15,50 | 7,94 | 12,70 |





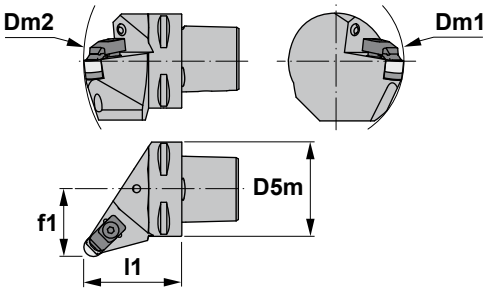

DNGN





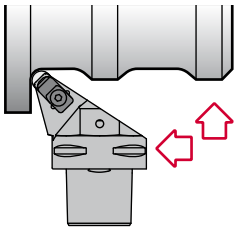
Characteristics:
Profiling multipurpose turning toolholder equipped with round negative insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer runden negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

## CRSN

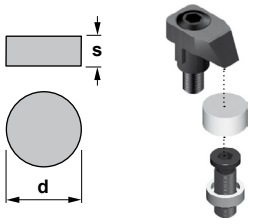
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-CRSNR/L27050-12-4 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | RNGN 1204.. | 0,420 |
| PSC40-CRSNR/L27050-12-7 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | RNGN 1207.. | 0,420 |
| PSC50-CRSNR/L35060-12-4 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | RNGN 1204.. | 0,800 |
| PSC50-CRSNR/L35060-12-7 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | RNGN 1207.. | 0,800 |
| PSC63-CRSNR/L45065-12-4 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | RNGN 1204.. | 1,100 |
| PSC63-CRSNR/L45065-12-7 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | RNGN 1207.. | 1,100 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CRSNR/L27050-12-4 | 1766 | IRSN 44 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CRSNR/L27050-12-7 | 1766 | IRSN 42 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CRSNR/L35060-12-4 | 1766 | IRSN 44 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CRSNR/L35060-12-7 | 1766 | IRSN 42 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CRSNR/L45065-12-4 | 1766 | IRSN 44 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CRSNR/L45065-12-7 | 1766 | IRSN 42 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## RNGN

Round negative insert.
Runde negative Wendeschneidplatte. D04

| Reference / Bez. | s | d |
|---|---|---|
| RNGN 1204.. | 4,76 | 12,70 |
| RNGN 1207.. | 7,94 | 12,70 |



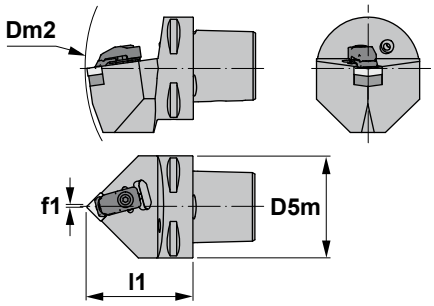

RNGN





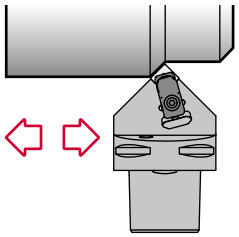
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# CSDN 45º

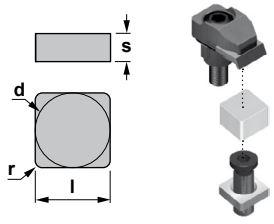
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-CSDNN00050-12-4 | 40 | 140 | 0.3 | 50 | -6º | -6º | SNGN 1204.. | 0,350 |
| PSC40-CSDNN00050-12-7 | 40 | 140 | 0.3 | 50 | -6º | -6º | SNGN 1207.. | 0,350 |
| PSC50-CSDNN00060-12-4 | 50 | 165 | 0.3 | 60 | -6º | -6º | SNGN 1204.. | 0,750 |
| PSC50-CSDNN00060-12-7 | 50 | 165 | 0.3 | 60 | -6º | -6º | SNGN 1207.. | 0,750 |
| PSC63-CSDNN00065-12-4 | 63 | 190 | 0.3 | 65 | -6º | -6º | SNGN 1204.. | 1,070 |
| PSC63-CSDNN00065-12-7 | 63 | 190 | 0.3 | 65 | -6º | -6º | SNGN 1207.. | 1,070 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CSDNN00050-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CSDNN00050-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSDNN00060-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSDNN00060-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSDNN00065-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSDNN00065-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## SNGN

Square negative insert. D05
Vierkantige negative Wendeschneidplatte.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNGN 1204.. | 12,70 | 4,76 | 12,70 |
| SNGN 1207.. | 12,70 | 7,94 | 12,70 |



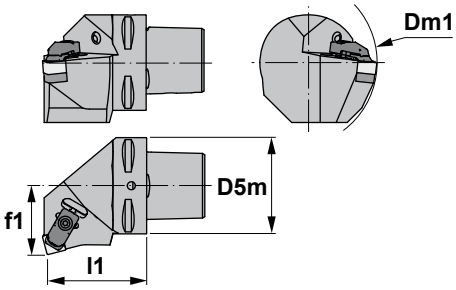

SNGN





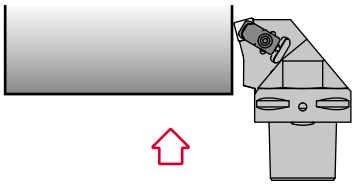
Characteristics:
Toolholder for face turning applications equipped with square negative insert and strong cutting edges.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte mit verstärkten Schnittkanten.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

## CSKN 75º

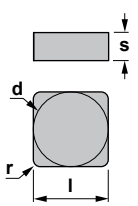
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-CSKNR/L27050-12-4 | 40 | 110 | 27 | 50 | -6º | -6º | SNGN 1204.. | 0,420 |
| PSC40-CSKNR/L27050-12-7 | 40 | 110 | 27 | 50 | -6º | -6º | SNGN 1207.. | 0,420 |
| PSC50-CSKNR/L35060-12-4 | 50 | 110 | 35 | 60 | -6º | -6º | SNGN 1204.. | 0,800 |
| PSC50-CSKNR/L35060-12-7 | 50 | 110 | 35 | 60 | -6º | -6º | SNGN 1207.. | 0,800 |
| PSC63-CSKNR/L45065-12-4 | 63 | 110 | 45 | 65 | -6º | -6º | SNGN 1204.. | 1,100 |
| PSC63-CSKNR/L45065-12-7 | 63 | 110 | 45 | 65 | -6º | -6º | SNGN 1207.. | 1,100 |

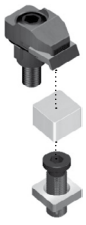
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CSKNR/L27050-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CSKNR/L27050-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSKNR/L35060-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSKNR/L35060-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSKNR/L45065-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSKNR/L45065-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |

### SNGN

Square negative insert. Vierkantige negative Wendeschneidplatte. D05

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNGN 1204.. | 12,70 | 4,76 | 12,70 |
| SNGN 1207.. | 12,70 | 7,94 | 12,70 |



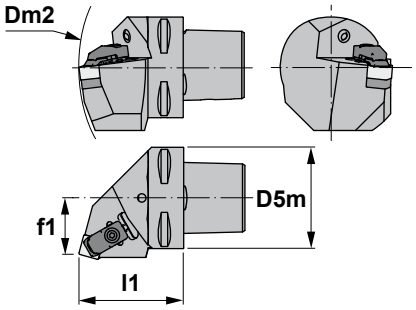
SNGN





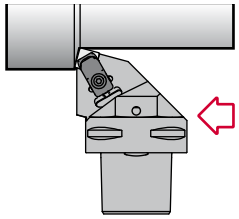
Characteristics:
Toolholder for external turning applications equipped with square negative insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

# CSRN 75º

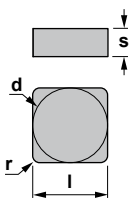
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-CSRNR/L22050-12-4 | 40 | 140 | 22 | 50 | -6º | -6º | SNGN 1204.. | 0,420 |
| PSC40-CSRNR/L22050-12-7 | 40 | 140 | 22 | 50 | -6º | -6º | SNGN 1207.. | 0,420 |
| PSC50-CSRNR/L27060-12-4 | 50 | 165 | 27 | 60 | -6º | -6º | SNGN 1204.. | 0,800 |
| PSC50-CSRNR/L27060-12-7 | 50 | 165 | 27 | 60 | -6º | -6º | SNGN 1207.. | 0,800 |
| PSC63-CSRNR/L35065-12-4 | 63 | 190 | 35 | 65 | -6º | -6º | SNGN 1204.. | 1,400 |
| PSC63-CSRNR/L35065-12-7 | 63 | 190 | 35 | 65 | -6º | -6º | SNGN 1207.. | 1,400 |

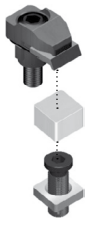
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CSRNR/L22050-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CSRNR/L22050-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSRNR/L27060-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSRNR/L27060-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSRNR/L35065-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSRNR/L35065-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## SNGN

Square negative insert.
Vierkantige negative Wendeschneidplatte. D05

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNGN 1204.. | 12,70 | 4,76 | 12,70 |
| SNGN 1207.. | 12,70 | 7,94 | 12,70 |



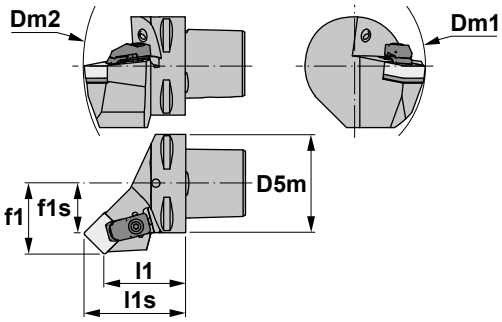
SNGN





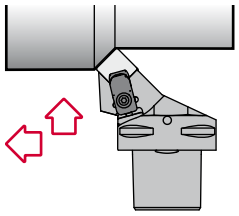
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



D

# CSSN 45º

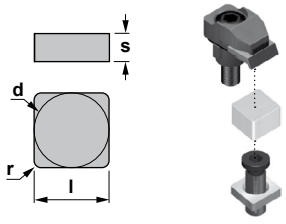
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | f1s | l1 | l1s | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-CSSNR/L27042-12-4 | 40 | 110 | 140 | 27 | 18.7 | 42 | 50.3 | -8º | -0º | SNGN 1204.. | 0,350 |
| PSC40-CSSNR/L27042-12-7 | 40 | 110 | 140 | 27 | 18.7 | 42 | 50.3 | -8º | -0º | SNGN 1207.. | 0,350 |
| PSC50-CSSNR/L35052-12-4 | 50 | 110 | 165 | 35 | 26.7 | 52 | 60.3 | -8º | -0º | SNGN 1204.. | 0,700 |
| PSC50-CSSNR/L35052-12-7 | 50 | 110 | 165 | 35 | 26.7 | 52 | 60.3 | -8º | -0º | SNGN 1207.. | 0,700 |
| PSC63-CSSNR/L45056-12-4 | 63 | 110 | 190 | 45 | 36.7 | 56 | 64.3 | -8º | -0º | SNGN 1204.. | 1,120 |
| PSC63-CSSNR/L45056-12-7 | 63 | 110 | 190 | 45 | 36.7 | 56 | 64.3 | -8º | -0º | SNGN 1207.. | 1,120 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-CSSNR/L27042-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC40-CSSNR/L27042-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSSNR/L35052-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC50-CSSNR/L35052-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSSNR/L45056-12-4 | 1766 | ISSN-442 | 9414 | 2713 | 1086 | 5003 | 3.0 |
| PSC63-CSSNR/L45056-12-7 | 1766 | ISSN-422 | 9414 | 2713 | 1086 | 5003 | 3.0 |

## SNGN

Square negative insert.
Vierkantige negative Wendeschneidplatte. D05

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNGN 1204.. | 12,70 | 4,76 | 12,70 |
| SNGN 1207.. | 12,70 | 7,94 | 12,70 |




SNGN





# PSC

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Klemmhalter mit Dimple Lock-Klemmung

Wedge clamp / Double lock toolholders E25-40
Klemmhalter mit Pratzen- und Doppel-Klemmung

Lever lock toolholders E41-50
Klemmhalter mit Kniehebel-Klemmung

Center screw toolholders E51-65
Klemmhalter mit Zentralschrauben-Klemmung

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Bohrstangen mit Dimple Lock-Klemmung

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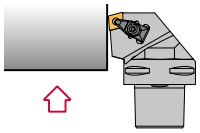
E

# NEGATIVE TOOLHOLDERS / NEGATIVE KLEMMHALTER

## *Dimple lock toolholders*
## *Klemmhalter mit Dimple Lock-Klemmung*

**DCKN 75º**



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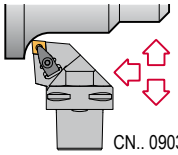

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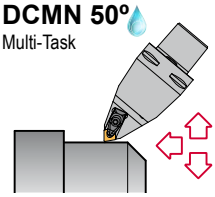
Multi-Task



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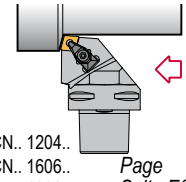

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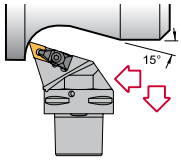


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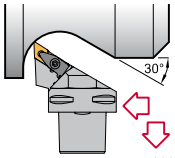


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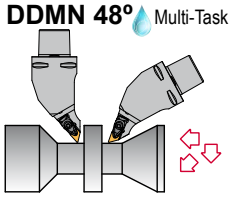

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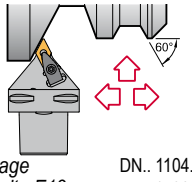


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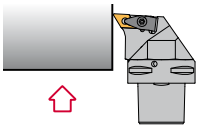

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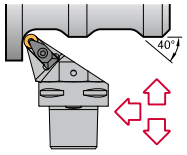


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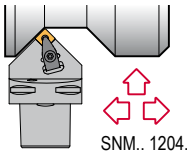

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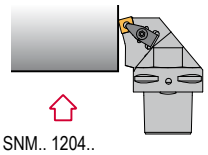

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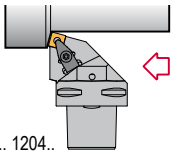

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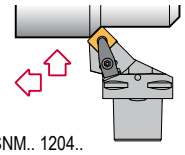

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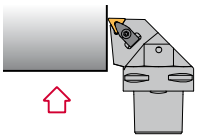

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TNM.. 2204..

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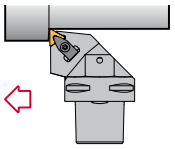

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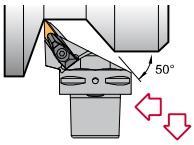


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VN.. 1604..

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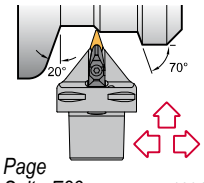


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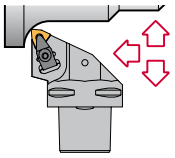

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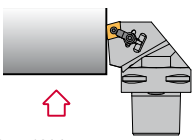
*Seite E24*
WNMG 0604..
WNMG 0804..

## *Wedge clamp / Double lock toolholders*
## *Klemmhalter mit Pratzen- und Doppel-Klemmung*

**MCKN 75º**



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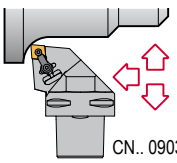

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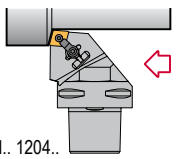

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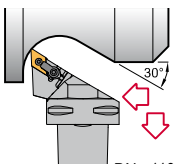


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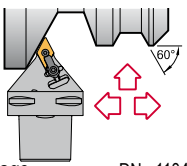
DN.. 1506..

**MDNN 63º**

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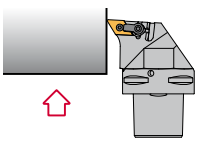

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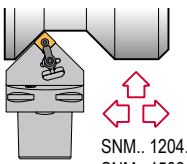

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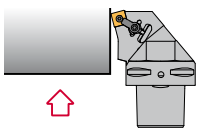

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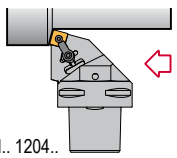

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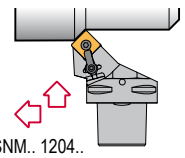

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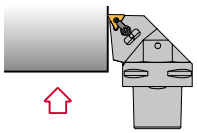

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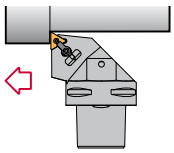

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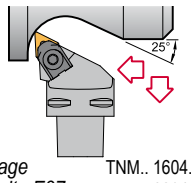
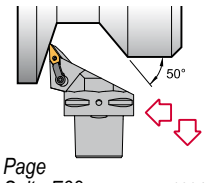


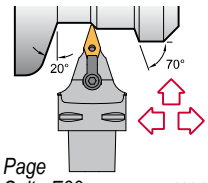

*Page* *Seite E37* TNM.. 1604.. TNM.. 2204..

**MVJN 93º**



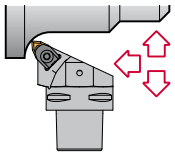

*Page* *Seite E38* VN.. 1604..

**MVVN 72º30'**




*Page* *Seite E39* VN.. 1604..

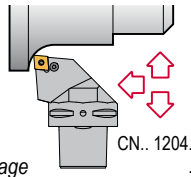
**MWLN 95º**



*Page* *Seite E40* WNMG 0604.. WNMG 0804..

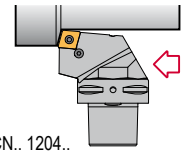
## *Lever lock toolholders*
## *Klemmhalter mit Kniehebel-Klemmung*

**PCLN 95º**



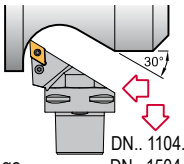
*Page* *Seite E41* CN.. 1204.. .. CN.. 2509..

**PCRN 75º**



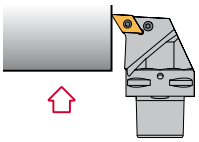
CN.. 1204.. CN.. 1606.. CN.. 1906.. *Page* *Seite E42*

**PDJN 93º**



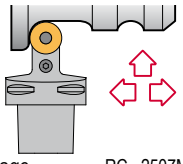

*Page* *Seite E43* DN.. 1104.. DN.. 1504.. DN.. 1506..

**PDUN 93º**



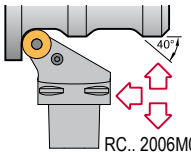
*Page* *Seite E44* DN.. 1506..

**PRDC**



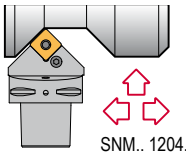
*Page* *Seite E45* RC.. 2507M0 RC.. 3209M0

**PRSC**



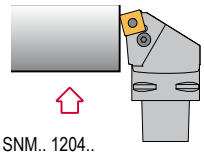

RC.. 2006M0 *Page* RC.. 2507M0 *Seite E46* RC.. 3209M0

**PSDN 45º**



SNM.. 1204.. *Page* .. *Seite E47* SNM.. 2507..

**PSKN 75º**



SNM.. 1204.. .. SNM.. 2507.. *Page* *Seite E48*

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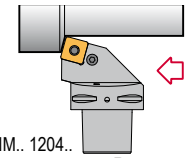
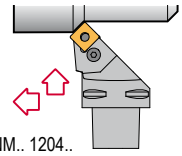


SNM.. 1204.. .. SNM.. 2507.. *Page* *Seite E49*

**PSSN 45º**

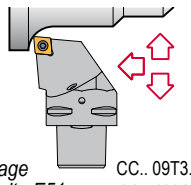


SNM.. 1204.. .. SNM.. 2507.. *Page* *Seite E50*

# POSITIVE TOOLHOLDERS / POSITIVE KLEMMHALTER

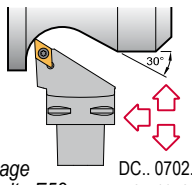
## *Center screw toolholders*
## *Klemmhalter mit Zentralschrauben-Klemmung*

**SCLC 95º**



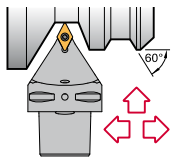
*Page* *Seite E51* CC.. 09T3.. CC.. 1204..

**SDJC 93º**



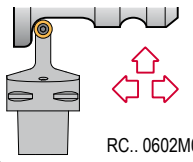

*Page* *Seite E52* DC.. 0702.. DC.. 11T3..

**SDNC 62º30'**



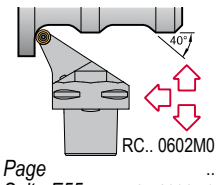

*Page* *Seite E53* DC.. 11T3..

**SRDC**



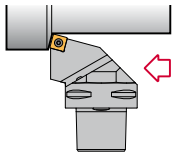
RC.. 0602M0 *Page* .. *Seite E54* RC.. 2006M0

**SRSC 45º**



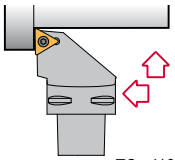

RC.. 0602M0 *Page* .. *Seite E55* RC.. 2006M0

**SSRC 75º**



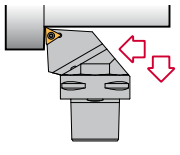
*Page* *Seite E56* SC.. 1204..

**STGC 90º**



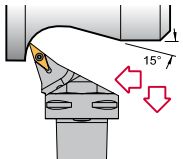
*Page* *Seite E57* TC.. 1102.. TC.. 16T3..

**STJC 93º**



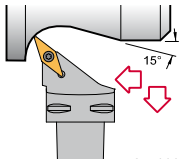
*Page* *Seite E58* TC.. 1102.. TC.. 16T3..

**SVHB 107º30'**




*Page* *Seite E59* VBMT 1604..

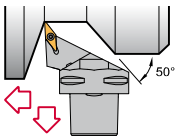
**SVHC 107º30'**




*Page* *Seite E60* VC.. 1103.. VC.. 1604..

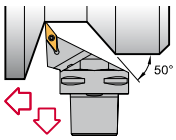
# POSITIVE TOOLHOLDERS / POSITIVE KLEMMHALTER

**SVJB 93º**



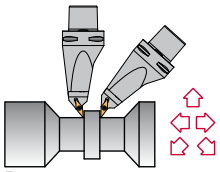

*Page* *Seite E61* VBMT 1604..

**SVJC 93º**



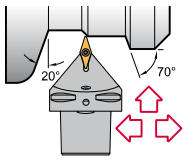

*Page* *Seite E62* VC.. 1103.. VC.. 1604..

**SVMB 50º** Multi-Task



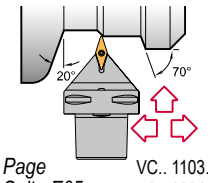
*Page* *Seite E63* VBMT 1604..

**SVVB 72º30'**




*Page* *Seite E64* VBMT 1604..

**SVVC 72º30'**




*Page* *Seite E65* VC.. 1103.. VC.. 1604..

# NEGATIVE BORING BARS / NEGATIVE BOHRSTANGEN

## *Adaptor*
## *Adapter*

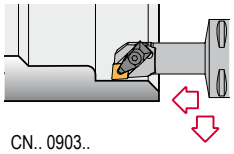
**J..**



*Page* *Seite E66*

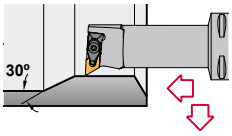
## *Dimple lock boring bars*
## *Bohrstangen mit Dimple Lock-Klemmung*

**DCLN 95º**



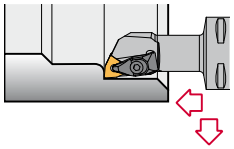
CN.. 0903.. CN.. 1204.. CN.. 1606.. *Page* *Seite E67*

**DDUN 93º**




*Page* *Seite E68* DN.. 1104.. DN.. 1506..

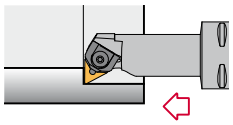
**DWLN 95º**



*Page* *Seite E69* WNMG 0604.. WNMG 0804..

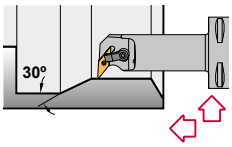
## *Wedge clamp / Double lock boring bars*
## *Bohrstangen mit Pratzen- und Doppel-Klemmung*

**MTFN 90º**



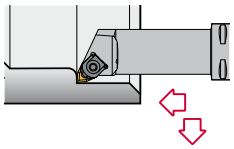
*Page* *Seite E70* TNM.. 1604..

**MVUN 93º**




*Page* *Seite E71* VN.. 1604..

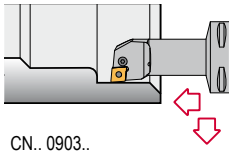
**MWLN 95º**



*Page* *Seite E72* WNMG 0604.. WNMG 0804..

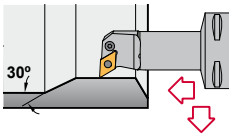
## *Lever lock boring bars*
## *Bohrstangen mit Kniehebel-Klemmung*

**PCLN 95º**



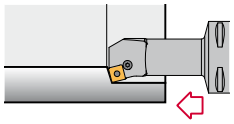
CN.. 0903.. CN.. 1204.. CN.. 1606.. *Page* *Seite E73*

**PDUN 93º**




*Page* *Seite E74* DN.. 1104.. DN.. 1506..

**PSKN 75º**

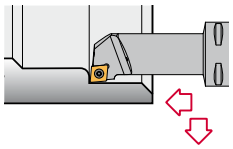


*Page* *Seite E75* SNM.. 1204..

# POSITIVE BORING BARS / POSITIVE BOHRSTANGEN

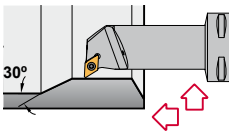
## *Center screw boring bars*
## *Bohrstangen mit Zentralschrauben-Klemmung*

**SCLC 95º**



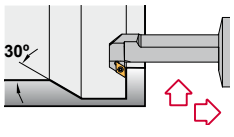
*Page* *Seite E76* CC.. 09T3.. CC.. 1204..

**SDUC 93º**



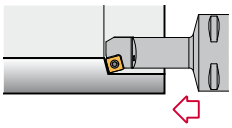

*Page* *Seite E77* DC.. 0702.. DC.. 11T3..

**SDUC-X 93º**



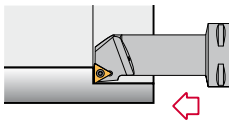

*Page* *Seite E78* DC.. 0702..

**SSKC 75º**



*Page* *Seite E79* SC.. 09T3..

**STFC 90º**

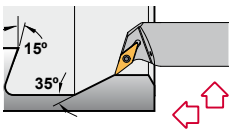


*Page* *Seite E80* TC.. 1102.. TC.. 16T3..

E

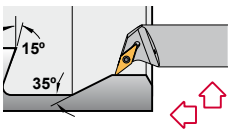
## POSITIVE BORING BARS / POSITIVE BOHRSTANGEN

**SVQB 107°30'**




*Page* *Seite E81* VBMT 1604..

**SVQC 107°30'**

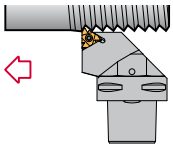



*Page* *Seite E82* VC.. 1103.. VC.. 1604..

## THREADING / GEWINDEDREHEN

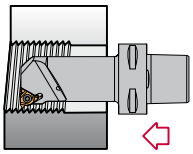
### *External and internal threading*
### *Außengewindedrehen und Innengewindedrehen*

**SE 90°**



*Page* *Seite E83* 16 ER/L.. 22 ER/L..

**SI 90°**

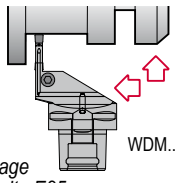


*Page* *Seite E84* 16 NR/L.. 22 NR/L..

## PARTING AND GROOVING / AB- UND EINSTECHDREHEN

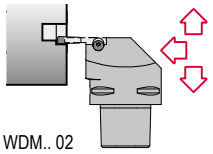
### *Toolholders and boring bars*
### *Klemmhalter und Bohrstangen*

**CZCD**



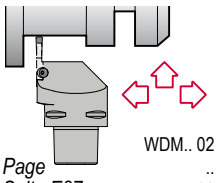
*Page* *Seite E85* WDM.. 02 .. WDM.. 06

**CZFD**



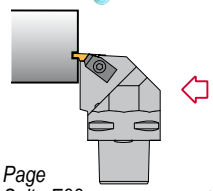
WDM.. 02 .. WDM.. 06 *Page* *Seite E86*

**CZGD**



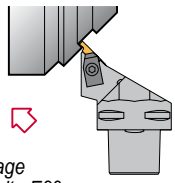
*Page* *Seite E87* WDM.. 02 .. WDM.. 06

**NE 93°**



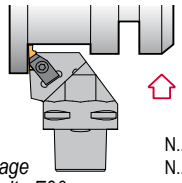
*Page* *Seite E88* N.. 3

**NR 45°**



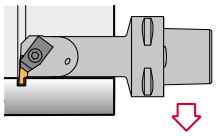
*Page* *Seite E89* N.. 3

**NS 93°**



*Page* *Seite E90* N.. 2 N.. 3 N.. 4

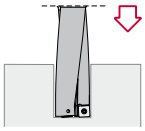
**NNTO 93°**



N.. 2 N.. 3 N.. 4 *Page* *Seite E91*

## DRILLS / BOHRER

**45..**



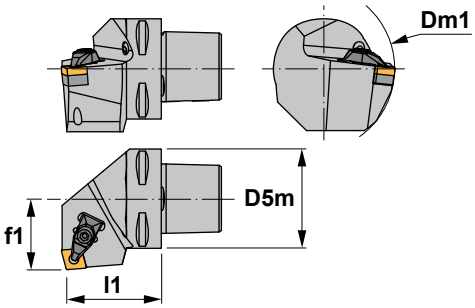
SPMT 0603.. .. SPMT 1204.. *Page* *Seite E92-94*

E



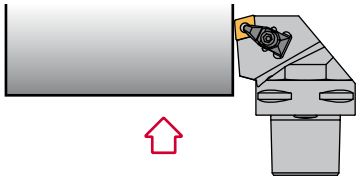
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Werkzeug mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 80º). PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DCKN 75º

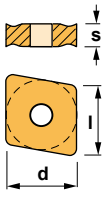
| Reference Bezeichnung | D5m | Dm1 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-DCKNR/L27050-12 | 40 | 110 | 27 | 50 | -6º | -6º | CN.. 1204.. | 0,420 |
| PSC50-DCKNR/L35060-12 | 50 | 110 | 35 | 60 | -6º | -6º | CN.. 1204.. | 0,800 |
| PSC63-DCKNR/L45065-12 | 63 | 110 | 45 | 65 | -6º | -6º | CN.. 1204.. | 1,100 |
| PSC40-DCKNR/L27050-16 | 40 | 125 | 27 | 50 | -6º | -6º | CN.. 1606.. | 0,420 |
| PSC50-DCKNR/L35060-16 | 50 | 125 | 35 | 60 | -6º | -6º | CN.. 1606.. | 0,800 |
| PSC63-DCKNR/L45065-16 | 63 | 125 | 45 | 65 | -6º | -6º | CN.. 1606.. | 1,100 |
| PSC63-DCKNR/L45065-19 | 63 | 125 | 45 | 65 | -6º | -6º | CN.. 1906.. | 1,100 |
| PSC80-DCKNR/L55080-19 | 80 | 125 | 55 | 80 | -6º | -6º | CN.. 1906.. | 2,740 |

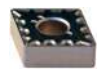
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DCKNR/L27050-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCKNR/L35060-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCKNR/L45065-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DCKNR/L27050-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCKNR/L35060-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCKNR/L45065-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCKNR/L45065-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCKNR/L55080-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80º rhombic negative inserts. 80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

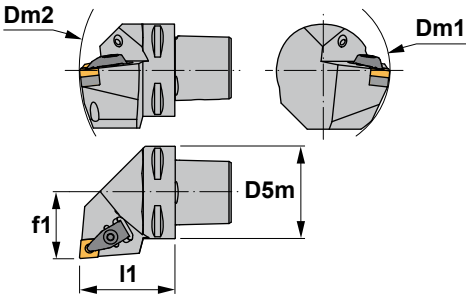


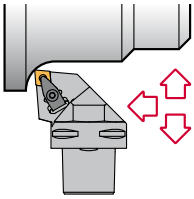

| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |



Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
PSC with internal coolant.

Eigenschaften:
Multifunktions-Werkzeug mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 80°).
PSC mit Innenkühlung.



1) γ= Rake angle (valid with a flat insert).
Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Angle of inclination.
Neigungswinkel.

# DCLN 95°

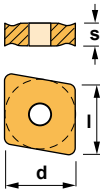
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-DCLNR/L22040-09 | 32 | 60 | 60 | 22 | 40 | -6° | -6° | CN.. 0903.. | 0,210 |
| PSC40-DCLNR/L27050-09 | 40 | 60 | 60 | 27 | 50 | -6° | -6° | CN.. 0903.. | 0,420 |
| PSC32-DCLNR/L22045-12 | 32 | 60 | 60 | 22 | 45 | -6° | -6° | CN.. 1204.. | 0,240 |
| PSC40-DCLNR/L27050-12 | 40 | 110 | 110 | 27 | 50 | -6° | -6° | CN.. 1204.. | 0,420 |
| PSC50-DCLNR/L35060-12 | 50 | 110 | 110 | 35 | 60 | -6° | -6° | CN.. 1204.. | 0,800 |
| PSC63-DCLNR/L45065-12 | 63 | 110 | 110 | 45 | 65 | -6° | -6° | CN.. 1204.. | 1,100 |
| PSC80-DCLNR/L55080-12 | 80 | 110 | 110 | 55 | 80 | -6° | -6° | CN.. 1204.. | 2,740 |
| PSC40-DCLNR/L27055-16 | 40 | 125 | 125 | 27 | 55 | -6° | -6° | CN.. 1606.. | 0,430 |
| PSC50-DCLNR/L35060-16 | 50 | 125 | 125 | 35 | 60 | -6° | -6° | CN.. 1606.. | 0,800 |
| PSC63-DCLNR/L45065-16 | 63 | 125 | 125 | 45 | 65 | -6° | -6° | CN.. 1606.. | 1,100 |
| PSC80-DCLNR/L55080-16 | 80 | 125 | 125 | 55 | 80 | -6° | -6° | CN.. 1606.. | 2,740 |
| PSC50-DCLNR/L35060-19 | 50 | 125 | 125 | 35 | 60 | -6° | -6° | CN.. 1906.. | 0,800 |
| PSC63-DCLNR/L45065-19 | 63 | 125 | 125 | 45 | 65 | -6° | -6° | CN.. 1906.. | 1,100 |
| PSC80-DCLNR/L55080-19 | 80 | 125 | 125 | 55 | 80 | -6° | -6° | CN.. 1906.. | 2,740 |

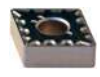
| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DCLNR/L22040-09 | 1764 | ICSN-332 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DCLNR/L27050-09 | 1764 | ICSN-332 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC32-DCLNR/L22045-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DCLNR/L27050-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCLNR/L35060-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCLNR/L45065-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCLNR/L55080-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DCLNR/L27055-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCLNR/L35060-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCLNR/L45065-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCLNR/L55080-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCLNR/L35060-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCLNR/L45065-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCLNR/L55080-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80° rhombic negative inserts. 80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

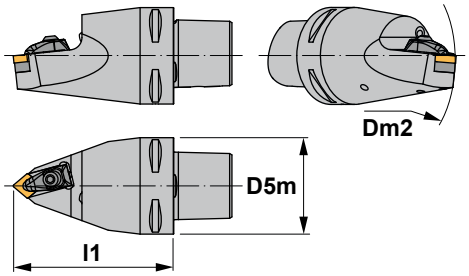



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |



Characteristics:
Toolholder for multi-task machining equipped with rhombic negative inserts (angle 80º).
PSC with internal coolant.

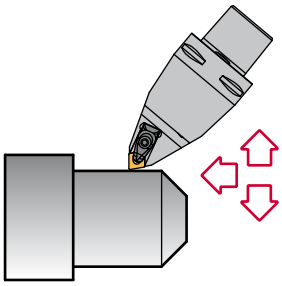
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



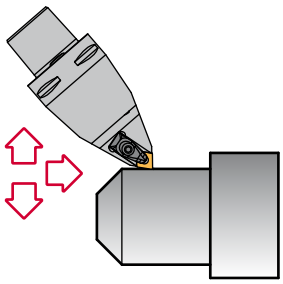

Eigenschaften:
Klemmhalter zur Multi-Task-Bearbeitung mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.

**Main application**
**Hauptanwendung**



**Alternative use**
**Alternative Anwendung**



# DCMN 50º

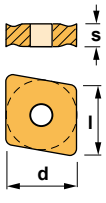
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSC63-DCMNN00115-12 | 63 | 110 | 115 | -6º | -6º | CN.. 1204.. | 1,700 |
| PSC80-DCMNN00150-16 | 80 | 115 | 150 | -6º | -6º | CN.. 1606.. | 3,300 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC63-DCMNN00115-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCMNN00150-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80º rhombic negative inserts.
80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |

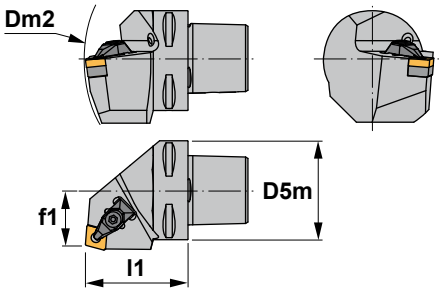



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |



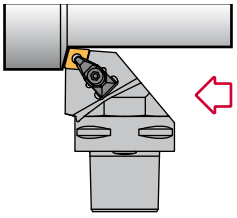
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Werkzeug mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 80º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DCRN 75º

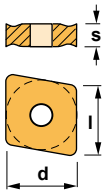
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-DCRNR/L22050-12 | 40 | 140 | 22 | 50 | -6º | -6º | CN.. 1204.. | 0,420 |
| PSC50-DCRNR/L27060-12 | 50 | 165 | 27 | 60 | -6º | -6º | CN.. 1204.. | 0,800 |
| PSC63-DCRNR/L35065-12 | 63 | 190 | 35 | 65 | -6º | -6º | CN.. 1204.. | 1,400 |
| PSC50-DCRNR/L27060-16 | 50 | 165 | 27 | 60 | -6º | -6º | CN.. 1606.. | 0,800 |
| PSC63-DCRNR/L35065-16 | 63 | 190 | 35 | 65 | -6º | -6º | CN.. 1606.. | 1,400 |
| PSC80-DCRNR/L55080-16 | 80 | 250 | 55 | 80 | -6º | -6º | CN.. 1606.. | 2,740 |
| PSC50-DCRNR/L27060-19 | 50 | 165 | 27 | 60 | -6º | -6º | CN.. 1906.. | 0,800 |
| PSC63-DCRNR/L35065-19 | 63 | 190 | 35 | 65 | -6º | -6º | CN.. 1906.. | 1,400 |
| PSC80-DCRNR/L55080-19 | 80 | 250 | 55 | 80 | -6º | -6º | CN.. 1906.. | 2,740 |

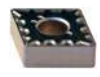
| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DCRNR/L22050-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCRNR/L27060-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCRNR/L35065-12 | 1766 | ICSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCRNR/L27060-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCRNR/L35065-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCRNR/L55080-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCRNR/L27060-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCRNR/L35065-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DCRNR/L55080-19 | 1770 | ICSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80º rhombic negative inserts. 80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

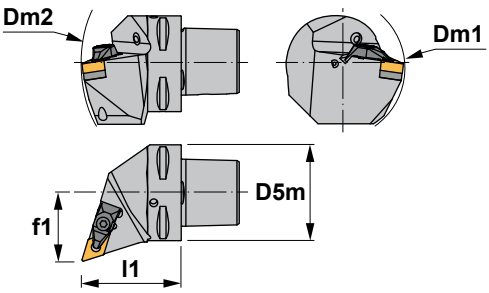



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |



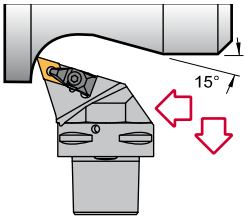
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Kopierdrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# DDHN 107º 30'

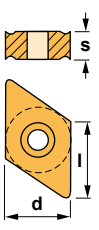
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-DDHNR/L27055-15 | 40 | 110 | 145 | 27 | 55 | -6º | -7º | DN.. 1506.. | 0,430 |
| PSC50-DDHNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DN.. 1506.. | 0,800 |
| PSC63-DDHNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DN.. 1506.. | 1,100 |
| PSC80-DDHNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DN.. 1506.. | 2,740 |

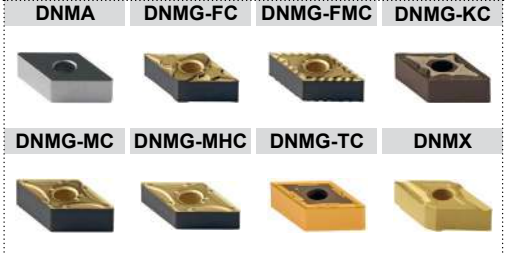
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DDHNR/L27055-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DDHNR/L35060-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DDHNR/L45065-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DDHNR/L55080-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

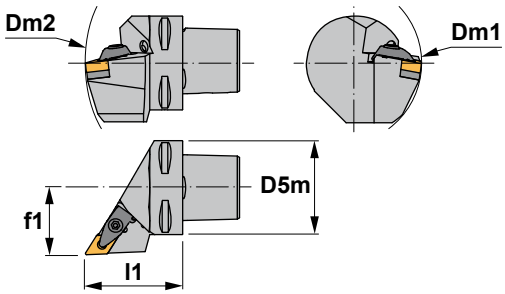




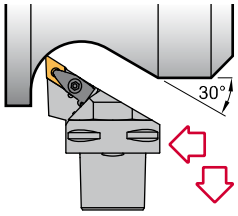
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Kopierdrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# DDJN 93°

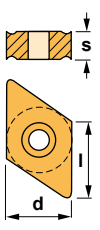
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-DDJNR/L22045-11 | 32 | 60 | 121 | 22 | 45 | -6° | -7° | DN.. 1104.. | 0,240 |
| PSC40-DDJNR/L27050-11 | 40 | 60 | 140 | 27 | 50 | -6° | -7° | DN.. 1104.. | 0,420 |
| PSC50-DDJNR/L35060-11 | 50 | 65 | 165 | 35 | 60 | -6° | -7° | DN.. 1104.. | 0,800 |
| PSC63-DDJNR/L45065-11 | 63 | 81 | 190 | 45 | 65 | -6° | -7° | DN.. 1104.. | 1,100 |
| PSC40-DDJNR/L27055-15 | 40 | 110 | 145 | 27 | 55 | -6° | -7° | DN.. 1506.. | 0,420 |
| PSC50-DDJNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6° | -7° | DN.. 1506.. | 0,800 |
| PSC63-DDJNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6° | -7° | DN.. 1506.. | 1,100 |
| PSC80-DDJNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6° | -7° | DN.. 1506.. | 2,740 |

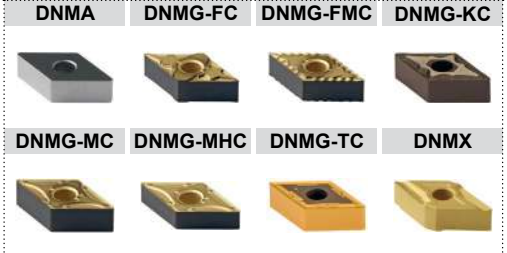
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DDJNR/L22045-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DDJNR/L27050-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DDJNR/L35060-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC63-DDJNR/L45065-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DDJNR/L27055-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DDJNR/L35060-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DDJNR/L45065-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DDJNR/L55080-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

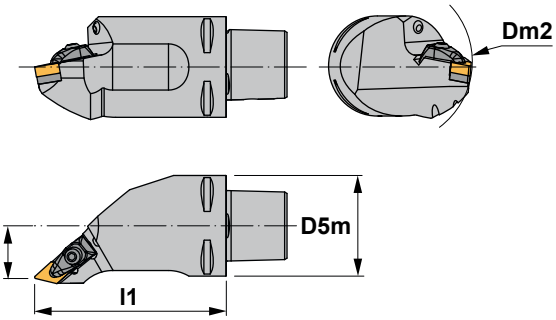




Characteristics:
Toolholder for multi-task machining equipped with rhombic negative inserts (angle 55°).
PSC with internal coolant.

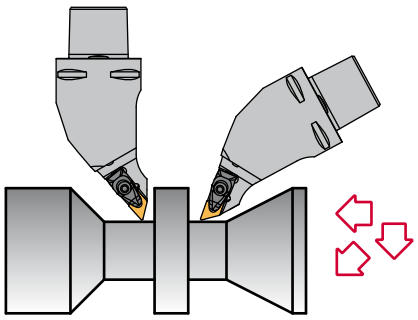
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



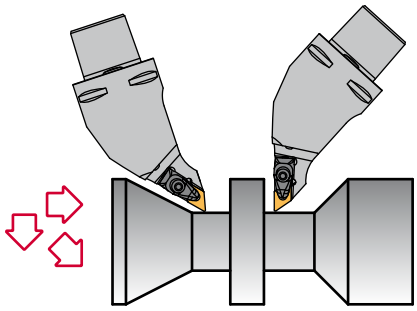

Eigenschaften:
Klemmhalter zur Multi-Task-Bearbeitung mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (55° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.

**Main application**
**Hauptanwendung**



**Alternative use**
**Alternative Anwendung**



# DDMN 48°

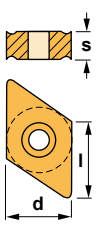
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|---|
| PSC63-DDMNR/L33120-15 | 63 | 130 | 33 | 120 | -5° | -9° | DN.. 1506.. | 2,300 |

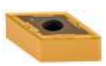
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC63-DDMNR/L33120-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

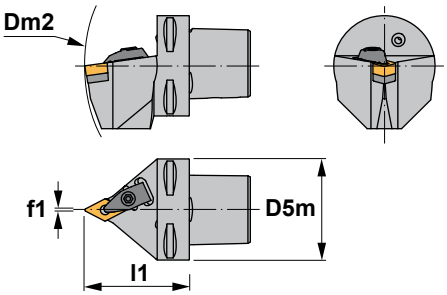



| DNMA | DNMG-FC | DNMG-FMC | DNMG-KC |
|---|---|---|---|
|  |  |  |  |
| **DNMG-MC** | **DNMG-MHC** | **DNMG-TC** | **DNMX** |
|  |  |  |  |



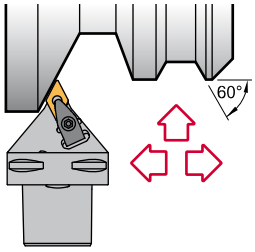
Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# DDNN 63°

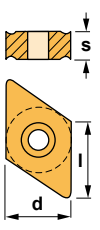
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-DDNNN00050-11 | 40 | 140 | 0.5 | 50 | -5° | -9° | DN.. 1104.. | 0,350 |
| PSC50-DDNNN00060-11 | 50 | 165 | 0.5 | 60 | -5° | -9° | DN.. 1104.. | 0,750 |
| PSC40-DDNNN00055-15 | 40 | 145 | 0.5 | 55 | -5° | -9° | DN.. 1506.. | 0,350 |
| PSC50-DDNNN00060-15 | 50 | 165 | 0.5 | 60 | -5° | -9° | DN.. 1506.. | 0,750 |
| PSC63-DDNNN00065-15 | 63 | 190 | 0.5 | 65 | -5° | -9° | DN.. 1506.. | 1,070 |
| PSC80-DDNNN00080-15 | 80 | 250 | 0.5 | 80 | -5° | -9° | DN.. 1506.. | 2,320 |

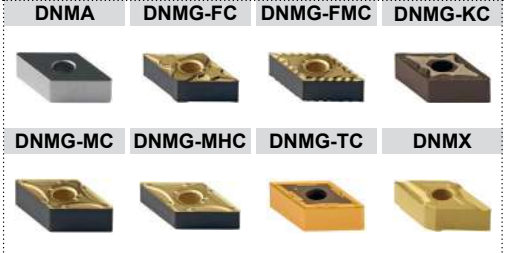
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DDNNN00050-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DDNNN00060-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DDNNN00055-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DDNNN00060-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DDNNN00065-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DDNNN00080-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

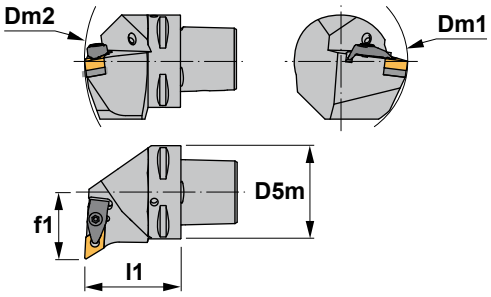




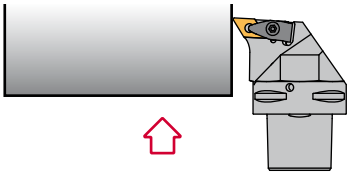
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Kopierdrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# DDUN 93º

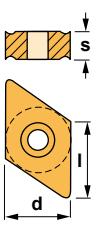
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-DDUNR/L27050-15 | 40 | 110 | 140 | 27 | 50 | -6º | -7º | DN.. 1506.. | 0,420 |
| PSC50-DDUNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DN.. 1506.. | 0,800 |
| PSC63-DDUNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DN.. 1506.. | 1,100 |
| PSC80-DDUNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DN.. 1506.. | 2,740 |

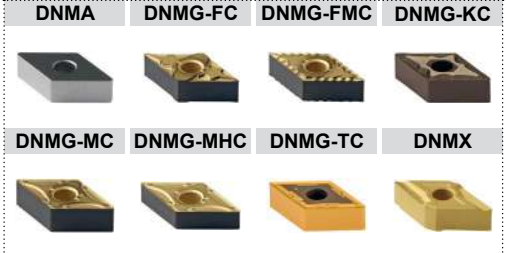
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DDUNR/L27050-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DDUNR/L35060-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DDUNR/L45065-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DDUNR/L55080-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

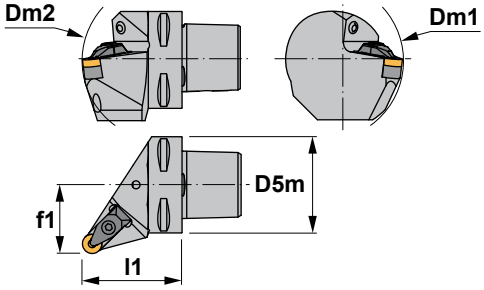




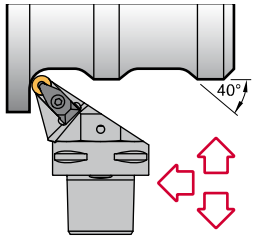
Characteristics:
Profiling multipurpose turning toolholder equipped with round negative insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer runden negativen Wendeschneidplatte. PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# DRSN

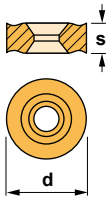
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-DRSNR/L27050-12 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | RNMG 1204.. | 0,420 |
| PSC50-DRSNR/L35060-12 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | RNMG 1204.. | 0,800 |
| PSC63-DRSNR/L45065-12 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | RNMG 1204.. | 1,100 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DRSNR/L27050-12 | 1766 | IRSN-44 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DRSNR/L35060-12 | 1766 | IRSN-44 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DRSNR/L45065-12 | 1766 | IRSN-44 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## RNMG

Round negative insert. A39
Runde negative Wendeschneidplatte.

| Reference / Bez. | s | d |
|---|---|---|
| RNMG 1204.. | 4,76 | 12,70 |



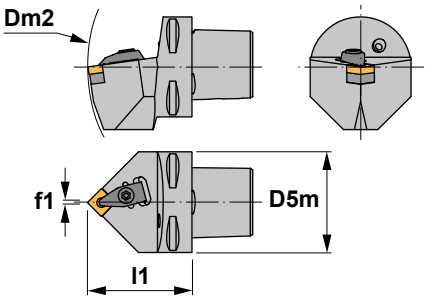

RNMG





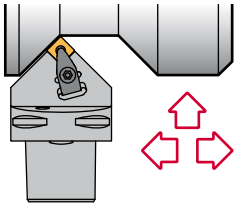
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DSDN 45º

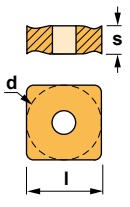
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ 1) | λs 2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-DSDNN00048-12 | 32 | 124 | 0.3 | 48 | -6º | -6º | SNM.. 1204.. | 0,240 |
| PSC40-DSDNN00050-12 | 40 | 140 | 0.3 | 50 | -6º | -6º | SNM.. 1204.. | 0,350 |
| PSC50-DSDNN00060-12 | 50 | 165 | 0.3 | 60 | -6º | -6º | SNM.. 1204.. | 0,750 |
| PSC63-DSDNN00065-12 | 63 | 190 | 0.3 | 65 | -6º | -6º | SNM.. 1204.. | 1,070 |
| PSC50-DSDNN00060-15 | 50 | 165 | 0.5 | 60 | -6º | -6º | SNM.. 1506.. | 0,750 |
| PSC63-DSDNN00065-15 | 63 | 190 | 0.5 | 65 | -6º | -6º | SNM.. 1506.. | 1,070 |
| PSC50-DSDNN00065-19 | 50 | 170 | 0.5 | 65 | -6º | -6º | SNM.. 1906.. | 0,800 |
| PSC63-DSDNN00070-19 | 63 | 195 | 0.5 | 70 | -6º | -6º | SNM.. 1906.. | 1,260 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DSDNN00048-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DSDNN00050-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSDNN00060-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSDNN00065-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSDNN00060-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSDNN00065-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSDNN00065-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSDNN00070-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

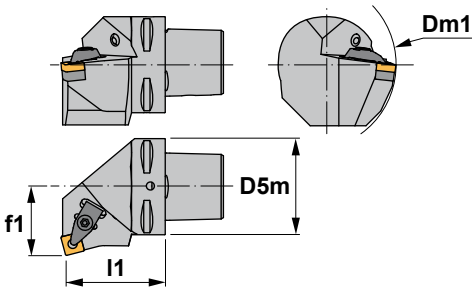



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



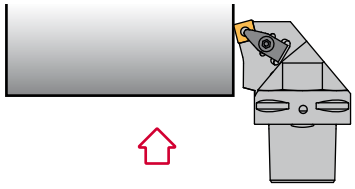
Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DSKN 75º

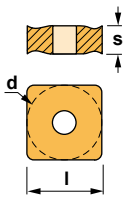
| Reference Bezeichnung | D5m | Dm1 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-DSKNR/L22040-12 | 32 | 60 | 22 | 40 | -6º | -6º | SNM.. 1204.. | 0,210 |
| PSC40-DSKNR/L27050-12 | 40 | 110 | 27 | 50 | -6º | -6º | SNM.. 1204.. | 0,420 |
| PSC50-DSKNR/L35060-12 | 50 | 110 | 35 | 60 | -6º | -6º | SNM.. 1204.. | 0,800 |
| PSC63-DSKNR/L45065-12 | 63 | 110 | 45 | 65 | -6º | -6º | SNM.. 1204.. | 1,100 |
| PSC50-DSKNR/L35060-15 | 50 | 125 | 35 | 60 | -6º | -6º | SNM.. 1506.. | 0,800 |
| PSC63-DSKNR/L45065-15 | 63 | 125 | 45 | 65 | -6º | -6º | SNM.. 1506.. | 1,100 |
| PSC50-DSKNR/L35060-19 | 50 | 125 | 35 | 60 | -6º | -6º | SNM.. 1906.. | 0,800 |
| PSC63-DSKNR/L45065-19 | 63 | 125 | 45 | 65 | -6º | -6º | SNM.. 1906.. | 1,100 |
| PSC80-DSKNR/L55080-19 | 80 | 125 | 55 | 80 | -6º | -6º | SNM.. 1906.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DSKNR/L22040-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DSKNR/L27050-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSKNR/L35060-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSKNR/L45065-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSKNR/L35060-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSKNR/L45065-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSKNR/L35060-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSKNR/L45065-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DSKNR/L55080-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## SNM..

Square negative inserts. A41-42
Vierkantige negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

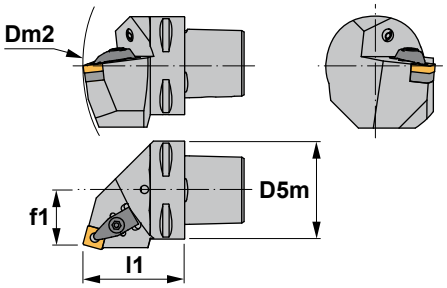



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



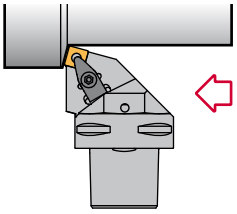
Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.





# DSRN 75º

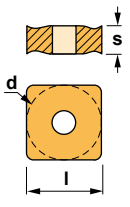
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-DSRNR/L19048-12 | 32 | 124 | 19 | 48 | -6º | -6º | SNM.. 1204.. | 0,260 |
| PSC40-DSRNR/L22050-12 | 40 | 140 | 22 | 50 | -6º | -6º | SNM.. 1204.. | 0,420 |
| PSC50-DSRNR/L27060-12 | 50 | 165 | 27 | 60 | -6º | -6º | SNM.. 1204.. | 0,800 |
| PSC63-DSRNR/L35065-12 | 63 | 190 | 35 | 65 | -6º | -6º | SNM.. 1204.. | 1,400 |
| PSC50-DSRNR/L27060-15 | 50 | 165 | 27 | 60 | -6º | -6º | SNM.. 1506.. | 0,800 |
| PSC63-DSRNR/L35065-15 | 63 | 190 | 35 | 65 | -6º | -6º | SNM.. 1506.. | 1,400 |
| PSC50-DSRNR/L27060-19 | 50 | 165 | 27 | 60 | -6º | -6º | SNM.. 1906.. | 0,800 |
| PSC63-DSRNR/L35065-19 | 63 | 190 | 35 | 65 | -6º | -6º | SNM.. 1906.. | 1,400 |
| PSC80-DSRNR/L45080-19 | 80 | 250 | 45 | 80 | -6º | -6º | SNM.. 1906.. | 2,800 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DSRNR/L19048-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DSRNR/L22050-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSRNR/L27060-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSRNR/L35065-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSRNR/L27060-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSRNR/L35065-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSRNR/L27060-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSRNR/L35065-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DSRNR/L45080-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

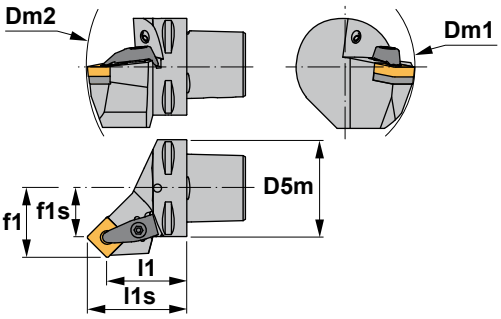



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



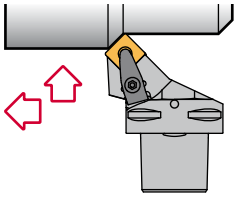
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DSSN 45º

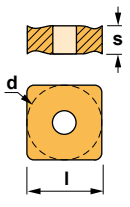
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | f1s | l1 | l1s | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-DSSNR/L22040-12 | 32 | 60 | 124 | 22 | 13.7 | 40 | 48.3 | -8º | 0º | SNM.. 1204.. | 0,210 |
| PSC40-DSSNR/L27042-12 | 40 | 110 | 140 | 27 | 18.7 | 42 | 50.3 | -8º | 0º | SNM.. 1204.. | 0,350 |
| PSC50-DSSNR/L35052-12 | 50 | 110 | 165 | 35 | 26.7 | 52 | 60.3 | -8º | 0º | SNM.. 1204.. | 0,700 |
| PSC63-DSSNR/L45056-12 | 63 | 110 | 190 | 45 | 36.7 | 56 | 64.3 | -8º | 0º | SNM.. 1204.. | 1,120 |
| PSC40-DSSNR/L27045-15 | 40 | 125 | 145 | 27 | 16.8 | 45 | 55.2 | -8º | 0º | SNM.. 1506.. | 0,400 |
| PSC50-DSSNR/L35050-15 | 50 | 125 | 165 | 35 | 24.8 | 50 | 60.2 | -8º | 0º | SNM.. 1506.. | 0,680 |
| PSC63-DSSNR/L45054-15 | 63 | 125 | 190 | 45 | 34.8 | 54 | 64.2 | -8º | 0º | SNM.. 1506.. | 1,140 |
| PSC50-DSSNR/L35048-19 | 50 | 125 | 165 | 35 | 22.5 | 48 | 60.5 | -8º | 0º | SNM.. 1906.. | 0,700 |
| PSC63-DSSNR/L45052-19 | 63 | 125 | 190 | 45 | 32.5 | 52 | 64.5 | -8º | 0º | SNM.. 1906.. | 1,130 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DSSNR/L22040-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DSSNR/L27042-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSSNR/L35052-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSSNR/L45056-12 | 1766 | ISSN-442 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC40-DSSNR/L27045-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSSNR/L35050-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSSNR/L45054-15 | 1768 | ISSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DSSNR/L35048-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DSSNR/L45052-19 | 1770 | ISSN-633 | 2719 | 1696 | 4295 | 5004 | 3.5 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

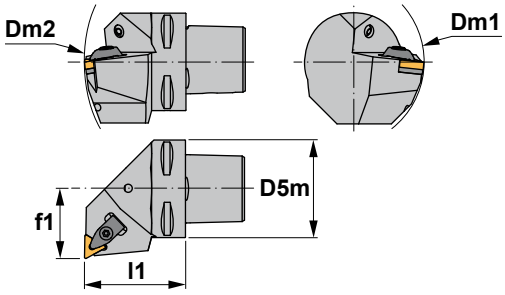



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



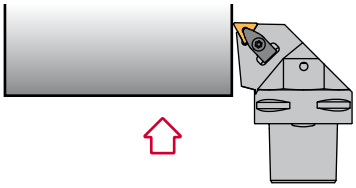
Characteristics:
Toolholder for face turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer dreikantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DTFN 90°

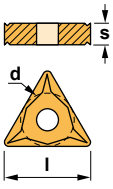
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-DTFNR/L22040-16 | 32 | 60 | 116 | 22 | 40 | -6° | -6° | TNM.. 1604.. | 0,210 |
| PSC40-DTFNR/L27050-16 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | TNM.. 1604.. | 0,420 |
| PSC50-DTFNR/L35060-16 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | TNM.. 1604.. | 0,800 |
| PSC63-DTFNR/L45065-16 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 1604.. | 1,100 |
| PSC40-DTFNR/L27050-22 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | TNM.. 2204.. | 0,420 |
| PSC50-DTFNR/L35060-22 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | TNM.. 2204.. | 0,800 |
| PSC63-DTFNR/L45065-22 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 2204.. | 1,100 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DTFNR/L22040-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DTFNR/L27050-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DTFNR/L35060-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC63-DTFNR/L45065-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DTFNR/L27050-22 | 1766 | ITSN-443 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DTFNR/L35060-22 | 1766 | ITSN-443 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DTFNR/L45065-22 | 1766 | ITSN-443 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## TNM..

Triangular negative inserts. Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

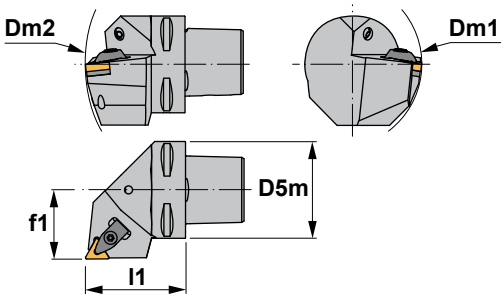



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |



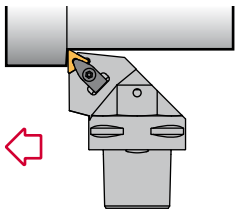
Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer dreikantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# DTGN 90º

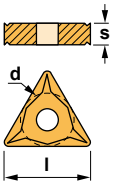
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-DTGNR/L27050-16 | 40 | 110 | 140 | 27 | 50 | -6º | -6º | TNM.. 1604.. | 0,420 |
| PSC50-DTGNR/L35060-16 | 50 | 110 | 165 | 35 | 60 | -6º | -6º | TNM.. 1604.. | 0,800 |
| PSC63-DTGNR/L45065-16 | 63 | 110 | 190 | 45 | 65 | -6º | -6º | TNM.. 1604.. | 1,100 |
| PSC40-DTGNR/L27050-22 | 40 | 110 | 140 | 27 | 50 | -6º | -6º | TNM.. 2204.. | 0,420 |
| PSC50-DTGNR/L35060-22 | 50 | 110 | 165 | 35 | 60 | -6º | -6º | TNM.. 2204.. | 0,800 |
| PSC63-DTGNR/L45065-22 | 63 | 110 | 190 | 45 | 65 | -6º | -6º | TNM.. 2204.. | 1,100 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DTGNR/L27050-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DTGNR/L35060-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC63-DTGNR/L45065-16 | 1764 | ITSN-342 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DTGNR/L27050-22 | 1766 | ITSN-443 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DTGNR/L35060-22 | 1766 | ITSN-443 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DTGNR/L45065-22 | 1766 | ITSN-443 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

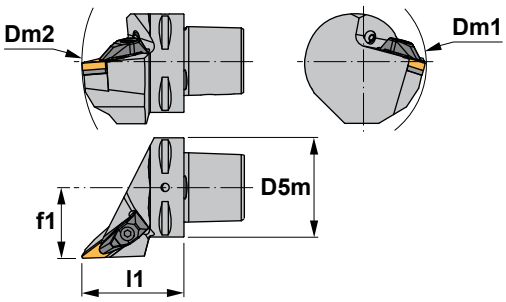






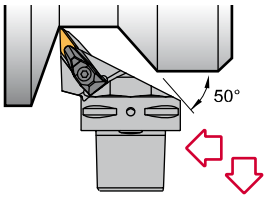

Characteristics:
Toolholder for very specific operations equipped with rhombic negative inserts (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter für sehr spezifische Anwendungen mit einer rhombischen negativen Wendeschneidplatte (Winkel 35º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# DVJN 93º

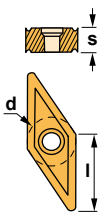
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-DVJNR/L27062-16 | 40 | 60 | 152 | 27 | 62 | -4º | -13º | VN.. 1604.. | 0,450 |
| PSC50-DVJNR/L35065-16 | 50 | 65 | 170 | 35 | 65 | -4º | -13º | VN.. 1604.. | 0,790 |
| PSC63-DVJNR/L45065-16 | 63 | 81 | 190 | 45 | 65 | -4º | -13º | VN.. 1604.. | 1,100 |
| PSC80-DVJNR/L55080-16 | 80 | 100 | 250 | 55 | 80 | -4º | -13º | VN.. 1604.. | 2,740 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DVJNR/L27062-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DVJNR/L35065-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC63-DVJNR/L45065-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC80-DVJNR/L55080-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



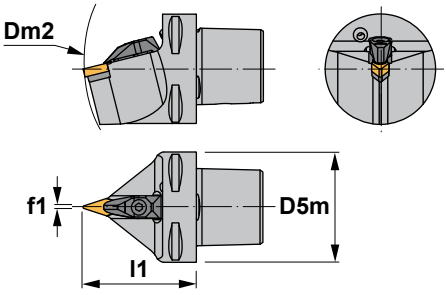
VNMG-TC





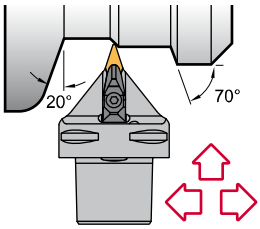
Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 35°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# DVVN 72° 30’

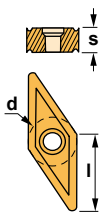
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-DVVNN00062-16 | 40 | 152 | 0.6 | 62 | -4° | -13° | VN.. 1604.. | 0,430 |
| PSC50-DVVNN00065-16 | 50 | 170 | 0.6 | 65 | -4° | -13° | VN.. 1604.. | 0,800 |
| PSC63-DVVNN00065-16 | 63 | 190 | 0.6 | 65 | -4° | -13° | VN.. 1604.. | 1,070 |
| PSC80-DVVNN00080-16 | 80 | 250 | 0.6 | 80 | -4° | -13° | VN.. 1604.. | 2,320 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DVVNN00062-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DVVNN00065-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC63-DVVNN00065-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC80-DVVNN00080-16 | 1764 | IVSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



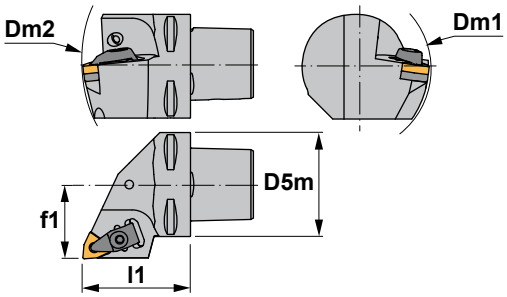
VNMG-TC





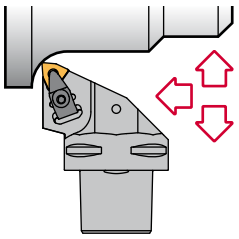
Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen negativen Trigon-Wendeschneidplatte (Winkel 80°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# DWLN 95°

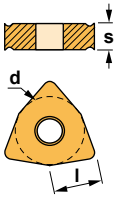
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-DWLNR/L22040-06 | 32 | 60 | 116 | 22 | 40 | -6° | -6° | WNMG 0604.. | 0,210 |
| PSC40-DWLNR/L27050-06 | 40 | 60 | 140 | 27 | 50 | -6° | -6° | WNMG 0604.. | 0,420 |
| PSC50-DWLNR/L35060-06 | 50 | 65 | 165 | 35 | 60 | -6° | -6° | WNMG 0604.. | 0,800 |
| PSC63-DWLNR/L45065-06 | 63 | 81 | 190 | 45 | 65 | -6° | -6° | WNMG 0604.. | 1,100 |
| PSC40-DWLNR/L27050-08 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | WNMG 0804.. | 0,420 |
| PSC50-DWLNR/L35060-08 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | WNMG 0804.. | 0,800 |
| PSC63-DWLNR/L45065-08 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | WNMG 0804.. | 1,100 |
| PSC80-DWLNR/L55080-08 | 80 | 110 | 250 | 55 | 80 | -6° | -6° | WNMG 0804.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-DWLNR/L22040-06 | 1764 | IWSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DWLNR/L27050-06 | 1764 | IWSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DWLNR/L35060-06 | 1764 | IWSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC63-DWLNR/L45065-06 | 1764 | IWSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DWLNR/L27050-08 | 1766 | IWSN-433 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DWLNR/L35060-08 | 1766 | IWSN-433 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DWLNR/L45065-08 | 1766 | IWSN-433 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC80-DWLNR/L55080-08 | 1766 | IWSN-433 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

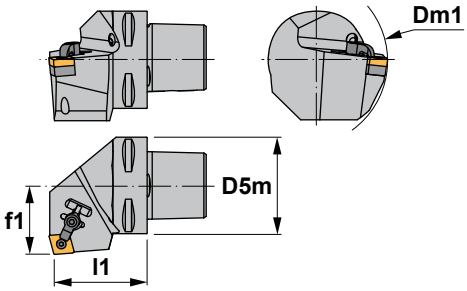






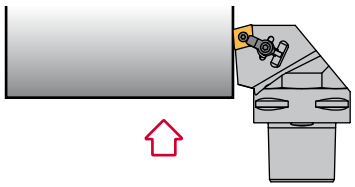

Characteristics:
Toohloder for face turning applications equipped with rhombic negative inserts (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MCKN 75°

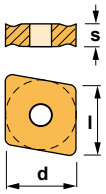
| Reference Bezeichnung | D5m | Dm1 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-MCKNR/L27050-12 | 40 | 110 | 27 | 50 | -6° | -6° | CN.. 1204.. | 0,420 |
| PSC50-MCKNR/L35060-12 | 50 | 110 | 35 | 60 | -6° | -6° | CN.. 1204.. | 0,800 |
| PSC63-MCKNR/L45065-12 | 63 | 110 | 45 | 65 | -6° | -6° | CN.. 1204.. | 1,100 |
| PSC40-MCKNR/L27050-16 | 40 | 125 | 27 | 50 | -6° | -6° | CN.. 1606.. | 0,420 |
| PSC50-MCKNR/L35060-16 | 50 | 125 | 35 | 60 | -6° | -6° | CN.. 1606.. | 0,800 |
| PSC63-MCKNR/L45065-16 | 63 | 125 | 45 | 65 | -6° | -6° | CN.. 1606.. | 1,100 |
| PSC63-MCKNR/L45065-19 | 63 | 125 | 45 | 65 | -6° | -6° | CN.. 1906.. | 1,100 |
| PSC80-MCKNR/L55080-19 | 80 | 125 | 55 | 80 | -6° | -6° | CN.. 1906.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MCKNR/L27050-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MCKNR/L35060-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MCKNR/L45065-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MCKNR/L27050-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MCKNR/L35060-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MCKNR/L45065-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MCKNR/L45065-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |
| PSC80-MCKNR/L55080-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |




| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
| CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM |

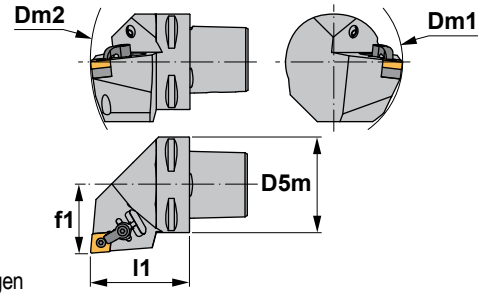


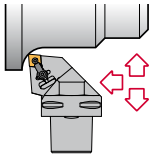
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°). PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen rhombischen Wendeschneidplatte (Winkel 80°). PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MCLN 95°

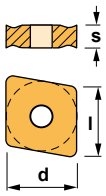
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-MCLNR/L22040-09 | 32 | 60 | 116 | 22 | 40 | -6° | -6° | CN.. 0903.. | 0,210 |
| PSC40-MCLNR/L27050-09 | 40 | 60 | 140 | 27 | 50 | -6° | -6° | CN.. 0903.. | 0,420 |
| PSC32-MCLNR/L22045-12 | 32 | 60 | 121 | 22 | 45 | -6° | -6° | CN.. 1204.. | 0,240 |
| PSC40-MCLNR/L27050-12 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | CN.. 1204.. | 0,420 |
| PSC50-MCLNR/L35060-12 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | CN.. 1204.. | 0,800 |
| PSC63-MCLNR/L45065-12 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | CN.. 1204.. | 1,100 |
| PSC80-MCLNR/L55080-12 | 80 | 110 | 250 | 55 | 80 | -6° | -6° | CN.. 1204.. | 2,740 |
| PSC40-MCLNR/L27055-16 | 40 | 125 | 145 | 27 | 55 | -6° | -6° | CN.. 1606.. | 0,430 |
| PSC50-MCLNR/L35060-16 | 50 | 125 | 165 | 35 | 60 | -6° | -6° | CN.. 1606.. | 0,800 |
| PSC63-MCLNR/L45065-16 | 63 | 125 | 190 | 45 | 65 | -6° | -6° | CN.. 1606.. | 1,100 |
| PSC80-MCLNR/L55080-16 | 80 | 125 | 250 | 55 | 80 | -6° | -6° | CN.. 1606.. | 2,740 |
| PSC50-MCLNR/L35060-19 | 50 | 125 | 165 | 35 | 60 | -6° | -6° | CN.. 1906.. | 0,800 |
| PSC63-MCLNR/L45065-19 | 63 | 125 | 190 | 45 | 65 | -6° | -6° | CN.. 1906.. | 1,100 |
| PSC80-MCLNR/L55080-19 | 80 | 125 | 250 | 55 | 80 | -6° | -6° | CN.. 1906.. | 2,740 |

| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MCLNR/L22040-09 | 2604 | 1085 | 5025 | ICSN-332 | 1665 | 5002 | 2.0 |
| PSC40-MCLNR/L27050-09 | 2604 | 1085 | 5025 | ICSN-332 | 1665 | 5002 | 2.0 |
| PSC32-MCLNR/L22045-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MCLNR/L27050-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MCLNR/L35060-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MCLNR/L45065-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC80-MCLNR/L55080-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MCLNR/L27055-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MCLNR/L35060-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MCLNR/L45065-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC80-MCLNR/L55080-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MCLNR/L35060-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |
| PSC63-MCLNR/L45065-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |
| PSC80-MCLNR/L55080-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |

## CN..

80° rhombic negative inserts. 80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

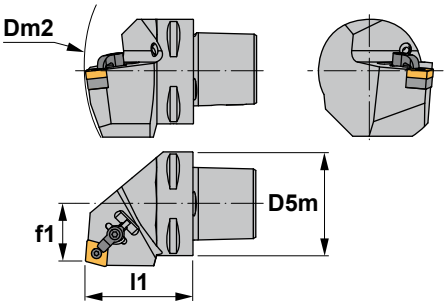



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |



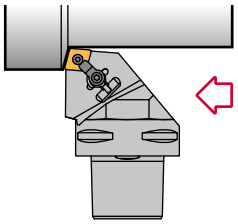
Characteristics:
Toolholder for external turning applications equipped with rhombic negative inserts (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer rhombischen negativen Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MCRN 75°

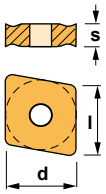
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-MCRNR/L22050-12 | 40 | 140 | 22 | 50 | -6° | -6° | CN.. 1204.. | 0,420 |
| PSC50-MCRNR/L27060-12 | 50 | 165 | 27 | 60 | -6° | -6° | CN.. 1204.. | 0,800 |
| PSC63-MCRNR/L35065-12 | 63 | 190 | 35 | 65 | -6° | -6° | CN.. 1204.. | 1,400 |
| PSC50-MCRNR/L27060-16 | 50 | 165 | 27 | 60 | -6° | -6° | CN.. 1606.. | 0,800 |
| PSC63-MCRNR/L35065-16 | 63 | 190 | 35 | 65 | -6° | -6° | CN.. 1606.. | 1,400 |
| PSC80-MCRNR/L55080-16 | 80 | 250 | 55 | 80 | -6° | -6° | CN.. 1606.. | 2,740 |
| PSC50-MCRNR/L27060-19 | 50 | 165 | 27 | 60 | -6° | -6° | CN.. 1906.. | 0,800 |
| PSC63-MCRNR/L35065-19 | 63 | 190 | 35 | 65 | -6° | -6° | CN.. 1906.. | 1,400 |
| PSC80-MCRNR/L55080-19 | 80 | 250 | 55 | 80 | -6° | -6° | CN.. 1906.. | 2,740 |

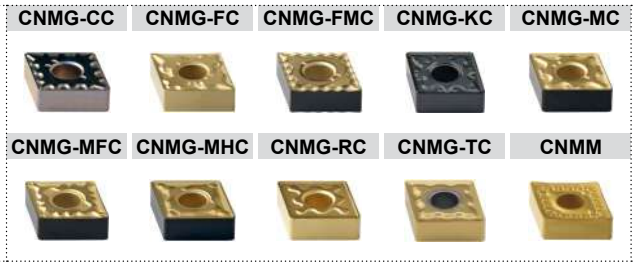
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MCRNR/L22050-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MCRNR/L27060-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MCRNR/L35065-12 | 2613 | 1086 | 5003 | ICSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MCRNR/L27060-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MCRNR/L35065-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC80-MCRNR/L55080-16 | 2614 | 1086 | 5003 | ICSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MCRNR/L27060-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |
| PSC63-MCRNR/L35065-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |
| PSC80-MCRNR/L55080-19 | 2614 | 1086 | 5003 | ICSN-633 | 1674 | 5004 | 3.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

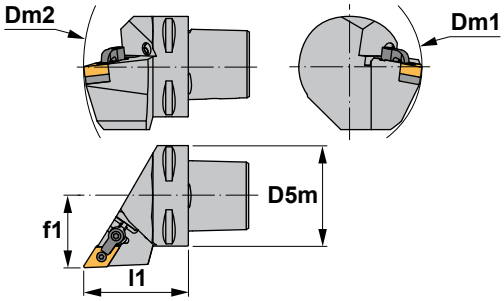




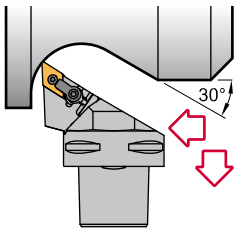
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# MDJN 93º

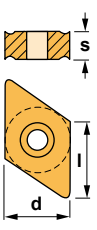
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-MDJNR/L22045-11 | 32 | 60 | 121 | 22 | 45 | -6º | -7º | DN.. 1104.. | 0,240 |
| PSC40-MDJNR/L27050-11 | 40 | 60 | 140 | 27 | 50 | -6º | -7º | DN.. 1104.. | 0,420 |
| PSC50-MDJNR/L35060-11 | 50 | 65 | 165 | 35 | 60 | -6º | -7º | DN.. 1104.. | 0,800 |
| PSC63-MDJNR/L45065-11 | 63 | 81 | 190 | 45 | 65 | -6º | -7º | DN.. 1104.. | 1,100 |
| PSC40-MDJNR/L27055-15 | 40 | 110 | 145 | 27 | 55 | -6º | -7º | DN.. 1506.. | 0,430 |
| PSC50-MDJNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DN.. 1506.. | 0,800 |
| PSC63-MDJNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DN.. 1506.. | 1,100 |
| PSC80-MDJNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DN.. 1506.. | 2,740 |

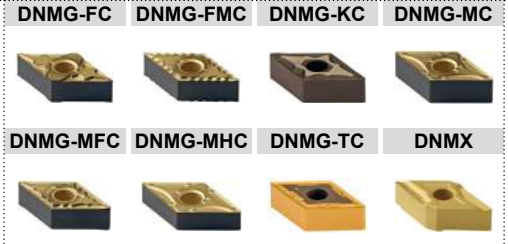
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MDJNR/L22045-11 | 2604 | 1085 | 5025 | IDSN-322 | 1665 | 5002 | 2.0 |
| PSC40-MDJNR/L27050-11 | 2604 | 1085 | 5025 | IDSN-322 | 1665 | 5002 | 2.0 |
| PSC50-MDJNR/L35060-11 | 2604 | 1085 | 5025 | IDSN-322 | 1665 | 5002 | 2.0 |
| PSC63-MDJNR/L45065-11 | 2604 | 1085 | 5025 | IDSN-322 | 1665 | 5002 | 2.0 |
| PSC40-MDJNR/L27055-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC50-MDJNR/L35060-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC63-MDJNR/L45065-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC80-MDJNR/L55080-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

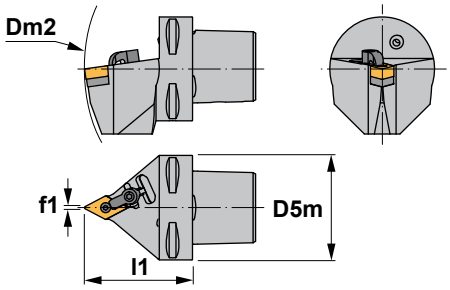




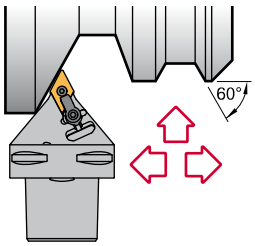
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# MDNN 63º

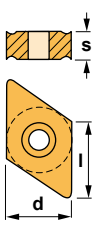
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-MDNNN00050-11 | 40 | 140 | 0.5 | 50 | -5º | -9º | DN.. 1104.. | 0,350 |
| PSC50-MDNNN00060-11 | 50 | 165 | 0.5 | 60 | -5º | -9º | DN.. 1104.. | 0,750 |
| PSC40-MDNNN00055-15 | 40 | 145 | 0.5 | 55 | -5º | -9º | DN.. 1506.. | 0,370 |
| PSC50-MDNNN00060-15 | 50 | 165 | 0.5 | 60 | -5º | -9º | DN.. 1506.. | 0,750 |
| PSC63-MDNNN00065-15 | 63 | 190 | 0.5 | 65 | -5º | -9º | DN.. 1506.. | 1,070 |
| PSC80-MDNNN00080-15 | 80 | 250 | 0.5 | 80 | -5º | -9º | DN.. 1506.. | 2,320 |

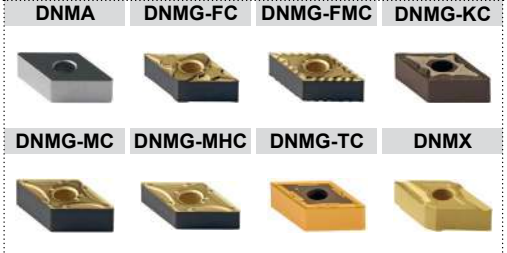
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MDNNN00050-11 | 2604 | 1085 | 5025 | IDSN-322 | 1665 | 5002 | 2.0 |
| PSC50-MDNNN00060-11 | 2604 | 1085 | 5025 | IDSN-322 | 1665 | 5002 | 2.0 |
| PSC40-MDNNN00055-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC50-MDNNN00060-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC63-MDNNN00065-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC80-MDNNN00080-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |

## DN..

55° rhombic negative inserts.
55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

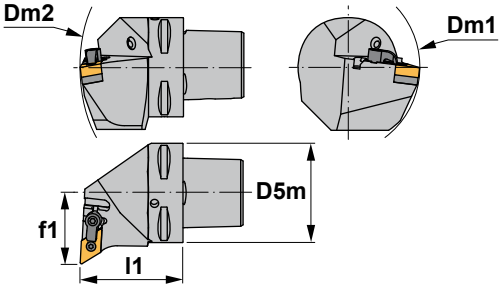




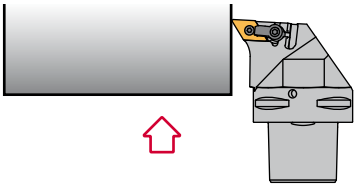
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# MDUN 93º

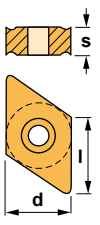
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-MDUNR/L27050-15 | 40 | 110 | 140 | 27 | 50 | -6º | -7º | DN.. 1506.. | 0,420 |
| PSC50-MDUNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DN.. 1506.. | 0,800 |
| PSC63-MDUNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DN.. 1506.. | 1,100 |
| PSC80-MDUNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DN.. 1506.. | 2,740 |

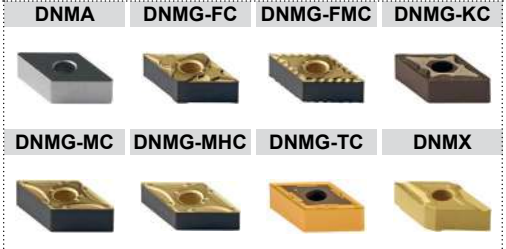
| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MDUNR/L27050-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC50-MDUNR/L35060-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC63-MDUNR/L45065-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |
| PSC80-MDUNR/L55080-15 | 2613 | 1086 | 5003 | IDSN-432 | 1657 | 5025 | 3.0 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

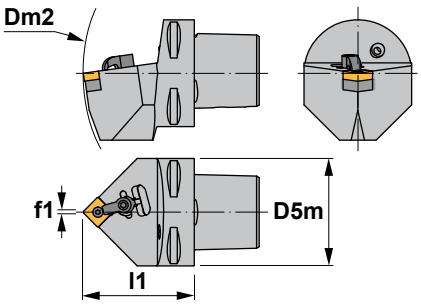




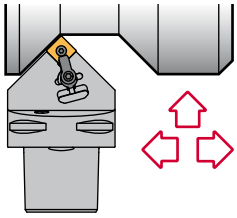
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MSDN 45°

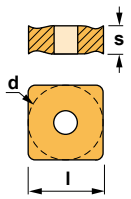
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-MSDNN00048-12 | 32 | 124 | 0.3 | 48 | -6° | -6° | SNM.. 1204.. | 0,240 |
| PSC40-MSDNN00050-12 | 40 | 140 | 0.3 | 50 | -6° | -6° | SNM.. 1204.. | 0,350 |
| PSC50-MSDNN00060-12 | 50 | 165 | 0.3 | 60 | -6° | -6° | SNM.. 1204.. | 0,750 |
| PSC63-MSDNN00065-12 | 63 | 190 | 0.3 | 65 | -6° | -6° | SNM.. 1204.. | 1,070 |
| PSC50-MSDNN00060-15 | 50 | 165 | 0.5 | 60 | -6° | -6° | SNM.. 1508.. | 0,750 |
| PSC63-MSDNN00065-15 | 63 | 190 | 0.5 | 65 | -6° | -6° | SNM.. 1508.. | 1,070 |
| PSC50-MSDNN00065-19 | 50 | 170 | 0.5 | 65 | -6° | -6° | SNM.. 1906.. | 0,800 |
| PSC63-MSDNN00070-19 | 63 | 195 | 0.5 | 70 | -6° | -6° | SNM.. 1906.. | 1,260 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MSDNN00048-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MSDNN00050-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSDNN00060-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MSDNN00065-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSDNN00060-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MSDNN00065-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MSDNN00065-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |
| PSC63-MSDNN00070-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

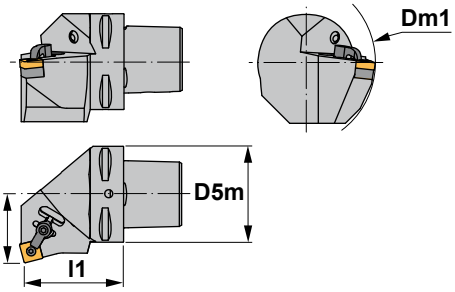



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



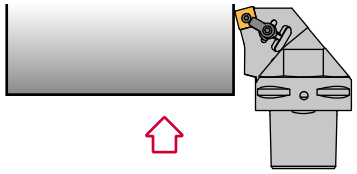
Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MSKN 75°

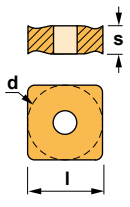
| Reference Bezeichnung | D5m | Dm1 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-MSKNR/L22040-12 | 32 | 60 | 22 | 40 | -6° | -6° | SNM.. 1204.. | 0,210 |
| PSC40-MSKNR/L27050-12 | 40 | 110 | 27 | 50 | -6° | -6° | SNM.. 1204.. | 0,420 |
| PSC50-MSKNR/L35060-12 | 50 | 110 | 35 | 60 | -6° | -6° | SNM.. 1204.. | 0,800 |
| PSC63-MSKNR/L45065-12 | 63 | 110 | 45 | 65 | -6° | -6° | SNM.. 1204.. | 1,100 |
| PSC50-MSKNR/L35060-15 | 50 | 125 | 35 | 60 | -6° | -6° | SNM..1506.. | 0,800 |
| PSC63-MSKNR/L45065-15 | 63 | 125 | 45 | 65 | -6° | -6° | SNM..1506.. | 1,100 |
| PSC50-MSKNR/L35060-19 | 50 | 125 | 35 | 60 | -6° | -6° | SNM.. 1906.. | 0,800 |
| PSC63-MSKNR/L45065-19 | 63 | 125 | 45 | 65 | -6° | -6° | SNM.. 1906.. | 1,100 |
| PSC80-MSKNR/L55080-19 | 80 | 125 | 55 | 80 | -6° | -6° | SNM.. 1906.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MSKNR/L22040-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MSKNR/L27050-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSKNR/L35060-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MSKNR/L45065-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSKNR/L35060-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MSKNR/L45065-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MSKNR/L35060-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |
| PSC63-MSKNR/L45065-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |
| PSC80-MSKNR/L55080-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

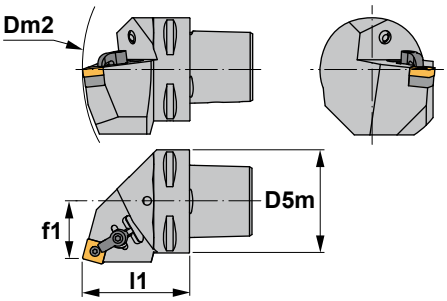



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



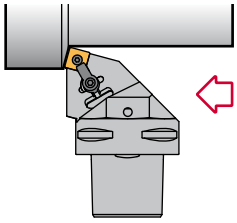
Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MSRN 75°

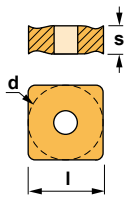
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ 1) | λs 2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-MSRNR/L19048-12 | 32 | 124 | 19 | 48 | -6° | -6° | SNM.. 1204.. | 0,260 |
| PSC40-MSRNR/L22050-12 | 40 | 140 | 22 | 50 | -6° | -6° | SNM.. 1204.. | 0,420 |
| PSC50-MSRNR/L27060-12 | 50 | 165 | 27 | 60 | -6° | -6° | SNM.. 1204.. | 0,800 |
| PSC63-MSRNR/L35065-12 | 63 | 190 | 35 | 65 | -6° | -6° | SNM.. 1204.. | 1,400 |
| PSC50-MSRNR/L27060-15 | 50 | 165 | 27 | 60 | -6° | -6° | SNM.. 1506.. | 0,800 |
| PSC63-MSRNR/L35065-15 | 63 | 190 | 35 | 65 | -6° | -6° | SNM.. 1506.. | 1,400 |
| PSC50-MSRNR/L27060-19 | 50 | 165 | 27 | 60 | -6° | -6° | SNM.. 1906.. | 0,800 |
| PSC63-MSRNR/L35065-19 | 63 | 190 | 35 | 65 | -6° | -6° | SNM.. 1906.. | 1,400 |
| PSC80-MSRNR/L45080-19 | 80 | 250 | 45 | 80 | -6° | -6° | SNM.. 1906.. | 2,800 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MSRNR/L19048-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MSRNR/L22050-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSRNR/L27060-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MSRNR/L35065-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSRNR/L27060-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MSRNR/L35065-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MSRNR/L27060-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |
| PSC63-MSRNR/L35065-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |
| PSC80-MSRNR/L45080-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

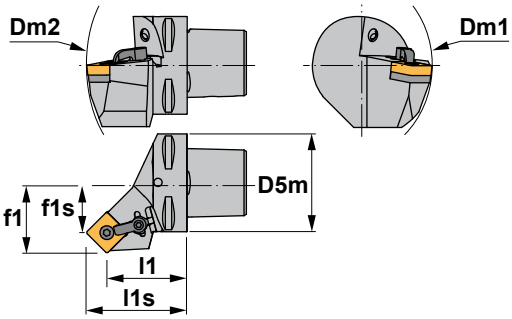



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



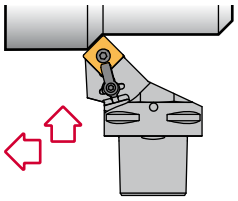
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# MSSN 45º

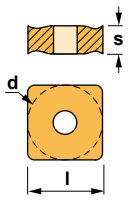
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | f1s | l1 | l1s | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-MSSNR/L22040-12 | 32 | 60 | 124 | 22 | 13.7 | 40 | 48.3 | -8º | 0º | SNM.. 1204.. | 0,210 |
| PSC40-MSSNR/L27042-12 | 40 | 110 | 140 | 27 | 18.7 | 42 | 50.3 | -8º | 0º | SNM.. 1204.. | 0,350 |
| PSC50-MSSNR/L35052-12 | 50 | 110 | 165 | 35 | 26.7 | 52 | 60.3 | -8º | 0º | SNM.. 1204.. | 0,700 |
| PSC63-MSSNR/L45056-12 | 63 | 110 | 190 | 45 | 36.7 | 56 | 64.3 | -8º | 0º | SNM.. 1204.. | 1,120 |
| PSC40-MSSNR/L27045-15 | 40 | 125 | 145 | 27 | 16.8 | 45 | 55.2 | -8º | 0º | SNM.. 1506.. | 0,400 |
| PSC50-MSSNR/L35050-15 | 50 | 125 | 165 | 35 | 24.8 | 50 | 60.2 | -8º | 0º | SNM.. 1506.. | 0,680 |
| PSC63-MSSNR/L45054-15 | 63 | 125 | 190 | 45 | 34.8 | 54 | 64.2 | -8º | 0º | SNM.. 1506.. | 1,140 |
| PSC50-MSSNR/L35048-19 | 50 | 125 | 165 | 35 | 22.5 | 48 | 60.5 | -8º | 0º | SNM.. 1906.. | 0,700 |
| PSC63-MSSNR/L45052-19 | 63 | 125 | 190 | 45 | 32.5 | 52 | 64.5 | -8º | 0º | SNM.. 1906.. | 1,130 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MSSNR/L22040-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MSSNR/L27042-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC50-MSSNR/L35052-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC63-MSSNR/L45056-12 | 2613 | 1086 | 5003 | ISSN-442 | 1657 | 5025 | 3.0 |
| PSC40-MSSNR/L27045-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MSSNR/L35050-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC63-MSSNR/L45054-15 | 2614 | 1086 | 5003 | ISSN-533 | 1673 | 5003 | 3.0 |
| PSC50-MSSNR/L35048-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |
| PSC63-MSSNR/L45052-19 | 2614 | 1086 | 5003 | ISSN-633 | 1674 | 5004 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |

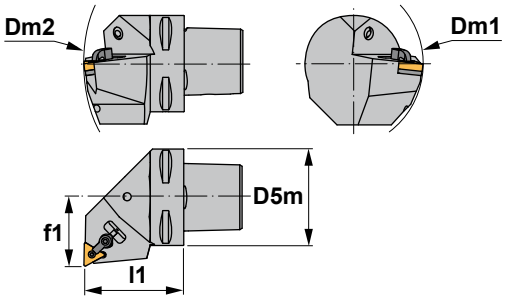



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



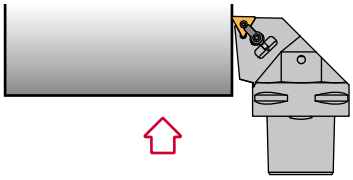
Characteristics:
Toolholder for face turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer dreikantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# MTFN 90°

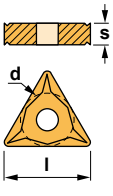
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-MTFNR/L22040-16 | 32 | 60 | 116 | 22 | 40 | -6° | -6° | TNM.. 1604.. | 0,210 |
| PSC40-MTFNR/L27050-16 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | TNM.. 1604.. | 0,420 |
| PSC50-MTFNR/L35060-16 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | TNM.. 1604.. | 0,800 |
| PSC63-MTFNR/L45065-16 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 1604.. | 1,100 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-MTFNR/L22040-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |
| PSC40-MTFNR/L27050-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |
| PSC50-MTFNR/L35060-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |
| PSC63-MTFNR/L45065-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |

## TNM..

Triangular negative inserts. Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |

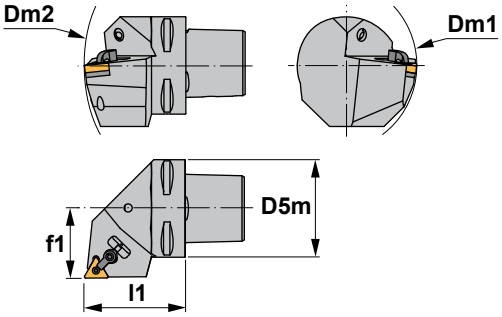



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |



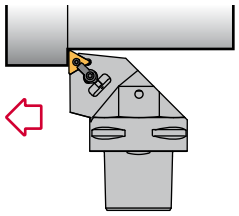
Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer dreikantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# MTGN 90°

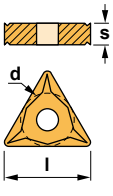
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-MTGNR/L27050-16 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | TNM.. 1604.. | 0,420 |
| PSC50-MTGNR/L35060-16 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | TNM.. 1604.. | 0,800 |
| PSC63-MTGNR/L45065-16 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 1604.. | 1,100 |
| PSC63-MTGNR/L45065-22 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 2204.. | 1,100 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MTGNR/L27050-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |
| PSC50-MTGNR/L35060-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |
| PSC63-MTGNR/L45065-16 | 2604 | 1085 | 5025 | ITSN-342 | 1675 | 5002 | 2.0 |
| PSC63-MTGNR/L45065-22 | 2613 | 1086 | 5003 | ITSN-443 | 1657 | 5025 | 2.0 |

## TNM..

Triangular negative inserts. Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

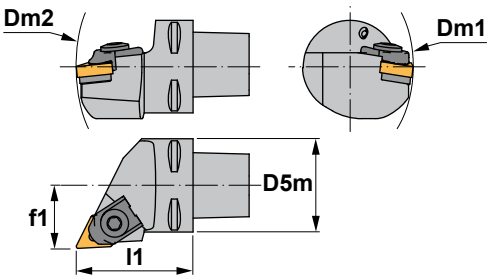



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |



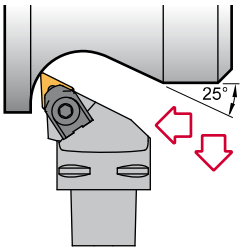
Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer dreikantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# MTJN 93°

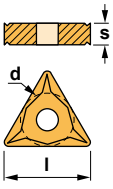
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-MTJNR/L22040-16 | 32 | 60 | 116 | 22 | 40 | -6° | -6° | TNM.. 1604.. | 0,210 |
| PSC40-MTJNR/L27050-16 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | TNM.. 1604.. | 0,420 |
| PSC50-MTJNR/L35060-16 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | TNM.. 1604.. | 0,800 |
| PSC63-MTJNR/L45065-16 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 1604.. | 1,100 |
| PSC40-MTJNR/L27050-22 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | TNM.. 2204.. | 0,420 |
| PSC50-MTJNR/L35060-22 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | TNM.. 2204.. | 0,800 |
| PSC63-MTJNR/L45065-22 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | TNM.. 2204.. | 1,100 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| PSC32-MTJNR/L22040-16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| PSC40-MTJNR/L27050-16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| PSC50-MTJNR/L35060-16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| PSC63-MTJNR/L45065-16 | 2014 | 5005 | 3414 | 1642 | 1393 | 4.0 |
| PSC40-MTJNR/L27050-22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| PSC50-MTJNR/L35060-22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |
| PSC63-MTJNR/L45065-22 | 2024 | 5005 | ITSN-433 | 1661 | 1394 | 4.0 |

## TNM..

Triangular negative inserts. Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |

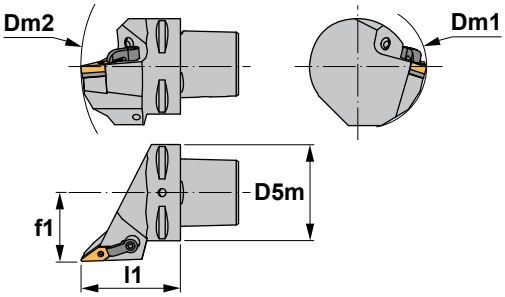



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |



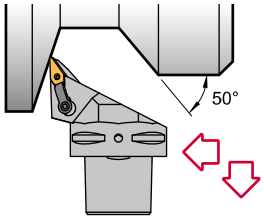
Characteristics:
Toolholder for very specific operations equipped with rhombic negative inserts (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter für sehr spezifische Anwendungen mit einer rhombischen negativen Wendeschneidplatte (Winkel 35º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.






# MVJN 93º

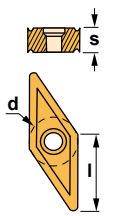
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-MVJNR/L27062-16 | 40 | 60 | 152 | 27 | 62 | -4º | -13º | VN.. 1604.. | 0,450 |
| PSC50-MVJNR/L35065-16 | 50 | 65 | 170 | 35 | 65 | -4º | -13º | VN.. 1604.. | 0,790 |
| PSC63-MVJNR/L45065-16 | 63 | 81 | 190 | 45 | 65 | -4º | -13º | VN.. 1604.. | 1,100 |
| PSC80-MVJNR/L55080-16 | 80 | 100 | 250 | 55 | 80 | -4º | -13º | VN.. 1604.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MVJNR/L27062-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |
| PSC50-MVJNR/L35065-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |
| PSC63-MVJNR/L45065-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |
| PSC80-MVJNR/L55080-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |

## VN..

35º rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



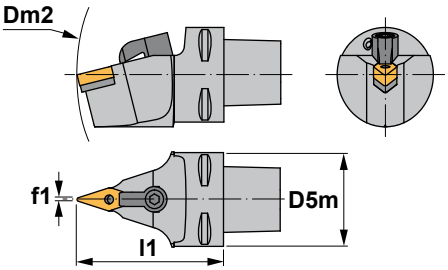
VNMG-TC





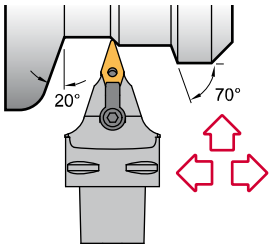
Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 35°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# MVVN 72° 30’

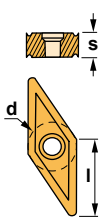
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-MVVNN00062-16 | 40 | 152 | 0.6 | 62 | -4° | -13° | VN.. 1604.. | 0,430 |
| PSC50-MVVNN00065-16 | 50 | 170 | 0.6 | 65 | -4° | -13° | VN.. 1604.. | 0,800 |
| PSC63-MVVNN00065-16 | 63 | 190 | 0.6 | 65 | -4° | -13° | VN.. 1604.. | 1,070 |
| PSC80-MVVNN00080-16 | 80 | 250 | 0.6 | 80 | -4° | -13° | VN.. 1604.. | 2,320 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MVVNN00062-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |
| PSC50-MVVNN00065-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |
| PSC63-MVVNN00065-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |
| PSC80-MVVNN00080-16 | 2604 | 1085 | 5025 | IVSN-322 | 1665 | 5002 | 2.0 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



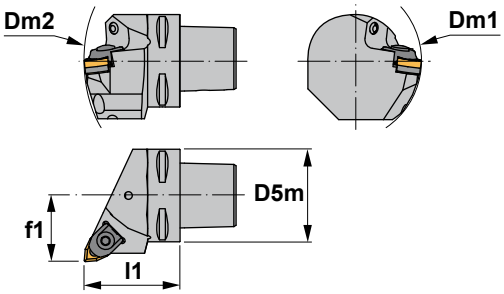
VNMG-TC





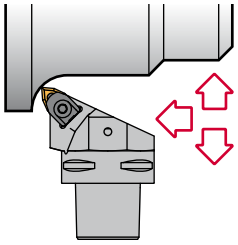
Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen negativen Trigon-Wendeschneidplatte (Winkel 80°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.





# MWLN 95°

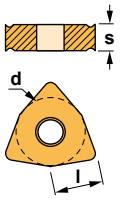
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-MWLNR/L22040-06 | 32 | 60 | 116 | 22 | 40 | -6° | -6° | WNMG 0604.. | 0,210 |
| PSC40-MWLNR/L27050-06 | 40 | 60 | 140 | 27 | 50 | -6° | -6° | WNMG 0604.. | 0,420 |
| PSC40-MWLNR/L27050-08 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | WNMG 0804.. | 0,420 |
| PSC50-MWLNR/L35060-08 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | WNMG 0804.. | 0,800 |
| PSC63-MWLNR/L45065-08 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | WNMG 0804.. | 1,100 |
| PSC80-MWLNR/L55080-08 | 80 | 110 | 250 | 55 | 80 | -6° | -6° | WNMG 0804.. | 2,740 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| PSC32-MWLNR/L22040-06 | 2006 | 5025 | 3006 | 1644 | 1813 | 2.0 |
| PSC40-MWLNR/L27050-06 | 2006 | 5025 | 3006 | 1642 | 1393 | 2.0 |
| PSC40-MWLNR/L27050-08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |
| PSC50-MWLNR/L35060-08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |
| PSC63-MWLNR/L45065-08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |
| PSC80-MWLNR/L55080-08 | 2011 | 5005 | IWSN-433 | 1661 | 1394 | 4.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |




| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |

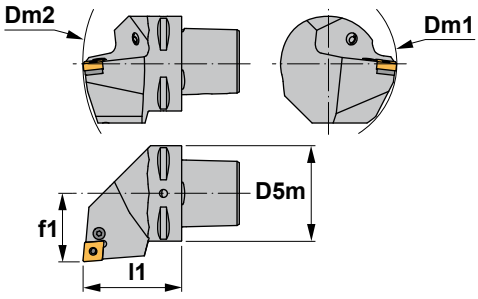


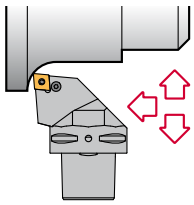
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°). PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

Eigenschaften:
Multifunktions-Klemmhalter mit einer doppelseitigen rhombischen Wendeschneidplatte (Winkel 80°). PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# PCLN 95°

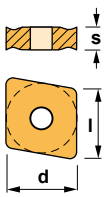
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-PCLNR/L22040-12 | 32 | 60 | 124 | 22 | 40 | -6° | -6° | CN.. 1204.. | 0,210 |
| PSC40-PCLNR/L27050-12 | 40 | 110 | 140 | 27 | 50 | -6° | -6° | CN.. 1204.. | 0,420 |
| PSC50-PCLNR/L35060-12 | 50 | 110 | 165 | 35 | 60 | -6° | -6° | CN.. 1204.. | 0,800 |
| PSC63-PCLNR/L45065-12 | 63 | 110 | 190 | 45 | 65 | -6° | -6° | CN.. 1204.. | 1,100 |
| PSC80-PCLNR/L55080-12 | 80 | 110 | 250 | 55 | 80 | -6° | -6° | CN.. 1204.. | 2,740 |
| PSC40-PCLNR/L27050-16 | 40 | 125 | 140 | 27 | 50 | -6° | -6° | CN.. 1606.. | 0,420 |
| PSC50-PCLNR/L35060-16 | 50 | 125 | 165 | 35 | 60 | -6° | -6° | CN.. 1606.. | 0,800 |
| PSC63-PCLNR/L45065-16 | 63 | 125 | 190 | 45 | 65 | -6° | -6° | CN.. 1606.. | 1,100 |
| PSC80-PCLNR/L55080-16 | 80 | 125 | 250 | 55 | 80 | -6° | -6° | CN.. 1606.. | 2,740 |
| PSC50-PCLNR/L35060-19 | 50 | 125 | 165 | 35 | 60 | -6° | -6° | CN.. 1906.. | 0,800 |
| PSC63-PCLNR/L45065-19 | 63 | 125 | 190 | 45 | 65 | -6° | -6° | CN.. 1906.. | 1,100 |
| PSC80-PCLNR/L55080-19 | 80 | 125 | 250 | 55 | 80 | -6° | -6° | CN.. 1906.. | 2,740 |
| PSC80-PCLNR/L55080-25 | 80 | 150 | 250 | 55 | 80 | -6° | -6° | CN.. 2509.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-PCLNR/L22040-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC40-PCLNR/L27050-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC50-PCLNR/L35060-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC63-PCLNR/L45065-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC80-PCLNR/L55080-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC40-PCLNR/L27050-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC50-PCLNR/L35060-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC63-PCLNR/L45065-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC80-PCLNR/L55080-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC50-PCLNR/L35060-19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PSC63-PCLNR/L45065-19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PSC80-PCLNR/L55080-19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PSC80-PCLNR/L55080-25 | 8025 | 1612 | 5005 | 3625 | 4125 | 0025 | 4.0 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |
| CN.. 2509.. | 25,80 | 9,52 | 25,40 |




CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC



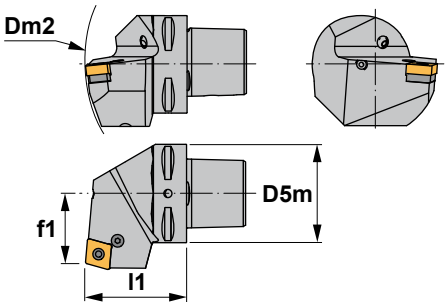
CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM





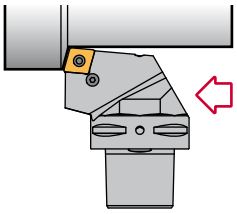
Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Werkzeuge mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 80º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# PCRN 75º

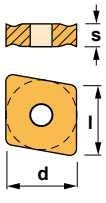
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC50-PCRNR/L27060-12 | 50 | 165 | 27 | 60 | -6º | -6º | CN.. 1204.. | 0,800 |
| PSC63-PCRNR/L35065-12 | 63 | 190 | 35 | 65 | -6º | -6º | CN.. 1204.. | 1,400 |
| PSC50-PCRNR/L27060-16 | 50 | 165 | 27 | 60 | -6º | -6º | CN.. 1606.. | 0,800 |
| PSC63-PCRNR/L35065-16 | 63 | 190 | 35 | 65 | -6º | -6º | CN.. 1606.. | 1,400 |
| PSC50-PCRNR/L27060-19 | 50 | 165 | 27 | 60 | -6º | -6º | CN.. 1906.. | 0,800 |
| PSC63-PCRNR/L35065-19 | 63 | 190 | 35 | 65 | -6º | -6º | CN.. 1906.. | 1,400 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC50-PCRNR/L27060-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC63-PCRNR/L35065-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC50-PCRNR/L27060-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC63-PCRNR/L35065-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC50-PCRNR/L27060-19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |
| PSC63-PCRNR/L35065-19 | 8019 | 1610 | 5004 | 3619 | 4119 | 0019 | 3.5 |

## CN..

80º rhombic negative inserts.
80º rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

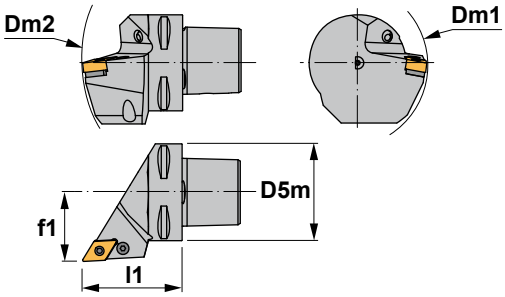



| CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC |
|---|---|---|---|---|
|  |  |  |  |  |
| **CNMG-MFC** | **CNMG-MHC** | **CNMG-RC** | **CNMG-TC** | **CNMM** |
|  |  |  |  |  |



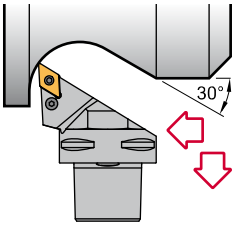
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Kopierdrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55°).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# PDJN 93°

| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC50-PDJNR/L35060-11 | 50 | 110 | 165 | 35 | 60 | -6° | -7° | DN.. 1104.. | 0,800 |
| PSC40-PDJNR/L27055-15 | 40 | 110 | 145 | 27 | 55 | -6° | -7° | DN.. 1506.. | 0,430 |
| PSC50-PDJNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6° | -7° | DN.. 1506.. | 0,800 |
| PSC63-PDJNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6° | -7° | DN.. 1506.. | 1,100 |
| PSC80-PDJNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6° | -7° | DN.. 1506.. | 2,740 |

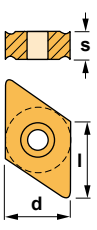
| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| PSC50-PDJNR/L35060-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | - | - | 2.0 |
| PSC40-PDJNR/L27055-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC50-PDJNR/L35060-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC63-PDJNR/L45065-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC80-PDJNR/L55080-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

For inserts DNM.. 1504..
Für Wendeschneidplatten DNM.. 1504

## DN..

55° rhombic negative inserts. 55° rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |




DNMG-FC | DNMG-FMC | DNMG-KC | DNMG-MC



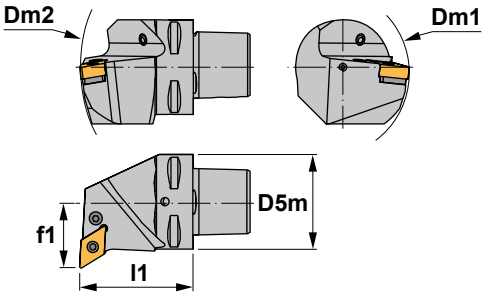
DNMG-MFC | DNMG-MHC | DNMG-TC | DNMX





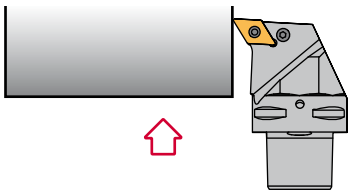
Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Drehen und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (Winkel 55º).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# PDUN 93º

| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-PDUNR/L27050-15 | 40 | 110 | 140 | 27 | 50 | -6º | -7º | DN.. 1506.. | 0,420 |
| PSC50-PDUNR/L35060-15 | 50 | 110 | 165 | 35 | 60 | -6º | -7º | DN.. 1506.. | 0,800 |
| PSC63-PDUNR/L45065-15 | 63 | 110 | 190 | 45 | 65 | -6º | -7º | DN.. 1506.. | 1,100 |
| PSC80-PDUNR/L55080-15 | 80 | 110 | 250 | 55 | 80 | -6º | -7º | DN.. 1506.. | 2,740 |

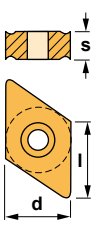
| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-PDUNR/L27050-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC50-PDUNR/L35060-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC63-PDUNR/L45065-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC80-PDUNR/L55080-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

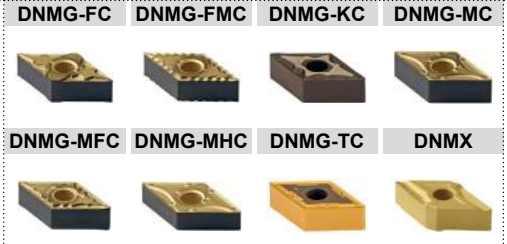
For inserts DNM.. 1504..
Für Wendeschneidplatten DNM.. 1504

## DN..

55º rhombic negative inserts. 55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

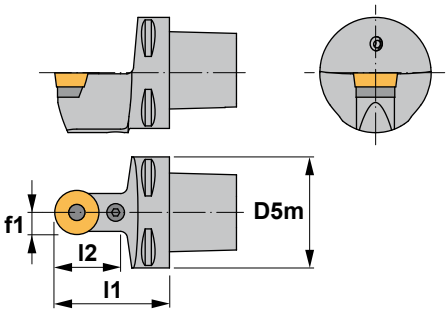




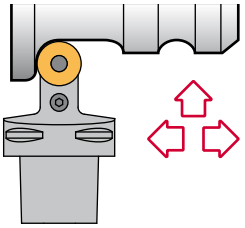
Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer runden positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# PRDC

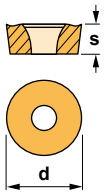
| Reference Bezeichnung | D5m | f1 | l1 | γ1) | λs2) | l2 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC63-PRDCN00065-25 | 63 | 12.5 | 65 | 0° | 0° | 40 | RC.. 2507M0 | 1,070 |
| PSC80-PRDCN00080-25 | 80 | 12.5 | 80 | 0° | 0° | 40 | RC.. 2507M0 | 2,320 |
| PSC80-PRDCN00080-32 | 80 | 16.0 | 80 | 0° | 0° | 45 | RC.. 3209M0 | 2,320 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC63-PRDCN00065-25 | 8125 | 1710 | 5004 | 3825 | 4119 | 0019 | 3.5 |
| PSC80-PRDCN00080-25 | 8125 | 1710 | 5004 | 3825 | 4119 | 0019 | 3.5 |
| PSC80-PRDCN00080-32 | 8132 | 1612 | 5005 | 3832 | 4125 | 0025 | 4.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 2507M0 | 7,94 | 25,00 |
| RC.. 3209M0 | 9,52 | 32,00 |




RCGT-AL



RCGT-AP



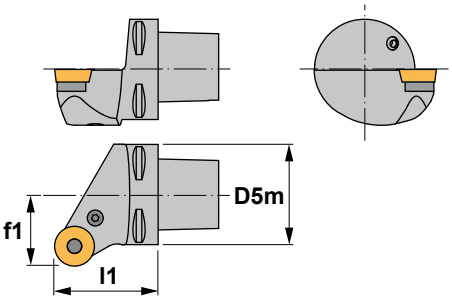
RCMT





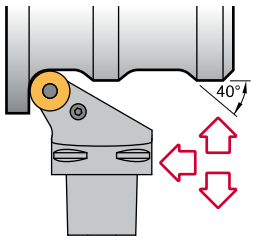
Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer runden positiven Wendeschneidplatten.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# PRSC

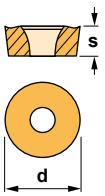
| Reference<br>Bezeichnung | D5m | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSC80-PRSCR/L55080-20 | 80 | 55 | 80 | 0° | 0° | RC.. 2006M0 | 2,740 |
| PSC63-PRSCR/L45065-25 | 63 | 45 | 65 | 0° | 0° | RC.. 2507M0 | 1,100 |
| PSC80-PRSCR/L55080-25 | 80 | 55 | 80 | 0° | 0° | RC.. 2507M0 | 2,740 |
| PSC80-PRSCR/L55080-32 | 80 | 55 | 80 | 0° | 0° | RC.. 3209M0 | 2,740 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC80-PRSCR/L55080-20 | 8120 | 1708 | 5003 | 3820 | 4115 | 0015 | 3.0 |
| PSC63-PRSCR/L45065-25 | 8125 | 1710 | 5004 | 3825 | 4119 | 0019 | 3.5 |
| PSC80-PRSCR/L55080-25 | 8125 | 1710 | 5004 | 3825 | 4119 | 0019 | 3.5 |
| PSC80-PRSCR/L55080-32 | 8132 | 1612 | 5005 | 3832 | 4125 | 0025 | 4.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 2006M0 | 6,35 | 20,00 |
| RC.. 2507M0 | 7,94 | 25,00 |
| RC.. 3209M0 | 9,52 | 32,00 |




RCGT-AL



RCGT-AP



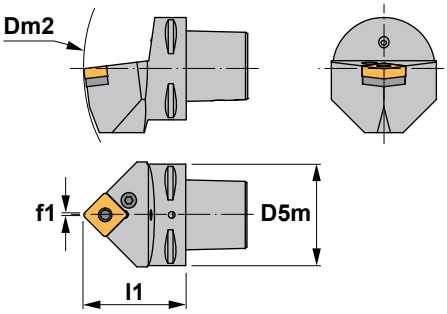
RCMT





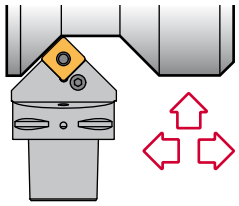
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# PSDN 45º

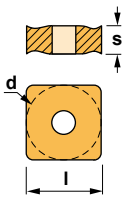
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-PSDNN00050-12 | 40 | 140 | 0.3 | 50 | -6º | -6º | SNM.. 1204.. | 0,350 |
| PSC50-PSDNN00060-12 | 50 | 165 | 0.3 | 60 | -6º | -6º | SNM.. 1204.. | 0,750 |
| PSC63-PSDNN00065-12 | 63 | 190 | 0.3 | 65 | -6º | -6º | SNM.. 1204.. | 1,070 |
| PSC40-PSDNN00050-15 | 40 | 140 | 0.5 | 50 | -6º | -6º | SNM.. 1506.. | 0,350 |
| PSC50-PSDNN00060-15 | 50 | 165 | 0.5 | 60 | -6º | -6º | SNM.. 1506.. | 0,750 |
| PSC63-PSDNN00065-15 | 63 | 190 | 0.5 | 65 | -6º | -6º | SNM.. 1506.. | 1,070 |
| PSC50-PSDNN00060-19 | 50 | 170 | 0.5 | 60 | -6º | -6º | SNM.. 1906.. | 0,750 |
| PSC63-PSDNN00065-19 | 63 | 195 | 0.5 | 65 | -6º | -6º | SNM.. 1906.. | 1,070 |
| PSC63-PSDNN00065-25 | 63 | 195 | 1.0 | 65 | -6º | -6º | SNM.. 2507.. | 1,070 |
| PSC80-PSDNN00080-25 | 80 | 250 | 1.0 | 80 | -6º | -6º | SNM.. 2507.. | 2,320 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-PSDNN00050-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSDNN00060-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC63-PSDNN00065-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC40-PSDNN00050-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC50-PSDNN00060-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC63-PSDNN00065-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC50-PSDNN00060-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC63-PSDNN00065-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC63-PSDNN00065-25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |
| PSC80-PSDNN00080-25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts. A41-42
Vierkantige negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |




SNMG-FMC | SNMG-KC | SNMG-MHC



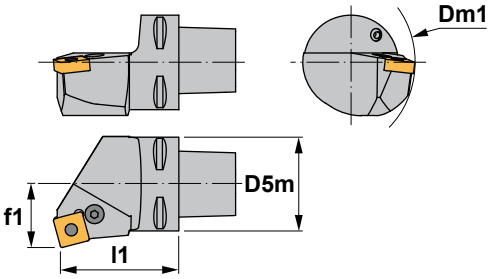
SNMG-RC | SNMG-TC | SNMM





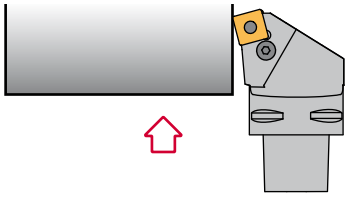
Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# PSKN 75º

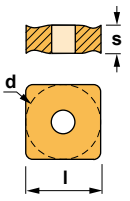
| Reference Bezeichnung | D5m | Dm1 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-PSKNR/L27050-12 | 40 | 110 | 27 | 50 | -6º | -6º | SNM.. 1204.. | 0,420 |
| PSC50-PSKNR/L35060-12 | 50 | 110 | 35 | 60 | -6º | -6º | SNM.. 1204.. | 0,800 |
| PSC63-PSKNR/L45065-12 | 63 | 110 | 45 | 65 | -6º | -6º | SNM.. 1204.. | 1,100 |
| PSC50-PSKNR/L35060-15 | 50 | 125 | 35 | 60 | -6º | -6º | SNM.. 1506.. | 0,800 |
| PSC63-PSKNR/L45065-15 | 63 | 125 | 45 | 65 | -6º | -6º | SNM.. 1506.. | 1,100 |
| PSC50-PSKNR/L35060-19 | 50 | 125 | 35 | 60 | -6º | -6º | SNM.. 1906.. | 0,800 |
| PSC63-PSKNR/L45065-19 | 63 | 125 | 45 | 65 | -6º | -6º | SNM.. 1906.. | 1,100 |
| PSC80-PSKNR/L55080-19 | 80 | 125 | 55 | 80 | -6º | -6º | SNM.. 1906.. | 2,740 |
| PSC80-PSKNR/L55080-25 | 80 | 150 | 55 | 80 | -6º | -6º | SNM.. 2507.. | 2,740 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-PSKNR/L27050-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSKNR/L35060-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC63-PSKNR/L45065-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSKNR/L35060-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC63-PSKNR/L45065-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC50-PSKNR/L35060-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC63-PSKNR/L45065-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC80-PSKNR/L55080-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC80-PSKNR/L55080-25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |

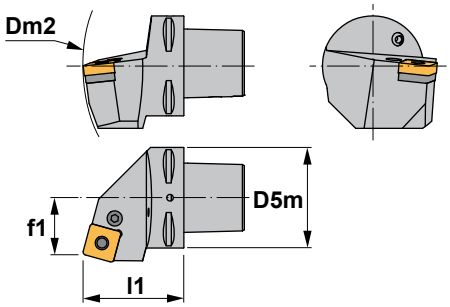



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



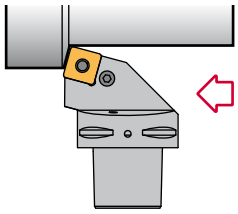
Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Plandrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# PSRN 75º

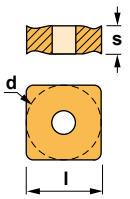
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-PSRNR/L17040-12 | 32 | 124 | 17 | 40 | -6º | -6º | SNM.. 1204.. | 0,200 |
| PSC40-PSRNR/L22050-12 | 40 | 140 | 22 | 50 | -6º | -6º | SNM.. 1204.. | 0,420 |
| PSC50-PSRNR/L27060-12 | 50 | 165 | 27 | 60 | -6º | -6º | SNM.. 1204.. | 0,800 |
| PSC63-PSRNR/L35065-12 | 63 | 190 | 35 | 65 | -6º | -6º | SNM.. 1204.. | 1,400 |
| PSC50-PSRNR/L27060-15 | 50 | 165 | 27 | 60 | -6º | -6º | SNM.. 1506.. | 0,800 |
| PSC63-PSRNR/L35065-15 | 63 | 190 | 35 | 65 | -6º | -6º | SNM.. 1506.. | 1,400 |
| PSC50-PSRNR/L27060-19 | 50 | 165 | 27 | 60 | -6º | -6º | SNM.. 1906.. | 0,800 |
| PSC63-PSRNR/L35065-19 | 63 | 190 | 35 | 65 | -6º | -6º | SNM.. 1906.. | 1,400 |
| PSC80-PSRNR/L45080-19 | 80 | 250 | 45 | 80 | -6º | -6º | SNM.. 1906.. | 2,800 |
| PSC80-PSRNR/L45080-25 | 80 | 250 | 45 | 80 | -6º | -6º | SNM.. 2507.. | 2,800 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-PSRNR/L17040-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC40-PSRNR/L22050-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSRNR/L27060-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC63-PSRNR/L35065-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSRNR/L27060-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC63-PSRNR/L35065-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC50-PSRNR/L27060-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC63-PSRNR/L35065-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC80-PSRNR/L45080-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC80-PSRNR/L45080-25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |

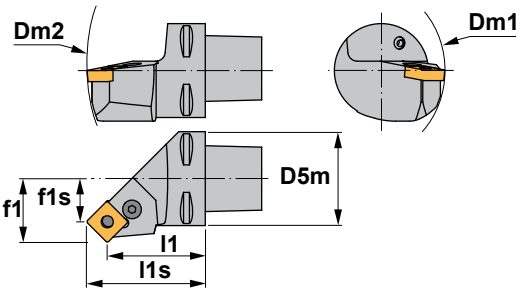



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



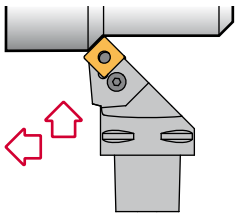
Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# PSSN 45º

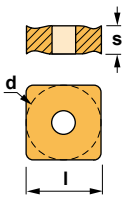
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | f1s | l1 | l1s | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-PSSNR/L22032-12 | 32 | 60 | 124 | 22 | 13.7 | 32 | 40.3 | -8º | 0º | SNM.. 1204.. | 0,180 |
| PSC40-PSSNR/L27042-12 | 40 | 110 | 140 | 27 | 18.7 | 42 | 50.3 | -8º | 0º | SNM.. 1204.. | 0,350 |
| PSC50-PSSNR/L35052-12 | 50 | 110 | 165 | 35 | 26.7 | 52 | 60.3 | -8º | 0º | SNM.. 1204.. | 0,700 |
| PSC63-PSSNR/L45056-12 | 63 | 110 | 190 | 45 | 36.7 | 56 | 64.3 | -8º | 0º | SNM.. 1204.. | 1,120 |
| PSC63-PSSNR/L45054-15 | 63 | 125 | 190 | 45 | 34.8 | 54 | 64.2 | -8º | 0º | SNM.. 1506.. | 1,140 |
| PSC63-PSSNR/L45052-19 | 63 | 125 | 190 | 45 | 32.5 | 52 | 64.5 | -8º | 0º | SNM.. 1906.. | 1,130 |
| PSC80-PSSNR/L55070-25 | 80 | 150 | 256 | 55 | 39.0 | 70 | 86.0 | -8º | 0º | SNM.. 2507.. | 2,620 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-PSSNR/L22032-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC40-PSSNR/L27042-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSSNR/L35052-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC63-PSSNR/L45056-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC63-PSSNR/L45054-15 | 8016 | 1618 | 5003 | 3515 | 4115 | 0015 | 3.0 |
| PSC63-PSSNR/L45052-19 | 8019 | 1610 | 5004 | 3519 | 4119 | 0019 | 3.5 |
| PSC80-PSSNR/L55070-25 | 8025 | 1612 | 5005 | 3525 | 4125 | 0025 | 4.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |
| SNM.. 1906.. | 19,05 | 6,35 | 19,05 |
| SNM.. 2507.. | 25,40 | 7,94 | 25,40 |

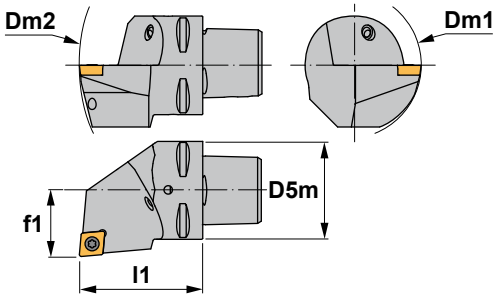



| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



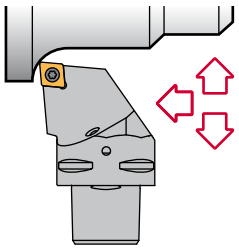
Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifuktions-Klemmhalter mit einer rhombischen positiven Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# SCLC 95°

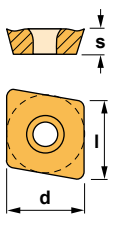
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-SCLCR/L22040-09 | 32 | 80 | 124 | 22 | 40 | 0° | 0° | CC.. 09T3.. | 0,210 |
| PSC40-SCLCR/L27050-09 | 40 | 80 | 140 | 27 | 50 | 0° | 0° | CC.. 09T3.. | 0,420 |
| PSC50-SCLCR/L35060-09 | 50 | 80 | 165 | 35 | 60 | 0° | 0° | CC.. 09T3.. | 0,800 |
| PSC63-SCLCR/L45065-09 | 63 | 80 | 190 | 45 | 65 | 0° | 0° | CC.. 09T3.. | 1,100 |
| PSC32-SCLCR/L22040-12 | 32 | 110 | 124 | 22 | 40 | 0° | 0° | CC.. 1204.. | 0,210 |
| PSC40-SCLCR/L27050-12 | 40 | 110 | 140 | 27 | 50 | 0° | 0° | CC.. 1204.. | 0,420 |
| PSC50-SCLCR/L35060-12 | 50 | 110 | 165 | 35 | 60 | 0° | 0° | CC.. 1204.. | 0,800 |
| PSC63-SCLCR/L45065-12 | 63 | 110 | 190 | 45 | 65 | 0° | 0° | CC.. 1204.. | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SCLCR/L22040-09 | 1240 | 5515 | - | - | 3.0 |
| PSC40-SCLCR/L27050-09 | 1240 | 5515 | - | - | 3.0 |
| PSC50-SCLCR/L35060-09 | 1240 | 5515 | - | - | 3.0 |
| PSC63-SCLCR/L45065-09 | 1240 | 5515 | - | - | 3.0 |
| PSC32-SCLCR/L22040-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC40-SCLCR/L27050-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC50-SCLCR/L35060-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC63-SCLCR/L45065-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCGT-AP



CCMT



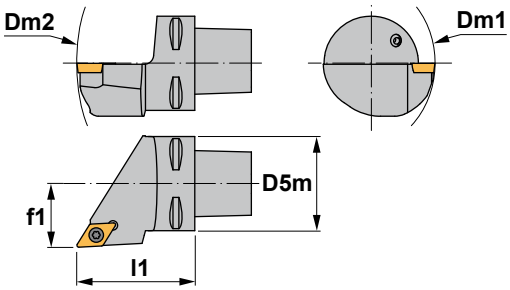
CCMW





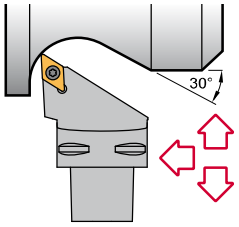
Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifuktions-Klemmhalter mit einer rhombischen positiven Wendeschneidplatte (55° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.






# SDJC 93°

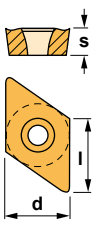
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-SDJCR/L22040-07 | 32 | 80 | 124 | 22 | 40 | 0° | 0° | DC.. 0702.. | 0,210 |
| PSC40-SDJCR/L27050-07 | 40 | 80 | 140 | 27 | 50 | 0° | 0° | DC.. 0702.. | 0,420 |
| PSC32-SDJCR/L22040-11 | 32 | 110 | 124 | 22 | 40 | 0° | 0° | DC.. 11T3.. | 0,210 |
| PSC40-SDJCR/L27050-11 | 40 | 110 | 140 | 27 | 50 | 0° | 0° | DC.. 11T3.. | 0,420 |
| PSC50-SDJCR/L35060-11 | 50 | 110 | 165 | 35 | 60 | 0° | 0° | DC.. 11T3.. | 0,800 |
| PSC63-SDJCR/L45065-11 | 63 | 110 | 190 | 45 | 65 | 0° | 0° | DC.. 11T3.. | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SDJCR/L22040-07 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SDJCR/L27050-07 | 1225 | 5507 | - | - | 0.9 |
| PSC32-SDJCR/L22040-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC40-SDJCR/L27050-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC50-SDJCR/L35060-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC63-SDJCR/L45065-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL



DCGT-AP



DCMT



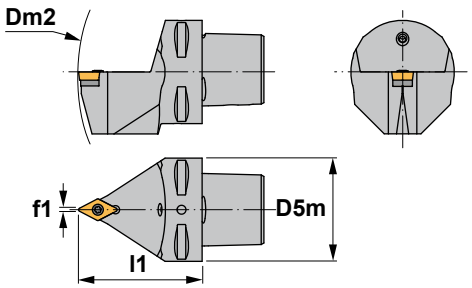
DCMW





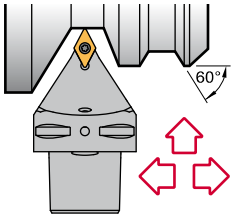
Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Proifildrehen mit einer rhombischen positiven Wendeschneidplatte (55° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# SDNC 62° 30’

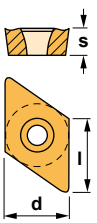
| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-SDNCN00040-11 | 32 | 124 | 0.5 | 40 | 0° | 0° | DC.. 11T3.. | 0,160 |
| PSC40-SDNCN00050-11 | 40 | 140 | 0.5 | 50 | 0° | 0° | DC.. 11T3.. | 0,350 |
| PSC50-SDNCN00060-11 | 50 | 165 | 0.5 | 60 | 0° | 0° | DC.. 11T3.. | 0,750 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SDNCN00040-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC40-SDNCN00050-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC50-SDNCN00060-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |




DCGT-AL | DCGT-AP



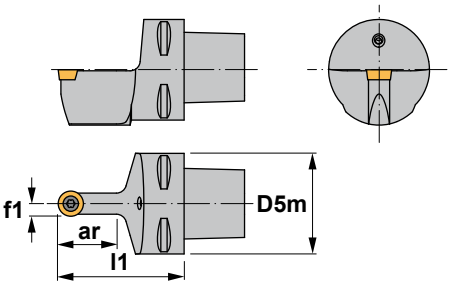

DCMT | DCMW





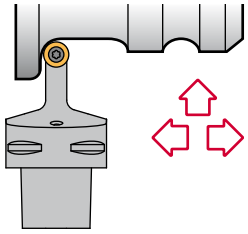

Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer runden positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



# SRDC

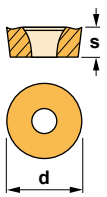
| Reference Bezeichnung | ar | D5m | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-SRDCN00040-06 | 12 | 32 | 3 | 40 | 0° | 0° | RC.. 0602M0 | 0,160 |
| PSC40-SRDCN00050-06 | 12 | 40 | 3 | 50 | 0° | 0° | RC.. 0602M0 | 0,350 |
| PSC50-SRDCN00060-06 | 12 | 50 | 3 | 60 | 0° | 0° | RC.. 0602M0 | 0,750 |
| PSC32-SRDCN00040-08 | 16 | 32 | 4 | 40 | 0° | 0° | RC.. 0803M0 | 0,160 |
| PSC40-SRDCN00050-08 | 16 | 40 | 4 | 50 | 0° | 0° | RC.. 0803M0 | 0,350 |
| PSC50-SRDCN00060-08 | 16 | 50 | 4 | 60 | 0° | 0° | RC.. 0803M0 | 0,750 |
| PSC32-SRDCN00040-10 | 20 | 32 | 5 | 40 | 0° | 0° | RC.. 10T3M0 | 0,160 |
| PSC40-SRDCN00050-10 | 25 | 40 | 5 | 50 | 0° | 0° | RC.. 10T3M0 | 0,350 |
| PSC50-SRDCN00060-10 | 25 | 50 | 5 | 60 | 0° | 0° | RC.. 10T3M0 | 0,750 |
| PSC63-SRDCN00065-10 | 25 | 63 | 5 | 65 | 0° | 0° | RC.. 10T3M0 | 1,070 |
| PSC40-SRDCN00050-12 | 28 | 40 | 6 | 50 | 0° | 0° | RC.. 1204M0 | 0,350 |
| PSC50-SRDCN00060-12 | 28 | 50 | 6 | 60 | 0° | 0° | RC.. 1204M0 | 0,750 |
| PSC63-SRDCN00065-12 | 28 | 63 | 6 | 65 | 0° | 0° | RC.. 1204M0 | 1,070 |
| PSC50-SRDCN00060-16 | 35 | 50 | 8 | 60 | 0° | 0° | RC.. 1606M0 | 0,750 |
| PSC63-SRDCN00065-16 | 35 | 63 | 8 | 65 | 0° | 0° | RC.. 1606M0 | 1,070 |
| PSC50-SRDCN00060-20 | 40 | 50 | 10 | 60 | 0° | 0° | RC.. 2006M0 | 0,750 |
| PSC63-SRDCN00065-20 | 40 | 63 | 10 | 65 | 0° | 0° | RC.. 2006M0 | 1,070 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| ... -06 | 1225 | 5507 | - | - | 0.9 |
| ... -08 | 1230 | 5508 | - | - | 1.2 |
| ... -10 | 1335 | 5516 | 3811 | 1750 | 3.0 |
| ... -12 | 1335 | 5516 | 3814 | 1750 | 3.0 |
| ... -16 | 1540 | 5517 | 3816 | 1765 | 3.0 |
| ... -20 | 1260 | 5520 | 3919 | 1059 | 4.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 0602M0 | 2,38 | 6,00 |
| RC.. 0803M0 | 3,18 | 8,00 |
| RC.. 10T3M0 | 3,97 | 10,00 |
| RC.. 1204M0 | 4,76 | 12,00 |
| RC.. 1606M0 | 6,35 | 16,00 |
| RC.. 2006M0 | 6,35 | 20,00 |




RCGT-AL



RCGT-AP



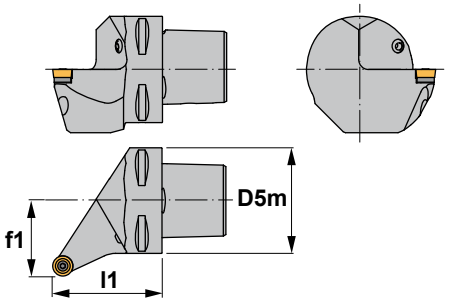
RCMT





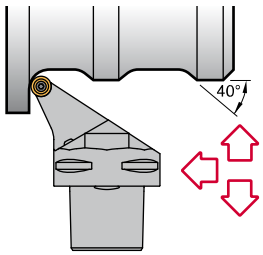
Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Profildrehen mit einer runden positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# SRSC 45°

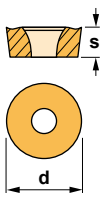
| Reference Bezeichnung | D5m | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| PSC32-SRSCR/L22040-06 | 32 | 22 | 40 | 0° | 0° | RC.. 0602M0 | 0,210 |
| PSC40-SRSCR/L27050-06 | 40 | 27 | 50 | 0° | 0° | RC.. 0602M0 | 0,420 |
| PSC50-SRSCR/L35060-06 | 50 | 35 | 60 | 0° | 0° | RC.. 0602M0 | 0,800 |
| PSC32-SRSCR/L22040-08 | 32 | 22 | 40 | 0° | 0° | RC.. 0803M0 | 0,210 |
| PSC40-SRSCR/L27050-08 | 40 | 27 | 50 | 0° | 0° | RC.. 0803M0 | 0,420 |
| PSC50-SRSCR/L35060-08 | 50 | 35 | 60 | 0° | 0° | RC.. 0803M0 | 0,800 |
| PSC32-SRSCR/L22040-10 | 32 | 22 | 40 | 0° | 0° | RC.. 10T3M0 | 0,210 |
| PSC40-SRSCR/L27050-10 | 40 | 27 | 50 | 0° | 0° | RC.. 10T3M0 | 0,420 |
| PSC50-SRSCR/L35060-10 | 50 | 35 | 60 | 0° | 0° | RC.. 10T3M0 | 0,800 |
| PSC63-SRSCR/L45065-10 | 63 | 45 | 65 | 0° | 0° | RC.. 10T3M0 | 1,100 |
| PSC40-SRSCR/L27050-12 | 40 | 27 | 50 | 0° | 0° | RC.. 1204M0 | 0,420 |
| PSC50-SRSCR/L35060-12 | 50 | 35 | 60 | 0° | 0° | RC.. 1204M0 | 0,800 |
| PSC63-SRSCR/L45065-12 | 63 | 45 | 65 | 0° | 0° | RC.. 1204M0 | 1,100 |
| PSC50-SRSCR/L35060-16 | 50 | 35 | 60 | 0° | 0° | RC.. 1606M0 | 0,800 |
| PSC63-SRSCR/L45065-16 | 63 | 45 | 65 | 0° | 0° | RC.. 1606M0 | 1,100 |
| PSC50-SRSCR/L35060-20 | 50 | 35 | 60 | 0° | 0° | RC.. 2006M0 | 0,800 |
| PSC63-SRSCR/L45065-20 | 63 | 45 | 65 | 0° | 0° | RC.. 2006M0 | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| ... -06 | 1225 | 5507 | - | - | 0.9 |
| ... -08 | 1230 | 5508 | - | - | 1.2 |
| ... -10 | 1335 | 5516 | 3811 | 1750 | 3.0 |
| ... -12 | 1335 | 5516 | 3814 | 1750 | 3.0 |
| ... -16 | 1540 | 5517 | 3816 | 1765 | 3.0 |
| ... -20 | 1260 | 5520 | 3919 | 1059 | 4.0 |

## RC..

Round positive inserts with 7° clearance.
Runde positive Wendeschneidplatten mit 7° Freiwinkel. A38-39

| Reference / Bez. | s | d |
|---|---|---|
| RC.. 0602M0 | 2,38 | 6,00 |
| RC.. 0803M0 | 3,18 | 8,00 |
| RC.. 10T3M0 | 3,97 | 10,00 |
| RC.. 1204M0 | 4,76 | 12,00 |
| RC.. 1606M0 | 6,35 | 16,00 |
| RC.. 2006M0 | 6,35 | 20,00 |




RCGT-AL



RCGT-AP



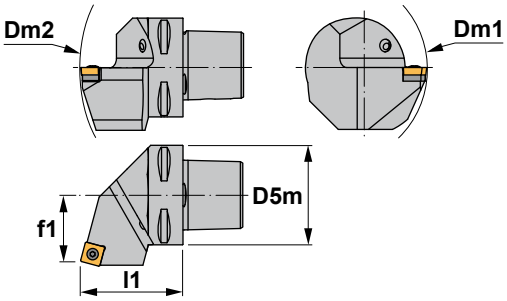
RCMT





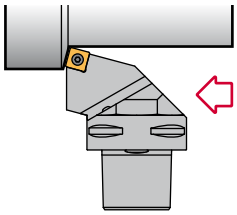
Characteristics:
Toolholder for external turning and chamfering applications equipped with square positive inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen und Abschrägen mit einer vierkantigen positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

## SSRC 75º

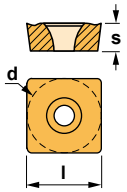
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-SSRCR/L22050-12 | 40 | 110 | 140 | 22 | 50 | 0º | 0º | SC.. 1204.. | 0,420 |
| PSC50-SSRCR/L27060-12 | 50 | 110 | 165 | 27 | 60 | 0º | 0º | SC.. 1204.. | 0,800 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC40-SSRCR/L22050-12 | 1540 | 5517 | 3514 | 1760 | 3.0 |
| PSC50-SSRCR/L27060-12 | 1540 | 5517 | 3514 | 1760 | 3.0 |

### SC..

Square positive inserts with 7º clearance. A40
Vierkantige positive Wendeschneidplatten mit 7º Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |




SCGT-AL



SCMT



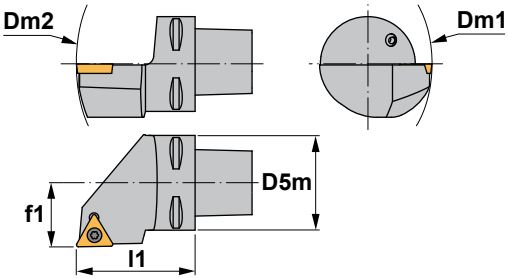
SCMT-39





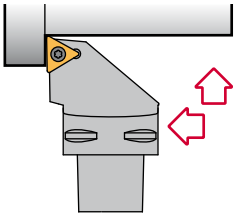
Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außendrehen mit einer dreikantigen positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# STGC 90º

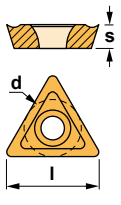
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-STGCR/L22040-11 | 32 | 80 | 124 | 22 | 40 | 0º | 0º | TC.. 1102.. | 0,210 |
| PSC40-STGCR/L27050-11 | 40 | 80 | 140 | 27 | 50 | 0º | 0º | TC.. 1102.. | 0,420 |
| PSC32-STGCR/L22040-16 | 32 | 110 | 124 | 22 | 40 | 0º | 0º | TC.. 16T3.. | 0,210 |
| PSC40-STGCR/L27050-16 | 40 | 110 | 140 | 27 | 50 | 0º | 0º | TC.. 16T3.. | 0,420 |
| PSC50-STGCR/L35060-16 | 50 | 110 | 165 | 35 | 60 | 0º | 0º | TC.. 16T3.. | 0,800 |
| PSC63-STGCR/L45065-16 | 63 | 110 | 190 | 45 | 65 | 0º | 0º | TC.. 16T3.. | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-STGCR/L22040-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-STGCR/L27050-11 | 1225 | 5507 | - | - | 0.9 |
| PSC32-STGCR/L22040-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| PSC40-STGCR/L27050-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| PSC50-STGCR/L35060-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| PSC63-STGCR/L45065-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7º clearance.
Dreikantige positive Wendeschneidplatten mit 7º Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



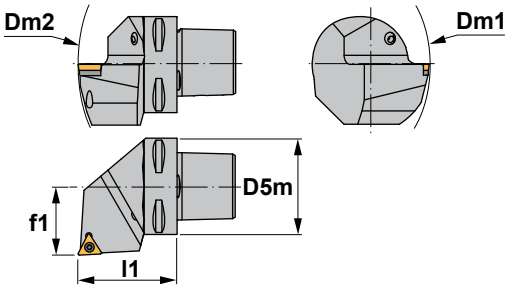
TCMW





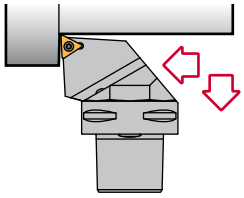
Characteristics:
Toolholder for external and face turning applications equipped with triangular positive inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Klemmhalter zum Außen- und Plandrehen mit einer dreikantigen positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

## STJC 93º

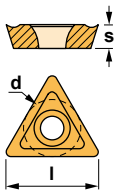
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-STJCR/L22040-11 | 32 | 80 | 124 | 22 | 40 | 0º | 0º | TC.. 1102.. | 0,210 |
| PSC40-STJCR/L27050-11 | 40 | 80 | 140 | 27 | 50 | 0º | 0º | TC.. 1102.. | 0,420 |
| PSC32-STJCR/L22040-16 | 32 | 110 | 124 | 22 | 40 | 0º | 0º | TC.. 16T3.. | 0,210 |
| PSC40-STJCR/L27050-16 | 40 | 110 | 140 | 27 | 50 | 0º | 0º | TC.. 16T3.. | 0,420 |
| PSC50-STJCR/L35060-16 | 50 | 110 | 165 | 35 | 60 | 0º | 0º | TC.. 16T3.. | 0,800 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-STJCR/L22040-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-STJCR/L27050-11 | 1225 | 5507 | - | - | 0.9 |
| PSC32-STJCR/L22040-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| PSC40-STJCR/L27050-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| PSC50-STJCR/L35060-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7º clearance.
Dreikantige positive Wendeschneidplatten mit 7º Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



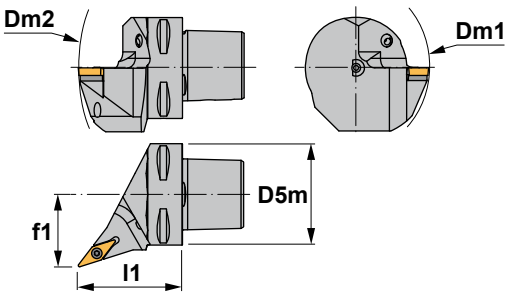
TCMW





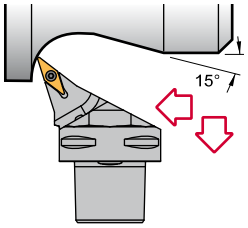
Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Proifildrehen mit einer rhombischen positiven Wendeschneidplatte (35° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.






# SVHB 107° 30'

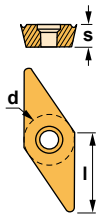
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-SVHBR/L27050-16 | 40 | 110 | 140 | 27 | 50 | 0° | 0° | VBMT 1604.. | 0,420 |
| PSC50-SVHBR/L35060-16 | 50 | 110 | 165 | 35 | 60 | 0° | 0° | VBMT 1604.. | 0,800 |
| PSC63-SVHBR/L45065-16 | 63 | 110 | 190 | 45 | 65 | 0° | 0° | VBMT 1604.. | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC40-SVHBR/L27050-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVHBR/L35060-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVHBR/L45065-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance. A48
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



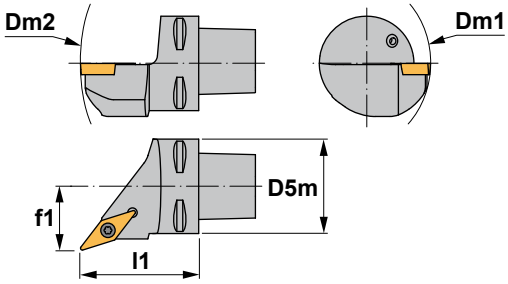

VBMT





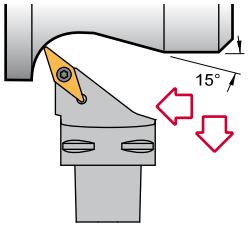
Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Proifildrehen mit einer rhombischen positiven Wendeschneidplatte (35º Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# SVHC 107º 30’

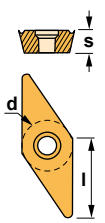
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-SVHCR/L22040-11 | 32 | 80 | 124 | 22 | 40 | 0º | 0º | VC.. 1103.. | 0,210 |
| PSC40-SVHCR/L27050-11 | 40 | 80 | 140 | 27 | 50 | 0º | 0º | VC.. 1103.. | 0,420 |
| PSC50-SVHCR/L35060-11 | 50 | 80 | 165 | 35 | 60 | 0º | 0º | VC.. 1103.. | 0,800 |
| PSC40-SVHCR/L27050-16 | 40 | 110 | 140 | 27 | 50 | 0º | 0º | VC.. 1604.. | 0,420 |
| PSC50-SVHCR/L35060-16 | 50 | 110 | 165 | 35 | 60 | 0º | 0º | VC.. 1604.. | 0,800 |
| PSC63-SVHCR/L45065-16 | 63 | 110 | 190 | 45 | 65 | 0º | 0º | VC.. 1604.. | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SVHCR/L22040-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SVHCR/L27050-11 | 1225 | 5507 | - | - | 0.9 |
| PSC50-SVHCR/L35060-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SVHCR/L27050-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVHCR/L35060-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVHCR/L45065-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35º rhombic positive inserts with 7º clearance.
35º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

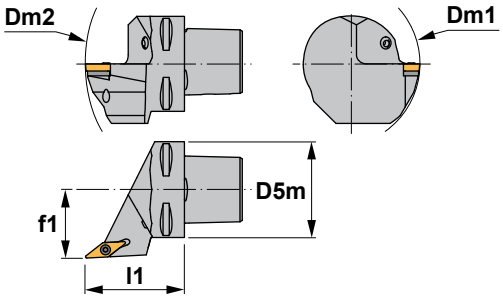



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |



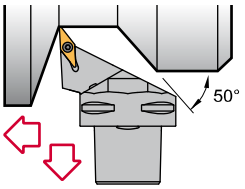
Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5° positive insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer 5° rhombischen positiven Wendeschneidplatte (35° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# SVJB 93°

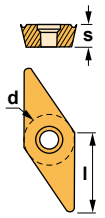
| Reference<br>Bezeichnung | D5m | Dm1<br>min. | Dm2<br>min. | f1 | l1 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC40-SVJBR/L27050-16 | 40 | 110 | 145 | 27 | 50 | 0° | 0° | VBMT 1604.. | 0,420 |
| PSC50-SVJBR/L35060-16 | 50 | 110 | 165 | 35 | 60 | 0° | 0° | VBMT 1604.. | 0,800 |
| PSC63-SVJBR/L45065-16 | 63 | 110 | 190 | 45 | 65 | 0° | 0° | VBMT 1604.. | 1,100 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC40-SVJBR/L27050-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVJBR/L35060-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVJBR/L45065-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance.
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



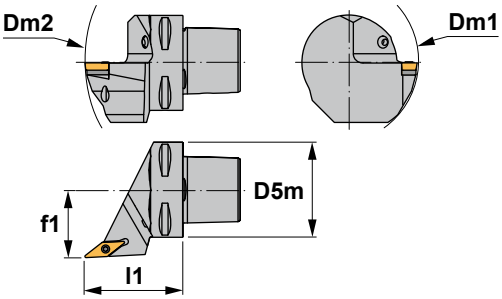

VBMT





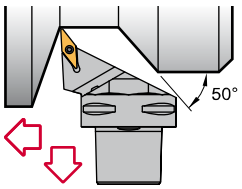
Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer rhombischen positiven Wendeschneidplatte (35º Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# SVJC 93º

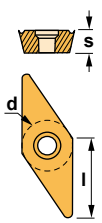
| Reference Bezeichnung | D5m | Dm1 min. | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-SVJCR/L22040-11 | 32 | 80 | 121 | 22 | 40 | 0º | 0º | VC.. 1103.. | 0,210 |
| PSC40-SVJCR/L27050-11 | 40 | 80 | 145 | 27 | 50 | 0º | 0º | VC.. 1103.. | 0,420 |
| PSC50-SVJCR/L35060-11 | 50 | 80 | 165 | 35 | 60 | 0º | 0º | VC.. 1103.. | 0,800 |
| PSC40-SVJCR/L27050-16 | 40 | 110 | 145 | 27 | 50 | 0º | 0º | VC.. 1604.. | 0,420 |
| PSC50-SVJCR/L35060-16 | 50 | 110 | 165 | 35 | 60 | 0º | 0º | VC.. 1604.. | 0,800 |
| PSC63-SVJCR/L45065-16 | 63 | 110 | 190 | 45 | 65 | 0º | 0º | VC.. 1604.. | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SVJCR/L22040-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SVJCR/L27050-11 | 1225 | 5507 | - | - | 0.9 |
| PSC50-SVJCR/L35060-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SVJCR/L27050-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVJCR/L35060-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVJCR/L45065-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35º rhombic positive inserts with 7º clearance.
35º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

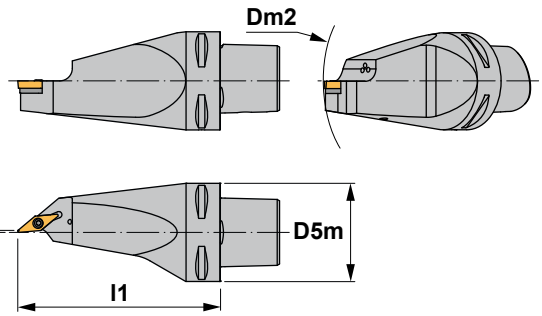



| VCGT-AL | VCGT-AP |
|---|---|
|  |  |
| **VCMT** | |
|  | |



Characteristics:
Toolholder for multi-task machining equipped with rhombic negative inserts (angle 35°).
PSC with internal coolant.
HP= High pressure coolant.

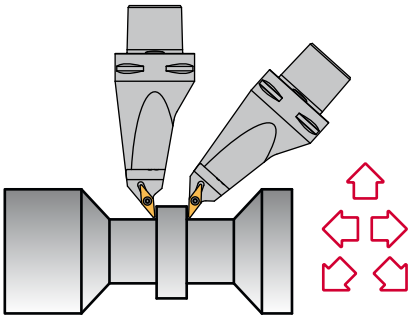
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



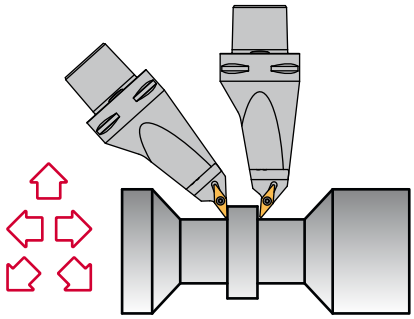

Eigenschaften:
Klemmhalter zur Multi-Task-Bearbeitung mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (35° Winkel).
PSC mit Innenkühlung.
HP= Hochdruck-Kühlschmierstoff.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.

**Main application**
**Hauptanwendung**



**Alternative use**
**Alternative Anwendung**



E

# SVMB 50°

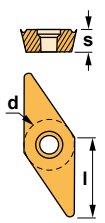
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC63-SVMBR/L00130-16HP | 63 | 110 | 1,2 | 130 | 0° | 0° | VBMT 1604.. | 1,690 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC63-SVMBR/L00130-16HP | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance. A48
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



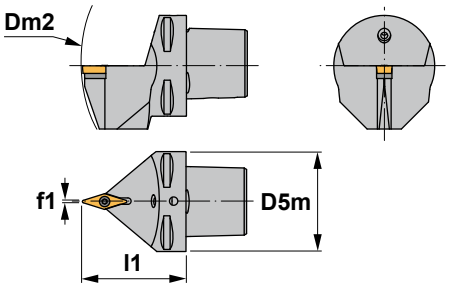

VBMT





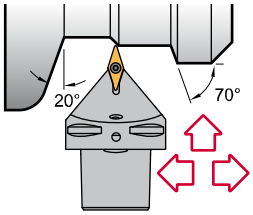
Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5° positive insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer 5° rhombischen positiven Wendeschneidplatte (35° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# SVVB 72° 30’

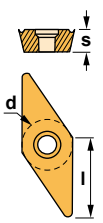
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-SVVBN00050-16 | 40 | 140 | 0.6 | 50 | 0° | 0° | VBMT 1604.. | 0,350 |
| PSC50-SVVBN00060-16 | 50 | 165 | 0.6 | 60 | 0° | 0° | VBMT 1604.. | 0,750 |
| PSC63-SVVBN00065-16 | 63 | 190 | 0.6 | 65 | 0° | 0° | VBMT 1604.. | 1,070 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC40-SVVBN00050-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVVBN00060-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVVBN00065-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance.
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



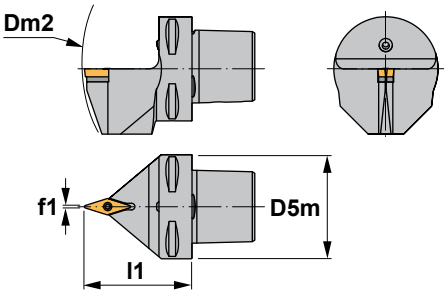

VBMT





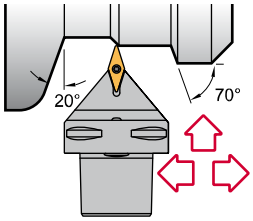
Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Klemmhalter zum Profildrehen mit einer rhombischen positiven Wendeschneidplatte (35° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# SVVC 72° 30’

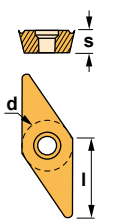
| Reference Bezeichnung | D5m | Dm2 min. | f1 | l1 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-SVVCN00040-11 | 32 | 124 | 0.3 | 40 | 0° | 0° | VC.. 1103.. | 0,160 |
| PSC40-SVVCN00050-11 | 40 | 140 | 0.3 | 50 | 0° | 0° | VC.. 1103.. | 0,350 |
| PSC40-SVVCN00050-16 | 40 | 140 | 0.6 | 50 | 0° | 0° | VC.. 1604.. | 0,350 |
| PSC50-SVVCN00060-16 | 50 | 165 | 0.6 | 60 | 0° | 0° | VC.. 1604.. | 0,750 |
| PSC63-SVVCN00065-16 | 63 | 190 | 0.6 | 65 | 0° | 0° | VC.. 1604.. | 1,070 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SVVCN00040-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SVVCN00050-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SVVCN00050-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVVCN00060-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVVCN00065-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35° rhombic positive inserts with 7° clearance. A48
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




VCGT-AL



VCGT-AP



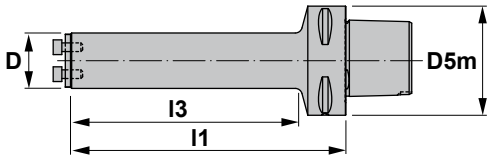
VCMT





Characteristics:
Antivibratory adaptor.

Eigenschaften:
Schwingungsgedämpfte Aufnahmen.




## J..

| Reference<br>Bezeichnung | D5m | D | l3 | l1 | Kg |
|---|---|---|---|---|---|
| PSC63-J25 | 63 | 25 | 103 | 132 | 1,300 |
| PSC63-J32 | 63 | 32 | 129 | 159 | 1,700 |
| PSC63-J40 | 63 | 40 | 169 | 198 | 2,300 |
| PSC63-J50 | 63 | 50 | 212 | 239 | 3,300 |
| PSC63-J60 | 63 | 60 | 263 | 287 | 5,900 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| PSC63-J25 | 1924 | 5025 | 2.0 |
| PSC63-J32 | 1925 | 5003 | 3.0 |
| PSC63-J40 | 1926 | 5004 | 3.5 |
| PSC63-J50 | 1928 | 5005 | 4.0 |
| PSC63-J60 | 1928 | 5005 | 4.0 |



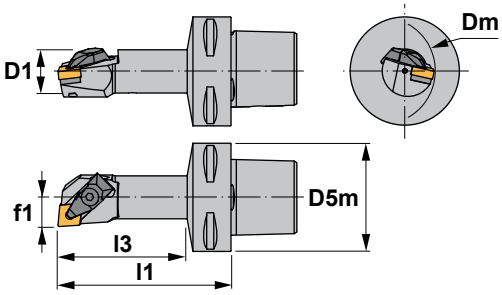
Boring heads for anti-vibration bars.
Bohrköpfe für Schwingungsgedämpfte Bohrstangen. A238-245

| MTUN 93º-N | PCLN 95º-N | PDUN 93º-N | PWLN 95º-N |
|---|---|---|---|
|  |  |  |  |
| **SCLC 95º-N** | **SDUC 93º-N** | **STFC 90º-N** | **SXFN 90º-N** |
|  |  |  |  |



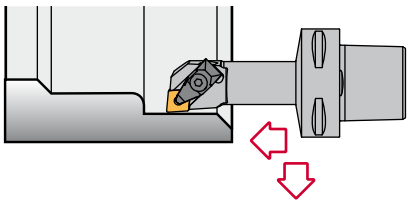
Characteristics:
Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Bohrstange zum Innendrehen mit einer rhombischen negativen Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.





# DCLN 95°

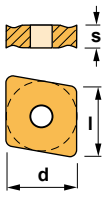
| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-DCLNR/L13080-09 | 25 | 20 | 40 | 13 | 80 | 57 | -6° | -14° | CN.. 0903.. | 0,400 |
| PSC50-DCLNR/L13080-09 | 25 | 20 | 50 | 13 | 80 | 56 | -6° | -14° | CN.. 0903.. | 0,570 |
| PSC40-DCLNR/L17090-12 | 32 | 25 | 40 | 17 | 90 | 68 | -6° | -12° | CN.. 1204.. | 0,480 |
| PSC50-DCLNR/L17090-12 | 32 | 25 | 50 | 17 | 90 | 66 | -6° | -12° | CN.. 1204.. | 0,700 |
| PSC63-DCLNR/L17100-12 | 32 | 25 | 63 | 17 | 100 | 72 | -6° | -12° | CN.. 1204.. | 1,000 |
| PSC63-DCLNR/L27140-16 | 50 | 40 | 63 | 27 | 140 | 114 | -6° | -16° | CN.. 1606.. | 1,780 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DCLNR/L13080-09 | - | - | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DCLNR/L13080-09 | - | - | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DCLNR/L17090-12 | 1766 | ICSN-422 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DCLNR/L17090-12 | 1766 | ICSN-422 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCLNR/L17100-12 | 1766 | ICSN-422 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DCLNR/L27140-16 | 1768 | ICSN-533 | 2716 | 1696 | 4295 | 5004 | 3.5 |

## CN..

80° rhombic negative inserts.
80° rhombische negative WSP. A32-34

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |




CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC



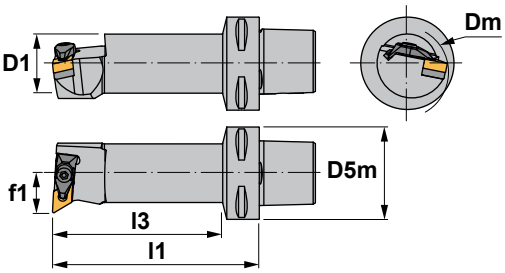
CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM





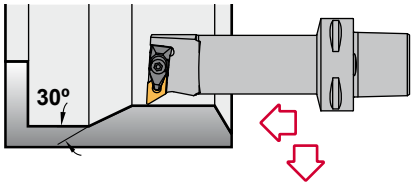
Characteristics:
Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit einer rhombischen negativen Wendeschneidplatte (55º Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# DDUN 93º

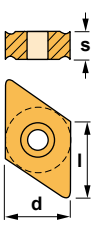
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-DDUNR/L17090-11 | 32 | 25.0 | 40 | 17 | 90 | 68 | -6º | -12º | DN.. 1104.. | 0,480 |
| PSC50-DDUNR/L17090-11 | 32 | 25.0 | 50 | 17 | 90 | 66 | -6º | -12º | DN.. 1104.. | 0,700 |
| PSC40-DDUNR/L27080-15 | 50 | 39.7 | 40 | 27 | 80 | 59 | -6º | -11º | DN.. 1506.. | 0,740 |
| PSC50-DDUNR/L27140-15 | 50 | 40.0 | 50 | 27 | 140 | 118 | -6º | -11º | DN.. 1506.. | 1,470 |
| PSC63-DDUNR/L27140-15 | 50 | 40.0 | 63 | 27 | 140 | 114 | -6º | -11º | DN.. 1506.. | 1,780 |

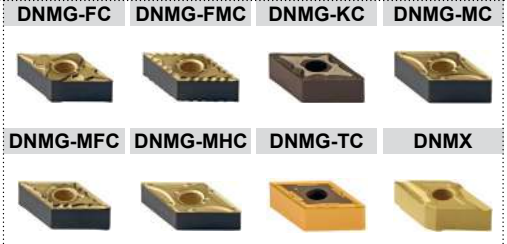
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DDUNR/L17090-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC50-DDUNR/L17090-11 | 1764 | IDSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DDUNR/L27080-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DDUNR/L27140-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC63-DDUNR/L27140-15 | 1766 | IDSN-432 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten. A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

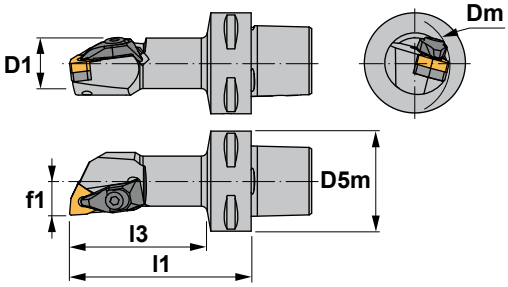




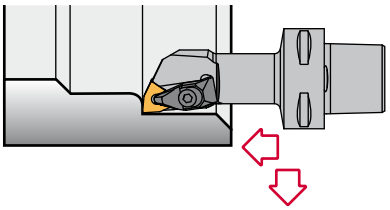
Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Bohrstange mit einer doppelseitigen negativen Trigon Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.





# DWLN 95°

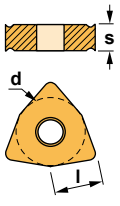
| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-DWLNR/L13075-06 | 33 | 20 | 40 | 13 | 75 | 52 | -6° | -17° | WNMG 0604.. | 0,420 |
| PSC40-DWLNR/L17090-08 | 35 | 25 | 40 | 17 | 90 | 68 | -6° | -12° | WNMG 0804.. | 0,480 |
| PSC50-DWLNR/L17090-08 | 35 | 25 | 50 | 17 | 90 | 66 | -6° | -12° | WNMG 0804.. | 0,700 |

| Reference<br>Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-DWLNR/L13075-06 | 1764 | IWSN-322 | 2708 | 1695 | 4294 | 5004 | 3.5 |
| PSC40-DWLNR/L17090-08 | 1766 | IWSN-433 | 2712 | 1696 | 4295 | 5004 | 3.5 |
| PSC50-DWLNR/L17090-08 | 1766 | IWSN-433 | 2712 | 1696 | 4295 | 5004 | 3.5 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

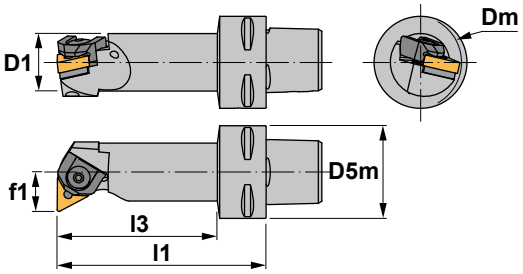



| WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC |
|---|---|---|---|
|  |  |  |  |
| **WNMG-MC** | **WNMG-MHC** | **WNMG-TC** | |
|  |  |  | |



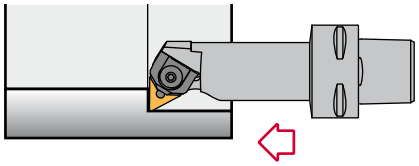
Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit einer doppelseitigen dreikantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.





# MTFN 90°

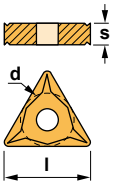
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-MTFNR/L17090-16 | 32 | 25 | 40 | 17 | 90 | 69 | -6° | -13° | TNM.. 1604.. | 0,480 |
| PSC40-MTFNR/L22110-16 | 40 | 32 | 40 | 22 | 110 | 89 | -6° | -12° | TNM.. 1604.. | 0,750 |
| PSC40-MTFNR/L27120-16 | 50 | 40 | 40 | 27 | 120 | 100 | -6° | -11° | TNM.. 1604.. | 1,130 |
| PSC50-MTFNR/L17090-16 | 32 | 25 | 50 | 17 | 90 | 67 | -6° | -13° | TNM.. 1604.. | 0,700 |
| PSC50-MTFNR/L22110-16 | 40 | 32 | 50 | 22 | 110 | 88 | -6° | -12° | TNM.. 1604.. | 0,930 |
| PSC50-MTFNR/L27140-16 | 50 | 40 | 50 | 27 | 140 | 119 | -6° | -11° | TNM.. 1604.. | 1,470 |
| PSC63-MTFNR/L22110-16 | 40 | 32 | 63 | 22 | 110 | 84 | -6° | -12° | TNM.. 1604.. | 1,260 |
| PSC63-MTFNR/L27140-16 | 50 | 40 | 63 | 27 | 140 | 115 | -6° | -11° | TNM.. 1604.. | 1,780 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| PSC40-MTFNR/L17090-16 | 2017 | 1644 | 5025 | 3414 | 1813 | 2.0 |
| PSC40-MTFNR/L22110-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |
| PSC40-MTFNR/L27120-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |
| PSC50-MTFNR/L17090-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |
| PSC50-MTFNR/L22110-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |
| PSC50-MTFNR/L27140-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |
| PSC63-MTFNR/L22110-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |
| PSC63-MTFNR/L27140-16 | 2017 | 1644 | 5025 | 3414 | 1393 | 2.0 |

## TNM..

Triangular negative inserts.
Dreikantige negative WSP. A45-46

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |

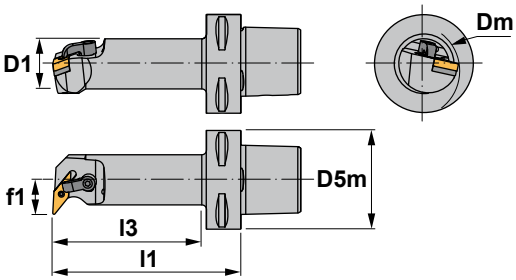



| TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC |
|---|---|---|---|---|
| TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L |



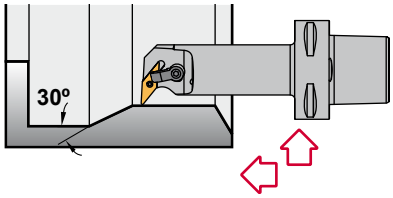
Characteristics:
Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit einer doppelseitigen rhombischen negativen Wendeschneidplatte (35° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# MVUN 93°

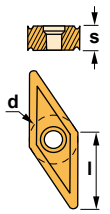
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-MVUNR/L27120-16 | 50 | 40 | 40 | 27 | 120 | 100 | -6° | -10° | VN.. 1604.. | 1,130 |
| PSC50-MVUNR/L27140-16 | 50 | 40 | 50 | 27 | 140 | 119 | -6° | -10° | VN.. 1604.. | 1,470 |
| PSC50-MVUNR/L35150-16 | 63 | 50 | 50 | 35 | 150 | 131 | -6° | -10° | VN.. 1604.. | 2,250 |
| PSC63-MVUNR/L22120-16 | 40 | 32 | 63 | 22 | 120 | 94 | -6° | -12° | VN.. 1604.. | 1,280 |
| PSC63-MVUNR/L35175-16 | 63 | 50 | 63 | 35 | 175 | 152 | -6° | -10° | VN.. 1604.. | 2,850 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-MVUNR/L27120-16 | 2614 | 5003 | IVSN-322 | 1086 | 1665 | 5002 | 3.0 |
| PSC50-MVUNR/L27140-16 | 2614 | 5003 | IVSN-322 | 1086 | 1665 | 5002 | 3.0 |
| PSC50-MVUNR/L35150-16 | 2614 | 5003 | IVSN-322 | 1086 | 1665 | 5002 | 3.0 |
| PSC63-MVUNR/L22120-16 | 2614 | 5003 | IVSN-322 | 1186 | 1665 | 5002 | 3.0 |
| PSC63-MVUNR/L35175-16 | 2614 | 5003 | IVSN-322 | 1086 | 1665 | 5002 | 3.0 |

## VN..

35° rhombic negative inserts. A49
35° rhombische negative Wendeschneidplatten.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |




VNGP



VNMG



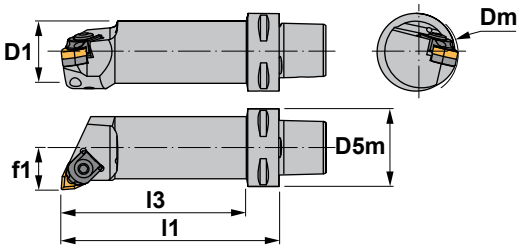
VNMG-TC





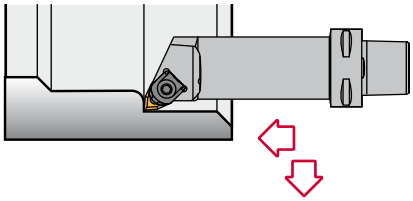
Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Bohrstange mit einer doppelseitigen negativen Trigon Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.





# MWLN 95°

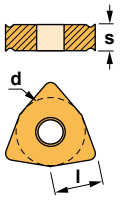
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-MWLNR/L13075-06 | 25 | 20 | 32 | 13 | 75 | 59 | -6° | -14° | WNMG 0604.. | 0,240 |
| PSC32-MWLNR/L17090-06 | 32 | 25 | 32 | 17 | 90 | 75 | -6° | -12° | WNMG 0604.. | 0,360 |
| PSC40-MWLNR/L13075-06 | 25 | 20 | 40 | 13 | 75 | 53 | -6° | -14° | WNMG 0604.. | 0,420 |
| PSC40-MWLNR/L17090-06 | 32 | 25 | 40 | 17 | 90 | 69 | -6° | -12° | WNMG 0604.. | 0,480 |
| PSC40-MWLNR/L17090-08 | 32 | 25 | 40 | 17 | 90 | 69 | -6° | -14° | WNMG 0804.. | 0,480 |
| PSC40-MWLNR/L22110-08 | 40 | 32 | 40 | 22 | 110 | 89 | -6° | -14° | WNMG 0804.. | 0,750 |
| PSC40-MWLNR/L27120-08 | 50 | 40 | 40 | 27 | 120 | 100 | -6° | -12° | WNMG 0804.. | 1,130 |
| PSC50-MWLNR/L17090-08 | 32 | 25 | 50 | 17 | 90 | 67 | -6° | -14° | WNMG 0804.. | 0,700 |
| PSC50-MWLNR/L22110-08 | 40 | 32 | 50 | 22 | 110 | 88 | -6° | -14° | WNMG 0804.. | 0,930 |
| PSC50-MWLNR/L27140-08 | 50 | 40 | 50 | 27 | 140 | 119 | -6° | -12° | WNMG 0804.. | 1,470 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| PSC32-MWLNR/L13075-06 | 2006 | 5025 | - | 1643 | 1813 | 2.0 |
| PSC32-MWLNR/L17090-06 | 2006 | 5025 | 3006 | 1644 | 1813 | 2.0 |
| PSC40-MWLNR/L13075-06 | 2006 | 5025 | - | 1643 | 1813 | 2.0 |
| PSC40-MWLNR/L17090-06 | 2006 | 5025 | 3006 | 1644 | 1813 | 2.0 |
| PSC40-MWLNR/L17090-08 | 2011 | 5005 | - | 1647 | 1814 | 4.0 |
| PSC40-MWLNR/L22110-08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |
| PSC40-MWLNR/L27120-08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |
| PSC50-MWLNR/L17090-08 | 2011 | 5005 | - | 1647 | 1814 | 4.0 |
| PSC50-MWLNR/L22110-08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |
| PSC50-MWLNR/L27140-08 | 2011 | 5005 | IWSN-433 | 1661 | 1814 | 4.0 |

## WNMG

80° trigon negative inserts.
80° trigon negative Wendeschneidplatten. A50-51

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WNMG 0604.. | 6,45 | 4,76 | 9,52 |
| WNMG 0804.. | 8,14 | 4,76 | 12,70 |

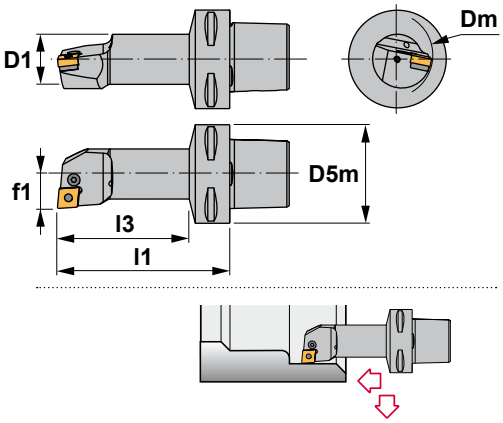







Characteristics: Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80°). PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

Eigenschaften:
Bohrstange zum Innendrehen mit einer rhombischen negativen Wendeschneidplatte (80° Winkel). PSC mit Innenkühlung.
1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.






# PCLN 95°

| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-PCLNR/L13080-09 | 25 | 20 | 40 | 13 | 80 | 58 | -6° | -11° | CN.. 0903.. | 0,400 |
| PSC50-PCLNR/L13080-09 | 25 | 20 | 50 | 13 | 80 | 56 | -6° | -11° | CN.. 0903.. | 0,570 |
| PSC32-PCLNR/L17090-12 | 32 | 25 | 32 | 17 | 90 | 75 | -6° | -11° | CN.. 1204.. | 0,360 |
| PSC32-PCLNR/L22064-12 | 40 | 32 | 32 | 22 | 64 | 50 | -6° | -11° | CN.. 1204.. | 0,350 |
| PSC32-PCLNR/L22096-12 | 40 | 32 | 32 | 22 | 96 | 82 | -6° | -11° | CN.. 1204.. | 0,550 |
| PSC40-PCLNR/L17090-12 | 32 | 25 | 40 | 17 | 90 | 69 | -6° | -11° | CN.. 1204.. | 0,480 |
| PSC40-PCLNR/L22110-12 | 40 | 32 | 40 | 22 | 110 | 89 | -6° | -11° | CN.. 1204.. | 0,750 |
| PSC40-PCLNR/L27080-12 | 50 | 40 | 40 | 27 | 80 | 60 | -6° | -10° | CN.. 1204.. | 0,740 |
| PSC40-PCLNR/L27120-12 | 50 | 40 | 40 | 27 | 120 | 100 | -6° | -11° | CN.. 1204.. | 1,130 |
| PSC50-PCLNR/L17090-12 | 32 | 25 | 50 | 17 | 90 | 67 | -6° | -11° | CN.. 1204.. | 0,700 |
| PSC50-PCLNR/L22110-12 | 40 | 32 | 50 | 22 | 110 | 88 | -6° | -11° | CN.. 1204.. | 0,930 |
| PSC50-PCLNR/L27140-12 | 50 | 40 | 50 | 27 | 140 | 119 | -6° | -10° | CN.. 1204.. | 1,470 |
| PSC50-PCLNR/L35100-12 | 63 | 50 | 50 | 35 | 100 | 81 | -6° | -7° | CN.. 1204.. | 1,480 |
| PSC63-PCLNR/L17100-12 | 32 | 25 | 63 | 17 | 100 | 74 | -6° | -11° | CN.. 1204.. | 1,000 |
| PSC63-PCLNR/L22110-12 | 40 | 32 | 63 | 22 | 110 | 84 | -6° | -11° | CN.. 1204.. | 1,260 |
| PSC50-PCLNR/L35150-16 | 63 | 50 | 50 | 35 | 150 | 131 | -6° | -11° | CN.. 1606.. | 2,250 |
| PSC63-PCLNR/L27140-16 | 50 | 40 | 63 | 27 | 140 | 115 | -6° | -11° | CN.. 1606.. | 1,780 |
| PSC63-PCLNR/L35175-16 | 63 | 50 | 63 | 35 | 175 | 152 | -6° | -11° | CN.. 1606.. | 2,850 |

| Reference Bezeichnung |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-PCLNR/L13080-09 | 8005 | 1605 | 5002 | - | - | - | 1.4 |
| PSC50-PCLNR/L13080-09 | 8005 | 1605 | 5002 | - | - | - | 1.4 |
| PSC32-PCLNR/L17090-12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| PSC32-PCLNR/L22064-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC32-PCLNR/L22096-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC40-PCLNR/L17090-12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| PSC40-PCLNR/L22110-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC40-PCLNR/L27080-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC40-PCLNR/L27120-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC50-PCLNR/L17090-12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| PSC50-PCLNR/L22110-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC50-PCLNR/L27140-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC50-PCLNR/L35100-12 | 8012 | 1608 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC63-PCLNR/L17100-12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| PSC63-PCLNR/L22110-12 | 8312 | 1648 | 5003 | 3612 | 4112 | 0012 | 3.0 |
| PSC50-PCLNR/L35150-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC63-PCLNR/L27140-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |
| PSC63-PCLNR/L35175-16 | 8016 | 1618 | 5003 | 3616 | 4115 | 0015 | 3.0 |

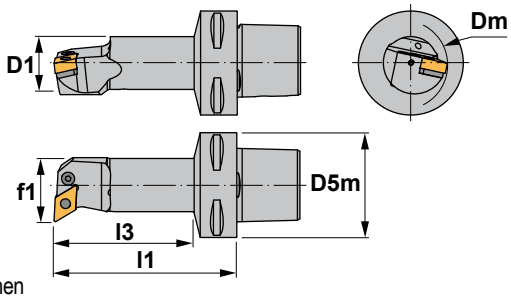
**CN..**

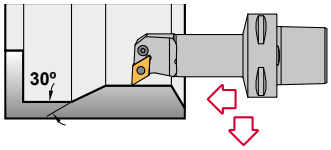
80° rhombic negative inserts.
80° rhombische negative Wendeschneidplatten. A32-34



Characteristics:
Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º). PSC with internal coolant.
1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.

Eigenschaften:
Bohrstange zum Innen- und Profildrehen mit einer rhombischen negativen Wendeschneidplatte (55º Winkel). PSC mit Innenkühlung.
1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# PDUN 93º

| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-PDUNR/L17090-11 | 32 | 25 | 32 | 17 | 90 | 75 | -6º | -11º | DN.. 1104.. | 0,360 |
| PSC40-PDUNR/L17090-11 | 32 | 25 | 40 | 17 | 90 | 69 | -6º | -11º | DN.. 1104.. | 0,480 |
| PSC40-PDUNR/L22110-11 | 40 | 32 | 40 | 22 | 110 | 89 | -6º | -10º | DN.. 1104.. | 0,750 |
| PSC50-PDUNR/L17090-11 | 32 | 25 | 50 | 17 | 90 | 67 | -6º | -11º | DN.. 1104.. | 0,700 |
| PSC50-PDUNR/L22110-11 | 40 | 32 | 50 | 22 | 110 | 88 | -6º | -10º | DN.. 1104.. | 0,930 |
| PSC63-PDUNR/L17100-11 | 32 | 25 | 63 | 17 | 100 | 74 | -6º | -11º | DN.. 1104.. | 1,000 |
| PSC40-PDUNR/L27080-15 | 50 | 40 | 40 | 27 | 80 | 60 | -6º | -11º | DN.. 1506.. | 0,740 |
| PSC40-PDUNR/L27120-15 | 50 | 40 | 40 | 27 | 120 | 100 | -6º | -11º | DN.. 1506.. | 1,130 |
| PSC50-PDUNR/L27140-15 | 50 | 40 | 50 | 27 | 140 | 119 | -6º | -11º | DN.. 1506.. | 1,470 |
| PSC50-PDUNR/L35100-15 | 63 | 50 | 50 | 35 | 100 | 81 | -6º | -10º | DN.. 1506.. | 1,480 |
| PSC50-PDUNR/L35150-15 | 63 | 50 | 50 | 35 | 150 | 131 | -6º | -10º | DN.. 1506.. | 2,250 |
| PSC63-PDUNR/L22110-15 | 40 | 32 | 63 | 22 | 110 | 84 | -6º | -12º | DN.. 1506.. | 1,260 |
| PSC63-PDUNR/L27140-15 | 50 | 40 | 63 | 27 | 140 | 115 | -6º | -11º | DN.. 1506.. | 1,780 |
| PSC63-PDUNR/L35175-15 | 63 | 50 | 63 | 35 | 175 | 152 | -6º | -10º | DN.. 1506.. | 2,850 |

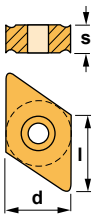
| Reference Bezeichnung | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|
| PSC32-PDUNR/L17090-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | 3725 | 4135 | 2.0 |
| PSC40-PDUNR/L17090-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | 3725 | 4135 | 2.0 |
| PSC40-PDUNR/L22110-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | 3725 | 4135 | 2.0 |
| PSC50-PDUNR/L17090-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | 3725 | 4135 | 2.0 |
| PSC50-PDUNR/L22110-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | 3725 | 4135 | 2.0 |
| PSC63-PDUNR/L17100-11 | 8009 | 1606 | 5025 | 3711 | 4109 | 0009 | 3725 | 4135 | 2.0 |
| PSC40-PDUNR/L27080-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC40-PDUNR/L27120-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC50-PDUNR/L27140-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC50-PDUNR/L35100-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC50-PDUNR/L35150-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC63-PDUNR/L22110-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC63-PDUNR/L27140-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |
| PSC63-PDUNR/L35175-15 | 8415 | 1638 | 5003 | 3715 | 4112 | 0012 | 3725 | 4135 | 3.0 |

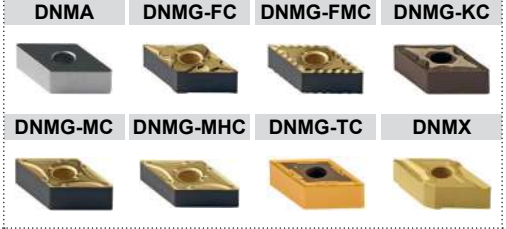
For DNM.. 1504.. inserts
Für Wendeschneidplatten DNM.. 1504..

## DN..

55º rhombic negative inserts.
55º rhombische negative Wendeschneidplatten.
A36-37

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

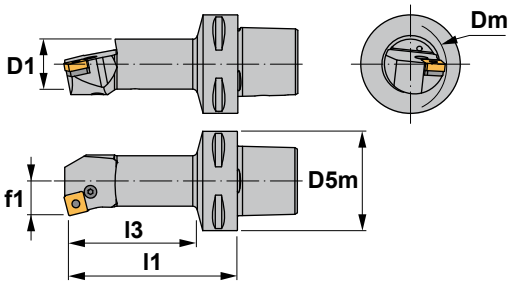




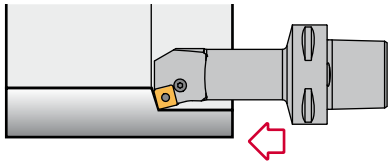
Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Bohrstange zum Innendrehen mit einer vierkantigen negativen Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# PSKN 75°

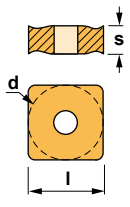
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-PSKNR/L17090-12 | 32 | 25 | 40 | 17 | 90 | 69 | -6° | -11° | SNM.. 1204.. | 0,480 |
| PSC50-PSKNR/L17090-12 | 32 | 25 | 50 | 17 | 90 | 67 | -6° | -11° | SNM.. 1204.. | 0,700 |
| PSC50-PSKNR/L22110-12 | 40 | 32 | 50 | 22 | 110 | 68 | -6° | -10° | SNM.. 1204.. | 0,930 |
| PSC50-PSKNR/L27140-12 | 50 | 40 | 50 | 27 | 140 | 119 | -6° | -10° | SNM.. 1204.. | 1,470 |
| PSC63-PSKNR/L22110-12 | 40 | 32 | 63 | 22 | 110 | 84 | -6° | -10° | SNM.. 1204.. | 1,260 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC40-PSKNR/L17090-12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| PSC50-PSKNR/L17090-12 | 8212 | 1626 | 5025 | - | - | - | 2.0 |
| PSC50-PSKNR/L22110-12 | 8312 | 1648 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC50-PSKNR/L27140-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |
| PSC63-PSKNR/L22110-12 | 8012 | 1608 | 5003 | 3512 | 4112 | 0012 | 3.0 |

## SNM..

Square negative inserts.
Vierkantige negative Wendeschneidplatten. A41-42

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |



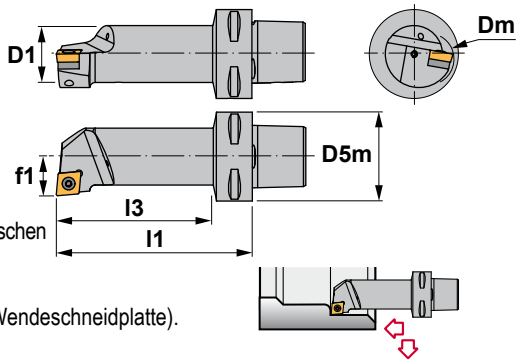

| SNMG-FMC | SNMG-KC | SNMG-MHC |
|---|---|---|
|  |  |  |
| **SNMG-RC** | **SNMG-TC** | **SNMM** |
|  |  |  |



# SCLC 95°

Characteristics:
Multipurpose boring bar equipped with rhombic positive insert (angle 80°). PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

Eigenschaften:
Multifunktions-Bohrstange mit einer rhombischen positiven Wendeschneidplatte (80° Winkel).
PSC mit Innenkühlung.
1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-SCLCR/L11065-09 | 20 | 16.0 | 32 | 11 | 65 | 48 | 0° | -12° | CC.. 09T3.. | 0,180 |
| PSC32-SCLCR/L13075-09 | 25 | 20.0 | 32 | 13 | 75 | 59 | 0° | -8° | CC.. 09T3.. | 0,240 |
| PSC32-SCLCR/L17090-09 | 32 | 25.0 | 32 | 17 | 90 | 75 | 0° | -6° | CC.. 09T3.. | 0,360 |
| PSC40-SCLCR/L11070-09 | 20 | 16.0 | 40 | 11 | 70 | 47 | 0° | -12° | CC.. 09T3.. | 0,330 |
| PSC40-SCLCR/L13080-09 | 25 | 20.0 | 40 | 13 | 80 | 58 | 0° | -8° | CC.. 09T3.. | 0,400 |
| PSC40-SCLCR/L17090-09 | 32 | 25.0 | 40 | 17 | 90 | 69 | 0° | -6° | CC.. 09T3.. | 0,480 |
| PSC40-SCLCR/L27080-09 | 50 | 39.7 | 40 | 27 | 80 | 60 | 0° | -6° | CC.. 09T3.. | 0,740 |
| PSC50-SCLCR/L11070-09 | 20 | 16.0 | 50 | 11 | 70 | 46 | 0° | -12° | CC.. 09T3.. | 0,500 |
| PSC50-SCLCR/L13080-09 | 25 | 20.0 | 50 | 13 | 80 | 56 | 0° | -8° | CC.. 09T3.. | 0,570 |
| PSC50-SCLCR/L17090-09 | 32 | 25.0 | 50 | 17 | 90 | 67 | 0° | -6° | CC.. 09T3.. | 0,700 |
| PSC50-SCLCR/L35100-09 | 63 | 49.7 | 50 | 35 | 100 | 81 | 0° | -4° | CC.. 09T3.. | 1,480 |
| PSC32-SCLCR/L17090-12 | 32 | 25.0 | 32 | 17 | 90 | 75 | 0° | -6° | CC.. 1204.. | 0,360 |
| PSC32-SCLCR/L22064-12 | 40 | 31.7 | 32 | 22 | 64 | 50 | 0° | -10° | CC.. 1204.. | 0,350 |
| PSC32-SCLCR/L22096-12 | 40 | 34.7 | 32 | 22 | 96 | 82 | 0° | -10° | CC.. 1204.. | 0,550 |
| PSC40-SCLCR/L17090-12 | 32 | 25.0 | 40 | 17 | 90 | 69 | 0° | -6° | CC.. 1204.. | 0,480 |
| PSC40-SCLCR/L22110-12 | 40 | 32.0 | 40 | 22 | 110 | 89 | 0° | -10° | CC.. 1204.. | 0,750 |
| PSC40-SCLCR/L27080-12 | 50 | 39.7 | 40 | 27 | 80 | 60 | 0° | -8° | CC.. 1204.. | 0,740 |
| PSC50-SCLCR/L17090-12 | 32 | 25.0 | 50 | 17 | 90 | 67 | 0° | -6° | CC.. 1204.. | 0,700 |
| PSC50-SCLCR/L22110-12 | 40 | 32.0 | 50 | 22 | 110 | 88 | 0° | -10° | CC.. 1204.. | 0,930 |
| PSC50-SCLCR/L27140-12 | 50 | 40.0 | 50 | 27 | 140 | 119 | 0° | -8° | CC.. 1204.. | 1,470 |
| PSC50-SCLCR/L35100-12 | 63 | 49.7 | 50 | 35 | 100 | 80 | 0° | -5° | CC.. 1204.. | 1,480 |

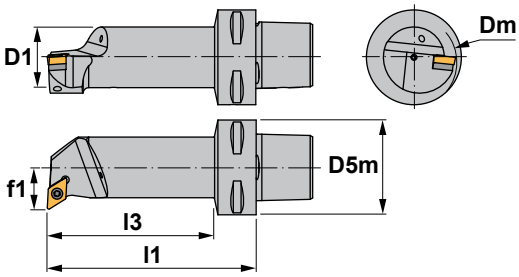
| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| PSC32-SCLCR/L.....-09 | 1440 | 5515 | - | - | 3.0 |
| PSC40-SCLCR/L.....-09 | 1440 | 5515 | - | - | 3.0 |
| PSC40-SCLCR/L17090-09 | 1240 | 5515 | - | - | 3.0 |
| PSC40-SCLCR/L27080-09 | 1240 | 5515 | - | - | 3.0 |
| PSC50-SCLCR/L.....-09 | 1440 | 5515 | - | - | 3.0 |
| PSC50-SCLCR/L17090-09 | 1240 | 5515 | - | - | 3.0 |
| PSC50-SCLCR/L35100-09 | 1240 | 5515 | - | - | 3.0 |
| PSC32-SCLCR/L17090-12 | 1250 | 5515 | - | - | 3.0 |
| PSC32-SCLCR/L22064-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC32-SCLCR/L22096-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC40-SCLCR/L17090-12 | 1250 | 5520 | - | - | 4.0 |
| PSC40-SCLCR/L22110-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC40-SCLCR/L27080-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC50-SCLCR/L17090-12 | 1250 | 5520 | - | - | 4.0 |
| PSC50-SCLCR/L22110-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC50-SCLCR/L27140-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |
| PSC50-SCLCR/L35100-12 | 1540 | 5517 | 3614 | 1760 | 3.0 |

**CC..**

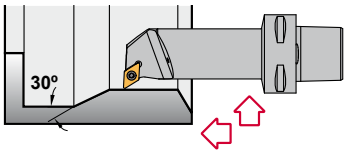
80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A30-31



Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).
PSC with internal coolant.
1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit einer rhombischen positiven Wendeschneidplatte (55° Winkel).
PSC mit Innenkühlung.
1) γ= Spanwinkel (Gültig nur mit flachen WSP).
2) λs= Neigungswinkel.




# SDUC 93°

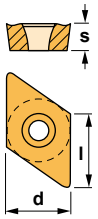
| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-SDUCR/L11065-07 | 20 | 16.0 | 32 | 11 | 65 | 48 | 0° | -6° | DC.. 0702.. | 0,180 |
| PSC40-SDUCR/L11070-07 | 20 | 16.0 | 40 | 11 | 70 | 47 | 0° | -8° | DC.. 0702.. | 0,330 |
| PSC50-SDUCR/L11070-07 | 20 | 16.0 | 50 | 11 | 70 | 46 | 0° | -8° | DC.. 0702.. | 0,500 |
| PSC32-SDUCR/L13075-11 | 25 | 20.0 | 32 | 13 | 75 | 59 | 0° | -6° | DC.. 11T3.. | 0,240 |
| PSC32-SDUCR/L17090-11 | 32 | 25.0 | 32 | 17 | 90 | 75 | 0° | -6° | DC.. 11T3.. | 0,360 |
| PSC32-SDUCR/L22064-11 | 40 | 31.7 | 32 | 22 | 64 | 50 | 0° | -6° | DC.. 11T3.. | 0,350 |
| PSC32-SDUCR/L22096-11 | 40 | 31.7 | 32 | 22 | 96 | 82 | 0° | -6° | DC.. 11T3.. | 0,550 |
| PSC40-SDUCR/L13080-11 | 25 | 20.0 | 40 | 13 | 80 | 58 | 0° | -6° | DC.. 11T3.. | 0,400 |
| PSC40-SDUCR/L17090-11 | 32 | 25.0 | 40 | 17 | 90 | 69 | 0° | -6° | DC.. 11T3.. | 0,480 |
| PSC40-SDUCR/L22110-11 | 40 | 32.0 | 40 | 22 | 110 | 89 | 0° | -6° | DC.. 11T3.. | 0,750 |
| PSC40-SDUCR/L27080-11 | 50 | 40.0 | 40 | 27 | 80 | 60 | 0° | -6° | DC.. 11T3.. | 0,740 |
| PSC50-SDUCR/L13080-11 | 25 | 20.0 | 50 | 13 | 80 | 56 | 0° | -6° | DC.. 11T3.. | 0,570 |
| PSC50-SDUCR/L17090-11 | 32 | 25.0 | 50 | 17 | 90 | 67 | 0° | -6° | DC.. 11T3.. | 0,700 |
| PSC50-SDUCR/L22110-11 | 40 | 32.0 | 50 | 22 | 110 | 88 | 0° | -6° | DC.. 11T3.. | 0,930 |
| PSC50-SDUCR/L35100-11 | 63 | 49.7 | 50 | 35 | 100 | 81 | 0° | -4° | DC.. 11T3.. | 1,480 |

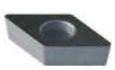
| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| PSC32-SDUCR/L11065-07 | 1225 | 5507 | - | - | 0.9 |
| PSC40-SDUCR/L11070-07 | 1225 | 5507 | - | - | 0.9 |
| PSC50-SDUCR/L11070-07 | 1225 | 5507 | - | - | 0.9 |
| PSC32-SDUCR/L13075-11 | 1240 | 5515 | - | - | 3.0 |
| PSC32-SDUCR/L17090-11 | 1240 | 5515 | - | - | 3.0 |
| PSC32-SDUCR/L22064-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC32-SDUCR/L22096-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC40-SDUCR/L13080-11 | 1240 | 5515 | - | - | 3.0 |
| PSC40-SDUCR/L17090-11 | 1240 | 5515 | - | - | 3.0 |
| PSC40-SDUCR/L22110-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC40-SDUCR/L27080-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC50-SDUCR/L13080-11 | 1240 | 5515 | - | - | 3.0 |
| PSC50-SDUCR/L17090-11 | 1240 | 5515 | - | - | 3.0 |
| PSC50-SDUCR/L22110-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |
| PSC50-SDUCR/L35100-11 | 1335 | 5516 | 3714 | 1750 | 3.0 |

## DC..

55° rhombic positive inserts with 7° clearance.
55° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

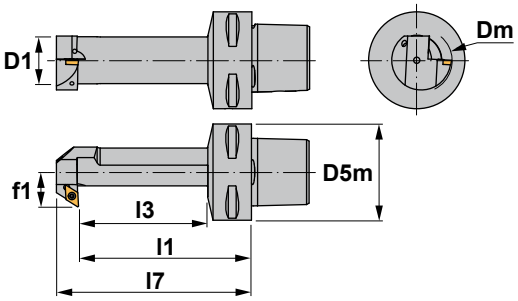



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |



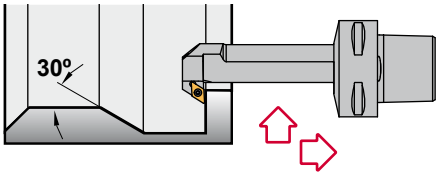
Characteristics:
Backwards multipurpose profiling boring bar equipped with rhombic positive insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Rückwärts-Multifunktions-Bohrstange zum Profildrehen mit einer rhombischen positiven Wendeschneidplatte (55º Winkel). PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# SDUC-X 93º

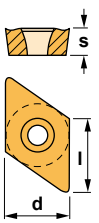
| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | l7 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-SDUCR/L13070-07X | 22 | 16 | 32 | 13 | 70 | 54 | 80.7 | 0º | -6º | DC.. 0702.. | 0,210 |
| PSC32-SDUCR/L15080-07X | 27 | 20 | 32 | 15 | 80 | 64 | 80.7 | 0º | -3º | DC.. 0702.. | 0,280 |
| PSC40-SDUCR/L13070-07X | 22 | 16 | 40 | 13 | 70 | 48 | 80.7 | 0º | -6º | DC.. 0702.. | 0,330 |
| PSC40-SDUCR/L15080-07X | 27 | 20 | 40 | 15 | 80 | 58 | 91.5 | 0º | -3º | DC.. 0702.. | 0,400 |
| PSC40-SDUCR/L18090-07X | 32 | 25 | 40 | 18 | 90 | 69 | 101.5 | 0º | -3º | DC.. 0702.. | 0,480 |
| PSC50-SDUCR/L15080-07X | 27 | 20 | 50 | 15 | 80 | 57 | 91.5 | 0º | -3º | DC.. 0702.. | 0,580 |
| PSC50-SDUCR/L18090-07X | 32 | 25 | 50 | 18 | 90 | 67 | 101.5 | 0º | -3º | DC.. 0702.. | 0,670 |

| Reference<br>Bezeichnung |  |  | Nm |
|---|---|---|---|
| PSC32-SDUCR/L13070-07X | 1225 | 5507 | 0.9 |
| PSC32-SDUCR/L15080-07X | 1225 | 5507 | 0.9 |
| PSC40-SDUCR/L13070-07X | 1225 | 5507 | 0.9 |
| PSC40-SDUCR/L15080-07X | 1225 | 5507 | 0.9 |
| PSC40-SDUCR/L18090-07X | 1225 | 5507 | 0.9 |
| PSC50-SDUCR/L15080-07X | 1225 | 5507 | 0.9 |
| PSC50-SDUCR/L18090-07X | 1225 | 5507 | 0.9 |

## DC..

55º rhombic positive inserts with 7º clearance.
55º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A35

| Reference / Bez. | l | s | d |
|---|---|---|---|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |

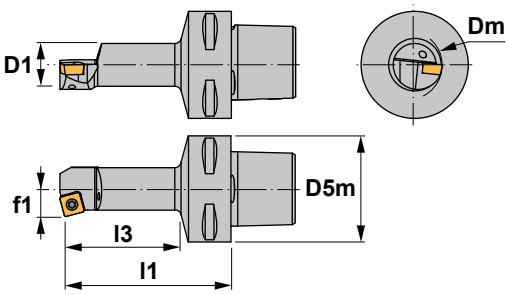



| DCGT-AL | DCGT-AP |
|---|---|
|  |  |
| **DCMT** | **DCMW** |
|  |  |



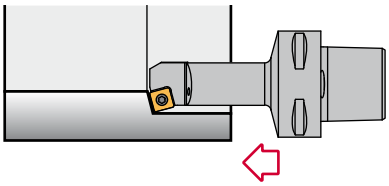
Characteristics:
Multipurpose boring bar equipped with square positive insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Bohrstange mit einer vierkantigen positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

## SSKC 75°

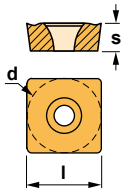
| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-SSKCR/L13080-09 | 25 | 20 | 40 | 13 | 80 | 58 | 0° | -6° | SC.. 09T3.. | 0,400 |
| PSC50-SSKCR/L13080-09 | 25 | 20 | 50 | 13 | 80 | 56 | 0° | -6° | SC.. 09T3.. | 0,570 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| PSC40-SSKCR/L13080-09 | 1540 | 5517 | 3.0 |
| PSC50-SSKCR/L13080-09 | 1540 | 5517 | 3.0 |

## SC..

Square positive inserts with 7° clearance. A40
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |




SCGT-AL



SCMT



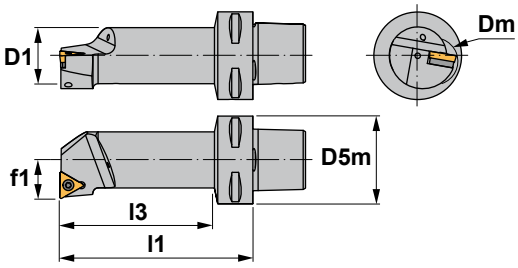
SCMT-39





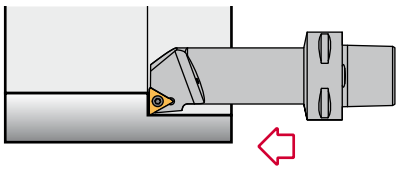
Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Bohrstange mit einer dreikantigen positiven Wendeschneidplatte.
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.



E

# STFC 90º

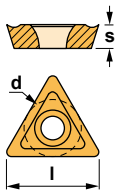
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-STFCR/L11065-11 | 20 | 16 | 32 | 11 | 65 | 48 | 0º | -4º | TC.. 1102.. | 0,180 |
| PSC32-STFCR/L13075-11 | 25 | 20 | 32 | 13 | 75 | 59 | 0º | -3º | TC.. 1102.. | 0,240 |
| PSC40-STFCR/L11070-11 | 20 | 16 | 40 | 11 | 70 | 47 | 0º | -4º | TC.. 1102.. | 0,330 |
| PSC40-STFCR/L13080-11 | 25 | 20 | 40 | 13 | 80 | 57 | 0º | -3º | TC.. 1102.. | 0,400 |
| PSC50-STFCR/L11070-11 | 20 | 16 | 50 | 11 | 70 | 46 | 0º | -4º | TC.. 1102.. | 0,500 |
| PSC50-STFCR/L13080-11 | 25 | 20 | 50 | 13 | 80 | 56 | 0º | -3º | TC.. 1102.. | 0,570 |
| PSC32-STFCR/L17090-16 | 32 | 25 | 32 | 17 | 90 | 74 | 0º | -3.5º | TC.. 16T3.. | 0,360 |
| PSC40-STFCR/L17090-16 | 32 | 25 | 40 | 17 | 90 | 69 | 0º | -6º | TC.. 16T3.. | 0,480 |
| PSC40-STFCR/L22110-16 | 40 | 32 | 40 | 22 | 110 | 89 | 0º | -10º | TC.. 16T3.. | 0,750 |
| PSC50-STFCR/L17090-16 | 32 | 25 | 50 | 17 | 90 | 67 | 0º | -6º | TC.. 16T3.. | 0,700 |
| PSC50-STFCR/L22110-16 | 40 | 32 | 50 | 22 | 110 | 88 | 0º | -10º | TC.. 16T3.. | 0,930 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-STFCR/L11065-11 | 1225 | 5507 | - | - | 0.9 |
| PSC32-STFCR/L13075-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-STFCR/L11070-11 | 1225 | 5507 | - | - | 0.9 |
| PSC40-STFCR/L13080-11 | 1225 | 5507 | - | - | 0.9 |
| PSC50-STFCR/L11070-11 | 1225 | 5507 | - | - | 0.9 |
| PSC50-STFCR/L13080-11 | 1225 | 5507 | - | - | 0.9 |
| PSC32-STFCR/L17090-16 | 1240 | 5515 | - | - | 3.0 |
| PSC40-STFCR/L17090-16 | 1240 | 5515 | - | - | 3.0 |
| PSC40-STFCR/L22110-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |
| PSC50-STFCR/L17090-16 | 1240 | 5515 | - | - | 3.0 |
| PSC50-STFCR/L22110-16 | 1335 | 5516 | 3414 | 1750 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. A44

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT



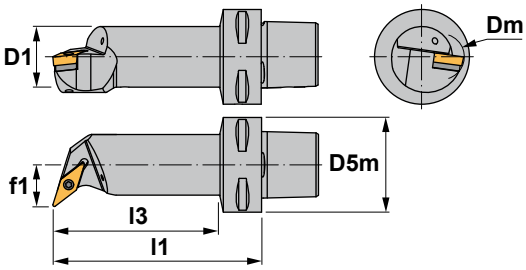
TCMW

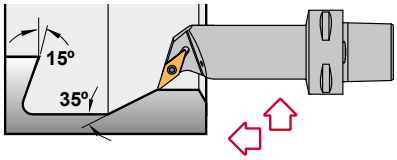




Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35°).
PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit einer rhombischen positiven Wendeschneidplatte (35° Winkel). PSC mit Innenkühlung.
1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




# SVQB 107° 30'

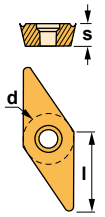
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-SVQBR/L18090-16 | 33 | 25.0 | 32 | 18 | 90 | 75 | 0° | -6° | VBMT 1604.. | 0,360 |
| PSC32-SVQBR/L22064-16 | 40 | 31.7 | 32 | 22 | 64 | 49 | 0° | -7.5° | VBMT 1604.. | 0,350 |
| PSC32-SVQBR/L22096-16 | 40 | 31.7 | 32 | 22 | 96 | 82 | 0° | -8° | VBMT 1604.. | 0,550 |
| PSC40-SVQBR/L18090-16 | 33 | 25.0 | 40 | 18 | 90 | 69 | 0° | -6° | VBMT 1604.. | 0,480 |
| PSC40-SVQBR/L22110-16 | 40 | 32.0 | 40 | 22 | 110 | 89 | 0° | -8° | VBMT 1604.. | 0,750 |
| PSC40-SVQBR/L27080-16 | 50 | 40.0 | 40 | 27 | 80 | 60 | 0° | -8° | VBMT 1604.. | 0,740 |
| PSC40-SVQBR/L27120-16 | 50 | 40.0 | 40 | 27 | 120 | 100 | 0° | -8° | VBMT 1604.. | 1,130 |
| PSC50-SVQBR/L18090-16 | 33 | 25.0 | 50 | 18 | 90 | 67 | 0° | -6° | VBMT 1604.. | 0,670 |
| PSC50-SVQBR/L22110-16 | 40 | 32.0 | 50 | 22 | 110 | 88 | 0° | -8° | VBMT 1604.. | 0,930 |
| PSC50-SVQBR/L27140-16 | 50 | 40.0 | 50 | 27 | 140 | 119 | 0° | -8° | VBMT 1604.. | 1,470 |
| PSC50-SVQBR/L35100-16 | 63 | 50.0 | 50 | 35 | 100 | 81 | 0° | -7° | VBMT 1604.. | 1,480 |
| PSC50-SVQBR/L35150-16 | 63 | 50.0 | 50 | 35 | 150 | 131 | 0° | -7° | VBMT 1604.. | 2,250 |
| PSC63-SVQBR/L22120-16 | 40 | 32.0 | 63 | 22 | 120 | 94 | 0° | -8° | VBMT 1604.. | 1,280 |
| PSC63-SVQBR/L27145-16 | 50 | 40.0 | 63 | 27 | 145 | 120 | 0° | -8° | VBMT 1604.. | 1,780 |
| PSC63-SVQBR/L35175-16 | 63 | 50.0 | 63 | 35 | 175 | 152 | 0° | -8° | VBMT 1604.. | 2,850 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-SVQBR/L18090-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC32-SVQBR/L22064-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC32-SVQBR/L22096-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC40-SVQBR/L18090-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC40-SVQBR/L22110-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC40-SVQBR/L27080-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC40-SVQBR/L27120-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVQBR/L18090-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVQBR/L22110-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVQBR/L27140-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVQBR/L35100-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC50-SVQBR/L35150-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVQBR/L22120-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVQBR/L27145-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |
| PSC63-SVQBR/L35175-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VBMT

35° rhombic positive insert with 5° clearance.
35° rhombische positive Wendeschneidplatte mit 5° Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



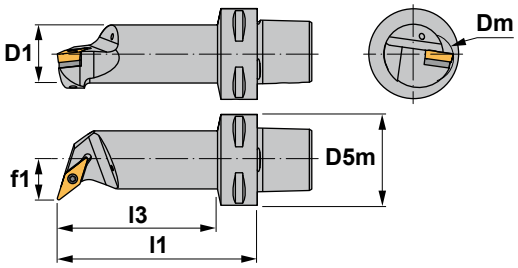

VBMT





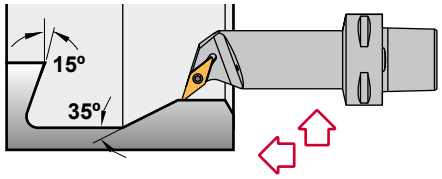
Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.




Eigenschaften:
Multifunktions-Bohrstange zum Profildrehen mit einer rhombischen positiven Wendeschneidplatte (35º Winkel).
PSC mit Innenkühlung.

1) γ= Spanwinkel (Gültig nur mit flachen Wendeschneidplatte).
2) λs= Neigungswinkel.




E

# SVQC 107º 30’

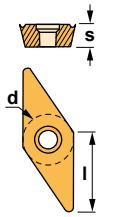
| Reference Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | γ1) | λs2) | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-SVQCR/L13070-11 | 22 | 16 | 32 | 13 | 70 | 53.4 | 0º | -7º | VC.. 1103.. | 0,210 |
| PSC32-SVQCR/L15080-11 | 27 | 20 | 32 | 15 | 80 | 63.9 | 0º | -5º | VC.. 1103.. | 0,280 |
| PSC40-SVQCR/L13070-11 | 25 | 20 | 40 | 13 | 70 | 47.9 | 0º | -5.5º | VC.. 1103.. | 0,330 |
| PSC40-SVQCR/L15080-11 | 27 | 20 | 40 | 15 | 80 | 57.9 | 0º | -5º | VC.. 1103.. | 0,400 |
| PSC40-SVQCR/L18090-16 | 33 | 25 | 40 | 18 | 90 | 69.0 | 0º | -12º | VC.. 1604.. | 0,480 |
| PSC40-SVQCR/L22110-16 | 40 | 32 | 40 | 22 | 110 | 89.0 | 0º | -8º | VC.. 1604.. | 0,750 |
| PSC40-SVQCR/L27080-16 | 50 | 40 | 40 | 27 | 80 | 60.0 | 0º | -8º | VC.. 1604.. | 0,740 |
| PSC40-SVQCR/L27120-16 | 50 | 40 | 40 | 27 | 120 | 100.0 | 0º | -8º | VC.. 1604.. | 1,130 |
| PSC50-SVQCR/L18090-16 | 33 | 25 | 50 | 18 | 90 | 67.0 | 0º | -12º | VC.. 1604.. | 0,670 |
| PSC50-SVQCR/L22110-16 | 40 | 32 | 50 | 22 | 110 | 88.0 | 0º | -8º | VC.. 1604.. | 0,930 |
| PSC50-SVQCR/L27140-16 | 50 | 40 | 50 | 27 | 140 | 119.0 | 0º | -8º | VC.. 1604.. | 1,470 |
| PSC50-SVQCR/L35100-16 | 63 | 50 | 50 | 35 | 100 | 81.0 | 0º | -7º | VC.. 1604.. | 1,480 |
| PSC50-SVQCR/L35150-16 | 63 | 50 | 50 | 35 | 150 | 131.0 | 0º | -7º | VC.. 1604.. | 2,250 |
| PSC63-SVQCR/L22120-16 | 40 | 32 | 63 | 22 | 120 | 94.0 | 0º | -8º | VC.. 1604.. | 1,280 |
| PSC63-SVQCR/L27145-16 | 50 | 40 | 63 | 27 | 145 | 120.0 | 0º | -8º | VC.. 1604.. | 1,780 |
| PSC63-SVQCR/L35175-16 | 63 | 50 | 63 | 35 | 175 | 152.0 | 0º | -8º | VC.. 1604.. | 2,850 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| .....-11 | 1225 | 5507 | - | - | 0.9 |
| .....-16 | 1335 | 5516 | 3718 | 1750 | 3.0 |

## VC..

35º rhombic positive inserts with 7º clearance.
35º rhombische positive Wendeschneidplatten mit 7º Freiwinkel. A48

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |




VCGT-AL



VCGT-AP



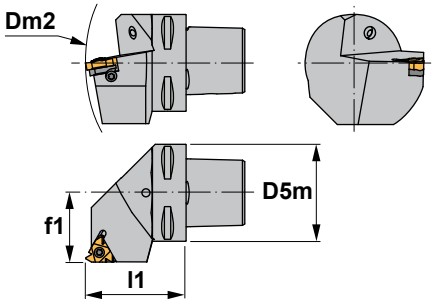
VCMT

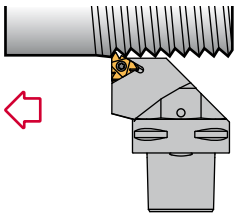




Characteristics:
Multipurpose threading toolholder for negative lay down inserts.
PSC with internal coolant.

Eigenschaften:
Multifunktions-Klemmhalter zum Gewindedrehen für negative Wendeschneidplatten.
PSC mit Innenkühlung.



# SE 90°

| Reference<br>Bezeichnung | D5m | Dm2<br>min. | f1 | l1 | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| PSC32-SER/L22040-16 | 32 | 124 | 22 | 40 | 16 ER/L.. | 0,210 |
| PSC40-SER/L27050-16 | 40 | 140 | 27 | 50 | 16 ER/L.. | 0,420 |
| PSC50-SER/L35060-16 | 50 | 165 | 35 | 60 | 16 ER/L.. | 0,800 |
| PSC63-SER/L45065-16 | 63 | 190 | 45 | 65 | 16 ER/L.. | 1,100 |
| PSC32-SER/L22040-22 | 32 | 124 | 22 | 40 | 22 ER/L.. | 0,210 |
| PSC40-SER/L27050-22 | 40 | 140 | 27 | 50 | 22 ER/L.. | 0,420 |
| PSC50-SER/L35060-22 | 50 | 165 | 35 | 60 | 22 ER/L.. | 0,800 |
| PSC63-SER/L45065-22 | 63 | 190 | 45 | 65 | 22 ER/L.. | 1,100 |
| PSC80-SER/L55080-22 | 80 | 250 | 55 | 80 | 22 ER/L.. | 2,740 |

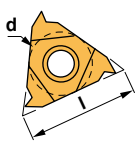
**WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofilen könnte eine Änderung im Klemmhalter erforderlich sein, um die volle Gewindetiefe zu erreichen.**

| Reference<br>Bezeichnung | | | R | L | | Nm |
|---|---|---|---|---|---|---|
| PSC32-SER/L22040-16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| PSC40-SER/L27050-16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| PSC50-SER/L35060-16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| PSC63-SER/L45065-16 | SA3 | 5510 | YE3 | YI3 | SY3 | 2.0 |
| PSC32-SER/L22040-22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| PSC40-SER/L27050-22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| PSC50-SER/L35060-22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| PSC63-SER/L45065-22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |
| PSC80-SER/L55080-22 | SA4 | 5520 | YE4 | YI4 | SY4 | 4.0 |

## E R/L

Triangular negative inserts for external threading.
Dreikantige negative Wendeschneidplatten zum Außengewindedrehen. C03,05,08,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |




E R/L



E R/L TD



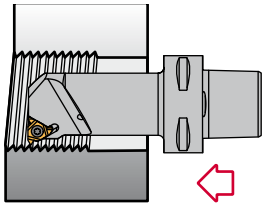
ER/L-LG

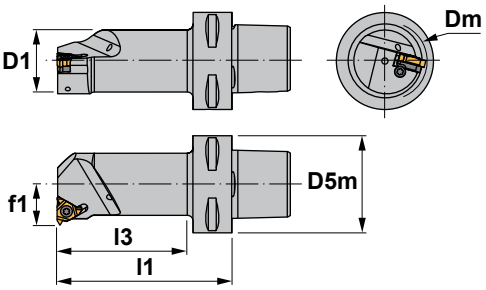




Characteristics:
Multipurpose threading boring bar for negative lay down inserts.
PSC with internal coolant.

Eigenschaften:
Multifunktions-Bohrstange zum Gewindedrehen für negative Wendeschneidplatten.
PSC mit Innenkühlung.






## SI 90°

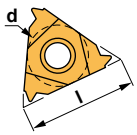
| Reference Bezeichnung | D1 | Dm | D5m | f1 | l1 | l3 | Insert size Wendeschneidplatte | | | R | L | | Nm | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSC32-SIR/L12050-16 | 15.5 | 20 | 32 | 12 | 50 | 33 | 16 NR/L.. | SN3 | 5510 | - | - | - | 2.0 | 0,210 |
| PSC32-SIR/L22085-16 | 31.5 | 40 | 32 | 22 | 85 | 70 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,510 |
| PSC40-SIR/L12060-16 | 15.5 | 20 | 40 | 12 | 60 | 37 | 16 NR/L.. | SN3 | 5510 | - | - | - | 2.0 | 0,300 |
| PSC40-SIR/L14060-16 | 18.5 | 25 | 40 | 14 | 60 | 38 | 16 NR/L.. | SA3T | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,340 |
| PSC40-SIR/L17070-16 | 24.5 | 32 | 40 | 17 | 70 | 48 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,410 |
| PSC40-SIR/L22090-16 | 32.0 | 40 | 40 | 22 | 90 | 69 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,650 |
| PSC40-SIR/L27080-16 | 39.5 | 50 | 40 | 27 | 80 | 60 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,760 |
| PSC50-SIR/L12060-16 | 15.5 | 20 | 50 | 12 | 60 | 35 | 16 NR/L.. | SN3 | 5510 | - | - | - | 2.0 | 0,490 |
| PSC50-SIR/L14060-16 | 18.5 | 25 | 50 | 14 | 60 | 36 | 16 NR/L.. | SA3T | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,510 |
| PSC50-SIR/L17070-16 | 24.5 | 32 | 50 | 17 | 70 | 47 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,590 |
| PSC50-SIR/L22090-16 | 24.5 | 40 | 50 | 22 | 90 | 68 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,820 |
| PSC50-SIR/L27105-16 | 40.0 | 50 | 50 | 27 | 105 | 84 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 1,200 |
| PSC63-SIR/L14070-16 | 18.5 | 25 | 63 | 14 | 70 | 42 | 16 NR/L.. | SA3T | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,900 |
| PSC63-SIR/L17075-16 | 24.5 | 32 | 63 | 17 | 75 | 48 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 0,970 |
| PSC63-SIR/L22090-16 | 32.0 | 40 | 63 | 22 | 90 | 64 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 1,140 |
| PSC63-SIR/L27105-16 | 40.0 | 50 | 63 | 27 | 105 | 80 | 16 NR/L.. | SA3 | 5510 | YI3 | YE3 | SY3 | 2.0 | 1,500 |
| PSC40-SIR/L15065-22 | 18.5 | 25 | 40 | 15 | 65 | 42 | 22 NR/L.. | SN4 | 5520 | - | - | - | 4.0 | 0,350 |
| PSC40-SIR/L19070-22 | 25.0 | 32 | 40 | 19 | 70 | 48 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 0,420 |
| PSC40-SIR/L22090-22 | 31.5 | 40 | 40 | 22 | 90 | 69 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 0,650 |
| PSC40-SIR/L27080-22 | 39.5 | 50 | 40 | 27 | 80 | 60 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 0,760 |
| PSC50-SIR/L15065-22 | 18.5 | 25 | 50 | 15 | 65 | 41 | 22 NR/L.. | SN4 | 5520 | - | - | - | 4.0 | 0,520 |
| PSC50-SIR/L19070-22 | 25.0 | 32 | 50 | 19 | 70 | 47 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 0,600 |
| PSC50-SIR/L22090-22 | 31.5 | 40 | 50 | 22 | 90 | 68 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 0,820 |
| PSC50-SIR/L27105-22 | 40.0 | 50 | 50 | 27 | 105 | 84 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 1,200 |
| PSC63-SIR/L19075-22 | 25.0 | 32 | 63 | 19 | 75 | 48 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 0,970 |
| PSC63-SIR/L22090-22 | 31.5 | 40 | 63 | 22 | 90 | 64 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 1,140 |
| PSC63-SIR/L27105-22 | 40.0 | 50 | 63 | 27 | 105 | 80 | 22 NR/L.. | SA4 | 5520 | YI4 | YE4 | SY4 | 4.0 | 1,500 |

**WARNING!! Because of large thread profile, modification may have to be made to the boring bar to achieve full depth of thread.**
**ACHTUNG!! Bei großen Gewindeprofilen könnte eine Änderung in der Bohrstange erforderlich sein, um die volle Gewindetiefe zu erreichen.**

## N R/L

Triangular negative inserts for internal threading.
Dreikantige negative Wendeschneidplatten zum Innengewindedrehen.
C04,06,07,09,10

| Reference / Bez. | l | d |
|---|---|---|
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |




N R/L



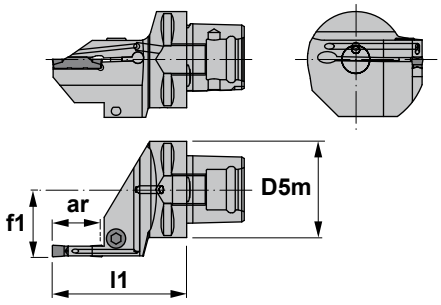
N R/L TD

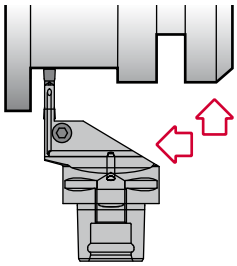




Characteristics:
Parting, grooving and side turning toolholder for modular blades CZFD.
Double-sided inserts 2 to 6 mm thickness.
PSC with internal coolant.

Eigenschaften:
Klemmhalter zum Ein- und Abstechen und Längsdrehen für modulare Kassetten CZFD.
Zweiseitige Wendeschneidplatten von 2 bis 6 mm Dicke.
PSC mit Innenkühlung.



## CZCD

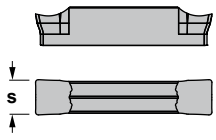
| Reference<br>Bezeichnung | D5m | f1 | l1 | ar max | Insert size<br>Wendeschneidplatte | | Nm | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC32-CZCDR/L22055-02 | 32 | 22 | 55 | 15 | WDM.. 02 | 1296 5005 | 4.0 | 0,250 |
| PSC40-CZCDR/L27055-02 | 40 | 27 | 55 | 15 | WDM.. 02 | 1096 5005 | 4.0 | 0,430 |
| PSC50-CZCDR/L35060-02 | 50 | 35 | 60 | 15 | WDM.. 02 | 1096 5005 | 4.0 | 0,800 |
| PSC32-CZCDR/L22055-03 | 32 | 22 | 55 | 20 | WDM.. 03 | 1296 5005 | 4.0 | 0,250 |
| PSC40-CZCDR/L27060-03 | 40 | 27 | 60 | 20 | WDM.. 03 | 1096 5005 | 4.0 | 0,480 |
| PSC50-CZCDR/L35060-03 | 50 | 35 | 60 | 20 | WDM.. 03 | 1096 5005 | 4.0 | 0,800 |
| PSC63-CZCDR/L45065-03 | 63 | 45 | 65 | 20 | WDM.. 03 | 1096 5005 | 4.0 | 1,100 |
| PSC32-CZCDR/L22060-04 | 32 | 22 | 60 | 20 | WDM.. 04 | 1296 5005 | 4.0 | 0,260 |
| PSC40-CZCDR/L27067-04 | 40 | 27 | 67 | 25 | WDM.. 04 | 1096 5005 | 4.0 | 0,440 |
| PSC50-CZCDR/L35067-04 | 50 | 35 | 67 | 25 | WDM.. 04 | 1096 5005 | 4.0 | 0,800 |
| PSC63-CZCDR/L45070-04 | 63 | 45 | 70 | 25 | WDM.. 04 | 1096 5005 | 4.0 | 1,350 |
| PSC40-CZCDR/L27067-05 | 40 | 27 | 67 | 25 | WDM.. 05 | 1096 5005 | 4.0 | 0,440 |
| PSC50-CZCDR/L35067-05 | 50 | 35 | 67 | 25 | WDM.. 05 | 1096 5005 | 4.0 | 0,800 |
| PSC63-CZCDR/L45070-05 | 63 | 45 | 70 | 25 | WDM.. 05 | 1096 5005 | 4.0 | 1,350 |
| PSC40-CZCDR/L27070-06 | 40 | 27 | 70 | 25 | WDM.. 06 | 1096 5005 | 4.0 | 0,440 |
| PSC50-CZCDR/L35070-06 | 50 | 35 | 70 | 25 | WDM.. 06 | 1096 5005 | 4.0 | 0,780 |
| PSC63-CZCDR/L45075-06 | 63 | 45 | 75 | 25 | WDM.. 06 | 1096 5005 | 4.0 | 1,430 |

**For modular blades CZFD, see pages B23 to B24.**
**Für modulare Kassetten CZFD, siehe Seiten B23 bis B24.**

## WDM..

B07

| Reference / Bez. | s |
|---|---|
| WDM.. 02 | 2,0 |
| WDM.. 03 | 3,0 |
| WDM.. 04 | 4,0 |
| WDM.. 05 | 5,0 |
| WDM.. 06 | 6,0 |



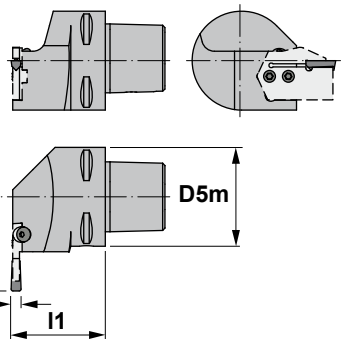

WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.
WDMG: Wendeschneidplatte zum Einstechen.
WDMP: Wendeschneidplatte zum Abstechen.
WDMR: Wendeschneidplatte zum Vollradius-Stechen.
WDMT: Wendeschneidplatte zum Drehen.

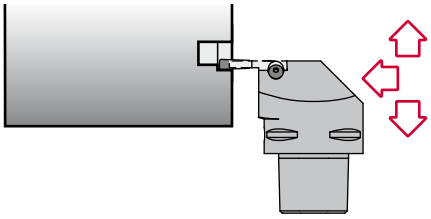
| WDMG | WDMP |
|---|---|
|  |  |
| **WDMR** | **WDMT** |
|  |  |



Characteristics:
Parting, grooving and side turning toolholder for modular blades CZFD.
Double-sided inserts 2 to 6 mm thickness.
PSC with internal coolant.

Eigenschaften:
Klemmhalter zum Ein- und Abstechen und Längsdrehen für modulare Kassetten CZFD.
Zweiseitige Wendeschneidplatten von 2 bis 6 mm Dicke.
PSC mit Innenkühlung.





## CZFD

| Reference Bezeichnung | D5m | f1 | l1 | B | Kg |
|---|---|---|---|---|---|
| PSC32-CZFDR/L09050 | 32 | 9 | 50 | 2-6 | 0,250 |
| PSC40-CZFDR/L14050 | 40 | 14 | 50 | 2-6 | 0,430 |
| PSC50-CZFDR/L22050 | 50 | 22 | 55 | 2-6 | 0,800 |
| PSC63-CZFDR/L32060 | 63 | 32 | 60 | 2-6 | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-CZFDR/L09050 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| PSC40-CZFDR/L14050 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| PSC50-CZFDR/L22050 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| PSC63-CZFDR/L32060 | 1815 | 1450 | 5003 | 5520 | 3.0 |

**For modular blades CZFD, see pages B23 to B24.**
**Für modulare Kassetten CZFD, siehe Seiten B23 bis B24.**

## Modular blades / Modulare Stechschwerter CZFD

WDM.. 02
WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06





**CZFD**

WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06



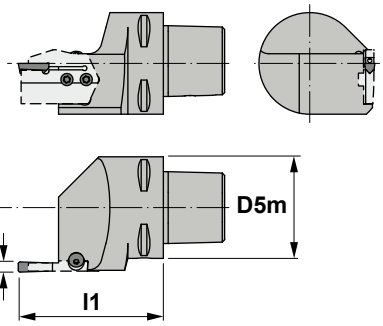
**Right-handed holders use left-handed modular blades.**

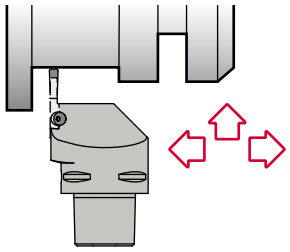
**Auf rechten Haltern werden linke modulare Stechschwerter montiert.**



Characteristics:
Parting, grooving and side turning toolholder for modular blades CZFD.
Double-sided inserts 2 to 6 mm thickness.
PSC with internal coolant.

Eigenschaften:
Klemmhalter zum Ein- und Abstechen und Längsdrehen für modulare Kassetten CZFD.
Zweiseitige Wendeschneidplatten von 2 bis 6 mm Dicke.
PSC mit Innenkühlung.



## CZGD

| Reference Bezeichnung | D5m | f1 | l1 | B | Kg |
|---|---|---|---|---|---|
| PSC32-CZGDR/L17042 | 32 | 17 | 42 | 2-6 | 0,250 |
| PSC40-CZGDR/L22042 | 40 | 22 | 42 | 2-6 | 0,430 |
| PSC50-CZGDR/L30047 | 50 | 30 | 47 | 2-6 | 0,800 |
| PSC63-CZGDR/L40052 | 63 | 40 | 52 | 2-6 | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC32-CZGDR/L17042 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| PSC40-CZGDR/L22042 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| PSC50-CZGDR/L30047 | 1815 | 1450 | 5003 | 5520 | 3.0 |
| PSC63-CZGDR/L40052 | 1815 | 1450 | 5003 | 5520 | 3.0 |

**For modular blades CZFD, see pages B23 to B24.**
**Für modulare Kassetten CZFD, siehe Seiten B23 bis B24.**

## Modular blades / Modulare Stechschwerter CZFD

WDM.. 02
WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06





**CZGD**

WDM.. 03
WDM.. 04
WDM.. 05
WDM.. 06



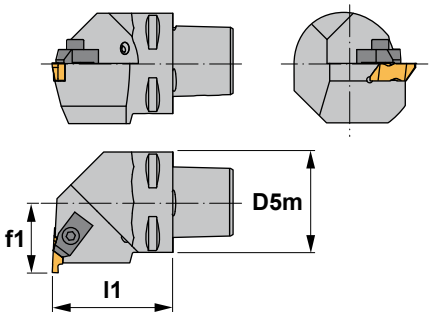
**Right-handed holders use right-handed modular blades.**

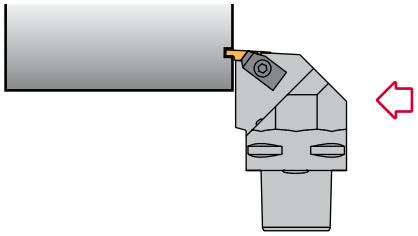
**Auf rechten Haltern werden rechte modulare Stechschwerter montiert.**



Characteristics:
Multipurpose grooving and threading top clamp toolholder.
Right tools require left inserts and vice versa.
PSC with internal coolant.

Eigenschaften:
Multifunktionaler Klemmhalter zum Einstechen und Gewindedrehen mit Top Notch Klemmung.
Rechte Werkzeuge erfordern linke Wendeschneidplatten und umgekehrt.
PSC mit Innenkühlung.



E

# NE 93°

| Reference Bezeichnung | D5m | f1 | l1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|
| PSC40-NER/L27050-03 | 40 | 27 | 50 | N.. 3 | 0,420 |
| PSC50-NER/L35060-03 | 50 | 35 | 60 | N.. 3 | 0,800 |
| PSC63-NER/L45065-03 | 63 | 45 | 65 | N.. 3 | 1,100 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC40-NER/L27050-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC50-NER/L35060-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC63-NER/L45065-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |

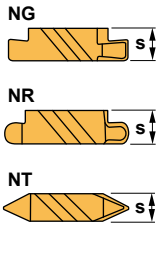
## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 3 | 4,95 |

NG: Insert for grooving.
NR: Insert for parting with radius.
NT: Insert for threading.

NG: Einstechwendeschneidplatte.
NR: Vollradius-Stechplatte.
NT: Gewindewendeschneidplatte.




NG



NR



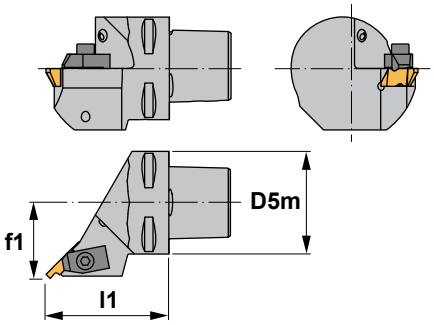
NT

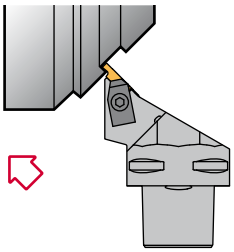




Characteristics:
Specific application grooving toolholder.
Right tools require left inserts and vice versa.
PSC with internal coolant.

Eigenschaften:
Klemmhalter zum Einstechen für spezifische Anwendungen.
Rechte Werkzeuge erfordern linke Wendeschneidplatten und umgekehrt.
PSC mit Innenkühlung.





## NR 45°

| Reference<br>Bezeichnung | D5m | f1 | l1 | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|
| PSC40-NRR/L27055-03 | 40 | 27 | 55 | N.. 3 | 0,430 |
| PSC50-NRR/L35060-03 | 50 | 35 | 60 | N.. 3 | 0,800 |
| PSC63-NRR/L45065-03 | 63 | 45 | 65 | N.. 3 | 1,100 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| PSC40-NRR/L27055-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC50-NRR/L35060-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC63-NRR/L45065-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |

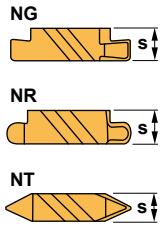
### N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 3 | 4,95 |

NG: Insert for grooving.
NR: Insert for parting with radius.
NT: Insert for threading.

NG: Einstechwendeschneidplatte.
NR: Vollradius-Stechplatte.
NT: Gewindewendeschneidplatte.




NG



NR



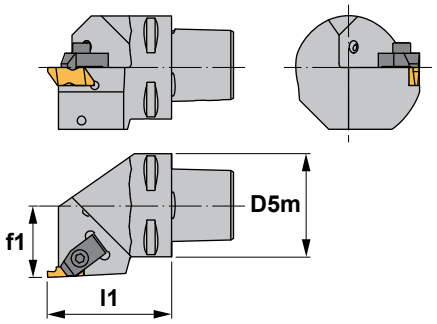
NT

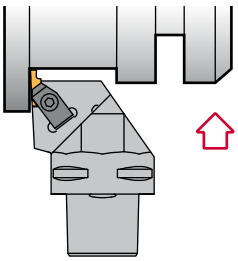




Characteristics:
Multipurpose grooving and threading top clamp toolholder.
PSC with internal coolant.

Eigenschaften:
Multifunktionaler Klemmhalter zum Einstechen und Gewindedrehen mit Top Notch Klemmung.
PSC mit Innenkühlung.



E

## NS 93°

| Reference Bezeichnung | D5m | f1 | l1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|
| PSC32-NSR22040-02 | 32 | 22 | 40 | N.. 2 | 0,210 |
| PSC40-NSR/L27050-02 | 40 | 27 | 50 | N.. 2 | 0,420 |
| PSC32-NSR22045-03 | 32 | 22 | 45 | N.. 3 | 0,240 |
| PSC40-NSR/L27050-03 | 40 | 27 | 50 | N.. 3 | 0,420 |
| PSC50-NSR/L35060-03 | 50 | 35 | 60 | N.. 3 | 0,800 |
| PSC63-NSR/L45065-03 | 63 | 45 | 65 | N.. 3 | 1,100 |
| PSC40-NSR/L27055-04 | 40 | 27 | 55 | N.. 4 | 0,430 |
| PSC50-NSR/L35060-04 | 50 | 35 | 60 | N.. 4 | 0,800 |
| PSC63-NSR/L45065-04 | 63 | 45 | 65 | N.. 4 | 1,100 |

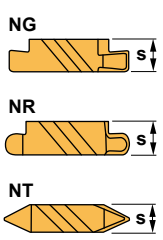
| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| PSC32-NSR22040-02 | TF-74 | TF-75 | - | - | 5003 | 1494 | 3.0 |
| PSC40-NSR/L27050-02 | TF-74 | TF-75 | - | - | 5003 | 1494 | 3.0 |
| PSC32-NSR22045-03 | TF-72 | TF-73 | - | - | 5004 | 1495 | 3.5 |
| PSC40-NSR/L27050-03 | TF-72 | TF-73 | - | - | 5004 | 1495 | 3.5 |
| PSC50-NSR/L35060-03 | TF-72 | TF-73 | - | - | 5004 | 1495 | 3.5 |
| PSC63-NSR/L45065-03 | TF-72 | TF-73 | - | - | 5004 | 1495 | 3.5 |
| PSC40-NSR/L27055-04 | TF-72 | TF-73 | 3521 | 1625 | 5004 | 1495 | 3.5 |
| PSC50-NSR/L35060-04 | TF-72 | TF-73 | 3521 | 1625 | 5004 | 1495 | 3.5 |
| PSC63-NSR/L45065-04 | TF-72 | TF-73 | 3521 | 1625 | 5004 | 1495 | 3.5 |

## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 2 | 3,81 |
| N.. 3 | 4,95 |
| N.. 4 | 6,48 |

NG: Insert for grooving. NG: Einstechwendeschneidplatte.
NR: Insert for parting with radius. NR: Vollradius-Stechplatte.
NT: Insert for threading. NT: Gewindewendeschneidplatte.




NG



NR



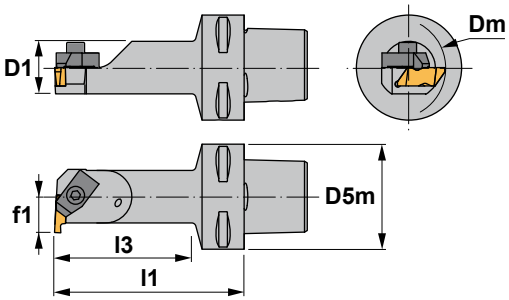
NT

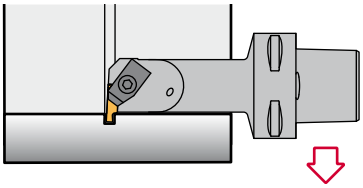




Characteristics:
Multipurpose grooving and threading top clamp boring bar.
Right tools require left inserts and vice versa.
PSC with internal coolant.

Eigenschaften:
Multifunktionale Bohrstange zum Einstechen und Gewindedrehen mit Top Notch Klemmung.
Rechte Werkzeuge erfordern linke Wendeschneidplatten und umgekehrt.
PSC mit Innenkühlung.



# NNTO 93°

| Reference<br>Bezeichnung | Dm | D1 | D5m | f1 | l1 | l3 | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| PSC40-NNTOR/L11070-02 | 22 | 16 | 40 | 11 | 70 | 47 | N.. 2 | 0,330 |
| PSC40-NNTOR/L13080-02 | 26 | 20 | 40 | 13 | 80 | 58 | N.. 2 | 0,400 |
| PSC50-NNTOR/L11070-02 | 22 | 16 | 50 | 11 | 70 | 46 | N.. 2 | 0,500 |
| PSC50-NNTOR/L13080-02 | 26 | 20 | 50 | 13 | 80 | 56 | N.. 2 | 0,570 |
| PSC50-NNTOR/L17090-02 | 34 | 25 | 50 | 17 | 90 | 67 | N.. 2 | 0,700 |
| PSC40-NNTOR/L17090-03 | 34 | 25 | 40 | 17 | 90 | 69 | N.. 3 | 0,480 |
| PSC50-NNTOR/L17090-03 | 34 | 25 | 50 | 17 | 90 | 67 | N.. 3 | 0,700 |
| PSC50-NNTOR/L22110-03 | 44 | 32 | 50 | 22 | 110 | 88 | N.. 3 | 0,930 |
| PSC63-NNTOR/L27140-04 | 54 | 40 | 63 | 27 | 140 | 115 | N.. 4 | 1,780 |
| PSC63-NNTOR/L35175-04 | 70 | 50 | 63 | 35 | 175 | 152 | N.. 4 | 2,850 |

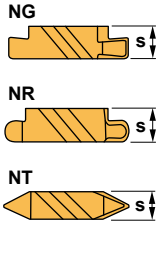
| Reference<br>Bezeichnung |  |  |  |  | Nm |
|---|---|---|---|---|---|
| PSC40-NNTOR/L11070-02 | TF-147 | TF-146 | 5003 | 1494 | 3.0 |
| PSC40-NNTOR/L13080-02 | TF-75 | TF-146 | 5003 | 1494 | 3.0 |
| PSC50-NNTOR/L11070-02 | TF-75 | TF-146 | 5003 | 1494 | 3.0 |
| PSC50-NNTOR/L13080-02 | TF-75 | TF-146 | 5003 | 1494 | 3.0 |
| PSC50-NNTOR/L17090-02 | TF-75 | TF-146 | 5003 | 1494 | 3.0 |
| PSC40-NNTOR/L17090-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC50-NNTOR/L17090-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC50-NNTOR/L22110-03 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC63-NNTOR/L27140-04 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |
| PSC63-NNTOR/L35175-04 | TF-73 | TF-72 | 5004 | 1495 | 3.5 |

## N..

B09-10

| Reference / Bez. | s |
|---|---|
| N.. 2 | 3,81 |
| N.. 3 | 4,95 |
| N.. 4 | 6,48 |

NG: Insert for grooving. NG: Einstechwendeschneidplatte.
NR: Insert for parting with radius. NR: Vollradius-Stechplatte.
NT: Insert for threading. NT: Gewindewendeschneidplatte.




NG



NR

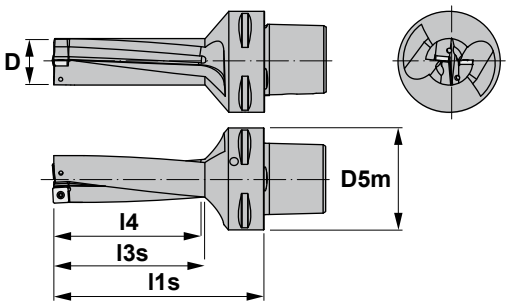


NT

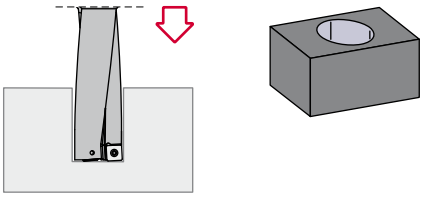




Characteristics:
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down square inserts for stability and clean through-hole putting.
PSC with internal coolant.
Max. hole depth = 3xDiameter (D)




Eigenschaften:
Die Spiralbohrer für Wendeschneidplatten erbringen schnellere Schnittgeschwindigkeiten und eine effiziente Spanabfuhr bei konventionellen und C.N.C. Maschinen. Dieser Bohrertyp benutzt verschraubte vierkantige Wendeschneidplatten mit neutralem Spanwinkel, was Stabilität und saubere Durchgangsbohrungen erbringt.
PSC mit Innenkühlung.
Maximale Bohrtiefe = 3xDrm. (D)



E

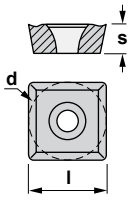
## 45..

| Reference Bezeichnung | D5m | D | l1s | l3s | l4 | Radial Adj. Dmax | Insert size Wendeschneidplatte | | Nm | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC40-4514.15 | 40 | 15,0 | 82 | 48 | 45 | +0,40➲15,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,330 |
| PSC40-4514.16 | 40 | 16,0 | 86 | 51 | 48 | +0,30➲16,6 | SPMT 0603.. | 1225 5507 | 0.9 | 0,360 |
| PSC40-4514.17 | 40 | 17,0 | 89 | 54 | 51 | +0,60➲18,2 | SPMT 0603.. | 1225 5507 | 0.9 | 0,370 |
| PSC40-4514.17,5 | 40 | 17,5 | 92 | 56 | 53 | +0,50➲18,5 | SPMT 0603.. | 1225 5507 | 0.9 | 0,380 |
| PSC40-4514.18 | 40 | 18,0 | 93 | 57 | 54 | +0,40➲18,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,390 |
| PSC40-4514.18,5 | 40 | 18,5 | 95 | 59 | 56 | +0,40➲19,3 | SPMT 0603.. | 1225 5507 | 0.9 | 0,400 |
| PSC40-4514.19 | 40 | 19,0 | 96 | 60 | 57 | +0,30➲19,6 | SPMT 0603.. | 1225 5507 | 0.9 | 0,410 |
| PSC40-4514.20 | 40 | 20,0 | 101 | 64 | 60 | +0,90➲21,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,440 |
| PSC40-4524.21 | 40 | 21,0 | 104 | 66 | 63 | +0,80➲22,6 | SPMT 0703.. | 1225 5507 | 0.9 | 0,460 |
| PSC40-4524.22 | 40 | 22,0 | 107 | 69 | 66 | +0,60➲23,2 | SPMT 0703.. | 1225 5507 | 0.9 | 0,490 |
| PSC40-4524.23 | 40 | 23,0 | 111 | 72 | 69 | +0,50➲24,0 | SPMT 0703.. | 1225 5507 | 0.9 | 0,520 |
| PSC40-4524.24 | 40 | 24,0 | 115 | 76 | 72 | +1,10➲26,2 | SPMT 0703.. | 1225 5507 | 0.9 | 0,560 |
| PSC40-4524.25 | 40 | 25,0 | 119 | 79 | 75 | +1,00➲27,0 | SPMT 0703.. | 1225 5507 | 0.9 | 0,590 |
| PSC40-4534.26 | 40 | 26,0 | 122 | 81 | 78 | +0,90➲27,8 | SPMT 0903.. | 1230 5508 | 1.2 | 0,640 |
| PSC40-4534.27 | 40 | 27,0 | 125 | 84 | 81 | +0,70➲28,4 | SPMT 0903.. | 1230 5508 | 1.2 | 0,680 |
| PSC40-4534.28 | 40 | 28,0 | 129 | 87 | 84 | +0,60➲29,2 | SPMT 0903.. | 1230 5508 | 1.2 | 0,720 |
| PSC40-4534.29 | 40 | 29,0 | 132 | 90 | 87 | +0,50➲30,0 | SPMT 0903.. | 1230 5508 | 1.2 | 0,760 |
| PSC40-4534.30 | 40 | 30,0 | 137 | 94 | 90 | +1,12➲32,2 | SPMT 0903.. | 1230 5508 | 1.2 | 0,810 |

## SPMT

Square positive insert with 11° clearance.
Vierkantige positive Wendeschneidplatte mit 11° Freiwinkel. H02

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMT 060304 | 6,35 | 3,18 | 6,35 |
| SPMT 070308 | 7,94 | 3,18 | 7,94 |
| SPMT 090308 | 9,52 | 3,18 | 9,52 |



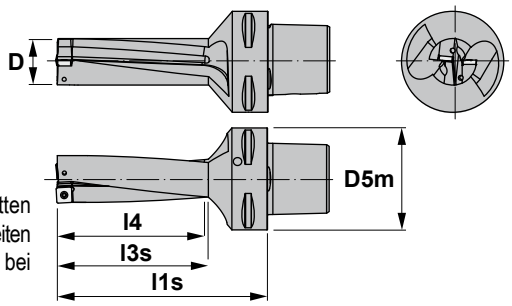

SPMT





Characteristics:
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.

Eigenschaften:
Die Spiralbohrer für Wendeschneidplatten erbringen schnellere Schnittgeschwindigkeiten und eine effiziente Spanabfuhr bei konventionellen und C.N.C. Maschinen.



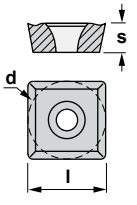

## 45..

| Reference Bezeichnung | D5m | D | l1s | l3s | l4 | Radial Adj. Dmax | Insert size Wendeschneidplatte | | Nm | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC50-4514.15 | 50 | 15,0 | 82 | 48 | 45 | +0,40➲15,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,580 |
| PSC50-4514.16 | 50 | 16,0 | 86 | 51 | 48 | +0,30➲16,6 | SPMT 0603.. | 1225 5507 | 0.9 | 0,590 |
| PSC50-4514.17 | 50 | 17,0 | 89 | 54 | 51 | +0,60➲18,2 | SPMT 0603.. | 1225 5507 | 0.9 | 0,600 |
| PSC50-4514.17,5 | 50 | 17,5 | 92 | 56 | 53 | +0,50➲18,5 | SPMT 0603.. | 1225 5507 | 0.9 | 0,600 |
| PSC50-4514.18 | 50 | 18,0 | 93 | 57 | 54 | +0,40➲18,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,600 |
| PSC50-4514.18,5 | 50 | 18,5 | 95 | 59 | 56 | +0,40➲19,3 | SPMT 0603.. | 1225 5507 | 0.9 | 0,600 |
| PSC50-4514.19 | 50 | 19,0 | 96 | 60 | 57 | +0,30➲19,6 | SPMT 0603.. | 1225 5507 | 0.9 | 0,610 |
| PSC50-4514.20 | 50 | 20,0 | 101 | 64 | 60 | +0,90➲21,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,640 |
| PSC50-4524.21 | 50 | 21,0 | 104 | 66 | 63 | +0,80➲22,6 | SPMT 0703.. | 1225 5507 | 0.9 | 0,650 |
| PSC50-4524.22 | 50 | 22,0 | 107 | 69 | 66 | +0,60➲23,2 | SPMT 0703.. | 1225 5507 | 0.9 | 0,670 |
| PSC50-4524.23 | 50 | 23,0 | 111 | 72 | 69 | +0,50➲24,0 | SPMT 0703.. | 1225 5507 | 0.9 | 0,700 |
| PSC50-4524.24 | 50 | 24,0 | 115 | 76 | 72 | +1,10➲26,2 | SPMT 0703.. | 1225 5507 | 0.9 | 0,740 |
| PSC50-4524.25 | 50 | 25,0 | 119 | 79 | 75 | +1,00➲27,0 | SPMT 0703.. | 1225 5507 | 0.9 | 0,780 |
| PSC50-4534.26 | 50 | 26,0 | 122 | 81 | 78 | +0,90➲27,8 | SPMT 0903.. | 1230 5508 | 1.2 | 0,820 |
| PSC50-4534.27 | 50 | 27,0 | 125 | 84 | 81 | +0,70➲28,4 | SPMT 0903.. | 1230 5508 | 1.2 | 0,820 |
| PSC50-4534.28 | 50 | 28,0 | 129 | 87 | 84 | +0,60➲29,2 | SPMT 0903.. | 1230 5508 | 1.2 | 0,900 |
| PSC50-4534.29 | 50 | 29,0 | 132 | 90 | 87 | +0,50➲30,0 | SPMT 0903.. | 1230 5508 | 1.2 | 0,950 |
| PSC50-4534.30 | 50 | 30,0 | 137 | 94 | 90 | +1,12➲32,2 | SPMT 0903.. | 1230 5508 | 1.2 | 1,010 |
| PSC50-4534.31 | 50 | 31,0 | 141 | 97 | 93 | +0,99➲33,0 | SPMT 0903.. | 1230 5508 | 1.2 | 1,060 |
| PSC50-4534.32 | 50 | 32,0 | 144 | 100 | 96 | +0,87➲33,7 | SPMT 0903.. | 1230 5508 | 1.2 | 1,110 |
| PSC50-4534.33 | 50 | 33,0 | 148 | 103 | 99 | +0,75➲34,5 | SPMT 0903.. | 1230 5508 | 1.2 | 1,180 |
| PSC50-4534.34 | 50 | 34,0 | 151 | 106 | 102 | +0,62➲35,2 | SPMT 0903.. | 1230 5508 | 1.2 | 1,260 |
| PSC50-4544.35 | 50 | 35,0 | 155 | 109 | 105 | +0,50➲36,0 | SPMT 1204.. | 1250 5520 | 4.0 | 1,330 |
| PSC50-4544.36 | 50 | 36,0 | 159 | 112 | 108 | +1,38➲38,8 | SPMT 1204.. | 1250 5520 | 4.0 | 1,420 |
| PSC50-4544.37 | 50 | 37,0 | 162 | 115 | 111 | +1,25➲39,5 | SPMT 1204.. | 1250 5520 | 4.0 | 1,470 |
| PSC50-4544.38 | 50 | 38,0 | 166 | 118 | 114 | +1,13➲40,2 | SPMT 1204.. | 1250 5520 | 4.0 | 1,580 |
| PSC50-4544.39 | 50 | 39,0 | 169 | 121 | 117 | +1,00➲41,0 | SPMT 1204.. | 1250 5520 | 4.0 | 1,640 |
| PSC50-4544.40 | 50 | 40,0 | 173 | 124 | 120 | +0,88➲41,8 | SPMT 1204.. | 1250 5520 | 4.0 | 2,040 |
| PSC50-4544.41 | 50 | 41,0 | 177 | 127 | 123 | +0,75➲42,5 | SPMT 1204.. | 1250 5520 | 4.0 | 2,040 |
| PSC50-4544.42 | 50 | 42,0 | 186 | 130 | 126 | +0,63➲43,2 | SPMT 1204.. | 1250 5520 | 4.0 | 2,040 |
| PSC50-4544.43 | 50 | 43,0 | 190 | 133 | 129 | +0,50➲44,0 | SPMT 1204.. | 1250 5520 | 4.0 | 2,150 |

## SPMT

Square positive insert with 11° clearance. H02
Vierkantige positive Wendeschneidplatte mit 11° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMT 060304 | 6,35 | 3,18 | 6,35 |
| SPMT 070308 | 7,94 | 3,18 | 7,94 |
| SPMT 090308 | 9,52 | 3,18 | 9,52 |
| SPMT 120408 | 12,70 | 4,76 | 12,70 |



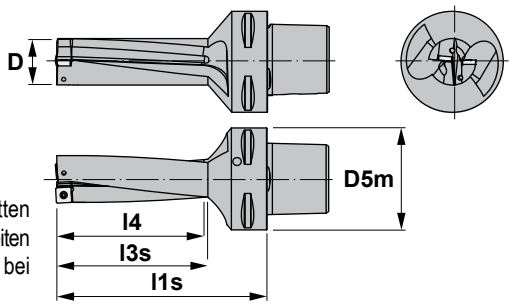

SPMT





Characteristics:
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.

Eigenschaften:
Die Spiralbohrer für Wendeschneidplatten erbringen schnellere Schnittgeschwindigkeiten und eine effiziente Spanabfuhr bei konventionellen und C.N.C. Maschinen.



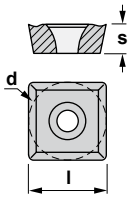

# 45..

| Reference Bezeichnung | D5m | D | l1s | l3s | l4 | Radial Adj. Dmax | Insert size Wendeschneidplatte | | Nm | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| PSC63-4514.15 | 63 | 15,0 | 84 | 48 | 45 | +0,40➲15,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,840 |
| PSC63-4514.16 | 63 | 16,0 | 88 | 51 | 48 | +0,30➲16,6 | SPMT 0603.. | 1225 5507 | 0.9 | 0,860 |
| PSC63-4514.17 | 63 | 17,0 | 91 | 54 | 51 | +0,60➲18,2 | SPMT 0603.. | 1225 5507 | 0.9 | 0,870 |
| PSC63-4514.17,5 | 63 | 17,5 | 94 | 56 | 53 | +0,50➲18,5 | SPMT 0603.. | 1225 5507 | 0.9 | 0,880 |
| PSC63-4514.18 | 63 | 18,0 | 95 | 57 | 54 | +0,40➲18,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,880 |
| PSC63-4514.18,5 | 63 | 18,5 | 97 | 59 | 56 | +0,40➲19,3 | SPMT 0603.. | 1225 5507 | 0.9 | 0,900 |
| PSC63-4514.19 | 63 | 19,0 | 98 | 60 | 57 | +0,30➲19,6 | SPMT 0603.. | 1225 5507 | 0.9 | 0,900 |
| PSC63-4514.20 | 63 | 20,0 | 103 | 64 | 60 | +0,90➲21,8 | SPMT 0603.. | 1225 5507 | 0.9 | 0,930 |
| PSC63-4524.21 | 63 | 21,0 | 106 | 66 | 63 | +0,80➲22,6 | SPMT 0703.. | 1225 5507 | 0.9 | 0,960 |
| PSC63-4524.22 | 63 | 22,0 | 109 | 69 | 66 | +0,60➲23,2 | SPMT 0703.. | 1225 5507 | 0.9 | 0,970 |
| PSC63-4524.23 | 63 | 23,0 | 113 | 72 | 69 | +0,50➲24,0 | SPMT 0703.. | 1225 5507 | 0.9 | 1,010 |
| PSC63-4524.24 | 63 | 24,0 | 117 | 76 | 72 | +1,10➲26,2 | SPMT 0703.. | 1225 5507 | 0.9 | 1,040 |
| PSC63-4524.25 | 63 | 25,0 | 121 | 79 | 75 | +1,00➲27,0 | SPMT 0703.. | 1225 5507 | 0.9 | 1,080 |
| PSC63-4534.26 | 63 | 26,0 | 124 | 81 | 78 | +0,90➲27,8 | SPMT 0903.. | 1230 5508 | 1.2 | 1,120 |
| PSC63-4534.27 | 63 | 27,0 | 127 | 84 | 81 | +0,70➲28,4 | SPMT 0903.. | 1230 5508 | 1.2 | 1,160 |
| PSC63-4534.28 | 63 | 28,0 | 131 | 87 | 84 | +0,60➲29,2 | SPMT 0903.. | 1230 5508 | 1.2 | 1,210 |
| PSC63-4534.29 | 63 | 29,0 | 134 | 90 | 87 | +0,50➲30,0 | SPMT 0903.. | 1230 5508 | 1.2 | 1,260 |
| PSC63-4534.30 | 63 | 30,0 | 139 | 94 | 90 | +1,12➲32,2 | SPMT 0903.. | 1230 5508 | 1.2 | 1,320 |
| PSC63-4534.31 | 63 | 31,0 | 143 | 97 | 93 | +0,99➲33,0 | SPMT 0903.. | 1230 5508 | 1.2 | 1,370 |
| PSC63-4534.32 | 63 | 32,0 | 146 | 100 | 96 | +0,87➲33,7 | SPMT 0903.. | 1230 5508 | 1.2 | 1,430 |
| PSC63-4534.33 | 63 | 33,0 | 150 | 103 | 99 | +0,75➲34,5 | SPMT 0903.. | 1230 5508 | 1.2 | 1,500 |
| PSC63-4534.34 | 63 | 34,0 | 153 | 106 | 102 | +0,62➲35,2 | SPMT 0903.. | 1230 5508 | 1.2 | 1,560 |
| PSC63-4544.35 | 63 | 35,0 | 157 | 109 | 105 | +0,50➲36,0 | SPMT 1204.. | 1250 5520 | 4.0 | 1,630 |
| PSC63-4544.36 | 63 | 36,0 | 161 | 112 | 108 | +1,38➲38,8 | SPMT 1204.. | 1250 5520 | 4.0 | 1,710 |
| PSC63-4544.37 | 63 | 37,0 | 164 | 115 | 111 | +1,25➲39,5 | SPMT 1204.. | 1250 5520 | 4.0 | 1,790 |
| PSC63-4544.38 | 63 | 38,0 | 168 | 118 | 114 | +1,13➲40,2 | SPMT 1204.. | 1250 5520 | 4.0 | 1,880 |
| PSC63-4544.39 | 63 | 39,0 | 171 | 121 | 117 | +1,00➲41,0 | SPMT 1204.. | 1250 5520 | 4.0 | 1,940 |
| PSC63-4544.40 | 63 | 40,0 | 175 | 124 | 120 | +0,88➲41,8 | SPMT 1204.. | 1250 5520 | 4.0 | 2,040 |
| PSC63-4544.41 | 63 | 41,0 | 179 | 127 | 123 | +0,75➲42,5 | SPMT 1204.. | 1250 5520 | 4.0 | 2,160 |
| PSC63-4544.42 | 63 | 42,0 | 182 | 130 | 126 | +0,63➲43,2 | SPMT 1204.. | 1250 5520 | 4.0 | 2,270 |
| PSC63-4544.43 | 63 | 43,0 | 186 | 133 | 129 | +0,50➲44,0 | SPMT 1204.. | 1250 5520 | 4.0 | 2,350 |

## SPMT

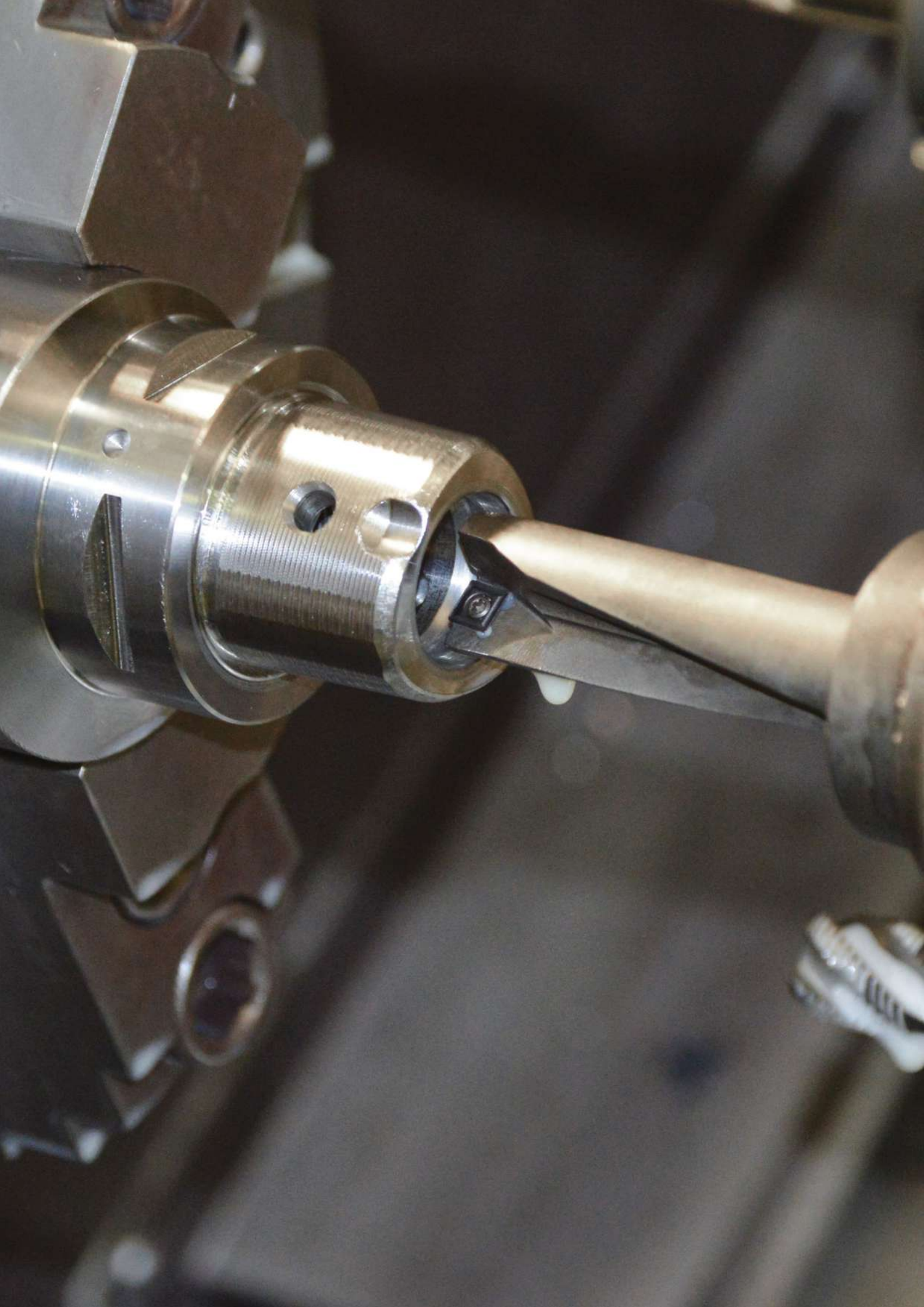
Square positive insert with 11° clearance. H02
Vierkantige positive Wendeschneidplatte mit 11° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMT 060304 | 6,35 | 3,18 | 6,35 |
| SPMT 070308 | 7,94 | 3,18 | 7,94 |
| SPMT 090308 | 9,52 | 3,18 | 9,52 |
| SPMT 120408 | 12,70 | 4,76 | 12,70 |




SPMT

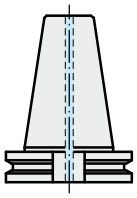




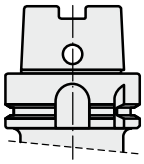
## **CANELA** *also offers a full range of adapters.*

## **CANELA** *bietet auch eine breite Palette von Adaptern an.*

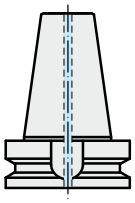
**13**
ISO 7388
DIN 69871/A



**16**
HSK
DIN 69893-1

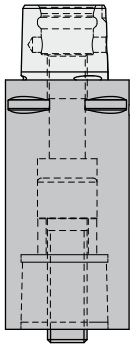


**23**
ISO
JIS B 6339-BT

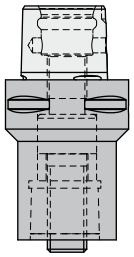


**18.218**

EXTENSION
VERLÄNGERUNG



REDUCER
REDUZIERHÜLSE



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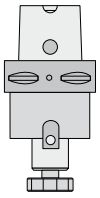

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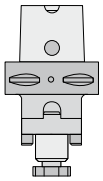

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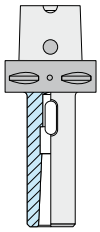

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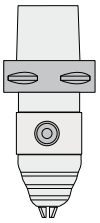

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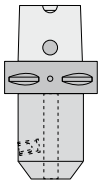

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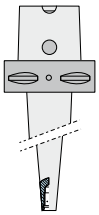

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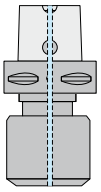

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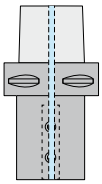

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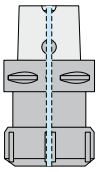

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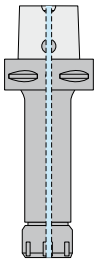

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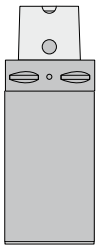

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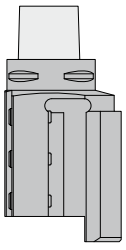

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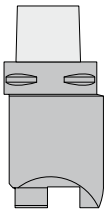

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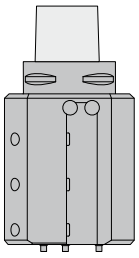

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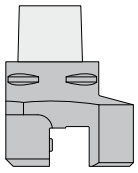

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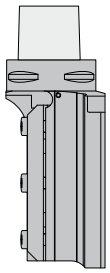

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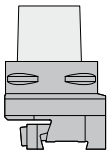

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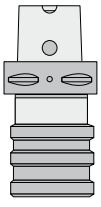
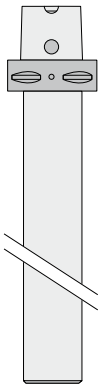


**18.999**



# Code system / Kodifizierung

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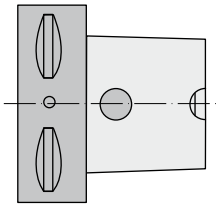
|---|---|---|---|
| 1 | 2 | 3 | 4 |

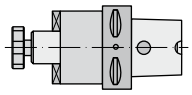
## 1 Model / Modell

PSC ISO 26623-1



18

## 2 Arbor type / Aufnahmen-Typ



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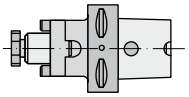

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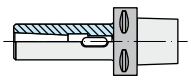

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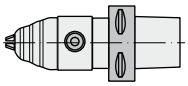

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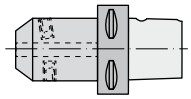

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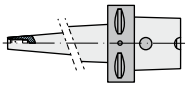

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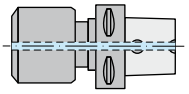

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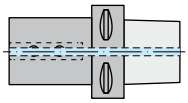

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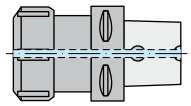

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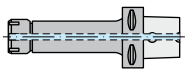

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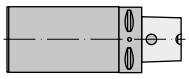

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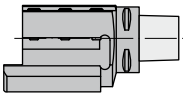

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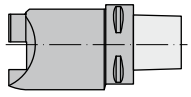

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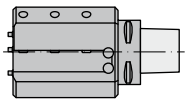

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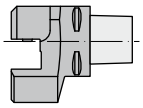

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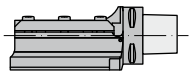

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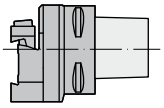

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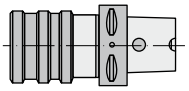

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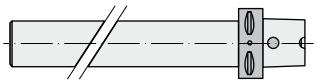

999

## 3 Arbor size / Aufnahmengröße

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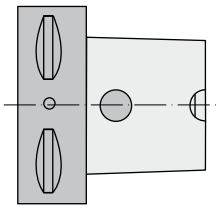
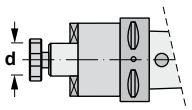


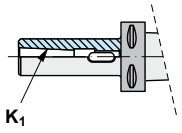
32 | 40 | 50 | 63 | 80 | 100

## 4 Adaptor size / Adaptergröße

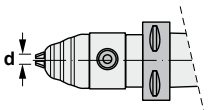


Ø 16 ... Ø 60
**16 ... 60**

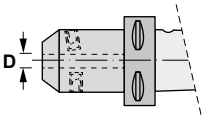
$K_1$ - MORSE



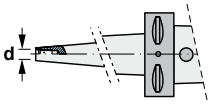
MK2 | MK3 | MK4 | MK5
**02** | **03** | **04** | **05**



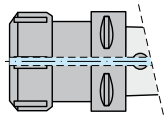
Ø 13 | Ø 16
**13** | **16**



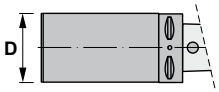
Ø 25 ... Ø 100
**25 ... 100**



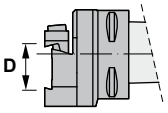
M | M | M | M
**M8** | **M10** | **M12** | **M16**



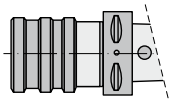
ER16 ... ER50
**16 ... 50**



Ø 32 ... Ø 200
**32 ... 200**



Ø 20 ... Ø 50
**20 ... 50**



M3-M12 | M8-M20 | M14-M33
**12** | **20** | **33**

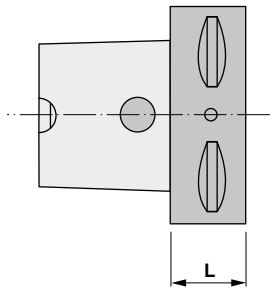
E

# AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS
# AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN

**MATERIAL:**
- Chromium-manganese carburised steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburised, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburised layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.




**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

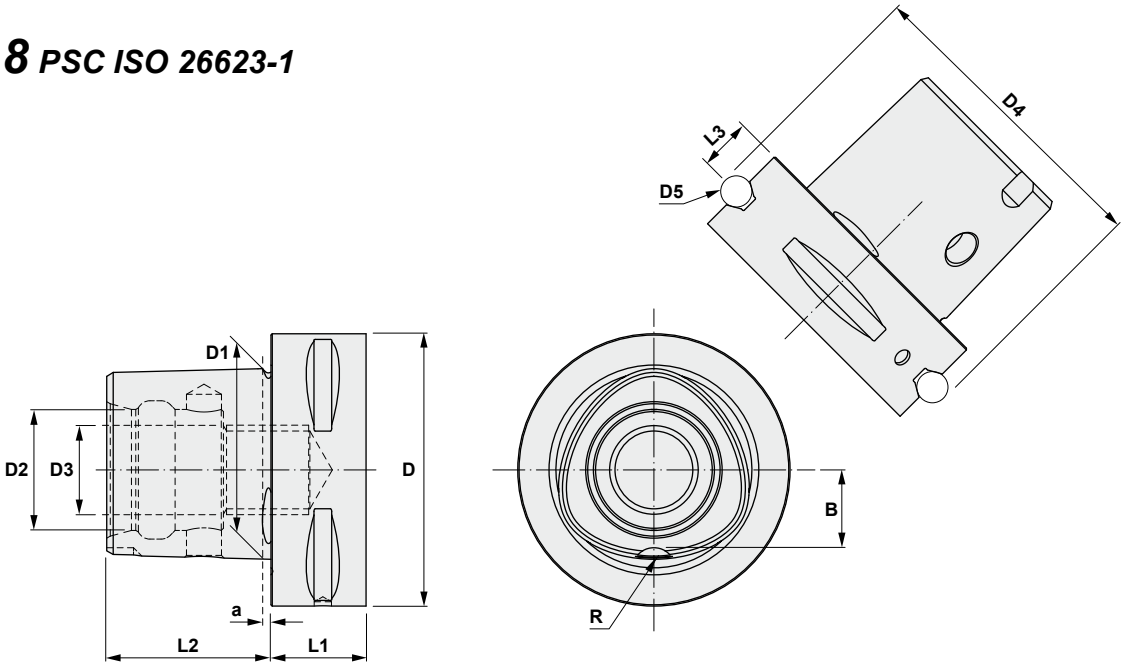
**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

| K | AT3 mm |
|---|---|
| ISO 30 | 0,002 |
| ISO 40 | 0,003 |
| ISO 45 | 0,003 |
| ISO 50 | 0,004 |
| ISO 60 | 0,005 |

**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

## 18 PSC ISO 26623-1




| PSC | D | D1 | D2 | D3 | D4 | D5 | L1 min | L2 | L3 | a | B | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | 32 | 22 | 15 | M12 x 1,5 | 39,0 | 5 | 15 | 19 | 6 | 2,5 | 9,0 | 3 |
| **40** | 40 | 28 | 18 | M14 x 1,5 | 46,0 | 5 | 20 | 24 | 8 | 2,5 | 11,0 | 3 |
| **50** | 50 | 35 | 21 | M16 x 1,5 | 59,3 | 7 | 20 | 30 | 10 | 3,0 | 14,0 | 4 |
| **63** | 63 | 44 | 28 | M20 x 2,0 | 70,7 | 7 | 22 | 38 | 12 | 3,0 | 18,0 | 5 |
| **80** | 80 | 55 | 32 | M20 x 2,0 | 86,0 | 7 | 30 | 48 | 12 | 3,0 | 22,2 | 6 |
| **100** | 100 | 72 | 43 | M24 x 2,0 | 110,0 | 10 | 32 | 60 | 16 | 3,0 | 29,2 | 6 |

## *Arbors and adaptors PSC ISO 26623-1*
## *Aufnahmen PSC ISO 26623-1*

**18.160**



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**18.406**



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**18.500**



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**18.520**



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**18.540**



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**18.550**



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**18.620**



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**18.999**



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**13.218**



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**16.218**



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**18.218** *Extension*
*Verlängerung*



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**18.218** *Reducer*
*Reduzierhülse*



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**23.218**



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**18.700**



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**MC**



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**AC**



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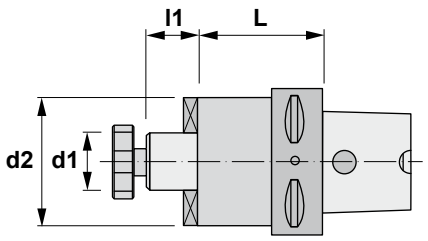
E



Characteristics:
Shell mill adaptor.
PSC ISO 26623-1
For cutters with driving slot DIN 138.

Eigenschaften:
Aufsteckfräsdorne.
PSC ISO 26623-1
Für Fräser mit Quernut DIN 138.



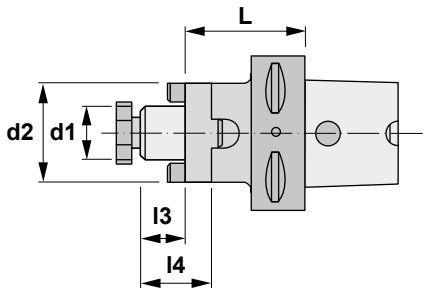

# 18.160

| Reference Bezeichnung | PSC | d1 h6 | L | l1 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 18.160.040.16 | 40 | 16 | 55 | 17 | 37 | 10008 | 86016 | 11103 | 0,560 |
| 18.160.040.22 | 40 | 22 | 55 | 19 | 47 | 10010 | 86022 | 11004 | 0,770 |
| 18.160.050.16 | 50 | 16 | 60 | 17 | 37 | 10008 | 86016 | 11103 | 0,780 |
| 18.160.050.22 | 50 | 22 | 60 | 19 | 47 | 10010 | 86022 | 11004 | 1,020 |
| 18.160.050.27 | 50 | 27 | 60 | 21 | 58 | 10012 | 86027 | 11005 | 1,270 |
| 18.160.050.32 | 50 | 32 | 60 | 24 | 63 | 10016 | 86032 | 11105 | 1,500 |
| 18.160.063.16 | 63 | 16 | 63 | 17 | 37 | 10008 | 86016 | 11103 | 1,070 |
| 18.160.063.22 | 63 | 22 | 25 | 19 | 47 | 10010 | 86122 | 11004 | 0,820 |
| 18.160.063.22/100 | 63 | 22 | 100 | 19 | 47 | 10010 | 86022 | 11004 | 1,810 |
| 18.160.063.27 | 63 | 27 | 25 | 21 | 58 | 10012 | 86127 | 11005 | 0,850 |
| 18.160.063.27/100 | 63 | 27 | 100 | 21 | 58 | 10012 | 86027 | 11005 | 2,390 |
| 18.160.063.32 | 63 | 32 | 25 | 24 | 63 | 10016 | 86132 | 11105 | 0,890 |
| 18.160.063.32/100 | 63 | 32 | 100 | 24 | 63 | 10016 | 86032 | 11105 | 2,710 |
| 18.160.063.40 | 63 | 40 | 40 | 27 | 89 | 10020 | 80040 | 11006 | 1,770 |
| 18.160.063.40/100 | 63 | 40 | 100 | 27 | 70 | 10020 | 86040 | 11006 | 3,230 |
| 18.160.080.16 | 80 | 16 | 50 | 17 | 37 | 10008 | 86016 | 11103 | 1,900 |
| 18.160.080.22 | 80 | 22 | 30 | 19 | 47 | 10010 | 86122 | 11004 | 1,760 |
| 18.160.080.22/100 | 80 | 22 | 100 | 19 | 47 | 10010 | 86022 | 11004 | 2,710 |
| 18.160.080.27 | 80 | 27 | 30 | 21 | 58 | 10012 | 86127 | 11005 | 1,790 |
| 18.160.080.27/100 | 80 | 27 | 100 | 21 | 58 | 10012 | 86027 | 11005 | 3,240 |
| 18.160.080.32 | 80 | 32 | 30 | 24 | 63 | 10016 | 86132 | 11105 | 1,830 |
| 18.160.080.32/100 | 80 | 32 | 100 | 24 | 63 | 10016 | 86032 | 11105 | 3,530 |
| 18.160.080.40 | 80 | 40 | 40 | 27 | 63 | 10020 | 86140 | 11006 | 2,380 |
| 18.160.080.40/100 | 80 | 40 | 100 | 27 | 70 | 10020 | 86040 | 11006 | 4,000 |
| 18.160.080.60 | 80 | 60 | 60 | 40 | 130 | - | 80060 | 11012 | 5,420 |
| 18.160.100.16 | 100 | 16 | 50 | 17 | 37 | 10008 | 86016 | 11103 | 3,260 |
| 18.160.100.22 | 100 | 22 | 50 | 19 | 47 | 10010 | 86022 | 11004 | 3,380 |
| 18.160.100.22/100 | 100 | 22 | 100 | 19 | 47 | 10010 | 86022 | 11004 | 4,050 |
| 18.160.100.27 | 100 | 27 | 50 | 21 | 58 | 10012 | 86027 | 11005 | 3,530 |
| 18.160.100.27/100 | 100 | 27 | 100 | 21 | 58 | 10012 | 86027 | 11005 | 4,560 |
| 18.160.100.32 | 100 | 32 | 50 | 24 | 63 | 10016 | 86032 | 11105 | 3,890 |
| 18.160.100.32/100 | 100 | 32 | 100 | 24 | 63 | 10016 | 86032 | 11105 | 5,860 |
| 18.160.100.40 | 100 | 40 | 50 | 27 | 63 | 10020 | 86040 | 11006 | 3,980 |
| 18.160.100.40/100 | 100 | 40 | 100 | 27 | 63 | 10020 | 86040 | 11006 | 5,940 |
| 18.160.100.60 | 100 | 60 | 70 | 40 | 130 | - | 80060 | 11012 | 7,610 |



Characteristics:
Combi-Shell mill adaptor.
PSC ISO 26623-1
For cutters with keyway or driving slot DIN 138.

Eigenschaften:
Kombi-Aufsteckfräsdorne.
PSC ISO 26623-1
Für Fräser mit Längsnut oder Stirnmitnehmer DIN 138.



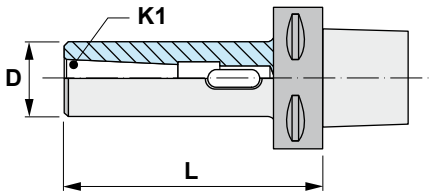

# 18.180

| Reference Bezeichnung | PSC | d1 h6 | L | l3 | l4 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.180.040.16 | 40 | 16 | 50 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 0,450 |
| 18.180.040.22 | 40 | 22 | 50 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 0,590 |
| 18.180.050.16 | 50 | 16 | 50 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 0,640 |
| 18.180.050.22 | 50 | 22 | 50 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 0,770 |
| 18.180.050.27 | 50 | 27 | 50 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 0,930 |
| 18.180.050.32 | 50 | 32 | 60 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 1,360 |
| 18.180.063.16 | 63 | 16 | 90 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 1,160 |
| 18.180.063.22 | 63 | 22 | 90 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 1,420 |
| 18.180.063.27 | 63 | 27 | 90 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 1,740 |
| 18.180.063.32 | 63 | 32 | 90 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 2,220 |
| 18.180.063.40 | 63 | 40 | 90 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 2,940 |
| 18.180.080.16 | 80 | 16 | 100 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 2,180 |
| 18.180.080.22 | 80 | 22 | 100 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 2,450 |
| 18.180.080.27 | 80 | 27 | 100 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 2,780 |
| 18.180.080.32 | 80 | 32 | 100 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 3,280 |
| 18.180.080.40 | 80 | 40 | 100 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 4,070 |
| 18.180.080.50 | 80 | 50 | 100 | 30 | 46 | 90 | 10024 | 60150 | 88050 | 5,550 |
| 18.180.100.16 | 100 | 16 | 100 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 3,540 |
| 18.180.100.22 | 100 | 22 | 100 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 3,800 |
| 18.180.100.27 | 100 | 27 | 100 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 4,130 |
| 18.180.100.32 | 100 | 32 | 100 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 4,610 |
| 18.180.100.40 | 100 | 40 | 100 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 5,330 |
| 18.180.100.50 | 100 | 50 | 100 | 30 | 46 | 90 | 10024 | 60150 | 88050 | 6,820 |



Characteristics:
Reducing adaptor.
PSC ISO 26623-1
For tools with Morse taper shank and tang DIN 228-B. Form B.

Eigenschaften:
Reduzierhülsen.
PSC ISO 26623-1
Für Werkzeuge mit Morsekegel und Austreiblappen DIN 228-B Form B.




# 18.215

| Reference Bezeichnung | PSC | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 18.215.050.02 | 50 | 2 | 110 | 32 | 0,860 |
| 18.215.050.03 | 50 | 3 | 130 | 40 | 1,230 |
| 18.215.063.02 | 63 | 2 | 110 | 32 | 1,140 |
| 18.215.063.03 | 63 | 3 | 130 | 40 | 1,500 |
| 18.215.063.04 | 63 | 4 | 150 | 52 | 2,250 |
| 18.215.080.03 | 80 | 3 | 120 | 40 | 2,340 |
| 18.215.080.04 | 80 | 4 | 140 | 52 | 2,980 |
| 18.215.080.05 | 80 | 5 | 160 | 63 | 3,480 |
| 18.215.100.03 | 100 | 3 | 130 | 40 | 3,780 |
| 18.215.100.04 | 100 | 4 | 150 | 52 | 4,480 |
| 18.215.100.05 | 100 | 5 | 175 | 63 | 5,130 |

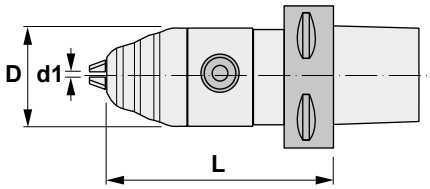


Characteristics:
CNC-Universal precision drill chucks.
PSC ISO 26623-1
For left and right hand turn.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeitsausführung.
PSC ISO 26623-1
Für links- und rechtslaufende
Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**




# 18.296

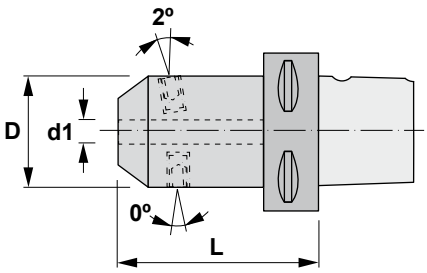
| Reference<br>Bezeichnung | PSC | d1 | D | L | Kg |
|---|---|---|---|---|---|
| 18.296.040.13 | 40 | 0.5 - 13 | 50 | 112 | 1,560 |
| 18.296.050.13 | 50 | 0.5 - 13 | 50 | 112 | 1,730 |
| 18.296.063.13 | 63 | 0.5 - 13 | 50 | 112 | 2,320 |
| 18.296.063.16 | 63 | 3.0 - 16 | 57 | 112 | 2,350 |
| 18.296.080.13 | 80 | 0.5 - 13 | 50 | 125 | 3,030 |
| 18.296.080.16 | 80 | 3.0 - 16 | 57 | 125 | 3,280 |
| 18.296.100.13 | 100 | 0.5 - 13 | 50 | 135 | 4,250 |
| 18.296.100.16 | 100 | 3.0 - 16 | 57 | 135 | 4,400 |

| Reference<br>Bezeichnung | | 3x |
|---|---|---|
| 18.296.040.13 | 50706 | 60313 |
| 18.296.050.13 | 50706 | 60313 |
| 18.296.063.13 | 50706 | 60313 |
| 18.296.063.16 | 50706 | 60313 |
| 18.296.080.13 | 50706 | 60313 |
| 18.296.080.16 | 50706 | 60313 |
| 18.296.100.13 | 50706 | 60313 |
| 18.296.100.16 | 50706 | 60313 |



Characteristics:
Combined end mill adaptors type Weldon / Whistle-Notch. PSC ISO 26623-1
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.

Eigenschaften:
Kombi-Aufnahme Typ Weldon / Whistle-Notch. PSC ISO 26623-1
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN1835-B+E.



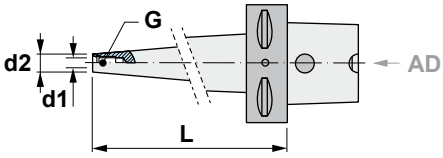

# 18.306

| Reference Bezeichnung | PSC | d1 | L | D | 2x | Kg |
|---|---|---|---|---|---|---|
| 18.306.040.06 | 40 | 06 | 50 | 25 | 15106 | 0,350 |
| 18.306.040.08 | 40 | 08 | 50 | 28 | 15108 | 0,370 |
| 18.306.040.10 | 40 | 10 | 50 | 35 | 15110 | 0,440 |
| 18.306.040.12 | 40 | 12 | 55 | 42 | 15212 | 0,570 |
| 18.306.040.16 | 40 | 16 | 55 | 48 | 15314 | 0,650 |
| 18.306.050.06 | 50 | 06 | 55 | 25 | 15106 | 0,550 |
| 18.306.050.08 | 50 | 08 | 55 | 28 | 15108 | 0,580 |
| 18.306.050.10 | 50 | 10 | 65 | 35 | 15110 | 0,730 |
| 18.306.050.12 | 50 | 12 | 65 | 42 | 15212 | 0,870 |
| 18.306.050.14 | 50 | 14 | 65 | 42 | 15212 | 0,850 |
| 18.306.050.16 | 50 | 16 | 65 | 48 | 15314 | 0,980 |
| 18.306.050.18 | 50 | 18 | 65 | 48 | 15314 | 0,950 |
| 18.306.050.20 | 50 | 20 | 65 | 52 | 15216 | 1,020 |
| 18.306.050.25 | 50 | 25 | 80 | 65 | 4 x 15218 | 1,620 |
| 18.306.063.06 | 63 | 06 | 80 | 25 | 15106 | 0,920 |
| 18.306.063.08 | 63 | 08 | 80 | 28 | 15108 | 0,960 |
| 18.306.063.10 | 63 | 10 | 80 | 35 | 15110 | 1,100 |
| 18.306.063.12 | 63 | 12 | 80 | 42 | 15212 | 1,280 |
| 18.306.063.14 | 63 | 14 | 80 | 42 | 15212 | 1,260 |
| 18.306.063.16 | 63 | 16 | 80 | 48 | 15314 | 1,430 |
| 18.306.063.18 | 63 | 18 | 80 | 48 | 15314 | 1,400 |
| 18.306.063.20 | 63 | 20 | 80 | 52 | 15216 | 1,510 |
| 18.306.063.25 | 63 | 25 | 90 | 65 | 4 x 15218 | 2,080 |
| 18.306.063.32 | 63 | 32 | 90 | 72 | 4 x 15220 | 1,890 |
| 18.306.063.40 | 63 | 40 | 95 | 80 | 4 x 15220 | 1,680 |
| 18.306.080.06 | 80 | 06 | 80 | 25 | 15106 | 1,900 |
| 18.306.080.08 | 80 | 08 | 80 | 28 | 15108 | 1,940 |
| 18.306.080.10 | 80 | 10 | 80 | 35 | 15110 | 2,060 |
| 18.306.080.12 | 80 | 12 | 80 | 42 | 15212 | 2,210 |
| 18.306.080.14 | 80 | 14 | 80 | 42 | 15212 | 2,190 |
| 18.306.080.16 | 80 | 16 | 80 | 48 | 15314 | 2,330 |
| 18.306.080.20 | 80 | 20 | 80 | 52 | 15216 | 2,400 |
| 18.306.080.25 | 80 | 25 | 90 | 65 | 4 x 15218 | 3,010 |
| 18.306.080.32 | 80 | 32 | 90 | 72 | 4 x 15220 | 3,190 |
| 18.306.080.40 | 80 | 40 | 110 | 80 | 4 x 15220 | 3,980 |
| 18.306.080.50 | 80 | 50 | 120 | 100 | 4 x 15024 | 3,760 |
| 18.306.100.12 | 100 | 12 | 100 | 42 | 15212 | 3,750 |
| 18.306.100.16 | 100 | 16 | 100 | 48 | 15314 | 3,930 |
| 18.306.100.20 | 100 | 20 | 100 | 52 | 15216 | 4,020 |
| 18.306.100.25 | 100 | 25 | 100 | 65 | 4 x 15218 | 4,550 |
| 18.306.100.32 | 100 | 32 | 100 | 72 | 4 x 15220 | 4,750 |
| 18.306.100.40 | 100 | 40 | 120 | 80 | 4 x 15220 | 5,600 |
| 18.306.100.50 | 100 | 50 | 130 | 100 | 4 x 15024 | 7,500 |



Characteristics:
Mill adaptors.
PSC ISO 26623-1
For frontal end mill support screwed shanks.

Eigenschaften:
Spannfutter PSC ISO 26623-1
Für Einschraubfräser.

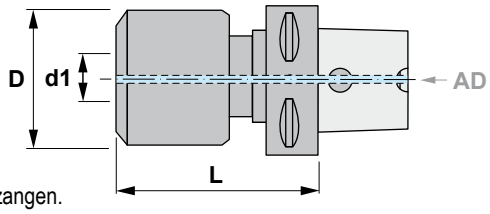



# 18.315

| Reference Bezeichnung | PSC | L | d1 | d2 | Kg |
|---|---|---|---|---|---|
| 18.315.040.08 | 40 | 70 | M8 | 13 | 0,310 |
| 18.315.040.10 | 40 | 80 | M10 | 18 | 0,390 |
| 18.315.040.12 | 40 | 80 | M12 | 21 | 0,430 |
| 18.315.050.08 | 50 | 70 | M8 | 13 | 0,490 |
| 18.315.050.10 | 50 | 80 | M10 | 18 | 0,570 |
| 18.315.050.12 | 50 | 80 | M12 | 21 | 0,610 |
| 18.315.050.16 | 50 | 80 | M16 | 29 | 0,750 |
| 18.315.063.08 | 63 | 70 | M8 | 13 | 0,770 |
| 18.315.063.10 | 63 | 90 | M10 | 18 | 0,880 |
| 18.315.063.12 | 63 | 100 | M12 | 21 | 0,980 |
| 18.315.063.16 | 63 | 100 | M16 | 29 | 1,170 |
| 18.315.080.12 | 80 | 100 | M12 | 21 | 1,950 |
| 18.315.080.16 | 80 | 100 | M16 | 29 | 2,110 |
| 18.315.100.12 | 100 | 120 | M12 | 21 | 3,590 |
| 18.315.100.16 | 100 | 120 | M16 | 29 | 3,560 |



Characteristics:
Strong hold collet chuck for cylindrical collets.
PSC ISO 26623-1




Eigenschaften:
Kraftspannfutter für zylindrische Spannzangen.
PSC ISO 26623-1

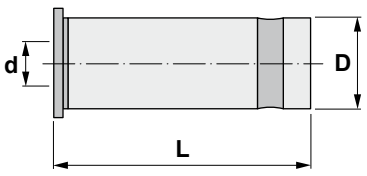
# 18.400

| Reference Bezeichnung | PSC | L | d1 | D | Kg |
|---|---|---|---|---|---|
| 18.400.063.20 | 63 | 93 | 20 | 54 | 1,690 |
| 18.400.080.20 | 80 | 89 | 32 | 72 | 2,490 |
| 18.400.080.32 | 80 | 101 | 32 | 72 | 3,140 |
| 18.400.100.32 | 100 | 120 | 32 | 72 | 5,160 |

E

## Complements (Collets type C) /Zubehör (Spannzangen Typ C)

| Reference / Bezeichnung | d | D | L |
|---|---|---|---|
| C2006 | 6 | 20 | 55 |
| C2008 | 8 | 20 | 55 |
| C2010 | 10 | 20 | 55 |
| C2012 | 12 | 20 | 55 |
| C2016 | 16 | 20 | 55 |
| C3206 | 6 | 32 | 65 |
| C3208 | 8 | 32 | 65 |
| C3210 | 10 | 32 | 65 |
| C3212 | 12 | 32 | 65 |
| C3216 | 16 | 32 | 65 |
| C3220 | 20 | 32 | 65 |
| C3225 | 25 | 32 | 65 |

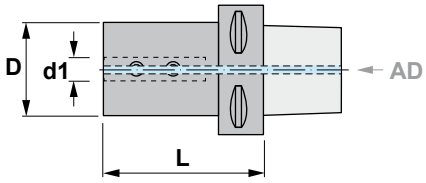







Characteristics:
Boring bar holders.
PSC ISO 26623-1

Eigenschaften:
Bohrstangenaufnahme.
PSC ISO 26623-1

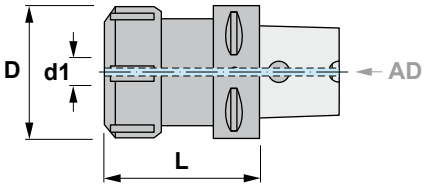



# 18.406

| Reference<br>Bezeichnung | PSC | L | d1 | D | | Kg |
|---|---|---|---|---|---|---|
| 18.406.040.08 | 40 | 50 | 08 | 44 | 14206 | 0,590 |
| 18.406.040.10 | 40 | 50 | 10 | 44 | 14208 | 0,580 |
| 18.406.040.12 | 40 | 50 | 12 | 44 | 14208 | 0,570 |
| 18.406.040.16 | 40 | 50 | 16 | 44 | 14210 | 0,550 |
| 18.406.050.08 | 50 | 52 | 08 | 44 | 14206 | 0,790 |
| 18.406.050.10 | 50 | 52 | 10 | 44 | 14208 | 0,780 |
| 18.406.050.12 | 50 | 52 | 12 | 44 | 14208 | 0,770 |
| 18.406.050.16 | 50 | 52 | 16 | 44 | 14210 | 0,730 |
| 18.406.050.20 | 50 | 52 | 20 | 50 | 14210 | 0,820 |
| 18.406.050.25 | 50 | 60 | 25 | 55 | 14210 | 1,000 |
| 18.406.063.08 | 63 | 60 | 08 | 44 | 14206 | 1,140 |
| 18.406.063.10 | 63 | 60 | 10 | 44 | 14208 | 1,130 |
| 18.406.063.12 | 63 | 60 | 12 | 44 | 14208 | 1,120 |
| 18.406.063.16 | 63 | 60 | 16 | 44 | 14210 | 1,090 |
| 18.406.063.20 | 63 | 60 | 20 | 50 | 14210 | 1,190 |
| 18.406.063.25 | 63 | 72 | 25 | 55 | 14210 | 1,420 |
| 18.406.063.32 | 63 | 75 | 32 | 55 | 14210 | 1,320 |
| 18.406.063.40 | 63 | 85 | 40 | 65 | 14210 | 3,260 |
| 18.406.080.16 | 80 | 85 | 16 | 44 | 14210 | 2,280 |
| 18.406.080.20 | 80 | 85 | 20 | 50 | 14210 | 2,410 |
| 18.406.080.25 | 80 | 85 | 25 | 55 | 14210 | 2,490 |
| 18.406.080.32 | 80 | 85 | 32 | 72 | 14310 | 3,080 |
| 18.406.080.40 | 80 | 95 | 40 | 65 | 14310 | 4,850 |
| 18.406.080.50 | 80 | 100 | 50 | 75 | 14310 | 4,680 |
| 18.406.100.16 | 100 | 100 | 16 | 44 | 14210 | 3,430 |
| 18.406.100.20 | 100 | 100 | 20 | 50 | 14210 | 3,650 |
| 18.406.100.25 | 100 | 100 | 25 | 55 | 14210 | 3,900 |
| 18.406.100.32 | 100 | 100 | 32 | 55 | 14310 | 4,600 |
| 18.406.100.40 | 100 | 110 | 40 | 65 | 14310 | 5,200 |
| 18.406.100.50 | 100 | 120 | 50 | 75 | 14310 | 5,580 |



Characteristics:
Collet chucks for DIN 6499 (ER) collets.
PSC ISO 26623-1
For tools with cylindrical shank DIN 1835-B.
* Ball bearing nut, see page: I217




Eigenschaften:
Spannzangenfutter für Spannzangen DIN 6499 (ER).
PSC ISO 26623-1
Für Werkzeuge mit zylindrischem Schaft DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I217

# 18.453

*** SUPPLIED WITHOUT WRENCH / LIEFERUNG OHNE SCHLÜSSEL**

| Reference Bezeichnung | PSC | | L | d1 | D | | | Kg |
|---|---|---|---|---|---|---|---|---|
| 18.453.040.16 | 40 | ER16 | 60 | 0,5-10 | 28 | 45316 | 50216 | 0,420 |
| 18.453.040.20 | 40 | ER20 | 60 | 1-13 | 34 | 45320 | 50220 | 0,490 |
| 18.453.040.25 | 40 | ER25 | 60 | 1-16 | 42 | 45325 | 50225 | 0,630 |
| 18.453.040.32 | 40 | ER32 | 60 | 2-20 | 50 | 45332 | 50232 | 0,850 |
| 18.453.050.16 | 50 | ER16 | 60 | 0,5-10 | 28 | 45316 | 50216 | 0,600 |
| 18.453.050.16/100 | 50 | ER16 | 100 | 0,5-10 | 28 | 45316 | 50216 | 0,790 |
| 18.453.050.20 | 50 | ER20 | 60 | 1-13 | 34 | 45320 | 50220 | 0,670 |
| 18.453.050.20/100 | 50 | ER20 | 100 | 1-13 | 34 | 45320 | 50220 | 0,900 |
| 18.453.050.25 | 50 | ER25 | 60 | 1-16 | 42 | 45325 | 50225 | 0,810 |
| 18.453.050.25/100 | 50 | ER25 | 100 | 1-16 | 42 | 45325 | 50225 | 1,150 |
| 18.453.050.32 | 50 | ER32 | 60 | 2-20 | 50 | 45332 | 50232 | 1,020 |
| 18.453.050.32/100 | 50 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 1,520 |
| 18.453.050.40 | 50 | ER40 | 65 | 3-30 | 63 | 45340 | 50240 | 1,410 |
| 18.453.050.40/100 | 50 | ER40 | 100 | 3-30 | 63 | 45340 | 50240 | 1,950 |
| 18.453.063.16 | 63 | ER16 | 60 | 0,5-10 | 28 | 45316 | 50216 | 0,870 |
| 18.453.063.16/100 | 63 | ER16 | 100 | 0,5-10 | 28 | 45316 | 50216 | 1,060 |
| 18.453.063.20 | 63 | ER20 | 60 | 1-13 | 34 | 45320 | 50220 | 0,940 |
| 18.453.063.20/100 | 63 | ER20 | 100 | 1-13 | 34 | 45320 | 50220 | 1,170 |
| 18.453.063.25 | 63 | ER25 | 60 | 1-16 | 42 | 45325 | 50225 | 1,070 |
| 18.453.063.25/100 | 63 | ER25 | 100 | 1-16 | 42 | 45325 | 50225 | 1,410 |
| 18.453.063.32 | 63 | ER32 | 60 | 2-20 | 50 | 45332 | 50232 | 1,280 |
| 18.453.063.32/100 | 63 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 1,810 |
| 18.453.063.40 | 63 | ER40 | 70 | 3-30 | 63 | 45340 | 50240 | 1,770 |
| 18.453.063.40/120 | 63 | ER40 | 120 | 3-30 | 63 | 45340 | 50240 | 2,740 |
| 18.453.080.32 | 80 | ER32 | 70 | 2-20 | 50 | 45332 | 50232 | 2,310 |
| 18.453.080.32/160 | 80 | ER32 | 160 | 2-20 | 50 | 45332 | 50232 | 3,420 |
| 18.453.080.40 | 80 | ER40 | 70 | 3-30 | 63 | 45340 | 50240 | 2,660 |
| 18.453.080.40/160 | 80 | ER40 | 160 | 3-30 | 63 | 45340 | 50240 | 4,350 |
| 18.453.100.32 | 100 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 3,960 |
| 18.453.100.32/160 | 100 | ER32 | 160 | 2-20 | 50 | 45332 | 50232 | 4,780 |
| 18.453.100.40 | 100 | ER40 | 100 | 3-30 | 63 | 45340 | 50240 | 4,430 |
| 18.453.100.40/160 | 100 | ER40 | 160 | 3-30 | 63 | 45340 | 50240 | 5,690 |
| 18.453.100.50 | 100 | ER50 | 100 | 6-34 | 78 | 45350 | 50250 | 5,460 |
| 18.453.100.50/160 | 100 | ER50 | 160 | 6-34 | 78 | 45350 | 50250 | 7,190 |

**ERXX** I210-212

| Reference / Bez. |
|---|
| ERXX |



**ERCXX** I215-216

| Reference / Bez. |
|---|
| ERCXX |



**ERTXX** I217-218

| Reference / Bez. |
|---|
| ERTXX |



**40.453..** I180

| Reference / Bez. |
|---|
| 40.453.. |



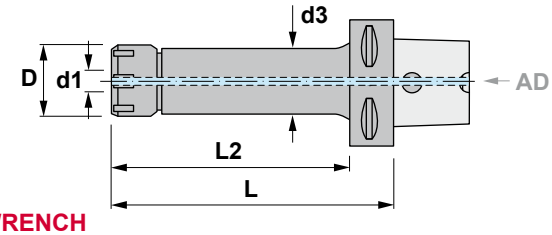
**40.455..** I181

| Reference / Bez. |
|---|
| 40.455.. |





Characteristics:
Long collet chuck for
DIN 6499 (ER) collets.
PSC ISO 26623-1
For tools with cylindrical shank.
With “mini” collet nut.




*** SUPPLIED WITHOUT WRENCH**

Eigenschaften:
Lange Spannzangenfutter für
Spannzangen DIN 6499 (ER).
PSC ISO 26623-1
Für Werkzeuge mit zylindrischem Schaft.
Mit “Mini”-Spannmutter.

*** LIEFERUNG OHNE SCHLÜSSEL**

# 18.455

| Reference<br>Bezeichnung | PSC | | L | d1 | D | L2 | d3 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18.455.063.16 | 63 | ER16 | 60 | 0,5-10 | 22 | - | - | 45516 | 50916 | 19210 | 0,860 |
| 18.455.063.16/100 | 63 | ER16 | 100 | 0,5-10 | 22 | 78 | 22 | 45516 | 50916 | 19210 | 0,950 |
| 18.455.063.20 | 63 | ER20 | 60 | 1-13 | 28 | - | - | 45520 | 50920 | 19212 | 0,960 |
| 18.455.063.20/100 | 63 | ER20 | 100 | 1-13 | 28 | 78 | 30 | 45520 | 50920 | 19212 | 1,120 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |

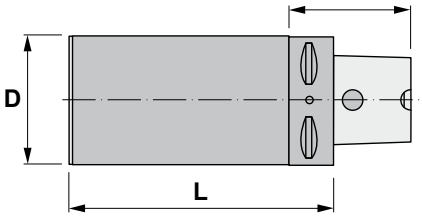




Characteristics:
Blank adaptors.
PSC ISO 26623-1

Eigenschaften:
Rohlinge.
PSC ISO 26623-1

Nitride hardened zone
Nitrierter Bereich



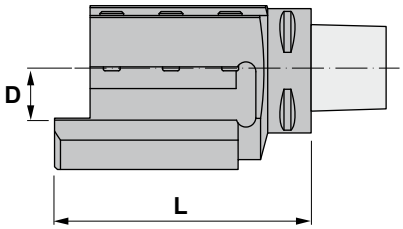

# 18.470

| Reference Bezeichnung | PSC | D | L | Kg |
|---|---|---|---|---|
| 18.470.032.032/090 | 32 | 32 | 90 | 0,590 |
| 18.470.032.040/110 | 32 | 40 | 110 | 1,050 |
| 18.470.032.050/125 | 32 | 50 | 125 | 1,810 |
| 18.470.032.060/090 | 32 | 60 | 90 | 1,780 |
| 18.470.032.070/060 | 32 | 70 | 60 | 1,470 |
| 18.470.032.090/070 | 32 | 90 | 70 | 2,860 |
| 18.470.040.040/095 | 40 | 40 | 95 | 0,990 |
| 18.470.040.040/120 | 40 | 40 | 120 | 1,240 |
| 18.470.040.060/165 | 40 | 60 | 165 | 3,460 |
| 18.470.040.080/075 | 40 | 80 | 75 | 2,420 |
| 18.470.040.080/120 | 40 | 80 | 120 | 4,190 |
| 18.470.040.100/085 | 40 | 100 | 85 | 4,260 |
| 18.470.050.050/125 | 50 | 50 | 125 | 2,050 |
| 18.470.050.050/150 | 50 | 50 | 150 | 2,430 |
| 18.470.050.063/180 | 50 | 63 | 180 | 4,340 |
| 18.470.050.075/175 | 50 | 75 | 175 | 5,800 |
| 18.470.050.090/080 | 50 | 90 | 80 | 3,420 |
| 18.470.050.095/150 | 50 | 95 | 150 | 7,660 |
| 18.470.050.110/090 | 50 | 110 | 90 | 5,650 |
| 18.470.063.063/180 | 63 | 63 | 180 | 4,630 |
| 18.470.063.075/195 | 63 | 75 | 195 | 6,710 |
| 18.470.063.110/085 | 63 | 110 | 85 | 5,410 |
| 18.470.063.110/120 | 63 | 110 | 120 | 8,020 |
| 18.470.063.120/180 | 63 | 120 | 180 | 14,730 |
| 18.470.063.130/095 | 63 | 130 | 95 | 14,740 |
| 18.470.080.080/200 | 80 | 80 | 200 | 8,430 |
| 18.470.080.100/200 | 80 | 100 | 200 | 12,200 |
| 18.470.080.120/160 | 80 | 120 | 160 | 13,260 |
| 18.470.080.130/090 | 80 | 130 | 90 | 7,970 |
| 18.470.080.150/200 | 80 | 150 | 200 | 25,300 |
| 18.470.080.160/120 | 80 | 160 | 120 | 15,930 |
| 18.470.100.100/100 | 100 | 100 | 100 | 7,280 |
| 18.470.100.100/200 | 100 | 100 | 200 | 13,450 |
| 18.470.100.150/100 | 100 | 150 | 100 | 12,520 |
| 18.470.100.150/200 | 100 | 150 | 200 | 26,390 |
| 18.470.100.160/150 | 100 | 160 | 150 | 21,710 |
| 18.470.100.200/100 | 100 | 200 | 100 | 19,850 |



Characteristics:
Adaptor with axial mounting.
PSC ISO 26623-1
Adaptor for square turning toolholder left / right hand.

Eigenschaften:
Axial-Werkzeughalter.
PSC ISO 26623-1
Dreh-Werkzeughalter für Klemmhalter links / rechts.




# 18.500

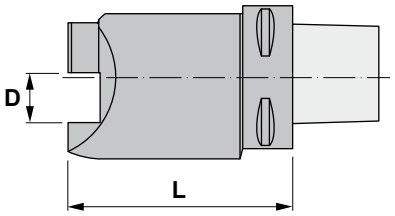
| Reference Bezeichnung | PSC | D | L | Kg |
|---|---|---|---|---|
| 18.500.050.20 R/L | 50 | 20 | 98 | 2,050 |
| 18.500.063.20 R/L | 63 | 20 | 100 | 2,560 |
| 18.500.063.25 R/L | 63 | 25 | 130 | 3,640 |
| 18.500.063.32 R/L | 63 | 32 | 134 | 3,990 |
| 18.500.080.32 R/L | 80 | 32 | 140 | 5,390 |
| 18.500.100.32 R/L | 100 | 32 | 150 | 10,100 |

| Reference Bezeichnung | 3x  |  |
|---|---|---|
| 18.500.050.20 R/L | 17010 | 29708 |
| 18.500.063.20 R/L | 17110 | 29708 |
| 18.500.063.25 R/L | 17012 | 29708 |
| 18.500.063.32 R/L | 17012 | 29708 |
| 18.500.080.32 R/L | 17012 | 29710 |
| 18.500.100.32 R/L | 17012 | 29710 |



Characteristics:
Adaptor with angular mounting.
PSC ISO 26623-1
Adaptor for square turning toolholder left / right hand.

Eigenschaften:
Werkzeughalter. Schräge Montage.
PSC ISO 26623-1
Dreh-Werkzeughalter für Klemmhalter links / rechts.




# 18.510

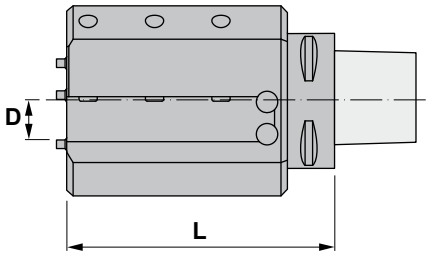
| Reference Bezeichnung | PSC | D | L | Kg |
|---|---|---|---|---|
| 18.510.050.20 R/L | 50 | 20 | 97 | 1,770 |
| 18.510.063.20 R/L | 63 | 20 | 99 | 2,180 |
| 18.510.063.25 R/L | 63 | 25 | 130 | 4,430 |
| 18.510.080.32 R/L | 80 | 32 | 135 | 6,680 |
| 18.510.100.32 R/L | 100 | 32 | 145 | 10,030 |

| Reference Bezeichnung |  |  |
|---|---|---|
| 18.510.050.20 R/L | 17110 | 29708 |
| 18.510.063.20 R/L | 17110 | 29708 |
| 18.510.063.25 R/L | 17012 | 29708 |
| 18.510.080.32 R/L | 17012 | 29710 |
| 18.510.100.32 R/L | 17012 | 29710 |



Characteristics:
Mini-turret with axial mounting.
PSC ISO 26623-1
Multipurpose mini-turret for square toolholders.

Eigenschaften:
Mehrfach-Axial-Werkzeughalter.
PSC ISO 26623-1
Multifunktionaler Werkzeughalter für vierkantigen Klemmhalter.




# 18.520

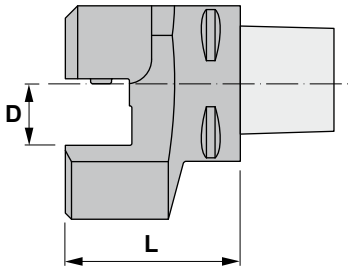
| Reference<br>Bezeichnung | PSC | D | L | Kg |
|---|---|---|---|---|
| 18.520.050.20 R/L | 50 | 20 | 123 | 3,770 |
| 18.520.063.20 R/L | 63 | 20 | 125 | 4,250 |
| 18.520.063.25 R/L | 63 | 25 | 130 | 5,140 |
| 18.520.080.32 R/L | 80 | 32 | 150 | 7,780 |
| 18.520.100.32 R/L | 100 | 32 | 160 | 11,400 |

| Reference<br>Bezeichnung |  |  |
|---|---|---|
| 18.520.050.20 R/L | 17012 | 29708 |
| 18.520.063.20 R/L | 17012 | 29708 |
| 18.520.063.25 R/L | 17012 | 29708 |
| 18.520.080.32 R/L | 17012 | 29710 |
| 18.520.100.32 R/L | 17012 | 29710 |



Characteristics:
Adaptor with radial mounting.
PSC ISO 26623-1
Multipurpose adaptor for square toolholders.

Eigenschaften:
Radial-Werkzeughalter.
PSC ISO 26623-1
Multifunktionaler Werkzeughalter für vierkantige Klemmhalter.




# 18.530

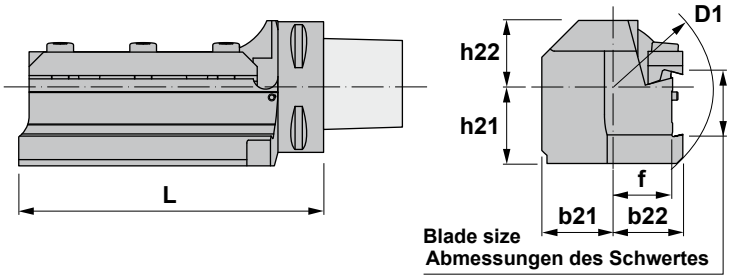
| Reference Bezeichnung | PSC | D | L | Kg |
|---|---|---|---|---|
| 18.530.050.20 | 50 | 20 | 58 | 1,460 |
| 18.530.063.20 | 63 | 20 | 60 | 1,790 |
| 18.530.063.25 | 63 | 25 | 71 | 2,860 |
| 18.530.063.32 | 63 | 32 | 71 | 3,300 |
| 18.530.080.32 | 80 | 32 | 85 | 4,750 |
| 18.530.100.32 | 100 | 32 | 90 | 6,470 |

| Reference Bezeichnung |  |  |
|---|---|---|
| 18.530.050.20 | 17112 | 29708 |
| 18.530.063.20 | 17112 | 29708 |
| 18.530.063.25 | 17012 | 29708 |
| 18.530.063.32 | 17012 | 29708 |
| 18.530.080.32 | 17012 | 29710 |
| 18.530.100.32 | 17012 | 29710 |



Characteristics:
Adaptor with axial mounting for blades.
PSC ISO 26623-1

Eigenschaften:
Axial-Werkzeughalter für Stechschwerter.
PSC ISO 26623-1




# 18.540

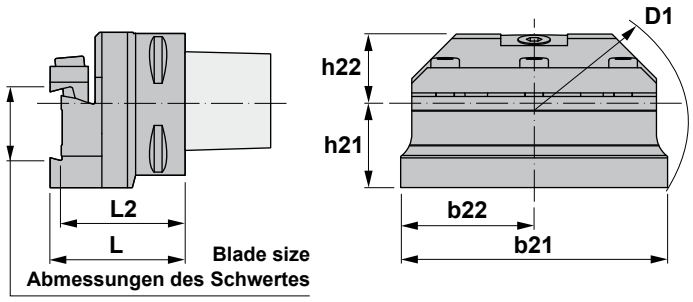
| Reference Bezeichnung | PSC | Blade size Abmessungen des Schwertes | D1 | b21 | b22 | f | h21 | h22 | L | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.540.050.26 R/L | 50 | 26 | 88 | 25.0 | 32.0 | 27.0 | 30.0 | 26.0 | 95 | 1,500 |
| 18.540.063.32 R/L | 63 | 32 | 106 | 32.0 | 39.5 | 32.0 | 38.0 | 32.0 | 147 | 3,300 |
| 18.540.080.32 R/L | 80 | 32 | 126 | 40.5 | 48.0 | 40.5 | 40.5 | 40.5 | 155 | 5,200 |
| 18.540.100.32 R/L | 100 | 32 | 145 | 50.0 | 58.0 | 50.5 | 50.5 | 50.0 | 160 | 9,240 |
| 18.540.100.52 R/L | 100 | 52/53 | 175 | 50.0 | 58.0 | 50.5 | 65.0 | 50.0 | 200 | 12,410 |

| Reference Bezeichnung |  |  |
|---|---|---|
| 18.540.050.26 R/L | 80526 | 11008 |
| 18.540.063.32 R/L | 80632 | 11108 |
| 18.540.080.32 R/L | 80632 | 11108 |
| 18.540.100.32 R/L | 80632 | 11108 |
| 18.540.100.52 R/L | 81052 | 11108 |



Characteristics:
Adaptor with radial mounting for blades.
PSC ISO 26623-1

Eigenschaften:
Radial-Werkzeughalter für Stechschwerter.
PSC ISO 26623-1






# 18.550

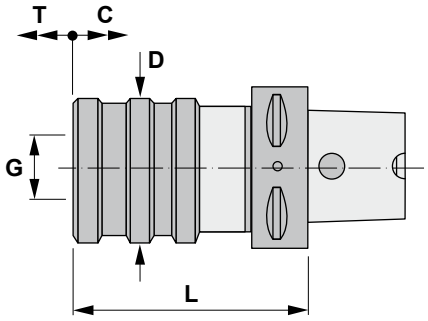
| Reference Bezeichnung | PSC | Blade size Abmessungen des Schwertes | D1 | b21 | b22 | h21 | h22 | L | L2 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.550.050.26 | 50 | 26 | 100 | 80 | 40 | 30.0 | 25.2 | 58 | 53.0 | 1,300 |
| 18.550.063.32 | 63 | 32 | 141 | 120 | 60 | 37.0 | 32.0 | 63 | 55.5 | 2,300 |
| 18.550.080.32 | 80 | 32 | 145 | 120 | 60 | 40.5 | 40.0 | 71 | 63.5 | 3,500 |
| 18.550.100.32 | 100 | 32 | 145 | 120 | 60 | 50.5 | 50.0 | 75 | 67.5 | 5,570 |
| 18.550.100.52 | 100 | 52/53 | 195 | 160 | 80 | 65.0 | 50.0 | 75 | 67.5 | 6,440 |

| Reference Bezeichnung |  |  |
|---|---|---|
| 18.550.050.26 | 80526 | 11008 |
| 18.550.063.32 | 81632 | 11108 |
| 18.550.080.32 | 81632 | 11108 |
| 18.550.100.32 | 81632 | 11108 |
| 18.550.100.52 | 81052 | 11108 |



Characteristics:
Quick change tapping head with axial compensation.
PSC ISO 26623-1
With Bilz system tap chucks bushings.
Compensation in compression (C) and tension (T).

Eigenschaften:
Gewindeschneid-Schnellwechselfutter mit Axial-Längenausgleich.
PSC ISO 26623-1
Mit Gewindebohrer-Buchsen System Bilz.
Ausgleich der Kompression (C) und der Traktion (T).




# 18.620

| Reference Bezeichnung | PSC | G N°. Ø | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.620.040.12 | 40 | 1 19 | M3-M12 | 65 | 38 | 9 | 9 | 710XX | 750XX | 0,510 |
| 18.620.050.12 | 50 | 1 19 | M3-M12 | 65 | 38 | 9 | 9 | 710XX | 750XX | 0,690 |
| 18.620.063.12 | 63 | 1 19 | M3-M12 | 70 | 38 | 9 | 9 | 710XX | 750XX | 0,970 |
| 18.620.063.20 | 63 | 2 31 | M8-M20 | 95 | 55 | 15 | 15 | 720XX | 760XX | 1,710 |
| 18.620.063.33 | 63 | 3 48 | M14-M33 | 140 | 79 | 24 | 24 | 730XX | 770XX | 3,550 |
| 18.620.080.12 | 80 | 1 19 | M3-M12 | 80 | 38 | 9 | 9 | 710XX | 750XX | 2,050 |
| 18.620.080.20 | 80 | 2 31 | M8-M20 | 100 | 55 | 15 | 15 | 720XX | 760XX | 2,720 |
| 18.620.080.33 | 80 | 3 48 | M14-M33 | 150 | 79 | 24 | 24 | 730XX | 770XX | 5,040 |
| 18.620.100.12 | 100 | 1 19 | M3-M12 | 90 | 38 | 9 | 9 | 710XX | 750XX | 3,470 |
| 18.620.100.20 | 100 | 2 31 | M8-M20 | 110 | 55 | 15 | 15 | 720XX | 760XX | 4,180 |
| 18.620.100.33 | 100 | 3 48 | M14-M33 | 160 | 79 | 24 | 24 | 730XX | 770XX | 6,620 |

## 710XX..730XX

I202

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch |
| | Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

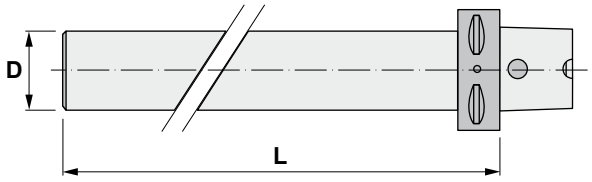
| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch |
| | Schnellwechseleinsätze mit Sicherheitskupplung |





Characteristics:
Test arbors.
PSC ISO 26623-1

Eigenschaften:
Prüfdorne.
PSC ISO 26623-1



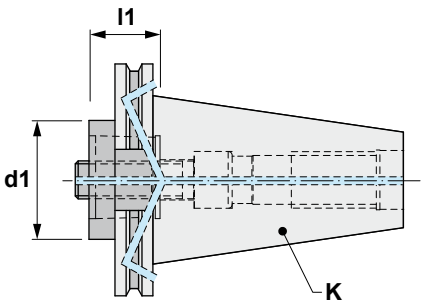

# 18.999

| Reference<br>Bezeichnung | PSC | L | D | Kg |
|---|---|---|---|---|
| 18.999.050 | 50 | 255 | 32 | 1,910 |
| 18.999.063 | 63 | 322 | 40 | 3,260 |
| 18.999.080 | 80 | 330 | 40 | 4,680 |



Characteristics:
Adaptor DIN 69871-A
to PSC ISO 26623-1.

Eigenschaften:
Adapter DIN 69871-A
zu PSC ISO 26623-1.



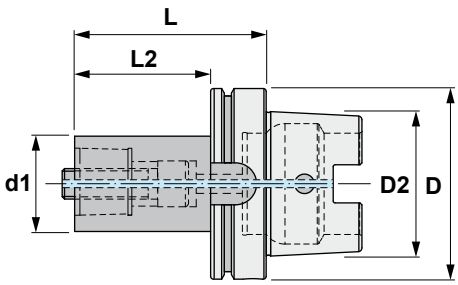

# 13.218

| Reference<br>Bezeichnung | K ISO | PSC | d1 | l1 | Kg |
|---|---|---|---|---|---|
| 13.218.30.32/030 | 30 | 32 | 32 | 30 | 0,400 |
| 13.218.30.32/060 | 30 | 32 | 32 | 60 | 0,550 |
| 13.218.40.32/030 | 40 | 32 | 32 | 30 | 0,850 |
| 13.218.40.32/060 | 40 | 32 | 32 | 60 | 1,000 |
| 13.218.40.40/030 | 40 | 40 | 40 | 30 | 0,850 |
| 13.218.40.40/060 | 40 | 40 | 40 | 60 | 1,100 |
| 13.218.40.50/030 | 40 | 50 | 50 | 30 | 0,850 |
| 13.218.40.50/070 | 40 | 50 | 50 | 70 | 1,400 |
| 13.218.40.63/085 | 40 | 63 | 63 | 85 | 1,900 |
| 13.218.50.32/030 | 50 | 32 | 32 | 30 | 2,700 |
| 13.218.50.32/060 | 50 | 32 | 32 | 60 | 3,000 |
| 13.218.50.40/030 | 50 | 40 | 40 | 30 | 0,850 |
| 13.218.50.40/060 | 50 | 40 | 40 | 60 | 3,000 |
| 13.218.50.50/030 | 50 | 50 | 50 | 30 | 2,650 |
| 13.218.50.50/070 | 50 | 50 | 50 | 70 | 3,210 |
| 13.218.50.63/030 | 50 | 63 | 63 | 30 | 2,610 |
| 13.218.50.63/080 | 50 | 63 | 63 | 80 | 3,750 |
| 13.218.50.80/070 | 50 | 80 | 80 | 70 | 3,900 |
| 13.218.50.80/120 | 50 | 80 | 80 | 120 | 5,550 |



Characteristics:
Adaptor HSK DIN 69893-1
to PSC ISO 26623-1.

Eigenschaften:
Adapter HSK DIN 69893-1
zu PSC ISO 26623-1.



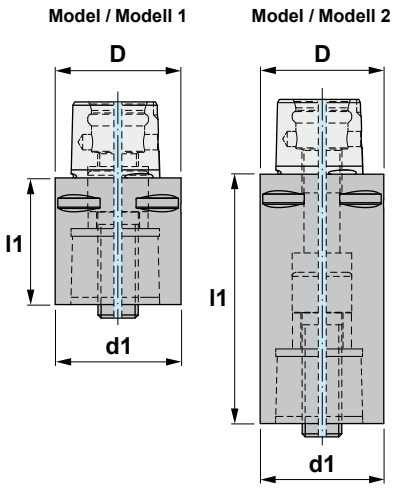

# 16.218

| Reference<br>Bezeichnung | HSK | PSC | d1 | D | D2 | L | L2 | Kg |
|---|---|---|---|---|---|---|---|---|
| 16.218.063.32/075 | 63 | 32 | 32 | 63 | 48 | 75 | 49 | 0,900 |
| 16.218.063.40/080 | 63 | 40 | 40 | 63 | 48 | 80 | 54 | 1,100 |
| 16.218.063.50/090 | 63 | 50 | 50 | 63 | 48 | 90 | 64 | 1,450 |
| 16.218.100.32/080 | 100 | 32 | 32 | 100 | 75 | 80 | 51 | 2,310 |
| 16.218.100.40/090 | 100 | 40 | 40 | 100 | 75 | 90 | 61 | 2,550 |
| 16.218.100.50/100 | 100 | 50 | 50 | 100 | 75 | 100 | 71 | 2,950 |
| 16.218.100.63/110 | 100 | 63 | 63 | 100 | 75 | 110 | 81 | 3,700 |
| 16.218.100.80/120 | 100 | 80 | 80 | 100 | 75 | 120 | 91 | 4,900 |



Characteristics:
Extension
PSC ISO 26623-1.

Eigenschaften:
Verlängerung
PSC ISO 26623-1.



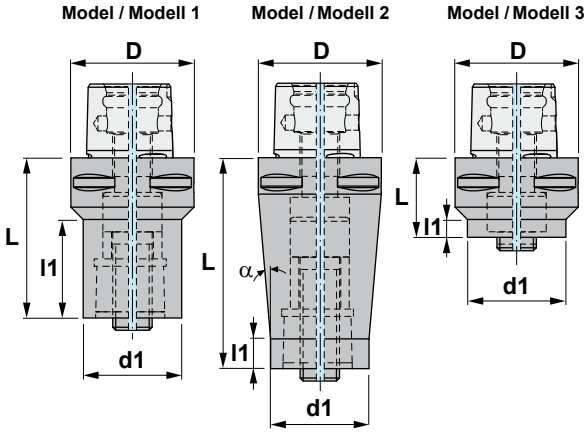

# 18.218

| Reference<br>Bezeichnung | Model<br>Modell | Side PSC / Machine<br>PSC Größe/ Maschine | d1 | D | l1 | Kg |
|---|---|---|---|---|---|---|
| 18.218.32.32/035 | 1 | 32 | 32 | 32 | 35 | 0,200 |
| 18.218.32.32/060 | 2 | 32 | 32 | 32 | 60 | 0,360 |
| 18.218.32.32/080 | 2 | 32 | 32 | 32 | 80 | 0,490 |
| 18.218.40.40/040 | 1 | 40 | 40 | 40 | 40 | 0,370 |
| 18.218.40.40/060 | 2 | 40 | 40 | 40 | 60 | 0,600 |
| 18.218.40.40/080 | 2 | 40 | 40 | 40 | 80 | 0,800 |
| 18.218.50.50/050 | 1 | 50 | 50 | 50 | 50 | 0,730 |
| 18.218.50.50/080 | 2 | 50 | 50 | 50 | 80 | 1,240 |
| 18.218.50.50/100 | 2 | 50 | 50 | 50 | 100 | 1,500 |
| 18.218.63.63/060 | 1 | 63 | 63 | 63 | 60 | 1,350 |
| 18.218.63.63/100 | 2 | 63 | 63 | 63 | 100 | 2,350 |
| 18.218.63.63/140 | 2 | 63 | 63 | 63 | 140 | 3,300 |
| 18.218.80.80/065 | 1 | 80 | 80 | 80 | 65 | 2,350 |
| 18.218.80.80/100 | 2 | 80 | 80 | 80 | 100 | 3,750 |
| 18.218.80.80/125 | 2 | 80 | 80 | 80 | 125 | 4,750 |



Characteristics:
Reducer
PSC ISO 26623-1.

Eigenschaften:
Reduzierhülse
PSC ISO 26623-1.



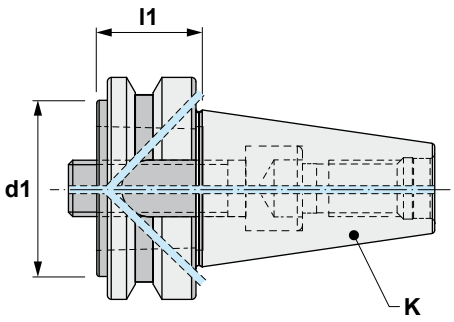

# 18.218

| Reference Bezeichnung | Model Modell | Side Machine PSC Maschine | Side PSC PSC Größe | D | d1 | L | l1 | α | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 18.218.40.32/055 | 1 | 40 | 32 | 40 | 32 | 55 | 31.0 | - | 0,430 |
| 18.218.40.32/070 | 2 | 40 | 32 | 40 | 32 | 70 | 12.0 | 6.0º | 0,560 |
| 18.218.50.32/060 | 1 | 50 | 32 | 50 | 32 | 60 | 34.8 | - | 0,640 |
| 18.218.50.40/065 | 1 | 50 | 40 | 50 | 40 | 65 | 40.0 | - | 0,800 |
| 18.218.50.40/085 | 2 | 50 | 40 | 50 | 40 | 85 | 12.0 | 5.4º | 1,130 |
| 18.218.50.32/033 | 3 | 50 | 32 | 50 | 32 | 33 | 10.0 | - | 0,470 |
| 18.218.50.40/040 | 3 | 50 | 40 | 50 | 40 | 40 | 18.0 | - | 0,550 |
| 18.218.63.32/070 | 1 | 63 | 32 | 63 | 32 | 70 | 39.0 | - | 0,970 |
| 18.218.63.40/080 | 1 | 63 | 40 | 63 | 40 | 80 | 51.4 | - | 1,200 |
| 18.218.63.50/080 | 1 | 63 | 50 | 63 | 50 | 80 | 51.5 | - | 1,500 |
| 18.218.63.50/110 | 2 | 63 | 50 | 63 | 50 | 110 | 12.0 | 4.9º | 2,250 |
| 18.218.63.32/032 | 3 | 63 | 32 | 63 | 32 | 32 | 6.0 | - | 0,760 |
| 18.218.63.40/040 | 3 | 63 | 40 | 63 | 40 | 40 | 11.0 | - | 0,800 |
| 18.218.63.50/050 | 3 | 63 | 50 | 63 | 50 | 50 | 26.5 | - | 1,000 |
| 18.218.80.32/060 | 1 | 80 | 32 | 80 | 32 | 60 | 29.3 | - | 1,900 |
| 18.218.80.40/070 | 1 | 80 | 40 | 80 | 40 | 70 | 36.5 | - | 2,000 |
| 18.218.80.50/080 | 1 | 80 | 50 | 80 | 50 | 80 | 49.3 | - | 2,300 |
| 18.218.80.63/080 | 1 | 80 | 63 | 80 | 63 | 80 | 53.1 | - | 2,650 |
| 18.218.80.63/120 | 2 | 80 | 63 | 80 | 63 | 120 | 12.0 | 6.2º | 4,300 |
| 18.218.80.50/045 | 3 | 80 | 50 | 80 | 50 | 45 | 10.0 | - | 1,800 |
| 18.218.80.63/055 | 3 | 80 | 63 | 80 | 63 | 55 | 20.0 | - | 2,000 |



Characteristics:
Adaptor JIS B 6339-BT
to PSC ISO 26623-1.

Eigenschaften:
Adapter JIS B 6339-BT
zu PSC ISO 26623-1.



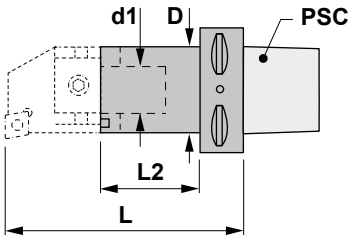

# 23.218

| Reference Bezeichnung | K ISO | PSC | d1 | l1 | Kg |
|---|---|---|---|---|---|
| 23.218.30.32/030 | 30 | 32 | 32 | 30 | 0,400 |
| 23.218.30.32/060 | 30 | 32 | 32 | 60 | 0,600 |
| 23.218.40.32/030 | 40 | 32 | 32 | 30 | 1,000 |
| 23.218.40.32/060 | 40 | 32 | 32 | 60 | 1,200 |
| 23.218.40.40/030 | 40 | 40 | 40 | 30 | 0,950 |
| 23.218.40.40/060 | 40 | 40 | 40 | 60 | 1,250 |
| 23.218.40.50/030 | 40 | 50 | 50 | 30 | 0,900 |
| 23.218.40.50/070 | 40 | 50 | 50 | 70 | 1,500 |
| 23.218.40.63/075 | 40 | 63 | 63 | 75 | 1,900 |
| 23.218.50.32/040 | 50 | 32 | 32 | 40 | 3,650 |
| 23.218.50.32/070 | 50 | 32 | 32 | 70 | 3,850 |
| 23.218.50.40/040 | 50 | 40 | 40 | 40 | 3,650 |
| 23.218.50.40/070 | 50 | 40 | 40 | 70 | 3,900 |
| 23.218.50.50/040 | 50 | 50 | 50 | 40 | 3,550 |
| 23.218.50.50/080 | 50 | 50 | 50 | 80 | 4,150 |
| 23.218.50.63/040 | 50 | 63 | 63 | 40 | 3,450 |
| 23.218.50.63/090 | 50 | 63 | 63 | 90 | 4,650 |
| 23.218.50.80/070 | 50 | 80 | 80 | 70 | 4,200 |
| 23.218.50.80/120 | 50 | 80 | 80 | 120 | 6,150 |



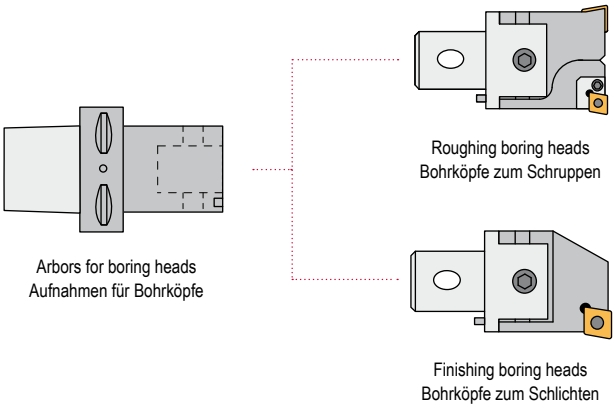
Characteristics:
Arbors for boring heads.
PSC ISO 26623-1

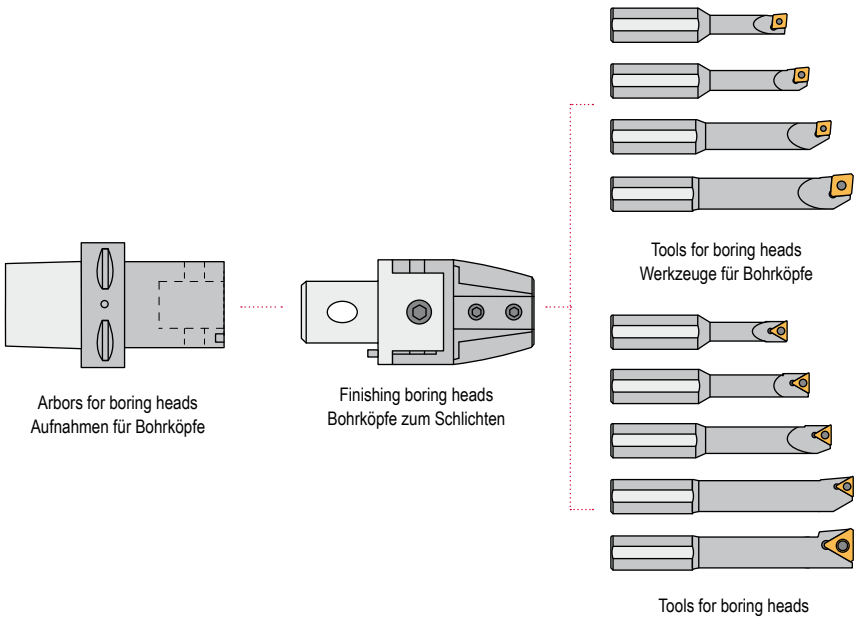
Eigenschaften:
Aufnahmen für Bohrköpfe.
PSC ISO 26623-1




# 18.700

| Reference<br>Bezeichnung | PSC | D | L | L2 | d1 | Kg |
|---|---|---|---|---|---|---|
| 18.700.63.12/055 | 63 | 22 | 77 | 43 | 12 | 0,750 |
| 18.700.63.12/110 | 63 | 22 | 132 | 98 | 12 | 0,920 |
| 18.700.63.15/065 | 63 | 27 | 87 | 45 | 15 | 0,880 |
| 18.700.63.15/110 | 63 | 27 | 132 | 90 | 15 | 1,080 |
| 18.700.63.20/075 | 63 | 32 | 97 | 52 | 20 | 1,000 |
| 18.700.63.20/120 | 63 | 32 | 142 | 97 | 20 | 1,280 |

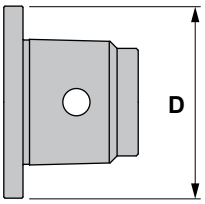




Characteristics:
Manual caps.

Eigenschaften:
Manuelle Verschlußstopfen.



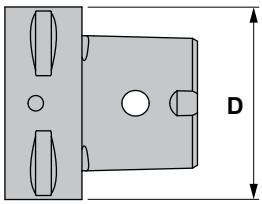

## MC

| Reference<br>Bezeichnung | Manual Cap<br>Manuelle Verschlußstopfen | Kg |
|---|---|---|
| PSC32-MC | 32 | 0,080 |
| PSC40-MC | 40 | 0,150 |
| PSC50-MC | 50 | 0,180 |
| PSC63-MC | 63 | 0,420 |
| PSC80-MC | 80 | 1,000 |



Characteristics:
Automatic caps.

Eigenschaften:
Automatische Verschlußstopfen.




## AC

| Reference<br>Bezeichnung | Automatic Cap<br>Automatische Verschlußstopfen | Kg |
|---|---|---|
| PSC40-AC | 40 | 0,250 |
| PSC50-AC | 50 | 0,445 |
| PSC63-AC | 63 | 0,700 |
| PSC80-AC | 80 | 1,700 |



# INSERTS
# WENDESCHNEIDPLATTEN

Grades
Sorten F02-05

ISO Code Key
ISO Bezeichnung F06-07

Contents - Milling inserts
Inhalt - Fräswendeplatten F08-09

ISO inserts
ISO Wendeschneidplatten F10-22

F

# UNCOATED CARBIDE



## UNCOATED CARBIDE

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

# Features of UNCOATED CARBIDE

| Material | | Grade | Colour | Composition | Definition |
|---|---|---|---|---|---|
| **P** Steel |  | ***PM25*** | | WC+TiC+TaC+Co | General purpose uncoated grade in the P30 range. This tough, economical grade is suitable to work carbon steels, alloyed steels, tool steels and stainless steels. PM25 provides toughness and resistance to deformation in roughing and semi-finishing applications. |
| |  | ***PM40*** | | WC+TiC+TaC+Co | Roughing grade in the P35 range. This tough grade is for structural, cast and tool steels. It is recommended when toughness is more important than wear resistance. |
| **K** Cast iron |  | ***KM15*** | | WC+Co | Finishing grade in the K10 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys. |

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# Application

| ISO | Composition | Features | Workpiece |
|---|---|---|---|
| P | WC+TiC+TaC+Co | Heat resistance, excellent plastic deformation resistance. | Carbon steel, alloy steel, stainless steel. |
| M | WC+TiC+TaC+Co | General tools stable heat resistance with strength. | Carbon steel, alloy steel, stainless steel, cast steel. |
| K | WC+Co | High strength and superior wear resistance. | Carbon iron, non-ferrous metal, plastic, etc. |

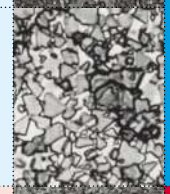
# Properties

| Grade | Hardness (HRA) | TRS (Kgf/mm²) | Young's modulus (103Kgf/mm²) | Thermal expansion coefficient ($10^{-6}$/°C) | Thermal conductivity (cal/cm·sec·°C) |
|---|---|---|---|---|---|
| KM15 | 90.9 | 250 | 63 | - | 105 |
| PM25 | 91.9 | 200 | 56 | 5.2 | 45 |
| PM40 | 91.3 | 230 | 53 | 5.2 | - |

## UNBESCHICHTETES HARTMETALL

- Die hervorragende Wärmerißbeständigkeit ermöglicht eine Bearbeitung mit Kühlmittel.
- Unbeschichtetes Hartmetall eignet sich zur Bearbeitung von verschiedenen Werkstoffen.
- Hohe Zähfestigkeit und geringe Schneidkraft.
- Niedrige Affinität zum Werkstoff.

# Eigenschaften von unbeschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| Allgemeine unbeschichtete Sorte im P30 Bereich. Diese zähe und wirtschaftliche Sorte ist zur Bearbeitung von Kohlenstoffstahl, legiertem Stahl, Werkzeugstahl und rostfreiem Stahl gut geeignet. PM25 hat eine gute Zähigkeit und Verschleißfestigkeit in Schrupp- und mittlere Schlichtarbeiten. | WC+TiC+TaC+Co | | ***PM25*** |  | **P** Stahl |
| Es ist eine Sorte zum Schruppen im P35 Bereich. Diese zähe Sorte ist für Baustahl, Stahlguß und Werkzeugstahl geeignet, insbesonders wenn die Zähigkeit wichtiger als die Verschleißfestigkeit ist. | WC+TiC+TaC+Co | | ***PM40*** |  | |
| Es ist eine Sorte zum Schlichten im K10 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständigen Legierungen geeignet. Sie hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetischen Materialien und ist für das Schlichten in hitzebeständigen Legierungen besonders gut geeignet. | WC+Co | | ***KM15*** |  | **K** Guß |

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# Anwendung

| ISO | Zusammensetzung | Eigenschaften | Bearbeitungsstück |
|---|---|---|---|
| **P** | WC+TiC+TaC+Co | Hitzebeständigkeit, ausgezeichneter Widerstand gegen plastische Verformung. | Kohlenstoffstahl, legierter Stahl, rostfreier Stahl. |
| **M** | WC+TiC+TaC+Co | Stabile Hitzebeständigkeit mit Stärke. | Kohlenstoffstahl, legierter Stahl, rostfreier Stahl, Stahlguß. |
| **K** | WC+Co | Hohe Festigkeit und hervorragende Verschleißfestigkeit. | Kohlenstoff-Eisen, Nicht-Eisen-Metall, Kunststoff, usw. |

# Sorteneigenschaften

| Sorte | Härte (HRA) | TRS (Kgf/mm²) | Youngscher Modul (103Kgf/mm²) | Wärmeausdehnungs-Koeffizient ($10^{-6}$/°C) | Wärmeleitfähigkeit (cal/cm·sec·°C) |
|---|---|---|---|---|---|
| **KM15** | 90.9 | 250 | 63 | - | 105 |
| **PM25** | 91.9 | 200 | 56 | 5.2 | 45 |
| **PM40** | 91.3 | 230 | 53 | 5.2 | - |

# CVD / PVD



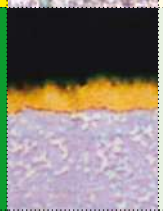
## CVD coated carbide

CVD coatings provide a high wear resistance due to its excellent adhesion to cemented carbide.
They are the first choice in a large turning range where wear resistance is important.

## PVD coated carbide

PVD coatings offer wear resistance due to their hardness.
They are recommended when sharp cutting edges are needed.

# Features of CVD and PVD coated carbide

| Material | | Grade | Colour | Coating composition | Definition |
|---|---|---|---|---|---|
| **P** Steel |  | ***TL10*** | ● | TiAlN | A K10 substrate premium grade with built-in wear resistance and a TiAlN-PVD coating for extended life during finishing applications. Used in ball nose finishing and back draft inserts for the die and mould industry, it is capable of running at moderate to high cutting speeds. |
| |  | ***TL20*** | ● | TiAlN | Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel. |
| |  | ***TL40*** | ● | TiAlN | A tough, general-purpose TiAlN-PVD-coated carbide grade for medium to heavy milling applications for use in all steels, stainless steels and cast irons. TL40 can be used either wet or dry. |
| |  | ***TIN21*** | ● | $TiCN+AL_2O_3$ | A multilayered $TiN-TiCN-Al_2O_3-TiN$-PVD-coated carbide grade with a tough substrate used for medium machining of all steels and ductile cast irons. Best results when machining dry, but it can be used wet. |
| |  | ***TIN25*** | ● | TiN-TiC-TiN | Coated with TiN-TiC-TiN. The CVD coating has a thickness of 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant. |
| **M** Stainless |  | ***TIN28*** | ● | TiCN | A thin PVD coated TiCN layer on a tough substrate, for milling, parting and grooving on stainless and alloyed steels at low to medium cutting speeds and for unstable machining conditions. |
| **N** Non ferrous materials |  | ***ZR10*** | ● | $TiB_2$ | Micrograin grade with an extremely hard single $TiB_2$ layer for machining aluminium, copper alloys and plastics. |

F

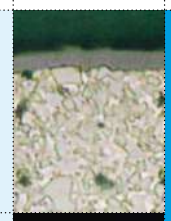
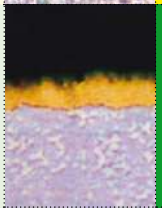
## CVD-beschichteter Hartmetall

Die CVD-Beschichtungen verfügen über eine hohe Verschleißfestigkeit, weil sie eine hervorragende Haftung auf dem Hartmetall haben.
Sie sind die erste Wahl bei einer breiten Drehpalette, bei der die Verschleißfestigkeit wichtig ist.

## PVD-beschichteter Hartmetall

Aufgrund Ihrer Härte bieten PVD-Beschichtungen Verschleißfestigkeit an.
Sie werden empfohlen, wenn man scharfe Schneidkanten braucht.

# Eigenschaften von CVD und PVD-beschichtetem Hartmetall

| Beschreibung | Zusammensetzung | Farbe | Sorte | | Werkstoff |
|---|---|---|---|---|---|
| Hochwertig beschichtete Sorte mit K10-Substrat, das Verschleißfestigkeit bietet, und eine TiAlN-PVD-Beschichtung für eine längere Standzeit bei Schlichtbearbeitungen. Sie wird für Vollradius-Schlichtwerkzeuge und für torische Wendeschneidplatten im Werkzeug- und Formenbau verwendet. Sie eignet sich für mittlere bis hohe Schnittgeschwindigkeiten. | TiAlN | | ***TL10*** |  | **P** Stahl |
| PVD beschichtete Sorte mit TiAlN und einer Gleitschicht. Sie hat einen niedrigen Reibungswert und eine niedrige Schneidenenergie beim Schlichten. Die scharfe Schneidkante reduziert den Schneidenaufbau und erzeugt eine hervorragende Oberfläche. Empfohlen für legierten Stahl. | TiAlN | | ***TL20*** |  | |
| Eine zähe Universal-Hartmetallsorte mit PVD-TiAlN-Beschichtung für mittlere und schwere Fräsanwendungen in allen Stählen und Gußeisen. TL40 eignet sich sowohl für die Trocken- als auch für die Nassbearbeitung. | TiAlN | | ***TL40*** |  | |
| Eine Hartmetallsorte mit Multischicht TiN-TiCN-$Al_2O_3$ TiN-PVD-Beschichtung und einem zähen Substrat, die zur mittleren Bearbeitung sämtlicher Stähle und Kugelgraphit-Gußwerkstoffe verwendet werden kann. Die besten Ergebnisse werden bei Trockenbearbeitung erzielt. Die Sorte kann jedoch auch bei Nassbearbeitung verwendet werden. | TiCN+$AL_2O_3$ | | ***TIN21*** |  | |
| Mit TiN-TiC-TiN beschichtet. Die Dicke der CVD-Schicht ist 3-5 Mikron und ist zur Bearbeitung von Stahl, legierten Stahl und rostfreien Stahl geeignet, mit oder ohne Kühlung. | TiN-TiC-TiN | | ***TIN25*** |  | |
| Eine dünne PVD-TiCN Schicht auf einem zähen Substrat. Geeignet zum Fräsen, Ein- und Abstechen auf rostfreiem und legiertem Stahl bei niedrigen bis mittleren Schnittgeschwindigkeiten, und auch für nicht stabilen Bearbeitungsbedingungen. | TiCN | | ***TIN28*** |  | **M** Rostfreier Stahl |
| Mikrokorn-Sorte mit einer einzigen sehr harten $TiB_2$-Schicht, zur Bearbeitung von Aluminium, Kupfer-Legierungen und Kunststoff. | $TiB_2$ | | ***ZR10*** |  | **N** Nicht-Eisen-Metalle |

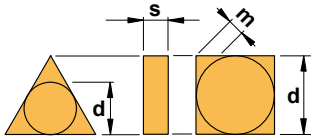
F

# ISO Code key / Bezeichnung

| INSERT SHAPE<br>FORM DER WENDEPLATTE | |
|---|---|
| V | Rhombic 35°<br>Rhombisch 35° |
| D | Rhombic 55°<br>Rhombisch 55° |
| E | Rhombic 75°<br>Rhombisch 75° |
| C | Rhombic 80°<br>Rhombisch 80° |
| M | Rhombic 86°<br>Rhombisch 86° |
| K | Parallelogram 55°<br>Parallelogramm 55° |
| B | Parallelogram 82°<br>Parallelogramm 82° |
| A | Parallelogram 85°<br>Parallelogramm 85° |
| L | Rectangular 90°<br>Rechteckig 90° |
| N | Heptagonal 128,57°<br>Siebeneckig 128,57° |
| H | Hexagonal 120°<br>Sechskant 120° |
| O | Octagonal 135°<br>Achtkant 135° |
| R | Round<br>Rund |
| S | Square 90°<br>Vierkant 90° |
| T | Triangular 60°<br>Dreikant 60° |
| W | Trigon 80°<br>Trigon 80° |
| X | Special design<br>Spezielles Design |

**TOLERANCES**
**TOLERANZEN**

| | m | Ø d | s |
|---|---|---|---|
| A | ±0.005 | ±0.025 | ±0.025 |
| F | ±0.005 | ±0.013 | ±0.025 |
| C | ±0.013 | ±0.025 | ±0.025 |
| H | ±0.013 | ±0.013 | ±0.025 |
| E | ±0.025 | ±0.025 | ±0.025 |
| G | ±0.025 | ±0.025 | ±0.013 |
| J | ±0.005 | ±0.05 - ±0.15 | ±0.025 |
| K | ±0.013 | ±0.05 - ±0.15 | ±0.025 |
| L | ±0.025 | ±0.05 - ±0.15 | ±0.025 |
| M | ±0.08 - ±0.20 | ±0.05 - ±0.15 | ±0.13 |
| N | ±0.08 - ±0.20 | ±0.05 - ±0.15 | ±0.025 |
| U | ±0.13 - ±0.38 | ±0.08 - ±0.25 | ±0.13 |

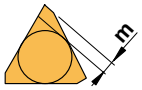



Detail of M Class insert tolerance (Tolerance of nose height **m**)
Detailtoleranz für Wendeschneidplatten M-Klasse (Toleranz ohne Radius **m**)

| D.I.C | △ | □ | 80° | 55° | 35° | ○ |
|---|---|---|---|---|---|---|
| **6.35** | ±0.08 | ±0.08 | ±0.08 | ±0.11 | ±0.16 | - |
| **9.525** | ±0.08 | ±0.08 | ±0.08 | ±0.11 | ±0.16 | - |
| **12.70** | ±0.13 | ±0.13 | ±0.13 | ±0.15 | - | - |
| **15.875** | ±0.15 | ±0.15 | ±0.15 | ±0.18 | - | - |
| **19.05** | ±0.15 | ±0.15 | ±0.15 | ±0.18 | - | - |
| **25.40** | - | ±0.18 | - | - | - | - |
| **31.75** | - | ±0.20 | - | - | - | - |

Detail of M Class insert tolerance (Tolerance of inscribed circle **d**)
Detailtoleranz für Wendeschneidplatten M-Klasse (Toleranz des Innenkreises **d**)

| D.I.C | △ | □ | 80° | 55° | 35° | ○ |
|---|---|---|---|---|---|---|
| **6.35** | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 | - |
| **9.525** | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 |
| **12.70** | ±0.08 | ±0.08 | ±0.08 | ±0.08 | - | ±0.08 |
| **15.875** | ±0.10 | ±0.10 | ±0.10 | ±0.10 | - | ±0.10 |
| **19.05** | ±0.10 | ±0.10 | ±0.10 | ±0.10 | - | ±0.10 |
| **25.40** | - | ±0.13 | - | - | - | ±0.13 |
| **31.75** | - | ±0.15 | - | - | - | ±0.15 |




Triangular insert with a facet (Secondary cutting edge)
Dreikant-Wendeplatte mit Seitenschneide (Nebenschneide)

**S E K N**

| CLEARANCE ANGLE<br>FREIWINKEL | |
|---|---|
| A | 3° |
| B | 5° |
| C | 7° |
| D | 15° |
| E | 20° |
| F | 25° |
| G | 30° |
| N | 0° |
| P | 11° |

**SYMBOL FOR FIXING AND/OR FOR CHIPBREAKER**
**BEFESTIGUNGS- UND/ODER SPANBRECHERSYMBOL**

| | Metric / Metrisch | | | |
|---|---|---|---|---|
| | **Hole**<br>**Loch** | **Hole configuration**<br>**Loch-Konfiguration** | **Chipbreaker**<br>**Spanbrecher** | **Figure**<br>**Abbildung** |
| N | Without hole / Ohne Loch | - | No / Nein | |
| R | Without hole / Ohne Loch | - | One-sided / Einseitig | |
| F | Without hole / Ohne Loch | - | Double-sided / Doppelseitig | |
| A | With hole / Mit Loch | Cylindrical hole<br>Zylindrisches Loch | No / Nein | |
| M | With hole / Mit Loch | Cylindrical hole<br>Zylindrisches Loch | One-sided / Einseitig | |
| G | With hole / Mit Loch | Cylindrical hole<br>Zylindrisches Loch | Double-sided / Doppelseitig | |
| W | With hole / Mit Loch | Cylindrical hole +<br>One countersink (40-60°)<br>Zylindrisches Loch +<br>Einseitige Senkung (40-60°) | No / Nein | |
| T | With hole / Mit Loch | | One-sided / Einseitig | |
| Q | With hole / Mit Loch | Cylindrical hole +<br>Double countersink (40-60°)<br>Zylindrisches Loch +<br>Doppelseitige Senkung (40-60°) | No / Nein | |
| U | With hole / Mit Loch | | Double-sided / Doppelseitig | |
| B | With hole / Mit Loch | Cylindrical hole +<br>One countersink (70-90°)<br>Zylindrisches Loch +<br>Einseitige Senkung (70-90°) | No / Nein | |
| H | With hole / Mit Loch | | One-sided / Einseitig | |
| C | With hole / Mit Loch | Cylindrical hole +<br>Double countersink (70-90°)<br>Zylindrisches Loch +<br>Doppelseitige Senkung (70-90°) | No / Nein | |
| J | With hole / Mit Loch | | Double-sided / Doppelseitig | |
| X | - | - | - | Special / Spezielles Design |

F

| SYMBOL FOR INSERT SIZE<br>SYMBOL FÜR WENDEPLATTENGRÖSSE | | | | | | | |
|---|---|---|---|---|---|---|---|
| V | D | C | S | T | W | R | |
| | 04 | 03 | 03 | 06 | | | 3,97 |
| 08 | 05 | 04 | 04 | 08 | | | 4,76 |
| 09 | 06 | 05 | 05 | 09 | 03 | | 5,56 |
| | | | | | | 06 | 6,00 |
| 11 | 07 | 06 | 06 | 11 | 04 | | 6,35 |
| 13 | 09 | 08 | 07 | 13 | 05 | | 7,94 |
| | | | | | | 08 | 8,00 |
| 16 | 11 | 09 | 09 | 16 | 06 | | 9,52 |
| | | | | | | 10 | 10,00 |
| | | | | | | 12 | 12,00 |
| 22 | 15 | 12 | 12 | 22 | 08 | | 12,70 |
| | 19 | 16 | 15 | 27 | 10 | | 15,87 |
| | | | | | | 16 | 16,00 |
| | 23 | 19 | 19 | 33 | 13 | | 19,00 |
| | | | | | | 20 | 20,00 |
| | 27 | 22 | 22 | 38 | | | 22,22 |
| | | | | | | 25 | 25,00 |
| | 31 | 25 | 25 | 44 | | | 25,40 |
| | 38 | 32 | 31 | 54 | | | 31,75 |
| | | | | | | 32 | 32,00 |

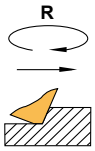
| INSERT CORNER<br>ECKENRADIUS | | | |
|---|---|---|---|
| 00 | 0,0 | 12 | 1,2 |
| M0 | 0,0 | 16 | 1,6 |
| 02 | 0,2 | 20 | 2,0 |
| 04 | 0,4 | 24 | 2,4 |
| 08 | 0,8 | 32 | 3,2 |

| SECONDARY CUTTING EDGE<br>WINKEL DER NEBENSCHNEIDE | | | |
|---|---|---|---|
| A | 45° | F | 85° |
| D | 60° | P | 90° |
| E | 75° | | |

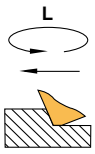
| CLEARANCE ANGLE<br>FREIWINKEL | | | |
|---|---|---|---|
| A | 3° | F | 25° |
| B | 5° | G | 30° |
| C | 7° | N | 0° |
| D | 15° | P | 11° |
| E | 20° | Z | Special<br>Spezielles |

CUTTING DIRECTION
DREHRICHTUNG

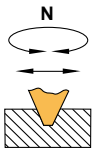
R



L

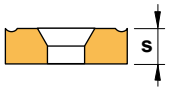


N



# 12 03 AF 04 E N - 3 A

| SYMBOL FOR INSERT THICKNESS<br>SYMBOL FÜR WENDEPLATTENDICKE | |
|---|---|
| SYMBOL | THICKNESS (mm)<br>DICKE (mm) |
| 01 | 1,59 |
| 02 | 2,38 |
| 03 | 3,18 |
| T3 | 3,97 |
| 04 | 4,76 |
| 05 | 5,56 |
| 06 | 6,35 |
| 07 | 7,94 |
| 09 | 9,52 |



| SYMBOL FOR CUTTING EDGE CONDITION<br>SYMBOL FÜR SCHNEIDKANTENAUSFÜHRUNG | |
|---|---|
| SYMBOL | CUTTING EDGE<br>SCHNEIDKANTE |
| F | Sharp<br>Scharf |
| E | Honed<br>Abgerundet |
| T | Chamfered<br>Gefasst |
| S | Chamfered and honed<br>Gefasst und abgerundet |
| K | Double-chamfered<br>Doppelgefasst |
| P | Double-chamfered and honed<br>Doppelgefasst und abgerundet |

| CUTTING EDGE<br>SCHNEIDKANTE | |
|---|---|
| ≤1,2 | 1 |
| 1,4 | 2 |
| 2,0 | 3 |
| 2,4 | 4 |



| CUTTING DIRECTION<br>DREHRICHTUNG | |
|---|---|
| 0 | A |
| 0,08 x 40° | B |
| 0,15 x 15° | C |
| 0,15 x 25° | D |
| 0,20 x 10° | E |
| 0,20 x 15° | F |
| 0,20 x 22° | G |
| 0,15 x 20° | X |



F

**ADKT**



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**ADMT**



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**ADMT-R**



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**ADMW**



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**ADMW-C**



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**APHT-AL**



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**APKT**



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**APLT**



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**APMT**



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**APMW**



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**CCGT-AL**



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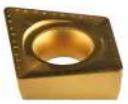
**CCKT**



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**CCMT**



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**CCMW**



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**ENHQ**



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**FRC**



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**FRCR**



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**LNMM**



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**NNMU**



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**ODMT**



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**ODMW**



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**RDHW**



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**RDMT**



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**RDMW**



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**RPMT**



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**RPMW**



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**SCGT-AL**



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**SCMT-39**



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**SCMW**



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**SDMT**



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**SEHT**



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**SEHT-AL**



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F

**SEHW**



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**SEKN**



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**SEKR**



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**SEMT**



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**SNHX**



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**SNKN**



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**SNMX**



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**SNUN**



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**SPKN**



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**SPKR**



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**SPMT**



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**SPMW**



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**SPMX**



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**SPUN**



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**TCGT-AL**



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**TCMT-39**



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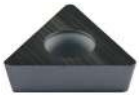
**TCMW**



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**TCMX**



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**TPKN**



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**TPKR**



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**TPUN**



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**VCGT-AL**



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**VCGT-AP**



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**HPKW**



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**HPR**



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**RPR**



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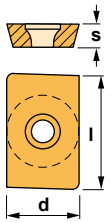
F

# Parallelogram inserts / Positive
# Parallelogramme Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◔ | ✣ | ◔ | ✣ | ✣ | ● | ◔ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



## ADKT

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADKT 2206PDTR | 22,00 | 6,74 | 12,70 | - | | | | | ● | ● | | | | |



## ADMT

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADMT 150308 | 15,00 | 3,18 | 9,52 | 0,8 | | | | ● | ● | | | | | |



## ADMT-R

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADMT 1503R1.0 | 15,00 | 3,18 | 9,52 | 1,0 | | | | | ● | | | | | |
| ADMT 1503R1.5 | 15,00 | 3,18 | 9,52 | 1,5 | | | | | ● | | | | | |
| ADMT 1503R2.0 | 15,00 | 3,18 | 9,52 | 2,0 | | | | | ● | | | | | |
| ADMT 1503R2.5 | 15,00 | 3,18 | 9,52 | 2,5 | | | | | ● | | | | | |
| ADMT 1503R3.0 | 15,00 | 3,18 | 9,52 | 3,0 | | | | | ● | | | | | |
| ADMT 1503R3.5 | 15,00 | 3,18 | 9,52 | 3,5 | | | | | ● | | | | | |
| ADMT 1503R4.0 | 15,00 | 3,18 | 9,52 | 4,0 | | | | | ● | | | | | |
| ADMT 1503R4.5 | 15,00 | 3,18 | 9,52 | 4,5 | | | | | ● | | | | | |
| ADMT 1503R5.0 | 15,00 | 3,18 | 9,52 | 5,0 | | | | | ● | | | | | |



## ADMW

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADMW 150308E | 15,00 | 3,18 | 9,52 | 0,8 | | ● | | | ● | | | | | |
| ADMW 150308F | 15,00 | 3,18 | 9,52 | 0,8 | ● | | | | | | | | | |

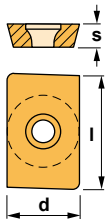


## ADMW-C

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADMW 1503R1.0-C | 15,00 | 3,18 | 9,52 | 1,0 | | | | | ● | | | | | |
| ADMW 1503R1.5-C | 15,00 | 3,18 | 9,52 | 1,5 | | | | | ● | | | | | |
| ADMW 1503R2.0-C | 15,00 | 3,18 | 9,52 | 2,0 | | | | | ● | | | | | |
| ADMW 1503R2.5-C | 15,00 | 3,18 | 9,52 | 2,5 | | | | | ● | | | | | |
| ADMW 1503R3.0-C | 15,00 | 3,18 | 9,52 | 3,0 | | | | | ● | | | | | |
| ADMW 1503R3.5-C | 15,00 | 3,18 | 9,52 | 3,5 | | | | | ● | | | | | |
| ADMW 1503R4.0-C | 15,00 | 3,18 | 9,52 | 4,0 | | | | | ● | | | | | |
| ADMW 1503R4.5-C | 15,00 | 3,18 | 9,52 | 4,5 | | | | | ● | | | | | |
| ADMW 1503R5.0-C | 15,00 | 3,18 | 9,52 | 5,0 | | | | | ● | | | | | |
| ADMW 1503R6.0-C | 15,00 | 3,18 | 9,52 | 6,0 | | | | | ● | | | | | |

# Parallelogram inserts / Positive
# Parallelogramme Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- ● Continuous / Ununterbrochen
- ◕ Slight interruption / Leicht unterbrochen
- ✣ Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- ● Standard item / Standard-Artikel
- ○ Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◕ | | | ◕ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



## APHT-AL

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APHT 1003PDFR-AL | 9,52 | 3,18 | 6,35 | - | ● | | | | | | | | | ● |
| APHT 1604PDFR-AL | 17,00 | 4,76 | 9,52 | - | ● | | | | | | | | | ● |



## APKT

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APKT 1003PDR | 9,52 | 3,18 | 6,35 | 0,4 | | | | | | ● | | | | |
| APKT 1003PDTR | 9,52 | 3,18 | 6,35 | 0,4 | | ● | | ● | ● | | | | | |
| APKT 1604PDR | 16,00 | 4,76 | 9,52 | 0,8 | | ● | | ● | ● | ● | | | | |
| APKT 160416 | 16,00 | 4,76 | 9,52 | 1,6 | | | | | ● | ● | | | | |
| APKT 160424 | 16,00 | 4,76 | 9,52 | 2,4 | | | | | ● | | | | | |
| APKT 160432 | 16,00 | 4,76 | 9,52 | 3,2 | | | | | ● | | | | | |



## APLT

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APLT 1504ZZR | 15,87 | 4,76 | 12,70 | 0,8 | | | | | ● | | | | | |



## APMT

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APMT 1604PDER | 16,00 | 4,76 | 9,52 | 0,8 | ● | ● | | | ● | | | | ● | |
| APMT 200408 | 20,00 | 4,76 | 12,70 | 0,8 | | ● | | | ● | | | | ● | |



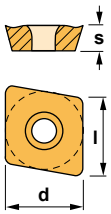
## APMW

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APMW 200408E | 20,00 | 4,76 | 12,70 | 0,8 | | ● | | | ● | | | | ● | |
| APMW 200408F | 20,00 | 4,76 | 12,70 | 0,8 | ○ | | | | | | | | | |

F

# 80º Rhombic inserts / Negative
# Rhombische Wendeschneidplatten 80º / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ● | | | ● | ✣ | | | | |
| K | Cast iron / Guß | ● | ✣ | | ✣ | | | ● | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

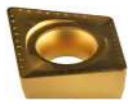
## CCGT-AL



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCGT 060202-AL | 6,45 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | ○ |
| CCGT 060204-AL | 6,45 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | ○ |
| CCGT 09T302-AL | 9,65 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | ○ |
| CCGT 09T304-AL | 9,65 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| CCGT 09T308-AL | 9,65 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | ○ |
| CCGT 120402-AL | 12,90 | 4,76 | 12,70 | 0,2 | ● | | | | | | | | | ○ |
| CCGT 120404-AL | 12,90 | 4,76 | 12,70 | 0,4 | ● | | | | | | | | | ○ |
| CCGT 120408-AL | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | ○ |

## CCKT



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCKT 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | | | ● | ● | | | | | |
| CCKT 080308 | 8,05 | 3,18 | 7,94 | 0,8 | | | | ● | ● | | | | | |
| CCKT 09T308 | 9,65 | 4,00 | 9,52 | 0,8 | | | | ● | ● | | | | | |
| CCKT 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | ● | ● | | | | | |

## CCMT



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCMT 060202 | 6,45 | 2,38 | 6,35 | 0,2 | | ● | | | | | | | | |
| CCMT 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | ● | | | ● | | | | | |
| CCMT 080304 | 8,05 | 3,18 | 7,94 | 0,4 | | ● | | | ● | | | | | |
| CCMT 080308 | 8,05 | 3,18 | 7,94 | 0,8 | | ● | | | ● | | | | | |
| CCMT 09T304 | 9,65 | 3,97 | 9,52 | 0,4 | | ● | | | ● | | | | | |
| CCMT 09T308 | 9,65 | 3,97 | 9,52 | 0,8 | | ● | | | ● | | | | | |
| CCMT 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | ● | | | ● | | | | | |

## CCMW

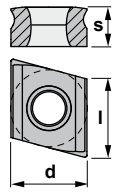


7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCMW 060202 | 6,45 | 2,38 | 6,35 | 0,2 | | | | | ○ | | | | | |
| CCMW 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | ● | | | ○ | | | | | |
| CCMW 080304 | 8,05 | 3,18 | 7,94 | 0,4 | | ● | | | ○ | | | | | |
| CCMW 09T304 | 9,65 | 3,97 | 9,52 | 0,4 | | ● | | | ○ | | | | | |
| CCMW 09T308 | 9,65 | 3,97 | 9,52 | 0,8 | | ● | | | ○ | | | | | |
| CCMW 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | ● | | | ○ | | | | | |

F

## 75º Rhombic inserts / Negative
## Rhombische Wendeschneidplatten 75º / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

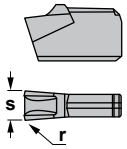
| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### ENHQ

| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENHQ 090408L | 9,86 | 4,76 | 9,52 | | | | | | | | | ● | |
| ENHQ 090408R | 9,86 | 4,76 | 9,52 | | | | | | | | | ● | |
| ENHQ 120610L | 13,15 | 6,35 | 12,70 | | | | | | | | | ● | |
| ENHQ 120610R | 13,15 | 6,35 | 12,70 | | | | | | | | | ● | |

## Single-ended inserts
## Einseitige Wendeschneidplatten




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

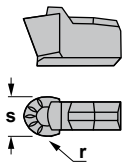


### FRC

Slot cutter insert.
Wendeschneidplatte für Scheibenfräser.

| Reference / Bezeichnung | s | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FRC 1.6 | 1,60 | 0,15 | | | | | | | | | ● | |
| FRC 2.2 | 2,20 | 0,20 | | | | | | | | | ● | |
| FRC 3.0 | 3,00 | 0,20 | | | | | | | | | ● | |
| FRC 4.0 | 4,00 | 0,20 | | | | | | | | | ● | |
| FRC 5.0 | 5,00 | 0,30 | | | | | | | | | ● | |
| FRC 6.0 | 6,00 | 0,30 | | | | | | | | | ● | |

## Single-ended inserts
## Einseitige Wendeschneidplatten




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



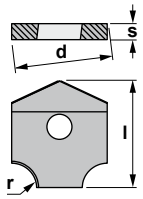
### FRCR

Round slot cutter insert.
Wendeschneidplatte mit Radius für Scheibenfräser.

| Reference / Bezeichnung | s | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FRCR 3.0 | 3,00 | 1,50 | | | | | | | | | ● | |
| FRCR 4.0 | 4,00 | 2,00 | | | | | | | | | ● | |
| FRCR 5.0 | 5,00 | 2,50 | | | | | | | | | ● | |
| FRCR 6.0 | 6,00 | 3,00 | | | | | | | | | ● | |

F

## Concave radius inserts / Positive
## Wendeschneidplatten für konkave Radien / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

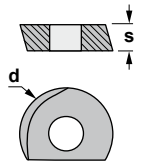


### HPKW

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HPKW 2504R06 | 26,50 | 4,00 | 25,00 | 6,00 | | | | | | | | | ● | |
| HPKW 2504R08 | 26,50 | 4,00 | 25,00 | 8,00 | | | | | | | | | ● | |
| HPKW 2504R10 | 26,50 | 4,00 | 25,00 | 10,00 | | | | | | | | | ● | |

## Round inserts / Positive
## Runde Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

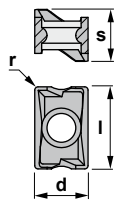


### HPR

11°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HPR 10 | 2,40 | 10,00 | | | | | | | | ● | | |
| HPR 12 | 2,50 | 12,00 | | | | | | | | ● | | |
| HPR 16 | 3,00 | 16,00 | | | | | | | | ● | | |
| HPR 20 | 3,00 | 20,00 | | | | | | | | ● | | |
| HPR 25 | 4,00 | 25,00 | | | | | | | | ● | | |
| HPR 32 | 5,00 | 32,00 | | | | | | | | ● | | |

## Rectangular inserts / Negative
## Rechteckige Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

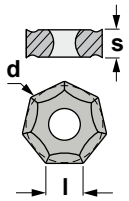
| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### LNMM

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LNMM 100605 | 10,00 | 6,50 | 6,50 | 0,5 | | | | | | | | | ● | |
| LNMM 151008 | 15,00 | 10,00 | 10,00 | 0,8 | | | | | | | | | ● | |

## Heptagonal inserts / Negative
## Siebeneckige Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

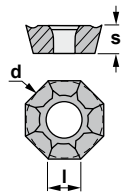
| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### NNMU

| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NNMU 200708 | 8,20 | 7,25 | 20,00 | | | | | | | | | ● | |

## Octogonal inserts / Positive
## Acthkantige Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### ODMT

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ODMT 040408 | 4,00 | 4,76 | 12,70 | 0,8 | | | | ● | | | | | | |
| ODMT 060512 | 6,00 | 5,55 | 16,00 | 1,2 | | | | ● | | | | | | |

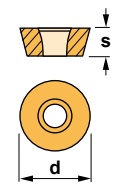


### ODMW

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ODMW 060512 | 6,00 | 5,55 | 16,00 | 1,2 | | | | ● | | | | | | |

## Round inserts / Positive
## Runde Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



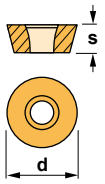
### RDHW

15°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RDHW 0702M0 | 2,38 | 7,00 | | | | | | | | ● | | |
| RDHW 1003M0 | 3,18 | 10,00 | | | | | | | | ● | ● | |
| RDHW 12T3M0 | 3,97 | 12,00 | | | | | | | | ● | ● | |
| RDHW 1604M0 | 4,76 | 16,00 | | | | | | | | ● | ● | |
| RDHW 2006M0 | 6,35 | 20,00 | | | | | | | | ● | | |

F

## Round inserts / Positive
## Runde Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### RDMT

15°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RDMT 1003M0 | 3,18 | 10,00 | | | | | | | | | ● | |
| RDMT 12T3M0 | 3,97 | 12,00 | | | | | | | | | ● | |
| RDMT 1604M0 | 4,76 | 16,00 | | | | | | | | | ● | |



### RDMW

15°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RDMW 1003M0 | 3,18 | 10,00 | | | | | | | | ● | ● | |
| RDMW 12T3M0 | 3,97 | 12,00 | | | | | | | | ● | ● | |
| RDMW 1604M0 | 4,76 | 16,00 | | | | | | | | | ● | |



### RPMT

11°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPMT 120400-39 | 4,76 | 12,70 | | ● | | | ● | | | | | |
| RPMT 1204M0 | 4,76 | 12,00 | | | | ● | ● | | | | | |

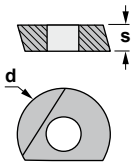


### RPMW

11°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPMW 0802M0 | 2,38 | 8,00 | | ● | | | ● | | | | ● | |
| RPMW 1003M0 | 3,18 | 10,00 | | ● | | | ● | | | | ● | |
| RPMW 1204M0 | 4,76 | 12,00 | | | | | | | | | | |
| RPMW 1204M0T | 4,76 | 12,00 | | | | ● | ● | | | | | |

## Round inserts / Positive
## Runde Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

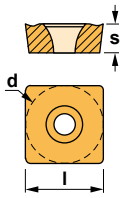


### RPR

11°

| Reference / Bezeichnung | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPR 10 | 2,60 | 10,00 | | | | | | | ● | | | |
| RPR 12 | 3,00 | 12,00 | | | | | | | ● | | | |
| RPR 16 | 4,00 | 16,00 | | | | | | | ● | | | |
| RPR 20 | 5,00 | 20,00 | | | | | | | ● | | | |
| RPR 25 | 6,00 | 25,00 | | | | | | | ● | | | |
| RPR 32 | 7,00 | 32,00 | | | | | | | ● | | | |

# Square inserts / Positive
# Vierkant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◔ | ✣ | ◔ | ✣ | ✣ | ● | ◔ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



## SCGT-AL

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCGT 09T304-AL | 9,52 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| SCGT 09T308-AL | 9.52 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | ○ |
| SCGT 120408-AL | 12,70 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | ○ |



## SCMT-39

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCMT 09T304-39 | 9,52 | 3,97 | 9,52 | 0,4 | | ● | | | ● | | | | | |
| SCMT 09T308-39 | 9,52 | 3,97 | 9,52 | 0,8 | ○ | ● | | | ● | | | | | |
| SCMT 120408-39 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ● | | | ● | | | | | |
| SCMT 120412-39 | 12,70 | 4,76 | 12,70 | 1,2 | | ● | | | ● | | | | | |
| SCMT 120612-39 | 12,70 | 6,35 | 12,70 | 1,2 | | ● | | | ● | | | | | |



## SCMW

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SCMW 09T308 | 9,52 | 3,97 | 9,52 | 0,8 | | ○ | | | ○ | | | | | |
| SCMW 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ○ | | | ○ | | | | | |
| SCMW 120412 | 12,70 | 4,76 | 12,70 | 1,2 | | ○ | | | ○ | | | | | |



## SDMT

15°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SDMT 09T308 | 9,52 | 3,97 | 9,52 | 0,8 | | | | ● | | | | | ● | |
| SDMT 120508 | 12,35 | 5,00 | 12,35 | 0,8 | | | | ● | | | | | ● | |



## SEHT

20°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEHT 1204AFN | 12,70 | 4,76 | 12,70 | - | | | | ● | ● | | | | | |



## SEHT-AL

20°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEHT 1204AFFN-AL | 12,70 | 3,18 | 12,70 | - | ● | | | | | | | | | ● |



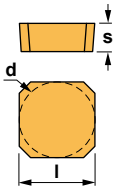
## SEHW

20°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEHW 1204AFEN001 | 12,70 | 4,76 | 12,70 | - | ● | | | | | | | | | |
| SEHW 1204AFSN151 | 12,70 | 4,76 | 12,70 | - | | ● | | ● | ● | | | | | |

F

## Square inserts / Positive
## Vierkant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### SEKN

20°

| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEKN 1203AFEN-3A | 12,70 | 3,18 | 12,70 | ● | | | | | | | | | |
| SEKN 1203AFSN-3D | 12,70 | 3,18 | 12,70 | | | | ● | ● | | | | ● | |
| SEKN 1204AFEN-3A | 12,70 | 4,76 | 12,70 | ○ | | | | | | | | | |
| SEKN 1204AFSN-3D | 12,70 | 4,76 | 12,70 | | ● | | | ● | | | | ● | |
| SEKN 1504AFEN-4A | 15,88 | 4,76 | 15,88 | ○ | | | | | | | | | |
| SEKN 1504AFSN-4D | 15,88 | 4,76 | 15,88 | | ● | | | ● | | | | ● | |



### SEKR

20°

| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEKR 1203AFN | 12,70 | 3,18 | 12,70 | | | | | | ● | | | | |
| SEKR 1203AFTN-94 | 12,70 | 3,18 | 12,70 | | | | ● | ● | | | | | |



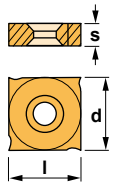
### SEMT

20°

| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEMT 1204AFTN | 12,70 | 4,76 | 12,70 | | | | | | ● | | | | |

F

## Square inserts / Negative
## Vierkant-Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### SNHX

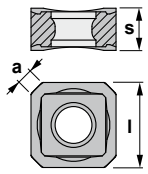
| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNHX 1102XX | 11,00 | 2,38 | 11,00 | | | | | ● | | | | ● | |
| SNHX 1103XX | 11,00 | 2,70 | 11,00 | | | | | ● | | | | ● | |
| SNHX 1203XX | 12,70 | 3,18 | 12,70 | | | | | ● | | | | ● | |
| SNHX 12045XX | 12,70 | 4,50 | 12,70 | | | | | ● | | | | ● | |
| SNHX 1205XX | 12,70 | 5,40 | 12,70 | | | | | ● | | | | ● | |
| SNHX 1207XX | 12,70 | 7,00 | 12,70 | | | | | ● | | | | ● | |



### SNKN

| Reference / Bezeichnung | l | s | d | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNKN 1204ENN | 12,70 | 4,76 | 12,70 | ○ | ● | | | | | | | | |

## Square inserts / Negative
## Vierkant-Wendeschneidplatten / Negativ




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ● | | | ● | ✣ | | | | |
| K | Cast iron / Guß | ● | ✣ | | ✣ | | | ● | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### SNMX

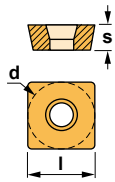
| Reference / Bezeichnung | l | s | a | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNMX 1206ANSN | 12,70 | 6,35 | 2,36 | | | | | | | | | ● | |



### SNUN

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SNUN 120408E | 12,70 | 4,76 | 12,70 | 0,8 | | ● | | | | | | | | |
| SNUN 120408F | 12,70 | 4,76 | 12,70 | 0,8 | ○ | | | | | | | | | |
| SNUN 120412E | 12,70 | 4,76 | 12,70 | 1,2 | | ● | | | | | | | | |

## Square inserts / Positive
## Vierkant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ● | ✣ | ● | ✣ | ✣ | ● | ● | ✣ | |
| M | Stainless / Rostfreier Stahl | | ● | | | ● | ✣ | | | | |
| K | Cast iron / Guß | ● | ✣ | | ✣ | | | ● | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### SPKN

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPKN 1203EDER-3A | 12,70 | 3,18 | 12,70 | - | ● | | | | | | | | | |
| SPKN 1203EDSR-3C | 12,70 | 3,18 | 12,70 | - | | ● | | ● | ● | | | | | |
| SPKN 1203EDTR | 12,70 | 3,18 | 12,70 | - | | | | | | ● | | | | |
| SPKN 1504EDSR-2F | 15,88 | 4,76 | 15,88 | - | | | | | | | | ● | | |



### SPKR

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPKR 1203EDSR | 12,70 | 3,18 | 12,70 | - | | | | | | | | | ● | |



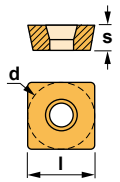
### SPMT

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TiN21 | TiN25 | TiN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPMT 060304 | 6,35 | 3,18 | 6,35 | 0,4 | | | | | | | | | ● | |
| SPMT 070308 | 7,94 | 3,18 | 7,94 | 0,8 | | | | | | | | | ● | |
| SPMT 090308 | 9,52 | 3,18 | 9,52 | 0,8 | | | | | | | | | ● | |
| SPMT 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | |

F

## Square inserts / Positive
## Vierkant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### SPMW

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPMW 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ● | | | ● | | | | ● | |



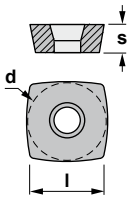
### SPUN

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPUN 090304E | 9,52 | 3,18 | 9,52 | 0,4 | | ● | | | ● | | | | | |
| SPUN 090308E | 9,52 | 3,18 | 9,52 | 0,8 | | ● | | | ● | | | | | |
| SPUN 120304E | 12,70 | 3,18 | 12,70 | 0,4 | | ● | | | ● | | | | | |
| SPUN 120308E | 12,70 | 3,18 | 12,70 | 0,8 | | ● | | | ● | | | | ○ | |
| SPUN 120308F | 12,70 | 3,18 | 12,70 | 0,8 | ● | | | | | | | | | |
| SPUN 120312E | 12,70 | 3,18 | 12,70 | 1,2 | | ● | | ● | ● | | | | | |
| SPUN 120408E | 12,70 | 4,76 | 12,70 | 0,8 | | ○ | | | | | | | | |
| SPUN 150408E | 15,88 | 4,76 | 15,88 | 0,8 | | ○ | | | | | | | | |
| SPUN 150412E | 15,88 | 4,76 | 15,88 | 1,2 | | ○ | | | | | | | | |
| SPUN 190412E | 19,05 | 4,76 | 19,05 | 1,2 | | ○ | | | | | | | | |

F

## High feed inserts / Positive
## Hoher Vorschub-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

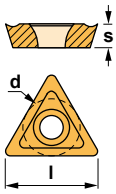


### SPMX

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPMX 073505 | 7,00 | 3,50 | 7,00 | 0,5 | | | | | | | | ● | | |
| SPMX 094506 | 9,70 | 4,40 | 9,70 | 0,6 | | | | | | | | ● | | |
| SPMX 115506 | 11,60 | 5,40 | 11,60 | 0,6 | | | | | | | | ● | | |

# Triangular inserts / Positive
# Dreikant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◔ | ✣ | ◔ | ✣ | ✣ | ● | ◔ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

## TCGT-AL



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCGT 110202-AL | 11,00 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | ○ |
| TCGT 110204-AL | 11,00 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | ○ |
| TCGT 16T302-AL | 16,50 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | ○ |
| TCGT 16T304-AL | 16,50 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| TCGT 16T308-AL | 16,50 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | ○ |

## TCMT-39



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCMT 16T308-39 | 16,50 | 3,97 | 9,52 | 0,8 | | ● | | | ● | | | | ● | |
| TCMT 16T312-39 | 16,50 | 3,97 | 9,52 | 1,2 | | ● | | | ● | | | | | |

## TCMW



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCMW 110204 | 11,00 | 2,38 | 6,35 | 0,4 | ○ | ● | | | | | | | | |
| TCMW 16T304 | 16,50 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | |
| TCMW 16T308 | 16,50 | 3,97 | 9,52 | 0,8 | ● | ● | | | | | | | ○ | |

## TCMX



7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCMX 16T300 | 16,50 | 3,97 | 9,52 | 0,4 | | | | | | | | | ● | |

## TPKN



11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPKN 1103PPSN-1C | 11,00 | 3,18 | 6,35 | - | | ● | | | ○ | | | | | |
| TPKN 1603PDER-1A | 16,50 | 3,18 | 9,52 | - | ● | | | | | | | | | |
| TPKN 1603PDSR-1C | 16,50 | 3,18 | 9,52 | - | | ● | | | ● | | | | ● | |
| TPKN 2204PDER-1A | 22,00 | 4,76 | 12,70 | - | ● | | | | | | | | | |
| TPKN 2204PDSR-1F | 22,00 | 4,76 | 12,70 | - | | ● | | | ● | | | | ● | |

## TPKR

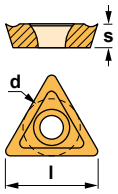


11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPKR 1603PPSR | 16,50 | 3,18 | 9,52 | - | | | | | ● | | | | ● | |

F

## Triangular inserts / Positive
## Dreikant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

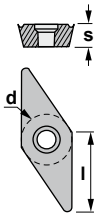


### TPUN

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPUN 110204E | 11,00 | 2,38 | 6,35 | 0,4 | | ● | | | ● | | | | | |
| TPUN 110204F | 11,00 | 2,38 | 6,35 | 0,4 | ○ | | | | | | | | | |
| TPUN 110208E | 11,00 | 2,38 | 6,35 | 0,8 | | ● | | | ● | | | | | |
| TPUN 110304E | 11,00 | 3,18 | 6,35 | 0,4 | | ● | | | ● | | | | | |
| TPUN 110308E | 11,00 | 3,18 | 6,35 | 0,8 | | ● | | | ● | | | | | |
| TPUN 160304E | 16,50 | 3,18 | 9,52 | 0,4 | | ● | | | ● | | | | | |
| TPUN 160304F | 16,50 | 3,18 | 9,52 | 0,4 | ● | | | | | | | | | |
| TPUN 160308T | 16,50 | 3,18 | 9,52 | 0,8 | | ● | | | ● | | | | | |
| TPUN 160308E | 16,50 | 3,18 | 9,52 | 0,8 | | ● | | | ● | | | | | |
| TPUN 160308F | 16,50 | 3,18 | 9,52 | 0,8 | ● | | | | | | | | | |
| TPUN 160312E | 16,50 | 3,18 | 9,52 | 1,2 | | ● | | | ● | | | | | |
| TPUN 160312F | 16,50 | 3,18 | 9,52 | 1,2 | ○ | | | | | | | | | |
| TPUN 220408E | 22,00 | 4,76 | 12,70 | 0,8 | | ● | | | ● | | | | | |
| TPUN 220408F | 22,00 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | |
| TPUN 220412E | 22,00 | 4,76 | 12,70 | 1,2 | | ● | | | ● | | | | | |

## 35º Rhombic inserts / Positive
## Rhombische Wendeschneidplatten 35º / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◕ | ✣ | ◕ | ✣ | ✣ | ● | ◕ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◕ | ✣ | | ✣ | | | ◕ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### VCGT-AL

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VCGT 160404-AL | 16,50 | 4,76 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| VCGT 160408-AL | 16,50 | 4,76 | 9,52 | 0,8 | ● | | | | | | | | | ○ |
| VCGT 160412-AL | 16,50 | 4,76 | 9,52 | 1,2 | ● | | | | | | | | | ○ |
| VCGT 220530-AL | 22,10 | 5,56 | 12,70 | 3,0 | ● | | | | | | | | | ○ |



### VCGT-AP

7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VCGT 160404-AP | 16,50 | 4,76 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| VCGT 160408-AP | 16,50 | 4,76 | 9,52 | 0,8 | ● | | | | | | | | | ○ |
| VCGT 160412-AP | 16,50 | 4,76 | 9,52 | 1,2 | ● | | | | | | | | | ○ |
| VCGT 220530-AP | 22,10 | 5,56 | 12,70 | 3,0 | ● | | | | | | | | | ○ |

F



# FACE AND CHAMFERING MILLING CUTTERS PLAN- UND ANFASFRÄSER

Applications index F24-25
Anwendungen

Facing milling cutters F26-43
Planfräser

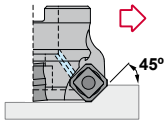
Chamfer and corner radius milling cutters F44-59
Anfas- und Viertelkreisfräser

Cutting data F60-61
Schnittdaten

F

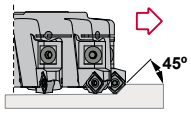
## *Face milling cutters*
## *Planfräser*

**1742.93 45º**
Soft materials 45º
Weiche Materialien 45º



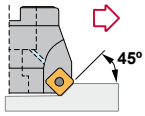

*Page* *Seite F26* SNMX 1206..

**1742.99 45º**
Soft materials 45º
Weiche Materialien 45º



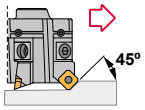

*Page* *Seite F27* SNMX 1206..

**1748.93 45º**
Soft materials 45º
Weiche Materialien 45º



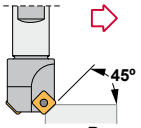

*Page* *Seite F28* SEH.. 1204.. SEMT 1204..

**1748.99 45º**
Soft materials 45º
Weiche Materialien 45º



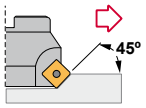

*Page* *Seite F29* SEH.. 1204.. SEMT 1204..

**1748.07 45º**
Facing and chamfering 45º
Plan- und Anfasfräser 45º



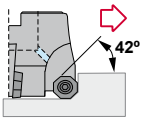

SEH.. 1204.. SEMT 1204.. *Page* *Seite F30*

**0744.90 45º**
Facing and chamfering 45º
Plan- und Anfasfräser 45º



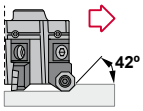

*Page* *Seite F31* SC.. 1204..

**1845.93 42º**
Multipurpose milling 42º
Multifunktions-Fräser 42º



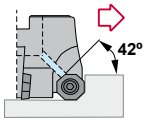

*Page* *Seite F32* ODMT 0404..

**1845.99 42º**
Multipurpose milling 42º
Multifunktions-Fräser 42º



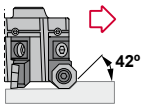

*Page* *Seite F33* ODMT 0404..

**1855.93 42º**
Multipurpose milling 42º
Multifunktions-Fräser 42º



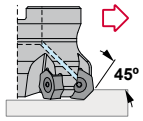

*Page* *Seite F34* ODM.. 0605..

**1855.99 42º**
Multipurpose milling 42º
Multifunktions-Fräser 42º



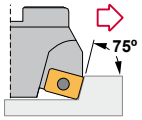

*Page* *Seite F35* ODM.. 0605..

**1852.93 45º**
Multipurpose milling 45º
Multifunktions-Fräser 45º



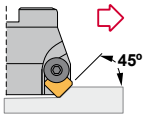

*Page* *Seite F36* NNMU 2007..

**1430.90 75º**
General application 75º
Allgemeine Anwendungen 75º



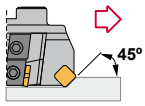

*Page* *Seite F37* AP.. 1604..

**0748.90 45º**
First choice 45º
Erste Wahl 45º



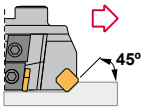

*Page* *Seite F38* SEK.. 1203..

**0748.99 45º**
General application 45º
Allgemeine Anwendungen 45º



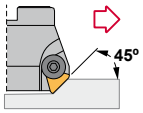

*Page* *Seite F39* SEK.. 1203..

**0758.99 45º**
Deep cutting 45º
Tiefer Schnitt 45º



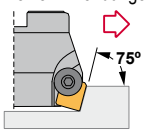

*Page* *Seite F40* SEK.. 1504..

**0640.90 45º**
Facing and chamfering 45º
Plan- und Anfasfräser 45º



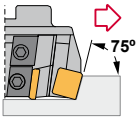

*Page* *Seite F41* TPUN 2204..

**0440.90 75º**
General application 75º
Allgemeine Anwendungen 75º




*Page* *Seite F42* SP.. 1203..

**0440.99 75º**
General application 75º
Allgemeine Anwendungen 75º

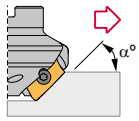


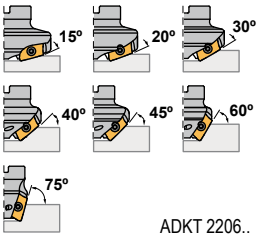

*Page* *Seite F43* SP.. 1203..

F

## *Chamfer and corner radius milling cutters*
## *Anfas- und Viertelkreisfräser*

**1745.93 15-75°**
Chamfering 15-75°
Anfasfräser 15-75°

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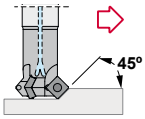
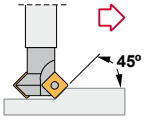
*Seite F44-45*
ADKT 2206..

**0735.03 45°**
Chamfering 45°
Anfasfräser 45°




*Page*
*Seite F46*
SDMT 09T3..

**0740.00 45°**
Chamfering 45°
Anfasfräser 45°

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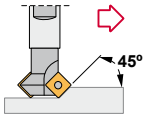
*Seite F47*
SPM.. 1204..

**0740.07 45°**
Chamfering 45°
Anfasfräser 45°

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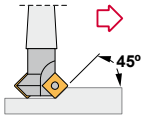
SPM.. 1204..

**0740.30 45°**
Chamfering 45°
Anfasfräser 45°

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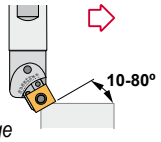
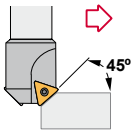
SPM.. 1204..

**1744.$^{0}_{2}$7**
Chamfering cutters 10-80°
Anfasfräser 10-80°



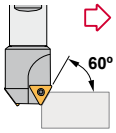

*Page*
*Seite F49*
SC.. 1204..

**0624.07 45°**
Chamfering cutters 45°
Anfasfräser 45°



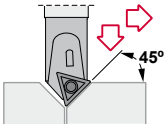

*Page*
*Seite F50*
TC.. 1102..

**0724.07 60°**
Chamfering cutters 60°
Anfasfräser 60°




*Page*
*Seite F50*
TC.. 1102..

**0634.37 45°**
Chamfering 45°
Anfasfräser 45°

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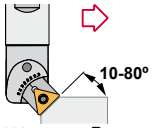
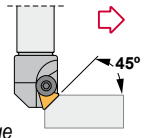
*Seite F51*
TCMX 16T3..

**16$^{2}_{3}$4.$^{0}_{2}$7**
Chamfering cutters 10-80°
Anfasfräser 10-80°




TC.. 1102..
TC.. 16T3..
*Page*
*Seite F52*

**0630.00 45°**
Chamfering 45°
Anfasfräser 45°

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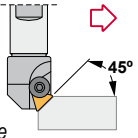
*Seite F53*
TPUN 1603..

**0630.07 45°**
Chamfering 45°
Anfasfräser 45°

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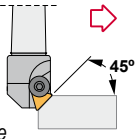
*Seite F53*
TPUN 1603..

**0630.30 45°**
Chamfering 45°
Anfasfräser 45°

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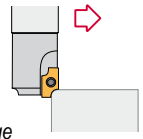
*Seite F54*
TPUN 1603..

**1235.01**
Concave milling cutters
Viertelkreisfräser



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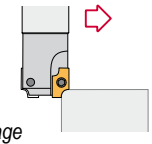
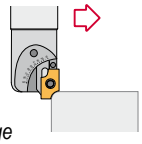
*Seite F55*
ADMT-R 1503..

**1235.07**
Concave milling cutters
Viertelkreisfräser



*Page*
*Seite F56*
ADMT-R 1503..

**1725.$^{0}_{2}$7**
Concave milling cutters
Viertelkreisfräser



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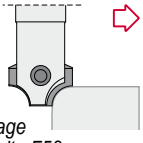
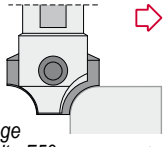
*Seite F57*
ADMT-R 1503..

**1345.07**
Concave milling cutters
Viertelkreisfräser



*Page*
*Seite F58*
HPKW 2504..

**1345.06**
Concave milling cutters
Viertelkreisfräser

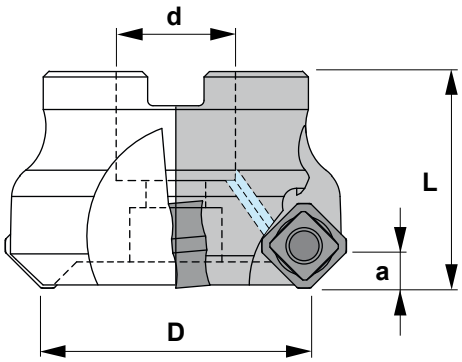


*Page*
*Seite F59*
HPKW 2504..

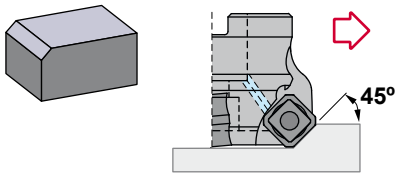
F



Characteristics:
Super positive milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on hard steels, alloyed steels, stainless steels, refractory casts and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt. Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1742.93 45°

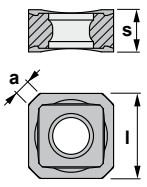
| Reference Bezeichnung | | D | L | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1742.93.050 | 4 | 50 | 40 | 22 | 6 | SNMX 1206.. | 0,350 |
| 1742.93.063 | 6 | 63 | 50 | 22 | 6 | SNMX 1206.. | 0,800 |
| 1742.93.080 | 7 | 80 | 50 | 27 | 6 | SNMX 1206.. | 1,150 |
| 1742.93.100 | 8 | 100 | 50 | 32 | 6 | SNMX 1206.. | 1,700 |
| 1742.93.125 | 10 | 125 | 63 | 40 | 6 | SNMX 1206.. | 2,750 |
| 1742.90.160 | 12 | 160 | 63 | 40 | 6 | SNMX 1206.. | 4,600 |
| 1742.90.200 | 14 | 200 | 63 | 60 | 6 | SNMX 1206.. | 6,600 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1742.93.050 | 1550 | 5520 | - | 912,10 | 4.0 |
| 1742.93.063 | 1550 | 5520 | - | 912,10 | 4.0 |
| 1742.93.080 | 1550 | 5520 | - | 912,12 | 4.0 |
| 1742.93.100 | 1550 | - | 5620 | 912,17 | 4.0 |
| 1742.93.125 | 1550 | - | 5620 | 912,20 | 4.0 |
| 1742.90.160 | 1550 | - | 5620 | - | 4.0 |
| 1742.90.200 | 1550 | - | 5620 | - | 4.0 |

## SNMX

Square negative insert.
Vierkantige negative Wendeschneidplatte.
F19

| Reference / Bez. | l | s | a |
|---|---|---|---|
| SNMX 1206.. | 12,70 | 6,35 | 2,36 |

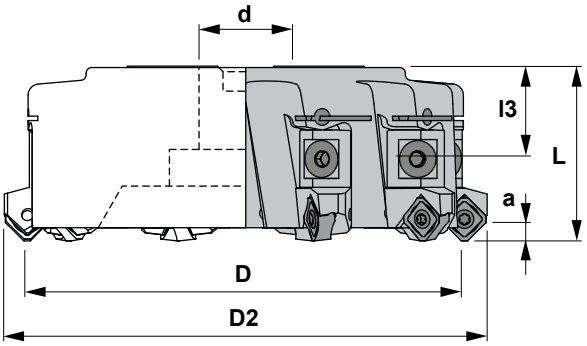



SNMX

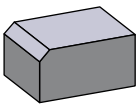


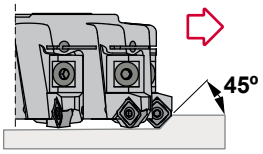


Characteristics:
Super positive milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on hard steels, alloyed steels, stainless steels, refractory casts and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt. Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 1742.99 45°

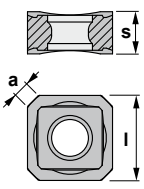
| Reference Bezeichnung | | D | L | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1742.99.160 | 10 | 160 | 63 | 40 | 6 | SNMX 1206.. | 5,450 |
| 1742.99.200 | 12 | 200 | 63 | 60 | 6 | SNMX 1206.. | 9,000 |
| 1742.99.250 | 16 | 250 | 63 | 60 | 6 | SNMX 1206.. | 14,250 |
| 1742.99.315 | 20 | 315 | 63 | 60 | 6 | SNMX 1206.. | 31,000 |
| 1742.99.400 | 22 | 400 | 63 | 60 | 6 | SNMX 1206.. | 47,500 |
| 1742.99.500 | 28 | 500 | 63 | 60 | 6 | SNMX 1206.. | 85,000 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| 1742.99.160 | 1550 | 5620 | 6742 | 1788 | 1460 | 4.0 |
| 1742.99.200 | 1550 | 5620 | 6742 | 1788 | 1460 | 4.0 |
| 1742.99.250 | 1550 | 5620 | 6742 | 1788 | 1460 | 4.0 |
| 1742.99.315 | 1550 | 5620 | 6742 | 1788 | 1460 | 4.0 |
| 1742.99.400 | 1550 | 5620 | 6742 | 1788 | 1460 | 4.0 |
| 1742.99.500 | 1550 | 5620 | 6742 | 1788 | 1460 | 4.0 |

## SNMX

Square negative insert.
Vierkantige negative Wendeschneidplatte.
F19

| Reference / Bez. | l | s | a |
|---|---|---|---|
| SNMX 1206.. | 12,70 | 6,35 | 2,36 |

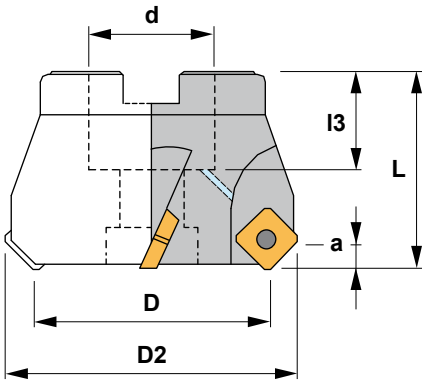



SNMX

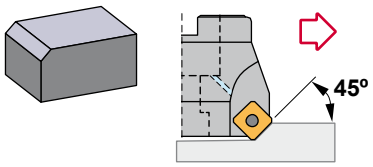




Characteristics:
Super positive face milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1748.93 45°

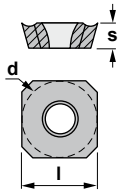
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1748.93.050 | 4 | 50 | 62 | 40 | 22 | 20 | 6 | SE.. 1204.. | 0,350 |
| 1748.93.063 | 5 | 63 | 75 | 50 | 22 | 20 | 6 | SE.. 1204.. | 0,800 |
| 1748.93.080 | 6 | 80 | 92 | 50 | 27 | 22 | 6 | SE.. 1204.. | 1,150 |
| 1748.93.100 | 6 | 100 | 112 | 50 | 32 | 25 | 6 | SE.. 1204.. | 1,700 |
| 1748.93.125 | 7 | 125 | 132 | 63 | 40 | 30 | 6 | SE.. 1204.. | 2,750 |
| 1748.90.160 | 8 | 160 | 172 | 63 | 40 | 30 | 6 | SE.. 1204.. | 4,600 |
| 1748.90.200 | 10 | 200 | 212 | 63 | 60 | 40 | 6 | SE.. 1204.. | 6,600 |

| Reference Bezeichnung | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|
| 1748.93.050 | 1550 | 5520 | - | 912,10 | - | 4.0 |
| 1748.93.063 | 1550 | 5520 | - | 912,10 | - | 4.0 |
| 1748.93.080 | 1550 | 5520 | - | 912,12 | - | 4.0 |
| 1748.93.100 | 1550 | - | 5620 | - | - | 4.0 |
| 1748.93.125 | 1550 | - | 5620 | - | - | 4.0 |
| 1748.90.160 | 1550 | - | 5620 | 912,52 | 40 | 4.0 |
| 1748.90.200 | 1550 | - | 5620 | 912,56 | 50 | 4.0 |

## SE..

Square positive inserts with 20° clearance.
Vierkantige positive Wendeschneidplatten mit 20° Freiwinkel. F17-18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204.. | 12,70 | 4,76 | 12,70 |




SEHT



SEHT-AL



SEHW



SEMT

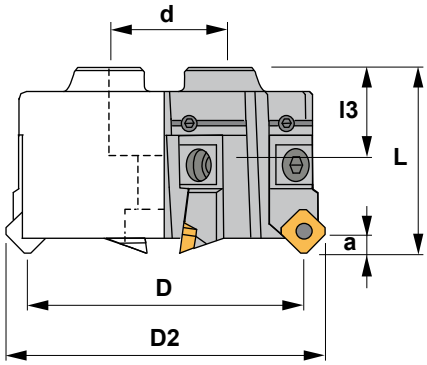




Characteristics:

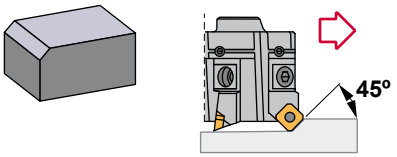
Super positive face milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.

It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften:

Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt. Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1748.99 45°

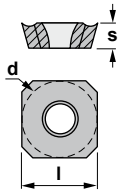
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1748.99.160 | 10 | 160 | 63 | 40 | 30 | 6 | SE.. 1204.. | 5,450 |
| 1748.99.200 | 12 | 200 | 63 | 60 | 40 | 6 | SE.. 1204.. | 9,000 |
| 1748.99.250 | 16 | 250 | 63 | 60 | 40 | 6 | SE.. 1204.. | 14,250 |
| 1748.99.315 | 20 | 315 | 63 | 60 | 40 | 6 | SE.. 1204.. | 31,000 |
| 1748.99.400 | 22 | 400 | 63 | 60 | 40 | 6 | SE.. 1204.. | 47,500 |
| 1748.99.500 | 28 | 500 | 63 | 60 | 40 | 6 | SE.. 1204.. | 85,000 |

| Reference Bezeichnung | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|
| 1748.99.160 | 1550 | 5620 | 6748 | 1788 | 1460 | 40 | 4.0 |
| 1748.99.200 | 1550 | 5620 | 6748 | 1788 | 1460 | 50 | 4.0 |
| 1748.99.250 | 1550 | 5620 | 6748 | 1788 | 1460 | 50 | 4.0 |
| 1748.99.315 | 1550 | 5620 | 6748 | 1788 | 1460 | 50/60 | 4.0 |
| 1748.99.400 | 1550 | 5620 | 6748 | 1788 | 1460 | 50/60 | 4.0 |
| 1748.99.500 | 1550 | 5620 | 6748 | 1788 | 1460 | 50/60 | 4.0 |

## SE..

Square positive inserts with 20° clearance.
Vierkantige positive Wendeschneidplatten mit 20° Freiwinkel. F17-18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204.. | 12,70 | 4,76 | 12,70 |




SEHT



SEHT-AL



SEHW

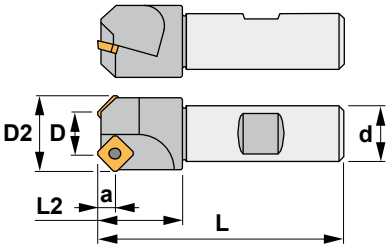


SEMT

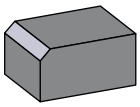


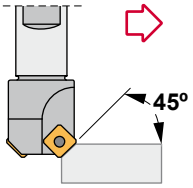


Characteristics:
Super positive face milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt. Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 1748.07

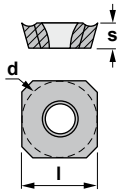
| Reference Bezeichnung | | D | D2 | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1748.07.032 | 2 | 32 | 44 | 125 | 40 | 32 | 6 | SE.. 1204.. | 0,800 |
| 1748.07.040 | 3 | 40 | 52 | 125 | 40 | 32 | 6 | SE.. 1204.. | 0,900 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1748.07.032 | 1550 | 5520 | 4.0 |
| 1748.07.040 | 1550 | 5520 | 4.0 |

## SE..

Square positive inserts with 20° clearance. Vierkantige positive Wendeschneidplatten mit 20° Freiwinkel. F17-18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204.. | 12,70 | 4,76 | 12,70 |




SEHT



SEHT-AL



SEHW

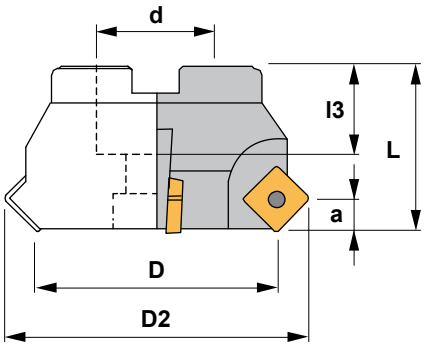


SEMT

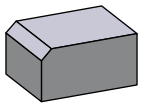


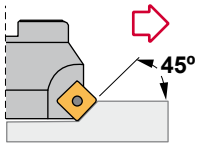


Characteristics:
Positive face chamfering milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt. Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 0744.90 45°

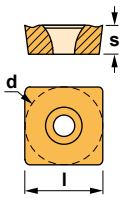
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0744.90.040 | 4 | 40 | 57 | 40 | 16 | 18 | 7 | SC.. 1204.. | 0,250 |
| 0744.90.050 | 4 | 50 | 67 | 40 | 22 | 20 | 7 | SC.. 1204.. | 0,400 |
| 0744.90.063 | 5 | 63 | 80 | 50 | 27 | 22 | 7 | SC.. 1204.. | 0,850 |
| 0744.90.080 | 6 | 80 | 97 | 50 | 32 | 25 | 7 | SC.. 1204.. | 1,300 |
| 0744.90.100 | 7 | 100 | 117 | 50 | 40 | 30 | 7 | SC.. 1204.. | 2,050 |
| 0744.90.125 | 8 | 125 | 142 | 63 | 40 | 30 | 7 | SC.. 1204.. | 3,250 |
| 0744.90.160 | 9 | 160 | 177 | 63 | 40 | 30 | 7 | SC.. 1204.. | 4,850 |
| 0744.90.200 | 11 | 200 | 217 | 63 | 60 | 40 | 7 | SC.. 1204.. | 8,350 |

| Reference Bezeichnung | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|
| 0744.90.040 | 1250 | 5520 | - | 1058 | - | 4.0 |
| 0744.90.050 | 1250 | 5520 | - | 912,10 | - | 4.0 |
| 0744.90.063 | 1250 | 5520 | - | 912,12 | - | 4.0 |
| 0744.90.080 | 1250 | 5520 | - | 912,16 | - | 4.0 |
| 0744.90.100 | 1250 | - | 5620 | - | - | 4.0 |
| 0744.90.125 | 1250 | - | 5620 | - | - | 4.0 |
| 0744.90.160 | 1250 | - | 5620 | 912,52 | 40 | 4.0 |
| 0744.90.200 | 1250 | - | 5620 | 912,56 | 50 | 4.0 |

## SC..

Square positive inserts with 7° clearance. F17
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |




SCGT-AL



SCMT-39

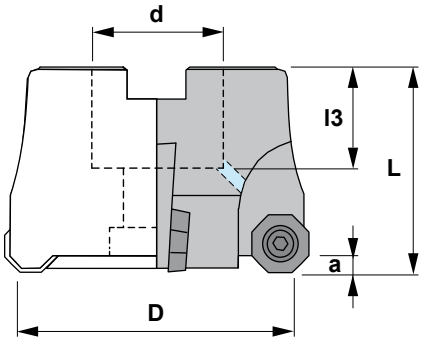


SCMW

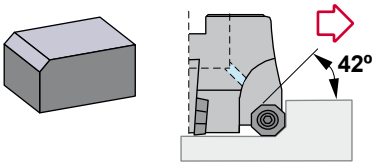




Characteristics:
Multipurpose face milling cutter with 42° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften: Multifunktions-Planfräser mit 42° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub ineiner Maschine mit beschränkter Leistungerlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1845.93 42°

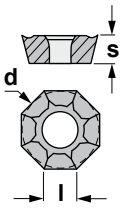
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1845.93.040 | 4 | 40 | 40 | 16 | 18 | 3 | ODMT 0404.. | 0,250 |
| 1845.93.050 | 4 | 50 | 40 | 22 | 20 | 3 | ODMT 0404.. | 0,350 |
| 1845.93.063 | 5 | 63 | 50 | 27 | 22 | 3 | ODMT 0404.. | 0,700 |
| 1845.93.080 | 6 | 80 | 50 | 32 | 25 | 3 | ODMT 0404.. | 1,200 |
| 1845.93.100 | 7 | 100 | 50 | 40 | 30 | 3 | ODMT 0404.. | 1,850 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1845.93.040 | 1240 | 5515 | - | 1058 | 3.0 |
| 1845.93.050 | 1240 | 5515 | - | 912,10 | 3.0 |
| 1845.93.063 | 1240 | 5515 | - | 912,12 | 3.0 |
| 1845.93.080 | 1240 | 5515 | - | 912,16 | 3.0 |
| 1845.93.100 | 1240 | - | 5615 | - | 3.0 |

## ODMT

Octogonal positive insert with 15° clearance. F15
Achtkantige positive Wendeschneidplatte mit 15° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ODMT 0404.. | 4,00 | 4,76 | 12,70 |

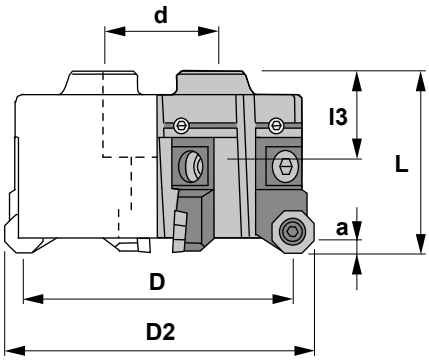



ODMT

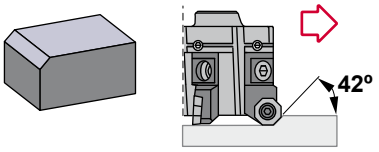




Characteristics:
Multipurpose face milling cutter with 42° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften: Multifunktions-Planfräser mit 42° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1845.99 42°

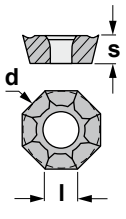
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1845.99.160 | 10 | 160 | 63 | 40 | 30 | 3 | ODMT 0404.. | 5,450 |
| 1845.99.200 | 12 | 200 | 63 | 60 | 40 | 3 | ODMT 0404.. | 9,000 |
| 1845.99.250 | 16 | 250 | 63 | 60 | 40 | 3 | ODMT 0404.. | 14,250 |
| 1845.99.315 | 20 | 315 | 63 | 60 | 40 | 3 | ODMT 0404.. | 31,000 |
| 1845.99.400 | 22 | 400 | 63 | 60 | 40 | 3 | ODMT 0404.. | 47,500 |
| 1845.99.500 | 28 | 500 | 63 | 60 | 40 | 3 | ODMT 0404.. | 85,000 |

| Reference Bezeichnung | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|
| 1845.99.160 | 1240 | 5615 | 6845 | 1788 | 1460 | 40 | 3.0 |
| 1845.99.200 | 1240 | 5615 | 6845 | 1788 | 1460 | 50 | 3.0 |
| 1845.99.250 | 1240 | 5615 | 6845 | 1788 | 1460 | 50 | 3.0 |
| 1845.99.315 | 1240 | 5615 | 6845 | 1788 | 1460 | 50/60 | 3.0 |
| 1845.99.400 | 1240 | 5615 | 6845 | 1788 | 1460 | 50/60 | 3.0 |
| 1845.99.500 | 1240 | 5615 | 6845 | 1788 | 1460 | 50/60 | 3.0 |

## ODMT

Octogonal positive insert with 15° clearance.
Achtkantige positive Wendeschneidplatte mit 15° Freiwinkel. F15

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ODMT 0404.. | 4,00 | 4,76 | 12,70 |

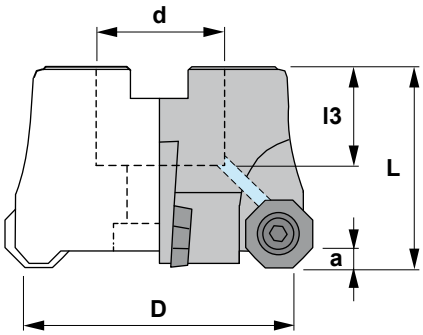



ODMT

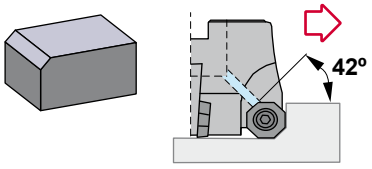




Characteristics:
Multipurpose face milling cutter with 42° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften: Multifunktions-Planfräser mit 42° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1855.93 42°

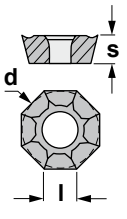
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1855.93.063 | 5 | 63 | 50 | 27 | 22 | 4 | ODM.. 0605.. | 0,850 |
| 1855.93.080 | 6 | 80 | 50 | 32 | 25 | 4 | ODM.. 0605.. | 1,200 |
| 1855.93.100 | 7 | 100 | 50 | 40 | 30 | 4 | ODM.. 0605.. | 1,850 |
| 1855.93.125 | 8 | 125 | 63 | 40 | 30 | 4 | ODM.. 0605.. | 3,250 |
| 1855.90.160 | 10 | 160 | 63 | 40 | 30 | 4 | ODM.. 0605.. | 4,600 |
| 1855.90.200 | 12 | 200 | 63 | 60 | 40 | 4 | ODM.. 0605.. | 9,100 |

| Reference Bezeichnung | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|
| 1855.93.063 | 1550 | 5520 | - | 912,12 | - | 4.0 |
| 1855.93.080 | 1550 | 5520 | - | 912,17 | - | 4.0 |
| 1855.93.100 | 1550 | - | 5620 | - | - | 4.0 |
| 1855.93.125 | 1550 | - | 5620 | - | - | 4.0 |
| 1855.90.160 | 1550 | - | 5620 | 912,52 | 40 | 4.0 |
| 1855.90.200 | 1550 | - | 5620 | 912,56 | 50 | 4.0 |

## ODM..

Octogonal positive inserts with 15° clearance.
Achtkantige positive Wendeschneidplatten mit 15° Freiwinkel. F15

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ODM.. 0605.. | 6,00 | 5,55 | 16,00 |




ODMT

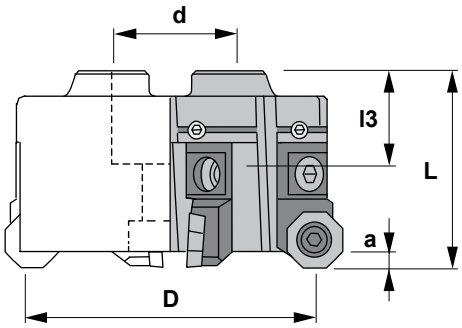


ODMW

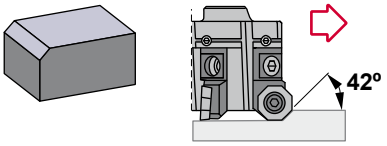




Characteristics:
Multipurpose face milling cutter with 42° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften: Multifunktions-Planfräser mit 42° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1855.99 42°

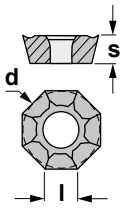
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1855.99.160 | 10 | 160 | 63 | 40 | 30 | 4 | ODM.. 0605.. | 5,000 |
| 1855.99.200 | 12 | 200 | 63 | 60 | 40 | 4 | ODM.. 0605.. | 7,300 |
| 1855.99.250 | 16 | 250 | 63 | 60 | 40 | 4 | ODM.. 0605.. | 12,050 |
| 1855.99.315 | 20 | 315 | 63 | 60 | 40 | 4 | ODM.. 0605.. | 31,000 |
| 1855.99.400 | 22 | 400 | 63 | 60 | 40 | 4 | ODM.. 0605.. | 47,500 |
| 1855.99.500 | 28 | 500 | 63 | 60 | 40 | 4 | ODM.. 0605.. | 85,000 |

| Reference Bezeichnung | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|
| 1855.99.160 | 1550 | 5620 | 6846 | 1788 | 1460 | 40 | 4.0 |
| 1855.99.200 | 1550 | 5620 | 6846 | 1788 | 1460 | 50 | 4.0 |
| 1855.99.250 | 1550 | 5620 | 6846 | 1788 | 1460 | 50 | 4.0 |
| 1855.99.315 | 1550 | 5620 | 6846 | 1788 | 1460 | 50/60 | 4.0 |
| 1855.99.400 | 1550 | 5620 | 6846 | 1788 | 1460 | 50/60 | 4.0 |
| 1855.99.500 | 1550 | 5620 | 6846 | 1788 | 1460 | 50/60 | 4.0 |

## ODM..

Octogonal positive inserts with 15° clearance.
Achtkantige positive Wendeschneidplatten mit 15° Freiwinkel. F15

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ODM.. 0605.. | 6,00 | 5,55 | 16,00 |




ODMT



ODMW

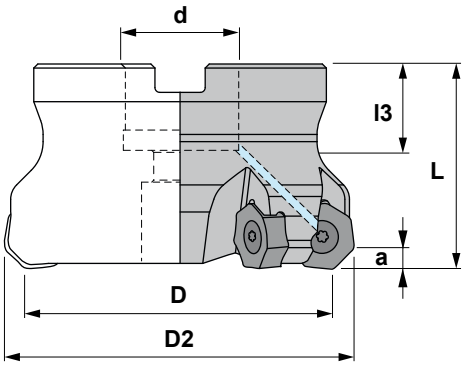




Characteristics:

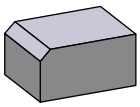
Positive face chamfering milling cutter with 45º entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.

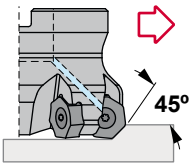
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften:

Extra positiver Planfräser mit 45º Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt. Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 1852.93 45º

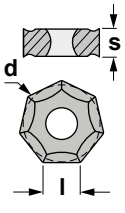
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1852.93.063 | 5 | 63 | 74 | 50 | 22 | 22 | 5.5 | NNMU 2007.. | 0,800 |
| 1852.93.080 | 6 | 80 | 91 | 50 | 27 | 25 | 5.5 | NNMU 2007.. | 1,150 |
| 1852.93.100 | 7 | 100 | 111 | 50 | 32 | 26 | 5.5 | NNMU 2007.. | 1,700 |
| 1852.93.125 | 8 | 125 | 136 | 63 | 40 | 30 | 5.5 | NNMU 2007.. | 2,750 |
| 1852.90.160 | 10 | 160 | 171 | 63 | 40 | 30 | 5.5 | NNMU 2007.. | 4,600 |

| Reference Bezeichnung | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|
| 1852.93.063 | 1250 | 5520 | - | 912,10 | - | 4.0 |
| 1852.93.080 | 1250 | 5520 | - | 912,12 | - | 4.0 |
| 1852.93.100 | 1250 | - | 5620 | 912,16 | - | 4.0 |
| 1852.93.125 | 1250 | - | 5620 | - | - | 4.0 |
| 1852.90.160 | 1250 | - | 5620 | 912,52 | 40 | 4.0 |

## NNM..

Heptagonal positive insert with 15º clearance.
Siebeneckige positive Wendeschneidplatte mit 15º Freiwinkel. F15

| Reference / Bez. | l | s | d |
|---|---|---|---|
| NNMU 2007.. | 8,2 | 7,25 | 20,00 |

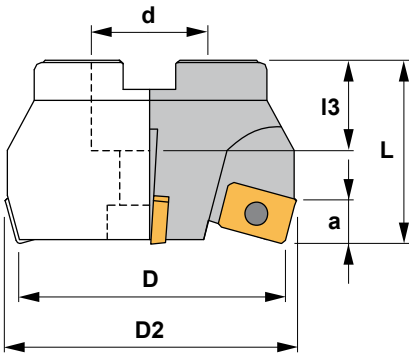



NNM..

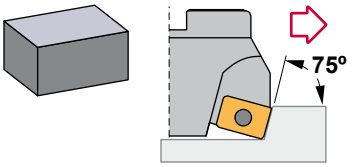




Characteristics:
Positive milling cutter with 75° entering angle.
Recommended for manual machines as well as for C.N.C. machines.
It allows to use the edges of APMT and APKT inserts that are not used currently.




Eigenschaften: Positiver Fräser mit 75° Einstellwinkel. Für allgemeine Anwendungen in manuellen und CNC-Maschinen geeignet. Der Fräser schneidet mit den Schnittkanten der Wendeschneidplatten APMT und APKT, die normalerweise nicht benutzt werden.




# 1430.90 75°

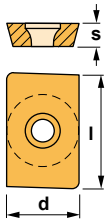
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1430.90.050 | 3 | 50 | 54 | 40 | 16 | 18 | 7 | AP.. 1604.. | 0,350 |
| 1430.90.063 | 4 | 63 | 67 | 50 | 27 | 22 | 7 | AP.. 1604.. | 0,700 |
| 1430.90.080 | 5 | 80 | 84 | 50 | 32 | 25 | 7 | AP.. 1604.. | 1,100 |
| 1430.90.100 | 6 | 100 | 104 | 50 | 40 | 30 | 7 | AP.. 1604.. | 1,900 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1430.90.050 | 1240 | 5515 | - | 1058 | 3.0 |
| 1430.90.063 | 1240 | 5515 | - | 912,12 | 3.0 |
| 1430.90.080 | 1240 | 5515 | - | 912,17 | 3.0 |
| 1430.90.100 | 1240 | - | 5615 | 912,20 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT

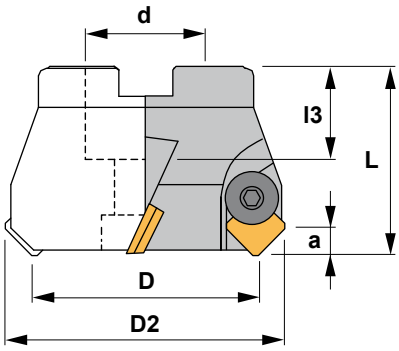


APMT

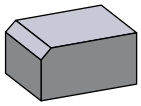


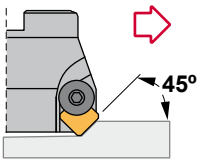


Characteristics:
Super positive milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on hard steels, alloyed steels, stainless steels, refractory casts and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 0748.90 45°

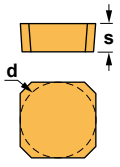
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0748.90.050 | 4 | 50 | 63 | 40 | 22 | 20 | 6 | SEK.. 1203.. | 0,350 |
| 0748.90.063 | 5 | 63 | 76 | 50 | 22 | 20 | 6 | SEK.. 1203.. | 0,850 |
| 0748.90.080 | 6 | 80 | 93 | 50 | 27 | 22 | 6 | SEK.. 1203.. | 1,200 |
| 0748.90.100 | 6 | 100 | 113 | 50 | 32 | 25 | 6 | SEK.. 1203.. | 1,850 |
| 0748.90.125 | 7 | 125 | 138 | 63 | 40 | 30 | 6 | SEK.. 1203.. | 3,250 |
| 0748.90.160 | 8 | 160 | 173 | 63 | 40 | 30 | 6 | SEK.. 1203.. | 4,600 |
| 0748.90.200 | 10 | 200 | 213 | 63 | 60 | 40 | 6 | SEK.. 1203.. | 9,100 |

| Reference Bezeichnung | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|
| 0748.90.050 | 1006L | 2063 | 3010 | 4016 | 5004 | 912,10 | - | 3.5 |
| 0748.90.063 | 1006L | 2063 | 3010 | 4012 | 5004 | 912,10 | - | 3.5 |
| 0748.90.080 | 1006L | 2063 | 3010 | 4012 | 5004 | 912,12 | - | 3.5 |
| 0748.90.100 | 1006L | 2063 | 3010 | 4012 | 5004 | 912,17 | - | 3.5 |
| 0748.90.125 | 1006L | 2063 | 3010 | 4012 | 5004 | - | - | 3.5 |
| 0748.90.160 | 1006L | 2063 | 3010 | 4012 | 5004 | 912,52 | 40 | 3.5 |
| 0748.90.200 | 1006L | 2063 | 3010 | 4012 | 5004 | 912,56 | 50 | 3.5 |

## SEK..

Square positive inserts with 20° clearance.
Vierkantige positive Wendeschneidplatten mit 20° Freiwinkel. F18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SEK.. 1203.. | 12,70 | 3,18 | 12,70 |




SEKN

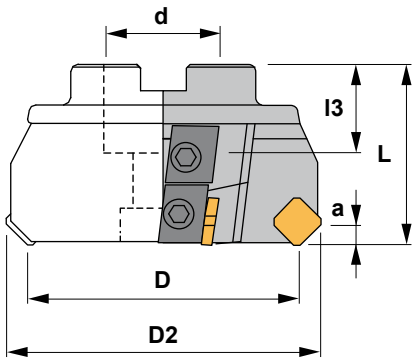


SEKR

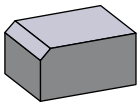


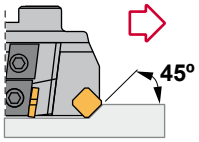


Characteristics:
Super positive milling cutter with 45° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on hard steels, alloyed steels, stainless steels, refractory casts and aluminium alloys.




Eigenschaften:
Extra positiver Planfräser mit 45° Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.
Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 0748.99 45°

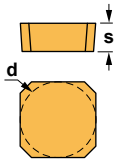
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0748.99.080 | 6 | 80 | 92 | 50 | 27 | 22 | 6 | SEK.. 1203.. | 1,450 |
| 0748.99.100 | 8 | 100 | 112 | 50 | 32 | 25 | 6 | SEK.. 1203.. | 2,250 |
| 0748.99.125 | 8 | 125 | 137 | 63 | 40 | 30 | 6 | SEK.. 1203.. | 3,750 |
| 0748.99.160 | 10 | 160 | 172 | 63 | 40 | 30 | 6 | SEK.. 1203.. | 5,000 |
| 0748.99.200 | 12 | 200 | 212 | 63 | 60 | 40 | 6 | SEK.. 1203.. | 7,300 |
| 0748.99.250 | 16 | 250 | 262 | 63 | 60 | 40 | 6 | SEK.. 1203.. | 12,050 |

| Reference Bezeichnung | | | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0748.99.080 | 1077 | 5520 | - | 6488 | 6489 | 6918 | 1460 | 912,12 | - | 4.0 |
| 0748.99.100 | 1077 | - | 5620 | 6488 | 6489 | 6918 | 1460 | 912,17 | - | 4.0 |
| 0748.99.125 | 1077 | - | 5620 | 6488 | 6489 | 6918 | 1460 | - | - | 4.0 |
| 0748.99.160 | 1077 | - | 5620 | 6488 | 6489 | 6918 | 1460 | 912,52 | 40 | 4.0 |
| 0748.99.200 | 1077 | - | 5620 | 6488 | 6489 | 6918 | 1460 | 912,56 | 50 | 4.0 |
| 0748.99.250 | 1077 | - | 5620 | 6488 | 6489 | 6918 | 1460 | 912,56 | 50 | 4.0 |

## SEK..

Square positive inserts with 20° clearance.
Vierkantige positive Wendeschneidplatten mit 20° Freiwinkel. F18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SEK.. 1203.. | 12,70 | 3,18 | 12,70 |




SEKN



SEKR

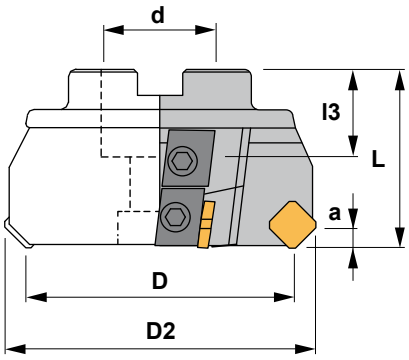




Characteristics:

Super positive milling cutter with 45º entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.

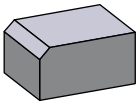
It works well on hard steels, alloyed steels, stainless steels, refractory casts and aluminium alloys.

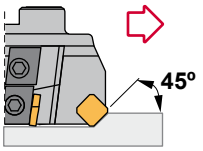



Eigenschaften:

Extra positiver Planfräser mit 45º Einstellwinkel, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.

Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.






# 0758.99 45º

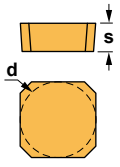
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0758.99.080 | 6 | 80 | 98 | 50 | 27 | 22 | 9 | SEK.. 1504.. | 1,350 |
| 0758.99.100 | 8 | 100 | 118 | 50 | 32 | 25 | 9 | SEK.. 1504.. | 2,200 |
| 0758.99.125 | 8 | 125 | 143 | 63 | 40 | 30 | 9 | SEK.. 1504.. | 3,550 |
| 0758.99.160 | 10 | 160 | 178 | 63 | 40 | 30 | 9 | SEK.. 1504.. | 5,450 |
| 0758.99.200 | 12 | 200 | 218 | 63 | 60 | 40 | 9 | SEK.. 1504.. | 9,050 |
| 0758.99.250 | 16 | 250 | 268 | 63 | 60 | 40 | 9 | SEK.. 1504.. | 13,250 |

| Reference Bezeichnung | | | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0758.99.080 | 1077 | 5520 | - | 6490 | 6491 | 6920 | 1460 | 912,12 | - | 4.0 |
| 0758.99.100 | 1077 | - | 5620 | 6490 | 6491 | 6920 | 1460 | 912,17 | - | 4.0 |
| 0758.99.125 | 1077 | - | 5620 | 6490 | 6491 | 6920 | 1460 | - | - | 4.0 |
| 0758.99.160 | 1077 | - | 5620 | 6490 | 6491 | 6920 | 1460 | 912,52 | 40 | 4.0 |
| 0758.99.200 | 1077 | - | 5620 | 6490 | 6491 | 6920 | 1460 | 912,56 | 50 | 4.0 |
| 0758.99.250 | 1077 | - | 5620 | 6490 | 6491 | 6920 | 1460 | 912,56 | 50 | 4.0 |

## SEK..

Square positive inserts with 20º clearance.
Vierkantige positive Wendeschneidplatten mit 20º Freiwinkel. F18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SEK.. 1504.. | 15,88 | 4,76 | 15,88 |




SEKN

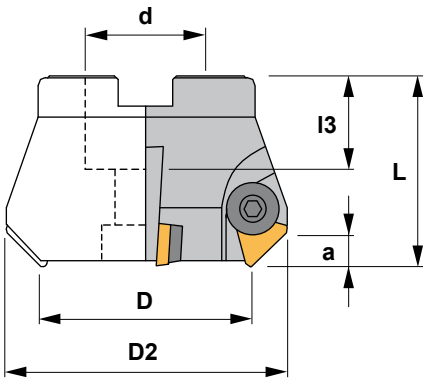


SEKR

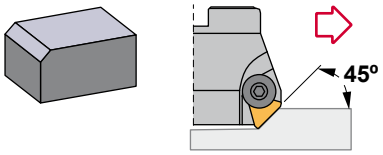




Characteristics:
General purpose positive milling cutter with 45° entering angle.
Recommended for manual machines as well as for C.N.C. machines.




Eigenschaften:
Positiver Fräser mit 45° Einstellwinkel.
Für allgemeine Anwendungen in manuellen und CNC-Maschinen geeignet.




# 0640.90 45°

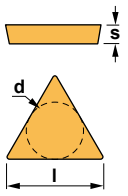
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0640.90.032 | 3 | 32 | 62 | 50 | 22 | 20 | 11 | TPUN 2204.. | 0,450 |
| 0640.90.040 | 3 | 40 | 70 | 50 | 27 | 22 | 11 | TPUN 2204.. | 0,700 |
| 0640.90.050 | 4 | 50 | 80 | 50 | 27 | 22 | 11 | TPUN 2204.. | 0,800 |
| 0640.90.063 | 4 | 63 | 93 | 50 | 32 | 25 | 11 | TPUN 2204.. | 1,300 |
| 0640.90.080 | 5 | 80 | 110 | 50 | 40 | 30 | 11 | TPUN 2204.. | 1,800 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| 0640.90.032 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,10 | 4.0 |
| 0640.90.040 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,12 | 4.0 |
| 0640.90.050 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,12 | 4.0 |
| 0640.90.063 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,16 | 4.0 |
| 0640.90.080 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,20 | 4.0 |

## TPUN

Triangular positive insert with 11° clearance.
Dreikantige positive Wendeschneidplatte mit 11° Freiwinkel. F22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TPUN 2204.. | 22,00 | 4,76 | 12,70 |

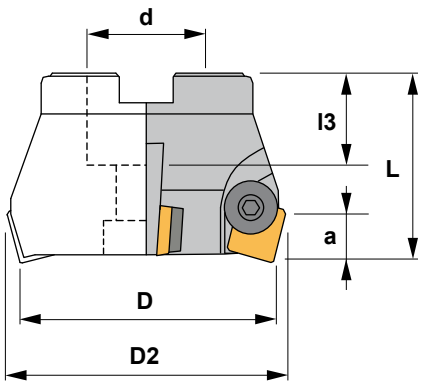



TPUN

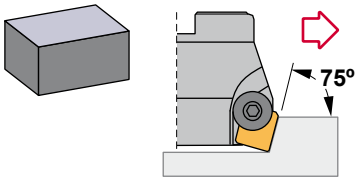




Characteristics:
General purpose positive milling cutter with 75° entering angle. Its strong inserts accept high cutting depths and high feed per teeth.
Recommended for manual machines as well as for C.N.C. machines.




Eigenschaften:
Positiver Planfräser mit 75° Einstellwinkel für allgemeine Anwendungen. Seine starken Wendeschneidplatten akzeptieren einen hohen Vorschub pro Zahn.
Für manuelle und CNC-Maschinen geeignet.




# 0440.90 75°

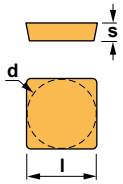
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0440.90.040 | 3 | 40 | 46 | 40 | 16 | 18 | 9 | SP.. 1203.. | 0,250 |
| 0440.90.050 | 3 | 50 | 56 | 40 | 22 | 20 | 9 | SP.. 1203.. | 0,300 |
| 0440.90.063 | 4 | 63 | 69 | 50 | 27 | 22 | 9 | SP.. 1203.. | 0,700 |
| 0440.90.080 | 5 | 80 | 86 | 50 | 32 | 25 | 9 | SP.. 1203.. | 1,100 |
| 0440.90.100 | 6 | 100 | 106 | 50 | 40 | 30 | 9 | SP.. 1203.. | 1,800 |
| 0440.90.125 | 6 | 125 | 131 | 63 | 40 | 30 | 9 | SP.. 1203.. | 3,500 |
| 0440.90.160 | 7 | 160 | 166 | 63 | 40 | 30 | 9 | SP.. 1203.. | 5,600 |
| 0440.90.200 | 8 | 200 | 206 | 63 | 60 | 40 | 9 | SP.. 1203.. | 9,150 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| 0440.90.040 | 1006 | 5004 | 2066 | - | - | 1058 | 3.5 |
| 0440.90.050 | 1006 | 5004 | 2066 | 3012 | 4012 | 912,10 | 3.5 |
| 0440.90.063 | 1006 | 5004 | 2066 | 3012 | 4012 | 912,12 | 3.5 |
| 0440.90.080 | 1006 | 5004 | 2066 | 3012 | 4012 | 912,17 | 3.5 |
| 0440.90.100 | 1006 | 5004 | 2066 | 3012 | 4012 | 912,20 | 3.5 |
| 0440.90.125 | 1006 | 5004 | 2066 | 3012 | 4012 | - | 3.5 |
| 0440.90.160 | 1006 | 5004 | 2066 | 3012 | 4012 | 912,52 | 3.5 |
| 0440.90.200 | 1006 | 5004 | 2066 | 3012 | 4012 | 912,56 | 3.5 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. F19-20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |




SPKN



SPKR

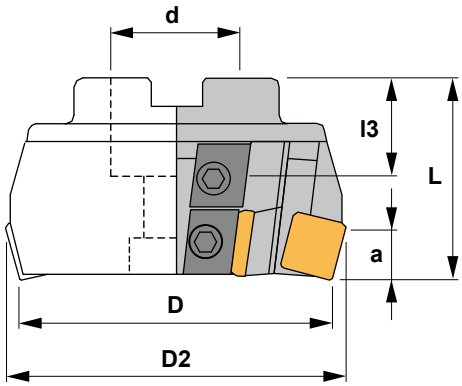


SPUN

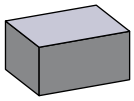


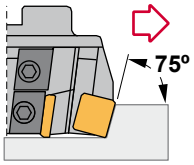


Characteristics:
General purpose positive milling cutter with 75° entering angle.
Recommended for manual machines as well as for C.N.C. machines. It is a good choice for economical machining since the SPUN type insert can be fitted.




Eigenschaften:
Positiver Planfräser mit 75° Einstellwinkel für allgemeine Anwendungen.
Für manuelle und CNC-Maschinen geeignet. Es ist eine gute Wahl für eine wirtschaftliche Bearbeitung, da man die SPUN-Wendeschneidplatten verwenden kann.






# 0440.99 75°

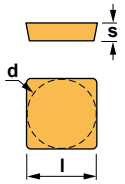
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0440.99.080 | 5 | 80 | 86 | 50 | 27 | 22 | 9 | SP.. 1203.. | 1,250 |
| 0440.99.100 | 7 | 100 | 106 | 50 | 32 | 25 | 9 | SP.. 1203.. | 2,000 |
| 0440.99.125 | 8 | 125 | 131 | 63 | 40 | 30 | 9 | SP.. 1203.. | 3,500 |
| 0440.99.160 | 10 | 160 | 166 | 63 | 40 | 30 | 9 | SP.. 1203.. | 5,750 |
| 0440.99.200 | 12 | 200 | 206 | 63 | 60 | 40 | 9 | SP.. 1203.. | 9,000 |
| 0440.99.250 | 16 | 250 | 256 | 63 | 60 | 40 | 9 | SP.. 1203.. | 14,200 |
| 0440.99.315 | 20 | 315 | 321 | 63 | 60 | 40 | 9 | SP.. 1203.. | 31,000 |
| 0440.99.400 | 26 | 400 | 406 | 63 | 60 | 40 | 9 | SP.. 1203.. | 47,500 |
| 0440.99.500 | 34 | 500 | 506 | 63 | 60 | 40 | 9 | SP.. 1203.. | 85,000 |

| Reference Bezeichnung | | | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0440.99.080 | 1077 | 5520 | - | 6437 | 6438 | 6914 | 1460 | 912,12 | - | 4.0 |
| 0440.99.100 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,20 | - | 4.0 |
| 0440.99.125 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | - | - | 4.0 |
| 0440.99.160 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,52 | 40 | 4.0 |
| 0440.99.200 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,56 | 50 | 4.0 |
| 0440.99.250 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,56 | 50 | 4.0 |
| 0440.99.315 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,56 | 50/60 | 4.0 |
| 0440.99.400 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,56 | 50/60 | 4.0 |
| 0440.99.500 | 1077 | - | 5620 | 6437 | 6438 | 6914 | 1460 | 912,56 | 50/60 | 4.0 |

## SP..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. F19-20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SP.. 1203.. | 12,70 | 3,18 | 12,70 |




SPKN



SPKR



SPUN

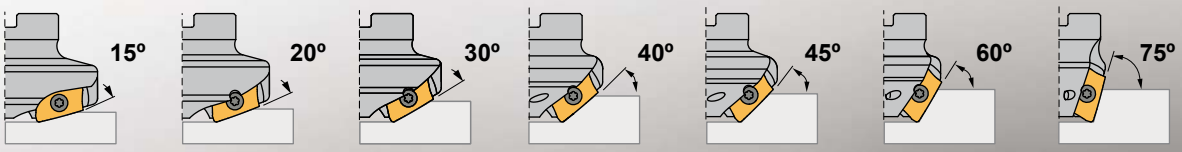


# Chamfer-Plus

The new Chamfer-Plus line is designed to provide high metal removal rates while reducing production costs. The new chamfering cutters use the same inserts and hardware as the Mill-Plus square shoulder mills, allowing to increase the versatility of both cutters without additional spare parts.

Die neue Chamfer-Plus Serie wurde entwickelt, um hohe Spanabfuhr-Raten zu bieten und gleichzeitig die Produktionskosten zu reduzieren. Die neuen Anfasfräser verwenden dieselben Wendeschneidplatten und Ersatzteilen als die Mill-Plus Eckfräser, wodurch die Vielseitigkeit der beiden Fräser ohne zusätzliche Ersatzteile erhöht wird.

## 1745.93 15-75º




## Features

- *Suitable for pre-welding operations*
- *High helix sharp cutting*
- *Exerts low force*
- *Two helical long cutting edges*
- *Screw clamping*

## Eigenschaften

- *Geeignet für Vorschweiß-Operationen*
- *Sehr scharfer spiralformiger Schnitt*
- *Übt geringe Schnittkraft aus*
- *Zwei spiralformige lange Schnittkanten*
- *Schraubenklemmung*

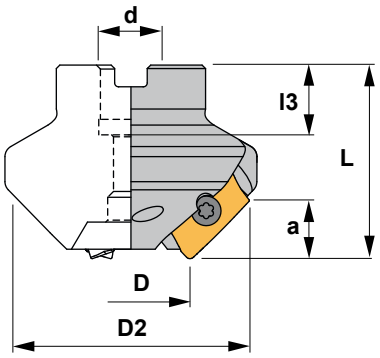


F



Characteristics:

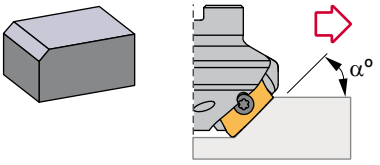
Super positive face chamfering milling cutter with 15 to 75° entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine. It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.




Eigenschaften:

Extra positiver Plan- und Anfasfräser mit einem Einstellwinkel von 15° bis 75°, der die Schnittkraft reduziert und einen schnellen Vorschub in einer Maschine mit beschränkter Leistung erlaubt.

Für Stahl, rostfreien Stahl, legierten Stahl, Guß und Aluminium-Legierungen empfohlen.




# 1745.93 15-75°

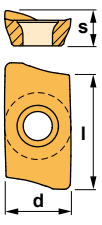
| Reference Bezeichnung | | D | D2 | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1745.93.032/15 | 3 | 32 | 71,7 | 50 | 22 | 20 | 5 | ADKT 2206.. | 1,074 |
| 1745.93.032/20 | 3 | 32 | 70,6 | 50 | 22 | 20 | 7 | ADKT 2206.. | 0,941 |
| 1745.93.032/30 | 3 | 32 | 67,6 | 50 | 22 | 20 | 10 | ADKT 2206.. | 0,803 |
| 1745.93.032/40 | 3 | 32 | 63,5 | 50 | 22 | 20 | 13 | ADKT 2206.. | 0,659 |
| 1745.93.032/45 | 3 | 32 | 61,1 | 50 | 16 | 18 | 14 | ADKT 2206.. | 0,538 |
| 1745.93.032/60 | 3 | 32 | 52,4 | 50 | 16 | 18 | 18 | ADKT 2206.. | 0,378 |
| 1745.93.032/75 | 3 | 32 | 42,8 | 50 | 16 | 18 | 20 | ADKT 2206.. | 0,258 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1745.93.032/15 | 1550 | 5520 | 912,10 | 4.0 |
| 1745.93.032/20 | 1550 | 5520 | 912,10 | 4.0 |
| 1745.93.032/30 | 1550 | 5520 | 912,10 | 4.0 |
| 1745.93.032/40 | 1550 | 5520 | 912,10 | 4.0 |
| 1745.93.032/45 | 1550 | 5520 | 1058 | 4.0 |
| 1745.93.032/60 | 1550 | 5520 | 1058 | 4.0 |
| 1745.93.032/75 | 1550 | 5520 | 1128 | 4.0 |

## ADKT

Parallelogram positive insert with 15° clearance.
Parallelogramme positive Wendeschneidplatte mit 15° Freiwinkel. F10

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ADKT 2206.. | 20,00 | 6,74 | 12,70 |



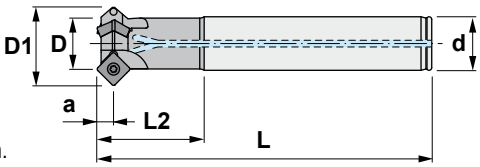

ADKT

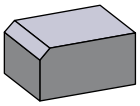


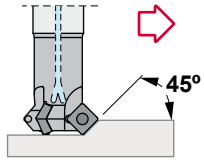


Characteristics:
Chamfering milling cutter for diversified manufacture.
Recommended for small conventional milling machines and machining centers.

Eigenschaften:
Anfasfräser für allgemeine Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.






# 0735.03 45°

| Reference Bezeichnung | | D | D1 | L | d | L2 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0735.03.008 | 1 | 8 | 19,3 | 100 | 16 | 30 | 6 | SDMT 09T3.. | 0,120 |
| 0735.03.016 | 2 | 16 | 27,5 | 100 | 20 | 30 | 6 | SDMT 09T3.. | 0,140 |
| 0735.03.020 | 3 | 20 | 31,5 | 125 | 25 | 40 | 6 | SDMT 09T3.. | 0,270 |

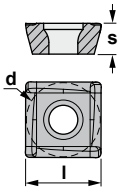
F

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0735.03.008 | 1430 | 5508 | 1.2 |
| 0735.03.016 | 1230 | 5508 | 1.2 |
| 0735.03.020 | 1230 | 5508 | 1.2 |

## SDMT

Square positive insert with 15° clearance.
Vierkantige positive Wendeschneidplatte mit 15° Freiwinkel. F17

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SDMT 09T3.. | 9,52 | 3,97 | 9,52 |

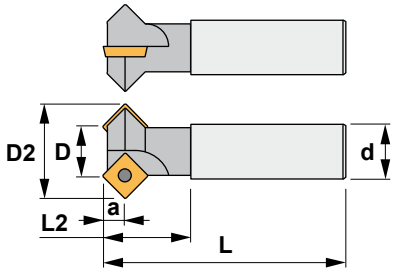



SDMT

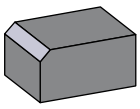


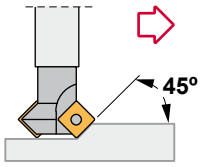


Characteristics:
Chamfering milling cutter for diversified manufacture.
Recommended for small conventional milling machines and machining centers.




Eigenschaften:
Anfasfräser für allgemeine Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.





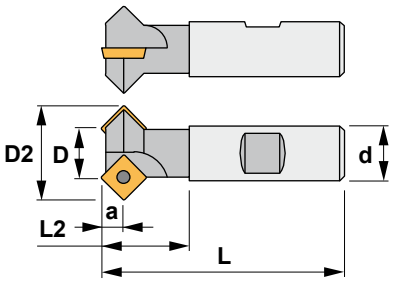

## 0740.00

| Reference Bezeichnung | | D | D2 | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0740.00.005 | 1 | 6,5 | 22 | 110 | 35 | 20 | 7 | SPM.. 1204.. | 0,250 |
| 0740.00.020 | 2 | 20,0 | 37 | 125 | 35 | 25 | 7 | SPM.. 1204.. | 0,450 |

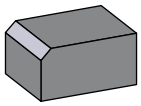
| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0740.00.005 | 1550 | 5520 | 4.0 |
| 0740.00.020 | 1550 | 5520 | 4.0 |

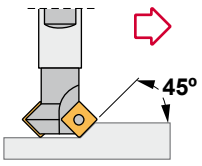


Characteristics:
Chamfering milling cutter for diversified manufacture.
Recommended for small conventional milling machines and machining centers.




Eigenschaften:
Anfasfräser für allgemeine Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.






## 0740.07

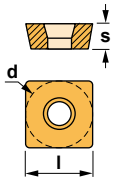
| Reference Bezeichnung | | D | D2 | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0740.07.005 | 1 | 6,5 | 22 | 110 | 35 | 25 | 7 | SPM.. 1204.. | 0,350 |
| 0740.07.020 | 2 | 20,0 | 37 | 110 | 35 | 25 | 7 | SPM.. 1204.. | 0,400 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0740.07.005 | 1550 | 5520 | 4.0 |
| 0740.07.020 | 1550 | 5520 | 4.0 |

## SPM..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. F19-20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |




SPMT



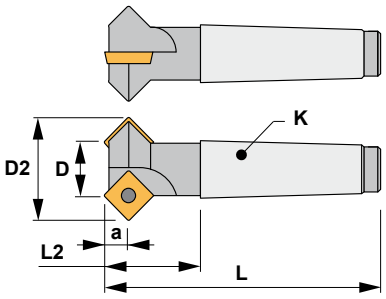
SPMW



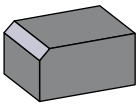
F

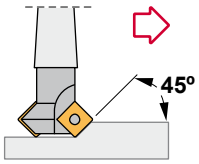


Characteristics:
Chamfering milling cutter for diversified manufacture.
Recommended for small conventional milling machines and machining centers.




Eigenschaften:
Anfasfräser für allgemeine Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.






# 0740.30

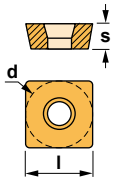
| Reference<br>Bezeichnung | | D | D2 | L | L2 | a | K | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0740.30.005 | 1 | 6,5 | 22 | 125 | 39 | 7 | MK3 | SPM.. 1204.. | 0,300 |
| 0740.30.020 | 2 | 20,0 | 37 | 125 | 39 | 7 | MK3 | SPM.. 1204.. | 0,300 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 0740.30.005 | 1550 | 5520 | 4.0 |
| 0740.30.020 | 1550 | 5520 | 4.0 |

## SPM..

Square positive inserts with 11° clearance.
Vierkantige positive Wendeschneidplatten mit 11° Freiwinkel. F19-20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |




SPMT

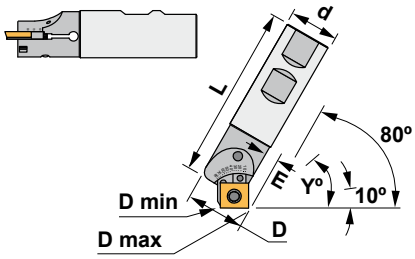


SPMW

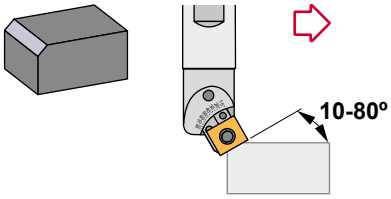




Characteristics:
Adjustable chamfering milling cutter for specific operations.
Recommended for small conventional milling machines and machining centers.



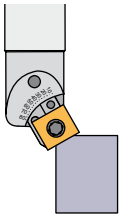
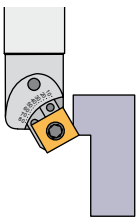
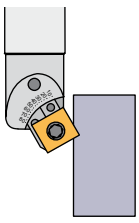

Eigenschaften:
Verstellbarer Winkelfräser zum Anfasen für spezifische Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.




# 1744.$^{0}_{2}$7

| Reference Bezeichnung | | D | d | L | Y | Dmin | Dmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1744.07.025 | 1 | 29 | 25 | 101 | 10° | 7,5 | 30,0 | SC.. 1204.. | 0,250 |
| 1744.27.025 | 1 | 29 | 25 | 176 | 20° | 10,0 | 32,0 | SC.. 1204.. | 0,500 |
| | | | | | 30° | 13,0 | 32,5 | | |
| | | | | | 40° | 16,5 | 33,5 | | |
| | | | | | 45° | 17,5 | 33,5 | | |
| | | | | | 50° | 19,0 | 33,5 | | |
| | | | | | 60° | 22,0 | 33,5 | | |
| | | | | | 70° | 24,5 | 32,5 | | |
| | | | | | 80° | 27,0 | 31,0 | | |

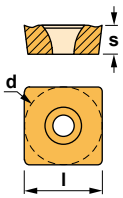
| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1744.07.025 | 6944 | 1244 | 1296 | 5520 | 4.0 |
| 1744.27.025 | 6944 | 1244 | 1296 | 5520 | 4.0 |

## SC..

Square positive inserts with 7° clearance.
Vierkantige positive Wendeschneidplatten mit 7° Freiwinkel. F17

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |




SCGT-AL



SCMT-39

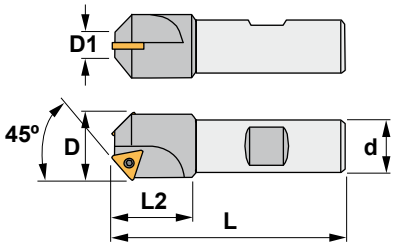


SCMW

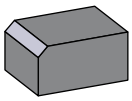


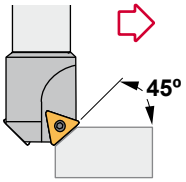


Characteristics:
Countersink milling cutter for specific operations.
Recommended for small conventional milling machines and machining centers.




Eigenschaften:
Senker für spezifische Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.





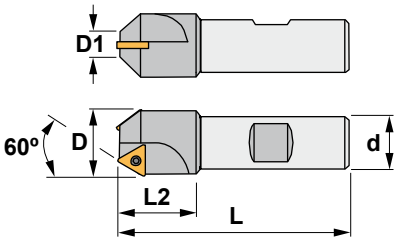

## 0624.07

| Reference Bezeichnung | | D1 | D | L | L2 | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0624.07.016 | 1 | 1,2 | 16 | 70 | 24 | 12 | TC.. 1102.. | 0,100 |
| 0624.07.021 | 2 | 8,5 | 21 | 90 | 30 | 20 | TC.. 1102.. | 0,150 |

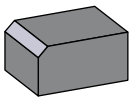
| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0624.07.016 | 1425 | 5507 | 0.9 |
| 0624.07.021 | 1425 | 5507 | 0.9 |

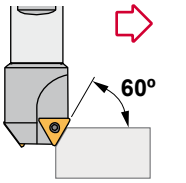


Characteristics:
Countersink milling cutter for specific operations.
Recommended for small conventional milling machines and machining centers.




Eigenschaften:
Senker für spezifische Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.






## 0724.07

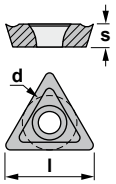
| Reference Bezeichnung | | D1 | D | L | L2 | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0724.07.016 | 1 | 5,4 | 16 | 70 | 24 | 12 | TC.. 1102.. | 0,100 |
| 0724.07.026 | 2 | 15,8 | 26 | 90 | 30 | 20 | TC.. 1102.. | 0,170 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0724.07.016 | 1425 | 5507 | 0.9 |
| 0724.07.026 | 1425 | 5507 | 0.9 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |




TCGT-AL



TCMT-39

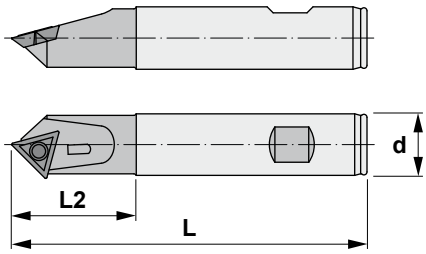


TCMW



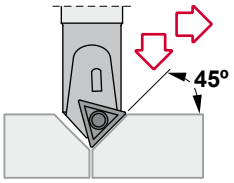


Characteristics:
Indexable spotting drill holders for spotting, engraving, grooving and chamfering on milling machines and machining centers.
Also for spotting and facing on CNC lathes.




Eigenschaften:
Fräser für Wendeschneidplatten zum Anbohren, Gravieren, Nutenstechen und Anfasen auf Fräsmaschinen und Bearbeitungscentren.
Auch zum Anbohren und Plansenken auf CNC-Drehmaschinen.






# 0634.37

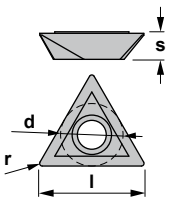
| Reference Bezeichnung | | L | L2 | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| 0634.37.000 | 1 | 115,5 | 40,5 | 20 | TCMX 16T3.. | 0,410 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0634.37.000 | 1440 | 5515 | 3.0 |

## TCMX

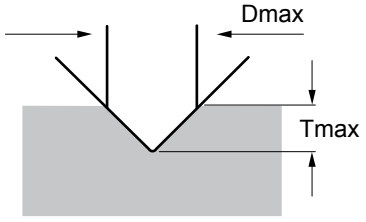
Triangular positive insert with 7° clearance.
Dreikantige positive Wendeschneidplatte mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| TCMX 16T300 | 9,52 | 3,18 | 6,35 | 0,4 |




TCMX

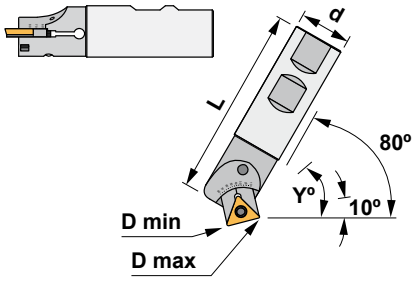




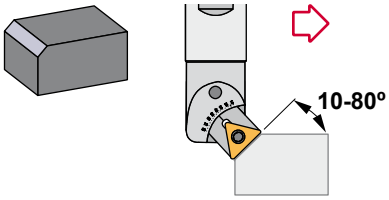

| Dmax | Tmax |
|---|---|
| 10 | 4 |



Characteristics:
Adjustable chamfering milling cutter for specific operations.
Recommended for small conventional milling machines and machining centers.




Eigenschaften:
Verstellbarer Winkelfräser zum Anfasen für spezifische Anwendungen.
Für kleine konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.




## 16$^{2}_{3}$4.$^{0}_{2}$7

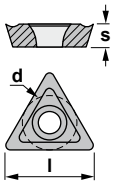
| Reference Bezeichnung | | d | L | Y | Dmin | Dmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1624.07.020 | 1 | 20 | 100 | 10º - 80º | 5 | 20 | TC.. 1102.. | 0,250 |
| 1634.07.025 | 1 | 25 | 100 | 10º - 80º | 5 | 23 | TC.. 16T3.. | 0,250 |
| 1634.27.025 | 1 | 25 | 175 | 10º - 80º | 5 | 23 | TC.. 16T3.. | 0,500 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1624.07.020 | 6921 | 1225 | 1905 | 5507 | 0.9 |
| 1634.07.025 | 6926 | 1240 | 1296 | 5515 | 3.0 |
| 1634.27.025 | 6926 | 1240 | 1296 | 5515 | 3.0 |

## TC..

Triangular positive inserts with 7º clearance.
Dreikantige positive Wendeschneidplatten mit 7º Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT-39

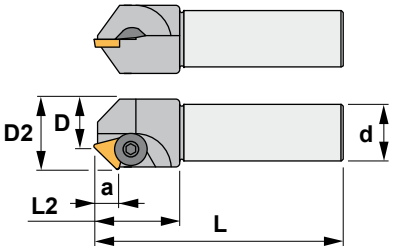


TCMW

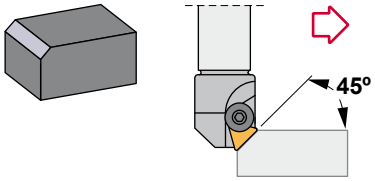




Characteristics:
General purpose positive milling cutter with 45° entering angle.
Recommended for manual machines as well as for C.N.C. machines.




Eigenschaften:
Positiver Planfräser mit 45° Einstellwinkel für allgemeine Anwendungen.
Für manuelle und CNC-Maschinen geeignet.



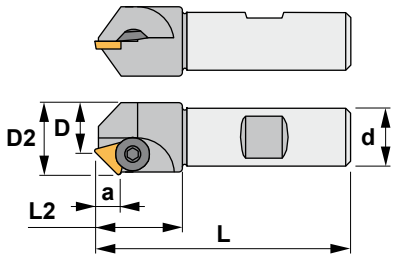

## 0630.00

| Reference Bezeichnung | | D | D2 | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0630.00.005 | 1 | 6,5 | 26,5 | 110 | 35 | 20 | 8 | TPUN 1603.. | 0,300 |
| 0630.00.020 | 3 | 20,0 | 40,0 | 125 | 35 | 25 | 8 | TPUN 1603.. | 0,500 |

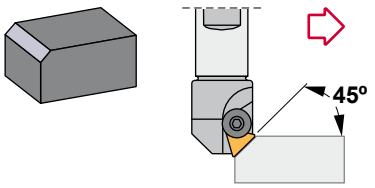
| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0630.00.005 | 1006 | 2064 | 5004 | 3.5 |
| 0630.00.020 | 1006 | 2064 | 5004 | 3.5 |



Characteristics:
General purpose positive milling cutter with 45° entering angle.
Recommended for manual machines as well as for C.N.C. machines.




Eigenschaften:
Positiver Planfräser mit 45° Einstellwinkel für allgemeine Anwendungen.
Für manuelle und CNC-Maschinen geeignet.




## 0630.07

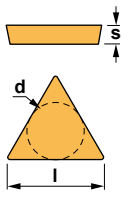
| Reference Bezeichnung | | D | D2 | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0630.07.005 | 1 | 6,5 | 26,5 | 110 | 35 | 25 | 8 | TPUN 1603.. | 0,400 |
| 0630.07.020 | 3 | 20,0 | 40,0 | 110 | 35 | 25 | 8 | TPUN 1603.. | 0,450 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0630.07.005 | 1006 | 2064 | 5004 | 3.5 |
| 0630.07.020 | 1006 | 2064 | 5004 | 3.5 |

## TPUN

Triangular positive insert with 11° clearance.
Dreikantige positive Wendeschneidplatte mit 11° Freiwinkel. F22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TPUN 1603.. | 16,50 | 3,18 | 9,52 |

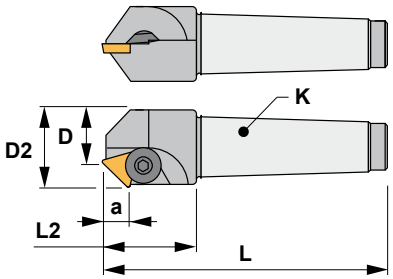



TPUN

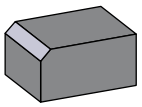


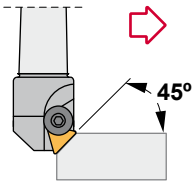


Characteristics:
General purpose positive milling cutter with 45° entering angle.
Recommended for manual machines as well as for C.N.C. machines.




Eigenschaften:
Positiver Planfräser mit 45° Einstellwinkel für allgemeine Anwendungen.
Für manuelle und CNC-Maschinen geeignet.






# 0630.30

| Reference Bezeichnung | | D | D2 | L | L2 | a | K | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 0630.30.005 | 1 | 6,5 | 26,5 | 125 | 38 | 8 | MK3 | TPUN 1603.. | 0,350 |
| 0630.30.020 | 3 | 20,0 | 40,0 | 125 | 38 | 8 | MK3 | TPUN 1603.. | 0,400 |

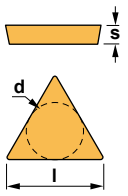
F

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0630.30.005 | 1006 | 2064 | 5004 | 3.5 |
| 0630.30.020 | 1006 | 2064 | 5004 | 3.5 |

## TPUN

Triangular positive insert with 11° clearance.
Dreikantige positive Wendeschneidplatte mit 11° Freiwinkel. F22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TPUN 1603.. | 16,50 | 3,18 | 9,52 |

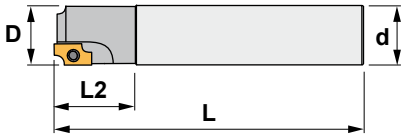



TPUN

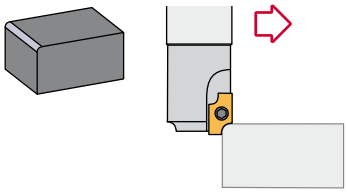




Characteristics:
Milling cutter with concave radius.
It works well on steels, alloyed steels, stainless steels and refractories.




Eigenschaften:
Viertelkreisfräser mit konkavem Radius.
Dieser Eckfräser wird für Stahl, legierten Stahl, rostfreien Stahl und hitzebeständige Gußteile empfohlen.



# 1235.01

| Reference Bezeichnung | | d | D | L | L2 | rmin | rmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1235.01.01701 | 1 | 16 | 17 | 120 | 30 | 1,0 | 2,5 | ADMT 1503R1.0 / 2.5 | 0,200 |
| 1235.01.01703 | 1 | 16 | 17 | 120 | 30 | 3,0 | 5,0 | ADMT 1503R3.0 / 5.0 | 0,200 |

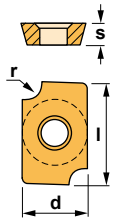
F

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1235.01.01701 | 1440 | 5515 | 3.0 |
| 1235.01.01703 | 1440 | 5515 | 3.0 |

## ADMT-R

Parallelogram positive inserts with 15° clearance.
Parallelogramme positive WSP mit 15° Freiwinkel. F10

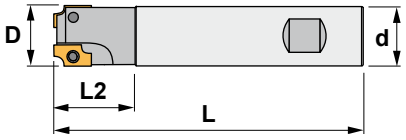
| Reference / Bezeichnung | r | s | d |
|---|---|---|---|
| ADMT 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMT 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMT 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMT 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMT 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMT 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMT 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMT 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMT 1503R5.0 | 5.0 | 3,18 | 9,52 |



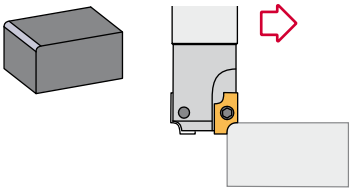

| R1.0-R | R1.5-R | R2.0-R |
|---|---|---|
|  |  |  |
| **R2.5-R** | **R3.0-R** | **R3.5-R** |
|  |  |  |
| **R4.0-R** | **R4.5-R** | **R5.0-R** |
|  |  |  |



Characteristics:
Milling cutter with concave radius.
It works well on steels, alloyed steels, stainless steels and refractories.




Eigenschaften:
Viertelkreisfräser mit konkavem Radius.
Dieser Eckfräser wird für Stahl, legierten Stahl, rostfreien Stahl und hitzebeständige Gußteile empfohlen.



# 1235.07

| Reference Bezeichnung | | d | D | L | L2 | rmin | rmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1235.07.02201 | 2 | 20 | 22 | 120 | 35 | 1,0 | 2,5 | ADMT 1503R1.0 / 2.5 | 0,320 |
| 1235.07.02203 | 2 | 20 | 22 | 120 | 35 | 3,0 | 5,0 | ADMT 1503R3.0 / 5.0 | 0,530 |

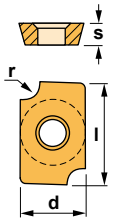
F

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1235.07.02201 | 1440 | 5515 | 3.0 |
| 1235.07.02203 | 1440 | 5515 | 3.0 |

## ADMT-R

Parallelogram positive inserts with 15° clearance.
Parallelogramme positive WSP mit 15° Freiwinkel. F10

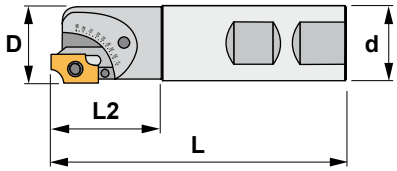
| Reference / Bezeichnung | r | s | d |
|---|---|---|---|
| ADMT 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMT 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMT 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMT 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMT 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMT 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMT 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMT 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMT 1503R5.0 | 5.0 | 3,18 | 9,52 |



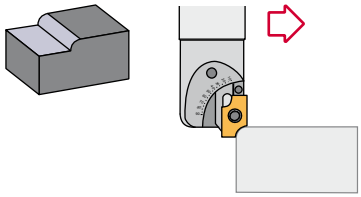

| R1.0-R | R1.5-R | R2.0-R |
|---|---|---|
|  |  |  |
| **R2.5-R** | **R3.0-R** | **R3.5-R** |
|  |  |  |
| **R4.0-R** | **R4.5-R** | **R5.0-R** |
|  |  |  |



Characteristics:
Adjustable milling cutter with concave radius.
It works well on steels, alloyed steels, stainless steels and refractories.



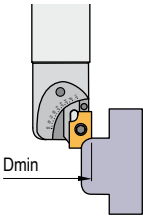

Eigenschaften:
Verstellbarer Viertelkreisfräser mit konkavem Radius.
Dieser Eckfräser wird für Stahl, legierten Stahl, rostfreien Stahl und hitzebeständige Gußteile empfohlen.

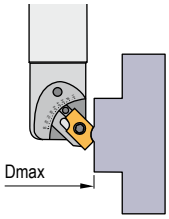


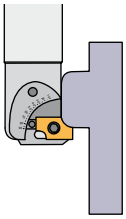
# 1725.$^{0}_{2}$7

| Reference Bezeichnung | | D | d | L | L2 | Dmin | Dmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1725.07.025 | 1 | 25,5 | 25 | 104 | 37 | 26,5 | 33 | ADMT-R 1503 | 0,250 |
| 1725.27.025 | 1 | 25,5 | 25 | 178 | 37 | 26,5 | 33 | ADMT-R 1503 | 0,500 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1725.07.025 | 6925 | 1240 | 1296 | 5515 | 3.0 |
| 1725.27.025 | 6925 | 1240 | 1296 | 5515 | 3.0 |



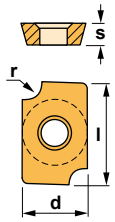



## ADMT-R

Parallelogram positive inserts with 15° clearance.
Parallelogramme positive WSP mit 15° Freiwinkel. F10

| Reference / Bezeichnung | r | s | d |
|---|---|---|---|
| ADMT 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMT 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMT 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMT 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMT 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMT 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMT 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMT 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMT 1503R5.0 | 5.0 | 3,18 | 9,52 |

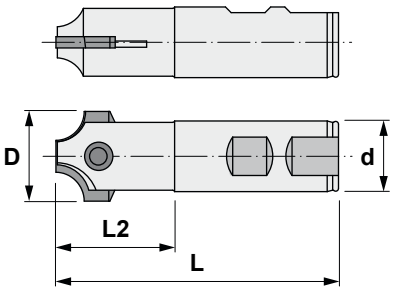



| R1.0-R | R1.5-R | R2.0-R |
|---|---|---|
|  |  |  |
| **R2.5-R** | **R3.0-R** | **R3.5-R** |
|  |  |  |
| **R4.0-R** | **R4.5-R** | **R5.0-R** |
|  |  |  |

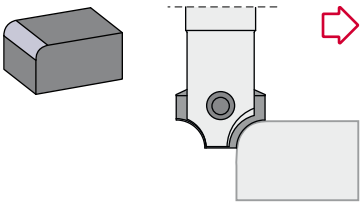
F



Characteristics:
Indexable cutters with concave radius.
Fully ground double cutting edge that offers an economical alternative to conventional corner rounding tools.
One cutter body for 6, 8 and 10 mm radius.




Eigenschaften:
Viertelkreisfräser mit konkavem Radius.
Völlig geschliffene doppelte Schnittkante, die eine wirtschaftliche Alternative zu den konventionellen Werkzeugen zum Kantenrunden anbietet.
Ein einzelner Körper, um Radien 6, 8 und 10 mm zu machen.



# 1345.07

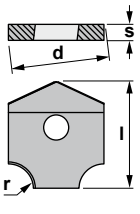
| Reference Bezeichnung | | L | L2 | d | D | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1345.07.012 | 2 | 100 | 33 | 25 | 25 | HPKW 2504.. | 0,450 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1345.07.012 | 1609 | 5530 | 7.0 |

## HPKW

Triangular positive insert with 7° clearance.
Dreikantige positive Wendeschneidplatte mit 11° Freiwinkel. F14

| Reference / Bez. | l | s | d | d2 | r |
|---|---|---|---|---|---|
| HPKW 2504R06 | 26,50 | 4,00 | 25,00 | 12,00 | 6,00 |
| HPKW 2504R08 | 26,50 | 4,00 | 25,00 | 12,00 | 8,00 |
| HPKW 2504R10 | 26,50 | 4,00 | 25,00 | 12,00 | 10,00 |

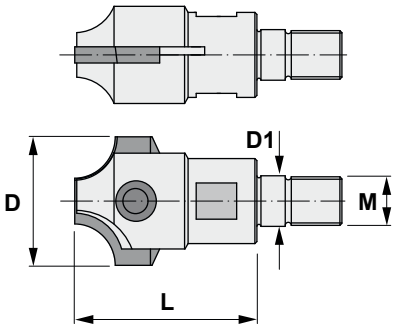



HPKW

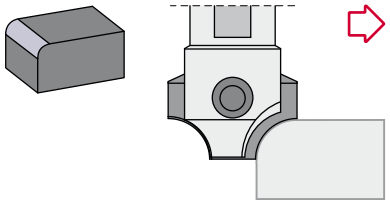




Characteristics:
Indexable cutters with concave radius.
Fully ground double cutting edge that offers an economical alternative to conventional corner rounding tools.
One cutter body for 6, 8 and 10 mm radius.




Eigenschaften:
Viertelkreisfräser mit konkavem Radius.
Völlig geschliffene doppelte Schnittkante, die eine wirtschaftliche Alternative zu den konventionellen Werkzeugen zum Kantenrunden anbietet.
Ein einzelner Körper, um Radien 6, 8 und 10 mm zu machen.



# 1345.06

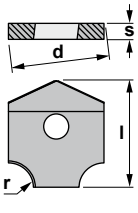
| Reference Bezeichnung | | L | M | D | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1345.06.012 | 2 | 45 | M12x1.75 | 25 | 12,5 | HPKW 2504.. | 0,300 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1345.06.012 | 1609 | 5530 | 7.0 |

## HPKW

Triangular positive insert with 7° clearance.
Dreikantige positive Wendeschneidplatte mit 11° Freiwinkel. F14

| Reference / Bez. | l | s | d | d2 | r |
|---|---|---|---|---|---|
| HPKW 2504R06 | 26,50 | 4,00 | 25,00 | 12,00 | 6,00 |
| HPKW 2504R08 | 26,50 | 4,00 | 25,00 | 12,00 | 8,00 |
| HPKW 2504R10 | 26,50 | 4,00 | 25,00 | 12,00 | 10,00 |




HPKW



## Cutting data for face milling cutters

| Material P | HB | Condition | Cutting speed m/min. TIN25 0.3-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.3-0.2-0.1 | PM25 0.4-0.2-0.1 | PM40 0.4-0.2-0.1 | TL40 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|---|
| Unalloyed steel | 110<br>150<br>310 | C<0.25%<br>C<0.80%<br>C<1.40% | 250-300-390<br>155-180-255<br>135-165-210 | 250-350-450<br>100-120-165<br>75-110-135 | 140-160-180<br>120-140-150<br>80-90-100 | 180-250-310<br>120-145-205<br>95-130-170 | 100-130-160<br>65-85-100<br>50-75-85 | 180-250-310<br>120-145-205<br>95-130-170 |
| Low alloyed steel | 125-225<br>220-450 | Hardened | 170-200-250<br>110-130-150 | 100-120-165<br>55-75-95 | 120-140-160<br>90-120-140 | 120-160-200<br>70-100-120 | 95-85-105<br>40-55-65 | 120-160-200<br>70-100-120 |
| High alloyed steel | 150-250<br>250-300 | Hardened | 140-170-225<br>90-110-150 | 90-115-150<br>60-75-90 | 60-80-90<br>55-60-70 | 110-140-180<br>65-90-120 | 60-80-90<br>40-50-60 | 110-140-180<br>65-90-120 |
| High alloyed steel | 150-250<br>250-300 | High speed steel (HSS)<br>Hardened<br>Hardened tool steel | 130-160-195 | 75-105-130 | 60-65-70 | 90-125-155<br>70-95-120 | 50-60-75<br>30-40-50 | 90-125-155<br>70-95-120 |
| Stainless steel | 150-270 | Ferritic, martensitic | 155-180-250 | 110-150-190 | 130-180-220 | 120-165-210 | 80-105-130 | 120-165-210 |
| Steel castings | 150<br>150-250<br>160-200 | Unalloyed<br>Low alloyed<br>High alloyed | 140-180-250<br>125-150-190<br>90-110-130 | 80-120-150<br>70-100-120<br>55-70-80 | 60-80-90<br>55-60-70 | 100-145-180<br>90-120-150<br>65-90-100 | 60-75-95<br>50-65-80<br>35-45-55 | 100-145-180<br>90-120-150<br>65-90-100 |
| Stainless steel castings | 150-250 | Ferritic, martensitic | | 50-80 | 60-65-70 | 50-70-80 | 30-40-50 | 50-70-80 |

| Material M | HB | Condition | Cutting speed m/min. TIN25 0.4-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.4-0.2-0.1 | KM15 0.2-0.1 | PM25 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|
| Stainless steel annealed | 150-220 | Austenitic | 180-220-280 | 80-150-220 | 130-180-220 | | 150-240-300 |
| Steel castings | 200 | Stainless, austenitic | | 40-70 | 80-120-160 | | 50-60 |
| Iron, nickel and cobalt base castings | 180-300<br>220-300<br>220-300 | | | 40-100 | 70-120-140 | 20-40<br>20-40<br>10-20 | |
| Titanium alloys | 300-400 | | | | 40-80 | | |

| Material K | HB | Condition | Cutting speed m/min. TIN25 0.4-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.4-0.2-0.1 | KM15 0.2-0.1 | PM25 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|
| Tempered steel | HCR<br>50-65 | | | | | | 15-20-30 |
| Stainless steel castings | 250 | Manganese steel<br>12-14% Mn | | | | 12-18-20 | |
| Malleable cast iron | 110-145<br>200-230 | Short chipping<br>Long chipping | | 200-300<br>150-200 | 180-330 | 65-80-95<br>50-65-80 | 100-125-150<br>90-115-135 |
| Grey cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | | 200-400<br>150-350 | 130-240<br>110-200 | 70-95-120<br>50-70-90 | 85-120-155<br>70-90-115 |
| Nodular cast iron | 160<br>250 | Ferritic<br>Pearlitic | 100-130<br>90-110 | 100-250<br>100-180 | 70-140<br>60-120 | 50-65-80<br>45-60-70 | 70-90-115<br>65-80-100 |
| Chilled cast iron | HCR<br>40-60 | | | | | | |
| Aluminium alloys | 60-100<br>75-110 | Non cast<br>Cast | | | | 500-2100<br>400-2000 | |
| Aluminium with high contents of Si | | 10-14% Si<br>14-16% Si<br>16-18% Si | | | | 200-1000<br>110-200 | |

## *Schnittdaten für Planfräser*

| Materialien P | HB | Beschaffenheit | Schnittgeschwindigkeit M/Min. | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TIN25 | TIN21 | TIN28 | PM25 | PM40 | TL40 |
| | | | 0.3-0.2-0.1 | 0.3-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.4-0.2-0.1 | 0.4-0.2-0.1 |
| Unlegierter Stahl | 110<br>150<br>310 | C<0.25%<br>C<0.80%<br>C<1.40% | 250-300-390<br>155-180-255<br>135-165-210 | 250-350-450<br>100-120-165<br>75-110-135 | 140-160-180<br>120-140-150<br>80-90-100 | 180-250-310<br>120-145-205<br>95-130-170 | 100-130-160<br>65-85-100<br>50-75-85 | 180-250-310<br>120-145-205<br>95-130-170 |
| Niedrig legierter Stahl | 125-225<br>220-450 | Vergütet | 170-200-250<br>110-130-150 | 100-120-165<br>55-75-95 | 120-140-160<br>90-120-140 | 120-160-200<br>70-100-120 | 95-85-105<br>40-55-65 | 120-160-200<br>70-100-120 |
| Hochlegierter Stahl | 150-250<br>250-300 | Vergütet | 140-170-225<br>90-110-150 | 90-115-150<br>60-75-90 | 60-80-90<br>55-60-70 | 110-140-180<br>65-90-120 | 60-80-90<br>40-50-60 | 110-140-180<br>65-90-120 |
| Hochlegierter Stahl | 150-250<br>250-300 | Schnellstahl (HSS)<br>Vergütet<br>Vergüteter Werkzeugstahl | 130-160-195 | 75-105-130 | 60-65-70 | 90-125-155<br>70-95-120 | 50-60-75<br>30-40-50 | 90-125-155<br>70-95-120 |
| Rostfreier Stahl | 150-270 | Ferritisch, Martensitisch | 155-180-250 | 110-150-190 | 130-180-220 | 120-165-210 | 80-105-130 | 120-165-210 |
| Stahlguß | 150<br>150-250<br>160-200 | Unlegiert<br>Niedrig legiert<br>Hochlegiert | 140-180-250<br>125-150-190<br>90-110-130 | 80-120-150<br>70-100-120<br>55-70-80 | 60-80-90<br>55-60-70 | 100-145-180<br>90-120-150<br>65-90-100 | 60-75-95<br>50-65-80<br>35-45-55 | 100-145-180<br>90-120-150<br>65-90-100 |
| Rostfreier Stahlguß | 150-250 | Ferritisch, Martensitisch | | 50-80 | 60-65-70 | 50-70-80 | 30-40-50 | 50-70-80 |

| Materialien M | HB | Beschaffenheit | Schnittgeschwindigkeit M/Min. | | | | |
|---|---|---|---|---|---|---|---|
| | | | TIN25 | TIN21 | TIN28 | KM15 | PM25 |
| | | | 0.4-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.2-0.1 | 0.4-0.2-0.1 |
| Rostfreier Stahl, geglüht | 150-220 | Austenitisch | 180-220-280 | 80-150-220 | 130-180-220 | | 150-240-300 |
| Stahlguß | 200 | Rostfrei, austenitisch | | 40-70 | 80-120-160 | | 50-60 |
| Eisen- Nickel- und Kobalthaltiger Guß | 180-300<br>220-300<br>220-300 | | | 40-100 | 70-120-140 | 20-40<br>20-40<br>10-20 | |
| Titan-Legierungen | 300-400 | | | | 40-80 | | |

| Materialien K | HB | Beschaffenheit | Schnittgeschwindigkeit M/Min. | | | | |
|---|---|---|---|---|---|---|---|
| | | | TIN25 | TIN21 | TIN28 | KM15 | PM25 |
| | | | 0.4-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.2-0.1 | 0.4-0.2-0.1 |
| Vergüteter Stahl | HCR<br>50-65 | | | | | | 15-20-30 |
| Rostfreier Stahlguß | 250 | Manganstahl<br>12-14% Mn | | | | 12-18-20 | |
| Temperguß | 110-145<br>200-230 | Kurzspanend<br>Langspanend | | 200-300<br>150-200 | 180-330 | 65-80-95<br>50-65-80 | 100-125-150<br>90-115-135 |
| Grauguß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | | 200-400<br>150-350 | 130-240<br>110-200 | 70-95-120<br>50-70-90 | 85-120-155<br>70-90-115 |
| Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | 100-130<br>90-110 | 100-250<br>100-180 | 70-140<br>60-120 | 50-65-80<br>45-60-70 | 70-90-115<br>65-80-100 |
| Kokillenhartguß | HCR<br>40-60 | | | | | | |
| Aluminium-Legierungen | 60-100<br>75-110 | Nicht gegossen<br>Gegossen | | | | 500-2100<br>400-2000 | |
| Aluminium mit hohem Siilizium (Si)-Gehalt | | 10-14% Si<br>14-16% Si<br>16-18% Si | | | | 200-1000<br>110-200 | |

F





# SQUARE SHOULDER CUTTERS ECKFRÄSER

Applications index — F65
Anwendungen

Facing square shoulder cutters — F66-95
Eckfräser

Cutting data — F96-99
Schnittdaten

F

# ECO-MILL 90°

***Eco-Mill double-sided insert series provide more available cutting edges and lower cost than conventional milling cutters. The exclusive positive geometry guarantees low cutting loads and longer tool life.***

***Die Eco-Mill Serie mit doppelseitigen Wendeschneidplatten bietet mehr verfügbare Schnittkanten und niedrigere Kosten als die konventionelle Fräser an.***
***Die einzigartige positive Geometrie garantiert einen niedrigen Schnittdruck und längere Standzeiten.***

## Features / Eigenschaften

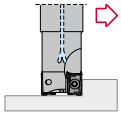
· High axial and radial positive geometry.
· Capable of multiple milling applications.
· Internal coolant supply.
· Strong pocket design.

· Sehr positive axiale und radiale Geometrie.
· Für vielfache Fräsanwendungen geeignet.
· Innere Kühlmittelzufuhr.
· Stabiles Design des Plattensitzes.



F

## *Facing square shoulder cutters*
## *Eckfräser*

**1222.37**
First choice 90°
Erste Wahl 90°

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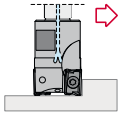
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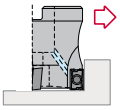
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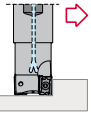
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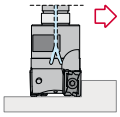
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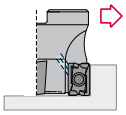
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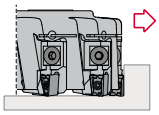
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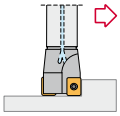
Allgemeine Anwendungen 90°

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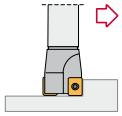
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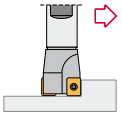
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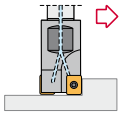
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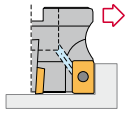
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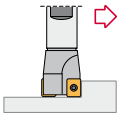
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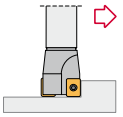
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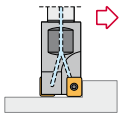
Allgemeine Anwendungen 90°

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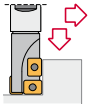
**$22\frac{2}{3}0.07$ 90°**
Slot and side milling 90°
Bohrnutenfräser 90°

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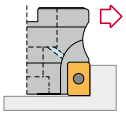
Allgemeine Anwendungen 90°

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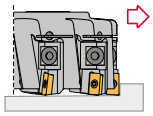
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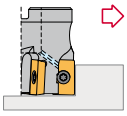
Allgemeine Anwendungen 90°

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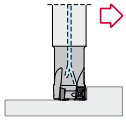
Plan- und Eckfräsen 90°

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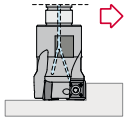
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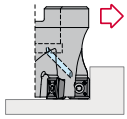
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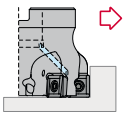
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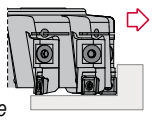
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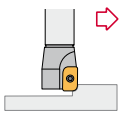
**1135.01**
Convex milling cutters
Konvexe Schaftfräser

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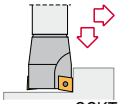
**3314.0$^{0}_{1}$** Multi-function centre-cutting end mill
Bohrnuten-Universalfräser

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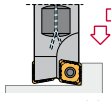
**3314.06** Multi-function centre-cutting end mill
Bohrnuten-Universalfräser

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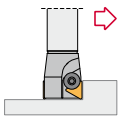
Allgemeine Anwendungen 90°

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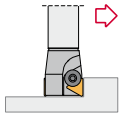
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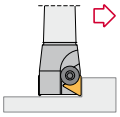
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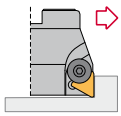
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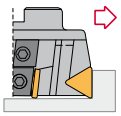
Allgemeine Anwendungen 90°

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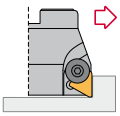
**0140.90 90°**
Deep cutting 90°
Tiefer Schnitt 90°

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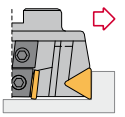
**0140.99 90°**
Deep cutting 90°
Tiefer Schnitt 90°

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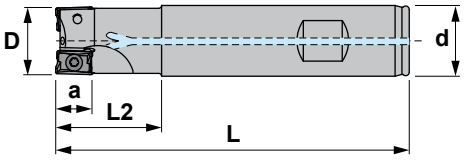
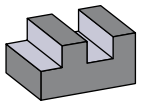
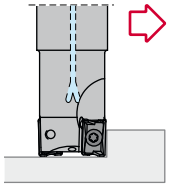
Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.




Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.





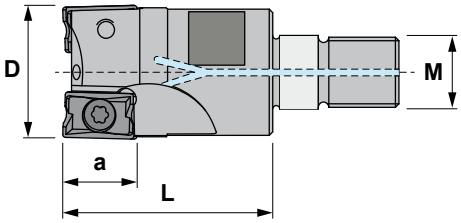
## 1222.37

| Reference Bezeichnung | | D | L | d | L2 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1222.37.020 | 2 | 20 | 100 | 20 | 30 | 9 | LNMM 1006.. | 0,220 |
| 1222.37.025 | 3 | 25 | 100 | 25 | 30 | 9 | LNMM 1006.. | 0,340 |
| 1222.37.032 | 4 | 32 | 110 | 32 | 30 | 9 | LNMM 1006.. | 0,630 |

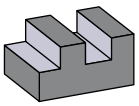
| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1222.37.020 | 1230 | 5508 | 1.2 |
| 1222.37.025 | 1230 | 5508 | 1.2 |
| 1222.37.032 | 1230 | 5508 | 1.2 |

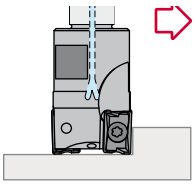


Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.




Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.





## 1222.06

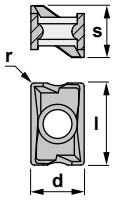
| Reference Bezeichnung | | D | L | M | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1222.06.020 | 2 | 20 | 30 | M10 | 9 | LNMM 1006.. | 0,060 |
| 1222.06.025 | 3 | 25 | 35 | M12 | 9 | LNMM 1006.. | 0,110 |
| 1222.06.032 | 4 | 32 | 43 | M16 | 9 | LNMM 1006.. | 0,250 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1222.06.020 | 1230 | 5508 | 1.2 |
| 1222.06.025 | 1230 | 5508 | 1.2 |
| 1222.06.032 | 1230 | 5508 | 1.2 |

## LNMM

Rectangular negative insert.
Rechteckige negative Wendeschneidplatte. F14

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| LNMM 1006.. | 10,00 | 6,5 | 6,5 | 0,5 |



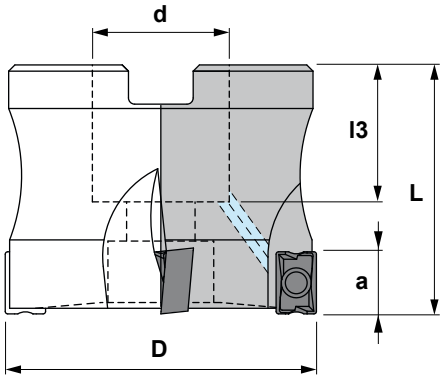

LNMM

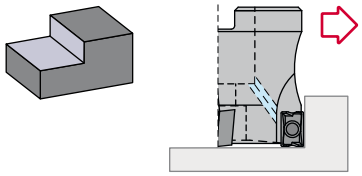




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.



# 1222.93 90°

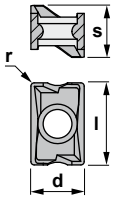
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1222.93.032 | 4 | 32 | 40 | 16 | 20 | 9 | LNMM 1006.. | 0,140 |
| 1222.93.040 | 5 | 40 | 40 | 16 | 20 | 9 | LNMM 1006.. | 0,240 |
| 1222.93.050 | 7 | 50 | 40 | 22 | 22 | 9 | LNMM 1006.. | 0,360 |
| 1222.93.063 | 9 | 63 | 50 | 22 | 25 | 9 | LNMM 1006.. | 0,080 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1222.93.032 | 1230 | 5508 | 1058 | 1.2 |
| 1222.93.040 | 1230 | 5508 | 1058 | 1.2 |
| 1222.93.050 | 1230 | 5508 | 912,10 | 1.2 |
| 1222.93.063 | 1230 | 5508 | 912,10 | 1.2 |

## LNMM

Rectangular negative insert.
Rechteckige negative Wendeschneidplatte. F14

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| LNMM 1006.. | 10,00 | 6,5 | 6,5 | 0,5 |

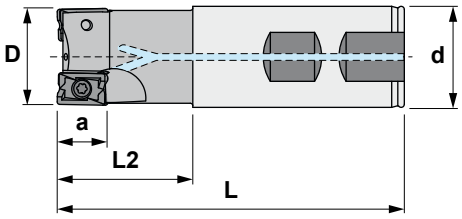



LNMM

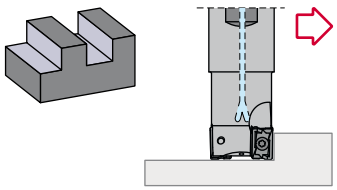




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.




Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.



# 1232.37

| Reference<br>Bezeichnung | | D | L | d | L2 | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1232.37.025 | 2 | 25 | 100 | 25 | 35 | 14 | LNMM 1510.. | 0,330 |
| 1232.37.032 | 3 | 32 | 110 | 32 | 35 | 14 | LNMM 1510.. | 0,610 |
| 1232.37.040 | 4 | 40 | 110 | 32 | 35 | 14 | LNMM 1510.. | 0,730 |

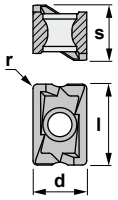
F

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 1232.37.025 | 1440 | 5515 | 3.0 |
| 1232.37.032 | 1240 | 5515 | 3.0 |
| 1232.37.040 | 1240 | 5515 | 3.0 |

## LNMM

Rectangular negative insert.
Rechteckige negative Wendeschneidplatte. F14

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| LNMM 1510.. | 15,00 | 10,00 | 10,00 | 0,8 |



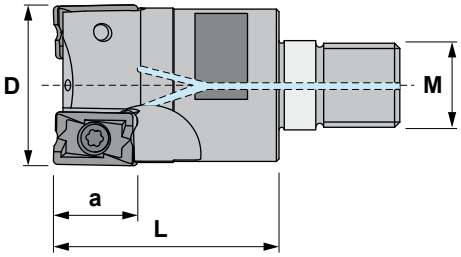

LNMM

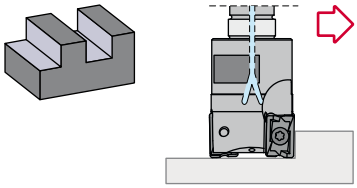




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.



# 1232.06

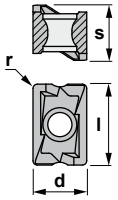
| Reference Bezeichnung | | D | L | M | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1232.06.025 | 2 | 25 | 35 | M12 | 14 | LNMM 1510.. | 0,100 |
| 1232.06.032 | 3 | 32 | 43 | M16 | 14 | LNMM 1510.. | 0,210 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1232.06.025 | 1240 | 5515 | 3.0 |
| 1232.06.032 | 1240 | 5515 | 3.0 |

## LNMM

Rectangular negative insert.
Rechteckige negative Wendeschneidplatte. F14

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| LNMM 1510.. | 15,00 | 10,00 | 10,00 | 0,8 |



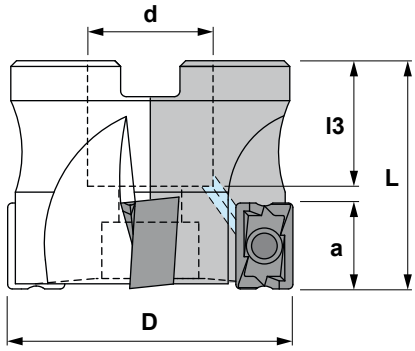

LNMM

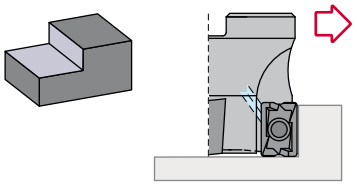




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.



# 1232.93 90°

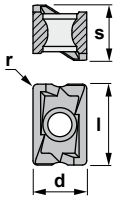
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1232.93.040 | 4 | 40 | 40 | 16 | 18 | 14 | LNMM 1510.. | 0,200 |
| 1232.93.050 | 4 | 50 | 40 | 22 | 22 | 14 | LNMM 1510.. | 0,300 |
| 1232.93.063 | 6 | 63 | 50 | 27 | 22 | 14 | LNMM 1510.. | 0,650 |
| 1232.93.080 | 7 | 80 | 50 | 27 | 25 | 14 | LNMM 1510.. | 1,150 |
| 1232.93.100 | 8 | 100 | 50 | 32 | 25 | 14 | LNMM 1510.. | 1,700 |
| 1232.93.125 | 10 | 125 | 63 | 40 | 30 | 14 | LNMM 1510.. | 2,850 |
| 1232.90.160 | 12 | 160 | 63 | 40 | 30 | 14 | LNMM 1510.. | 4,400 |

| Reference Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 1232.93.040 | 1240 | 5515 | - | 1058 | 3.0 |
| 1232.93.050 | 1240 | 5515 | - | 912,10 | 3.0 |
| 1232.93.063 | 1240 | 5515 | - | 912,12 | 3.0 |
| 1232.93.080 | 1240 | 5515 | - | 912,12 | 3.0 |
| 1232.93.100 | 1240 | - | 5615 | 912,16 | 3.0 |
| 1232.93.125 | 1240 | - | 5615 | 912,20 | 3.0 |
| 1232.90.160 | 1240 | - | 5615 | 912,52 x 4 | 3.0 |

## LNMM

Rectangular negative insert.
Rechteckige negative Wendeschneidplatte. F14

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| LNMM 1510.. | 15,00 | 10,00 | 10,00 | 0,8 |



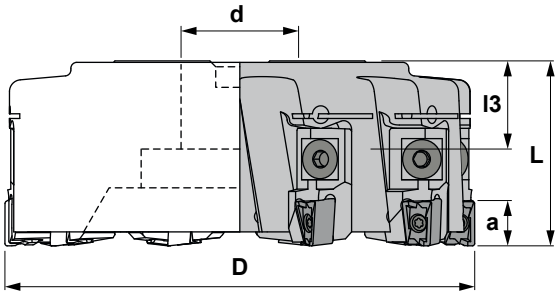

LNMM

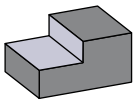


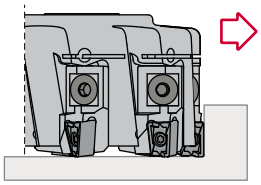


Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.





# 1232.99 90°

| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1232.99.160 | 10 | 160 | 63 | 40 | 30 | 14 | LNMM 1510.. | 4,000 |
| 1232.99.200 | 12 | 200 | 63 | 60 | 40 | 14 | LNMM 1510.. | 7,700 |
| 1232.99.250 | 16 | 250 | 63 | 60 | 40 | 14 | LNMM 1510.. | 10,800 |
| 1232.99.315 | 20 | 315 | 63 | 60 | 40 | 14 | LNMM 1510.. | 31,000 |
| 1232.99.400 | 22 | 400 | 63 | 60 | 40 | 14 | LNMM 1510.. | 47,500 |
| 1232.99.500 | 28 | 500 | 63 | 60 | 40 | 14 | LNMM 1510.. | 85,000 |

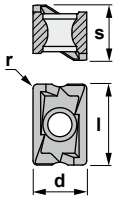
F

| Reference Bezeichnung | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|
| 1232.99.160 | 1240 | 5615 | 6232 | 1788 | 1460 | 40 | 3.0 |
| 1232.99.200 | 1240 | 5615 | 6232 | 1788 | 1460 | 50 | 3.0 |
| 1232.99.250 | 1240 | 5615 | 6232 | 1788 | 1460 | 50 | 3.0 |
| 1232.99.315 | 1240 | 5615 | 6232 | 1788 | 1460 | 50/60 | 3.0 |
| 1232.99.400 | 1240 | 5615 | 6232 | 1788 | 1460 | 50/60 | 3.0 |
| 1232.99.500 | 1240 | 5615 | 6232 | 1788 | 1460 | 50/60 | 3.0 |

## LNMM

Rectangular negative insert.
Rechteckige negative Wendeschneidplatte. F14

| Reference / Bez. | l | s | d | r |
|---|---|---|---|---|
| LNMM 1510.. | 15,00 | 10,00 | 10,00 | 0,8 |

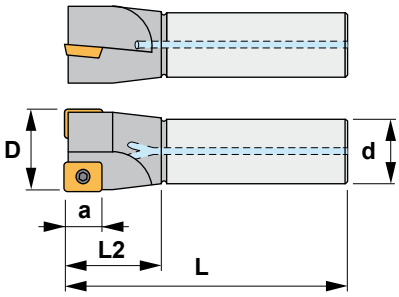



LNMM

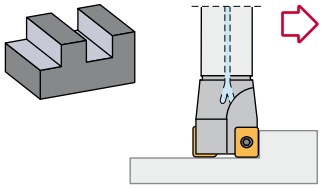




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.




Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90º und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1220.03

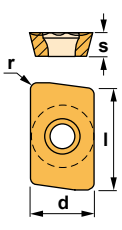
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1220.03.010 | 1 | 10 | 110 | 25 | 16 | 9 | AP.. 1003.. | 0,120 |
| 1220.03.012 | 1 | 12 | 110 | 25 | 16 | 9 | AP.. 1003.. | 0,150 |
| 1220.03.014 | 1 | 14 | 110 | 25 | 16 | 9 | AP.. 1003.. | 0,200 |
| 1220.03.016 | 2 | 16 | 110 | 25 | 20 | 9 | AP.. 1003.. | 0,250 |
| 1220.03.018 | 2 | 18 | 110 | 30 | 20 | 9 | AP.. 1003.. | 0,280 |
| 1220.03.020 | 3 | 20 | 125 | 30 | 20 | 9 | AP.. 1003.. | 0,300 |
| 1220.03.022 | 3 | 22 | 125 | 30 | 20 | 9 | AP.. 1003.. | 0,350 |
| 1220.03.025 | 4 | 25 | 125 | 30 | 25 | 9 | AP.. 1003.. | 0,450 |
| 1220.03.028 | 4 | 28 | 125 | 30 | 25 | 9 | AP.. 1003.. | 0,500 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1220.03.010 | 1425 | 5507 | 0.9 |
| 1220.03.012 | 1425 | 5507 | 0.9 |
| 1220.03.014 | 1425 | 5507 | 0.9 |
| 1220.03.016 | 1425 | 5507 | 0.9 |
| 1220.03.018 | 1225 | 5507 | 0.9 |
| 1220.03.020 | 1225 | 5507 | 0.9 |
| 1220.03.022 | 1225 | 5507 | 0.9 |
| 1220.03.025 | 1225 | 5507 | 0.9 |
| 1220.03.028 | 1225 | 5507 | 0.9 |

## AP..

Parallelogram positive inserts with 11º clearance.
Parallelogramme positive Wendeschneidplatten mit 11º Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |




APHT-AL



APKT

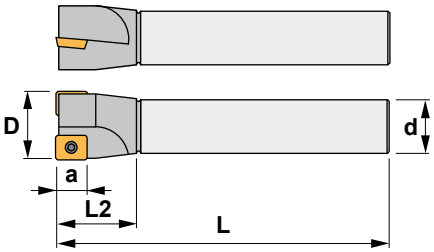




Characteristics:

Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Recommended for conventional milling machines and machining centers.

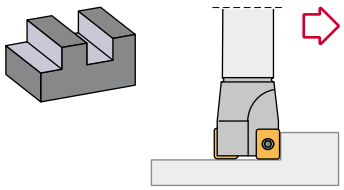



**Long series / Lange Ausführungt**

Eigenschaften:

Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1220.02

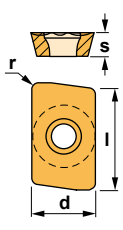
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1220.02.016 | 2 | 16 | 175 | 25 | 20 | 9 | AP.. 1003.. | 0,250 |
| 1220.02.020 | 3 | 20 | 200 | 30 | 20 | 9 | AP.. 1003.. | 0,300 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1220.02.016 | 1425 | 5507 | 0.9 |
| 1220.02.020 | 1225 | 5507 | 0.9 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |




**APHT-AL**



**APKT**

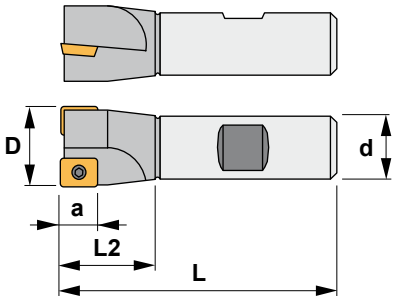




Characteristics:

Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.

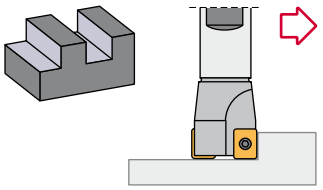
Recommended for conventional milling machines and machining centers.




Eigenschaften:

Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90º und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1220.07

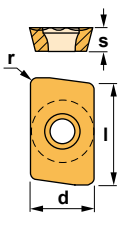
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1220.07.012 | 1 | 12 | 90 | 25 | 16 | 9 | AP.. 1003.. | 0,100 |
| 1220.07.016 | 2 | 16 | 90 | 25 | 20 | 9 | AP.. 1003.. | 0,200 |
| 1220.07.020 | 3 | 20 | 95 | 30 | 20 | 9 | AP.. 1003.. | 0,200 |
| 1220.07.025 | 4 | 25 | 95 | 30 | 25 | 9 | AP.. 1003.. | 0,350 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1220.07.012 | 1425 | 5507 | 0.9 |
| 1220.07.016 | 1425 | 5507 | 0.9 |
| 1220.07.020 | 1225 | 5507 | 0.9 |
| 1220.07.025 | 1225 | 5507 | 0.9 |

## AP..

Parallelogram positive inserts with 11º clearance.
Parallelogramme positive Wendeschneidplatten mit 11º Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |




APHT-AL

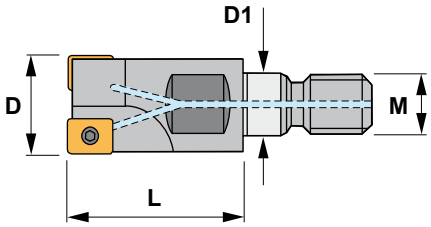


APKT

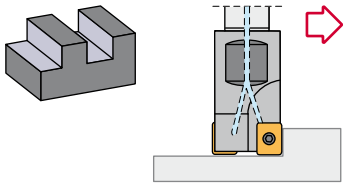




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.




Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1220.06

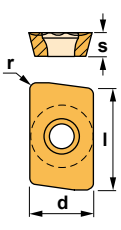
| Reference Bezeichnung | | D | L | M | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1220.06.016 | 2 | 16 | 23 | M8 | 8,5 | AP.. 1003.. | 0,040 |
| 1220.06.020 | 3 | 20 | 30 | M10 | 10,5 | AP.. 1003.. | 0,070 |
| 1220.06.025 | 3 | 25 | 35 | M12 | 12,5 | AP.. 1003.. | 0,110 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1220.06.016 | 1425 | 5507 | 0.9 |
| 1220.06.020 | 1225 | 5507 | 0.9 |
| 1220.06.025 | 1225 | 5507 | 0.9 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |




APHT-AL



APKT

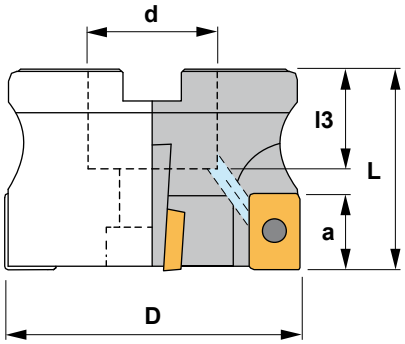




Characteristics:

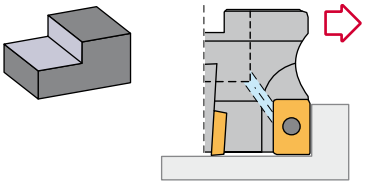
Positive multi-tooth milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Recommended for conventional milling machines and machining centers.




Eigenschaften:

Positiver Mehrzahn-Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1220.93 90°

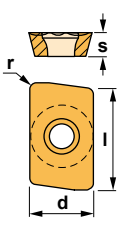
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1220.93.032 | 5 | 32 | 40 | 16 | 18 | 9 | AP.. 1003.. | 0,160 |
| 1220.93.040 | 6 | 40 | 40 | 16 | 18 | 9 | AP.. 1003.. | 0,240 |
| 1220.93.050 | 7 | 50 | 40 | 22 | 20 | 9 | AP.. 1003.. | 0,400 |
| 1220.93.063 | 9 | 63 | 50 | 22 | 20 | 9 | AP.. 1003.. | 0,900 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1220.93.032 | 1225 | 5507 | 1058 | 0.9 |
| 1220.93.040 | 1225 | 5507 | 1058 | 0.9 |
| 1220.93.050 | 1225 | 5507 | 912,10 | 0.9 |
| 1220.93.063 | 1225 | 5507 | 912,10 | 0.9 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |




APHT-AL



APKT

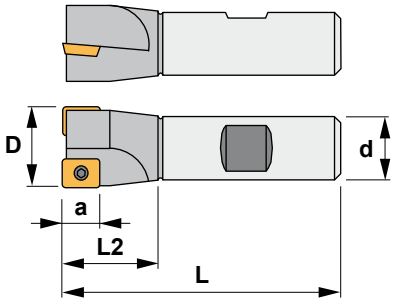




Characteristics:

Positive multi-tooth milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

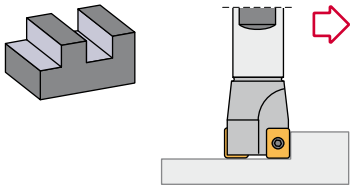
Recommended for conventional milling machines and machining centers.




Eigenschaften:

Positiver Mehrzahn-Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1230.07

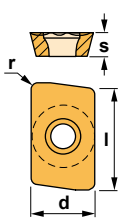
| Reference<br>Bezeichnung | | D | L | L2 | d | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1230.07.020 | 1 | 20 | 100 | 30 | 20 | 14 | AP.. 1604.. | 0,200 |
| 1230.07.025 | 2 | 25 | 100 | 30 | 25 | 14 | AP.. 1604.. | 0,350 |
| 1230.07.032 | 3 | 32 | 110 | 35 | 32 | 14 | AP.. 1604.. | 0,600 |
| 1230.07.040 | 4 | 40 | 110 | 35 | 32 | 14 | AP.. 1604.. | 0,650 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 1230.07.020 | 1440 | 5515 | 3.0 |
| 1230.07.025 | 1440 | 5515 | 3.0 |
| 1230.07.032 | 1240 | 5515 | 3.0 |
| 1230.07.040 | 1240 | 5515 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT



APMT

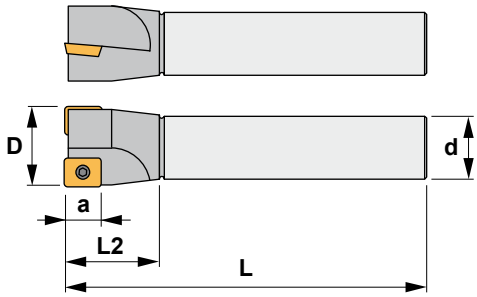




Characteristics:

Positive multi-tooth milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Recommended for conventional milling machines and machining centers.

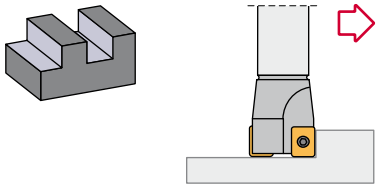



**Long series / Lange Ausführung**

Eigenschaften:

Positiver Mehrzahn-Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1230.02

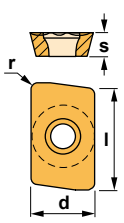
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1230.02.020 | 1 | 20 | 200 | 35 | 20 | 14 | AP.. 1604.. | 0,450 |
| 1230.02.025 | 2 | 25 | 200 | 35 | 25 | 14 | AP.. 1604.. | 0,700 |
| 1230.02.032 | 3 | 32 | 250 | 35 | 32 | 14 | AP.. 1604.. | 1,500 |
| 1230.02.040 | 4 | 40 | 250 | 35 | 32 | 14 | AP.. 1604.. | 1,550 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1230.02.020 | 1440 | 5515 | 3.0 |
| 1230.02.025 | 1440 | 5515 | 3.0 |
| 1230.02.032 | 1240 | 5515 | 3.0 |
| 1230.02.040 | 1240 | 5515 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




**APHT-AL**



**APKT**

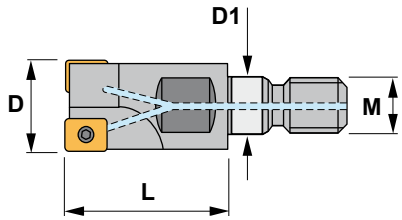


**APMT**

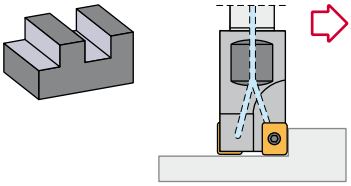




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.




Eigenschaften:
Positiver Eckfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1230.06

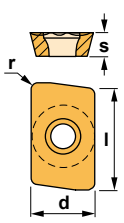
| Reference<br>Bezeichnung | | D | L | M | D1 | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1230.06.025 | 2 | 25 | 35 | M12 | 12,5 | AP.. 1604.. | 0,110 |
| 1230.06.032 | 3 | 32 | 43 | M16 | 17,0 | AP.. 1604.. | 0,240 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 1230.06.025 | 1440 | 5515 | 3.0 |
| 1230.06.032 | 1240 | 5515 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT



APMT

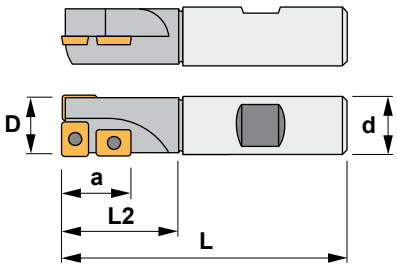




Characteristics:

Super positive drill milling cutter for diversified manufacture with an exact angle of 90° that uses strong inserts allowing deep passes.

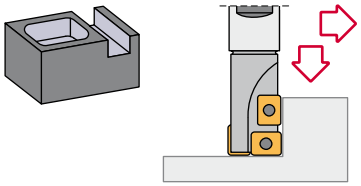
Recommended for conventional milling machines and machining centers.




Eigenschaften:

Hochpositiver Bohrnutenfräser für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



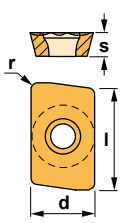
## 22$\frac{2}{3}$0.07

| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 2220.07.020 | 1+1 | 20 | 90 | 35 | 20 | 19 | AP.. 1003.. | 0,200 |
| 2220.07.025 | 1+1 | 25 | 110 | 50 | 25 | 19 | AP.. 1003.. | 0,350 |
| 2230.07.032 | 1+1 | 32 | 125 | 50 | 32 | 26 | AP.. 1604.. | 0,600 |
| 2230.07.040 | 1+1 | 40 | 125 | 50 | 32 | 26 | AP.. 1604.. | 0,700 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 2220.07.020 | 1425 | 5507 | 0.9 |
| 2220.07.025 | 1425 | 5507 | 0.9 |
| 2230.07.032 | 1440 | 5515 | 3.0 |
| 2230.07.040 | 1440 | 5515 | 3.0 |

**AP..** Parallelogram positive inserts with 11° clearance. Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT

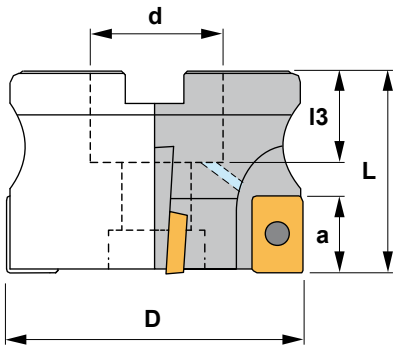


APMT

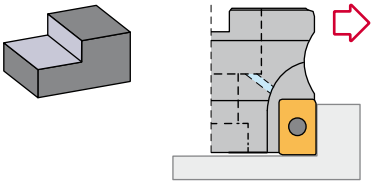




Characteristics:
Positive milling cutter for diversified manufacture with internal coolant and an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1230.93 90°

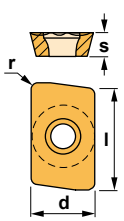
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1230.93.040 | 4 | 40 | 40 | 16 | 18 | 14 | AP.. 1604.. | 0,200 |
| 1230.93.050 | 5 | 50 | 40 | 22 | 20 | 14 | AP.. 1604.. | 0,300 |
| 1230.93.063 | 6 | 63 | 50 | 27 | 22 | 14 | AP.. 1604.. | 0,650 |
| 1230.93.080 | 7 | 80 | 50 | 27 | 22 | 14 | AP.. 1604.. | 1,150 |
| 1230.93.100 | 8 | 100 | 50 | 32 | 25 | 14 | AP.. 1604.. | 1,700 |
| 1230.90.125 | 8 | 125 | 63 | 40 | 30 | 14 | AP.. 1604.. | 2,850 |
| 1230.90.160 | 9 | 160 | 63 | 40 | 30 | 14 | AP.. 1604.. | 4,400 |

| Reference Bezeichnung | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|
| 1230.93.040 | 1240 | 5515 | - | 1058 | - | 3.0 |
| 1230.93.050 | 1240 | 5515 | - | 912,10 | - | 3.0 |
| 1230.93.063 | 1240 | 5515 | - | 912,12 | - | 3.0 |
| 1230.93.080 | 1240 | 5515 | - | 912,12 | - | 3.0 |
| 1230.93.100 | 1240 | - | 5615 | 912,16 | - | 3.0 |
| 1230.90.125 | 1240 | - | 5615 | - | - | 3.0 |
| 1230.90.160 | 1240 | - | 5615 | 912,52 | 40 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT

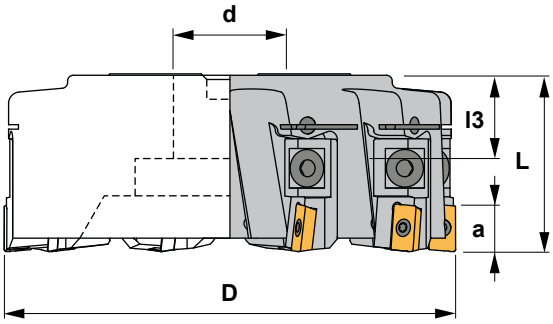


APMT

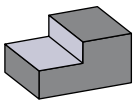


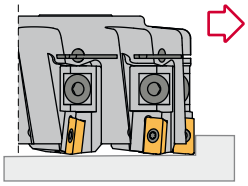


Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90º und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.





# 1230.99 90º

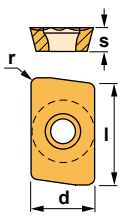
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1230.99.160 | 10 | 160 | 63 | 40 | 30 | 14 | AP.. 1604.. | 4,000 |
| 1230.99.200 | 12 | 200 | 63 | 60 | 40 | 14 | AP.. 1604.. | 7,700 |
| 1230.99.250 | 16 | 250 | 63 | 60 | 40 | 14 | AP.. 1604.. | 10,800 |
| 1230.99.315 | 20 | 315 | 63 | 60 | 40 | 14 | AP.. 1604.. | 31,000 |
| 1230.99.400 | 22 | 400 | 63 | 60 | 40 | 14 | AP.. 1604.. | 47,500 |
| 1230.99.500 | 28 | 500 | 63 | 60 | 40 | 14 | AP.. 1604.. | 85,000 |

| Reference Bezeichnung | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|
| 1230.99.160 | 1240 | 5615 | 6230 | 1788 | 1460 | 40 | 3.0 |
| 1230.99.200 | 1240 | 5615 | 6230 | 1788 | 1460 | 50 | 3.0 |
| 1230.99.250 | 1240 | 5615 | 6230 | 1788 | 1460 | 50 | 3.0 |
| 1230.99.315 | 1240 | 5615 | 6230 | 1788 | 1460 | 50/60 | 3.0 |
| 1230.99.400 | 1240 | 5615 | 6230 | 1788 | 1460 | 50/60 | 3.0 |
| 1230.99.500 | 1240 | 5615 | 6230 | 1788 | 1460 | 50/60 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT

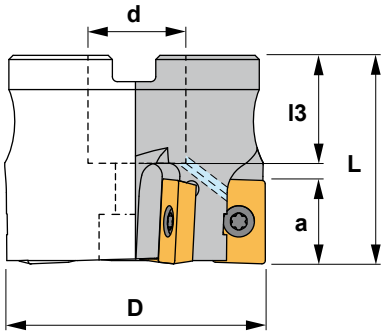


APMT

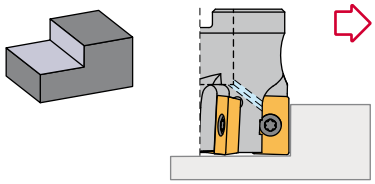




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 1245.93 90°

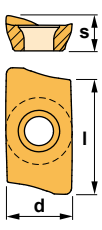
| Reference<br>Bezeichnung | | D | L | d | l3 | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1245.93.050 | 4 | 50 | 40 | 22 | 20 | 19 | ADKT 2206.. | 0,450 |
| 1245.93.063 | 5 | 63 | 50 | 27 | 22 | 19 | ADKT 2206.. | 0,760 |
| 1245.93.080 | 7 | 80 | 50 | 27 | 22 | 19 | ADKT 2206.. | 1,030 |
| 1245.93.100 | 8 | 100 | 50 | 32 | 25 | 19 | ADKT 2206.. | 1,700 |
| 1245.93.125 | 8 | 125 | 63 | 40 | 30 | 19 | ADKT 2206.. | 3,690 |
| 1245.90.160 | 9 | 160 | 63 | 40 | 30 | 19 | ADKT 2206.. | 4,000 |

| Reference<br>Bezeichnung | | | | | DIN<br>2079 | Nm |
|---|---|---|---|---|---|---|
| 1245.93.050 | 1550 | 5520 | - | 912,10 | - | 4.0 |
| 1245.93.063 | 1550 | 5520 | - | 912,12 | - | 4.0 |
| 1245.93.080 | 1550 | 5520 | - | 912,12 | - | 4.0 |
| 1245.93.100 | 1550 | - | 5620 | 912,16 | - | 4.0 |
| 1245.93.125 | 1550 | - | 5620 | 912,20 | - | 4.0 |
| 1245.90.160 | 1550 | - | 5620 | 912,52 | 40 | 4.0 |

## ADKT

Parallelogram positive insert with 15° clearance.
Parallelogramme positive Wendeschneidplatte mit 15° Freiwinkel. F10

| Reference / Bez. | l | s | d |
|---|---|---|---|
| ADKT 2206.. | 20,00 | 6,74 | 12,70 |



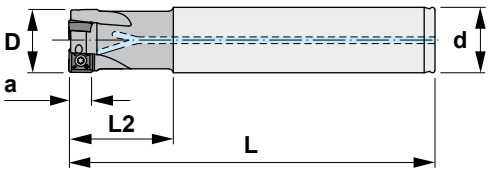

ADKT

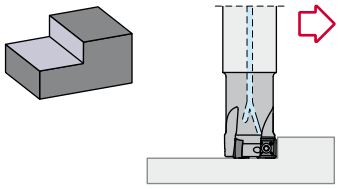




Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.



## 0235.03

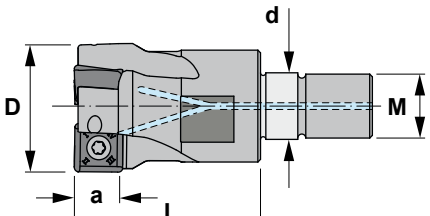
| Reference Bezeichnung | | D | L | d | L2 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0235.03.025 | 3 | 25 | 125 | 25 | 30 | 8 | SDMT 09T3.. | 0,450 |
| 0235.03.032 | 4 | 32 | 150 | 32 | 30 | 8 | SDMT 09T3.. | 0,510 |

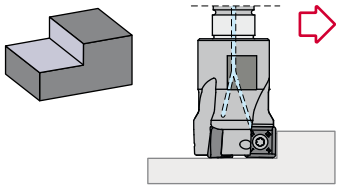
| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0235.03.025 | 1430 | 5508 | 1.2 |
| 0235.03.032 | 1430 | 5508 | 1.2 |



Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.



## 0235.06

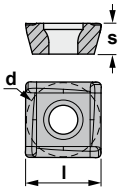
| Reference Bezeichnung | | D | L | M | a | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0235.06.025 | 3 | 25 | 35 | M12 | 8 | 12,5 | SDMT 09T3.. | 0,110 |
| 0235.06.032 | 4 | 32 | 43 | M16 | 8 | 17,0 | SDMT 09T3.. | 0,240 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0235.06.025 | 1430 | 5508 | 1.2 |
| 0235.06.032 | 1430 | 5508 | 1.2 |

## SDMT

Square positive insert with 15° clearance.
Vierkantige positive Wendeschneidplatte mit 15° Freiwinkel. F17

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SDMT 09T3.. | 9,52 | 3,97 | 9,52 |




SDMT

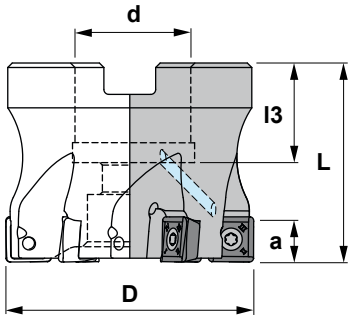




Characteristics:

Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

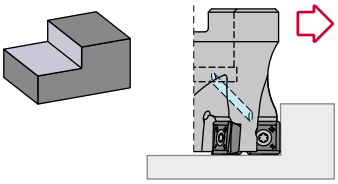
Recommended for conventional milling machines and machining centers.




Eigenschaften:

Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 0235.93 90°

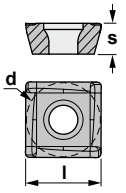
| Reference<br>Bezeichnung | | D | L | d | l3 | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0235.93.040 | 5 | 40 | 40 | 16 | 18 | 8 | SDMT 09T3.. | 0,240 |
| 0235.93.050 | 6 | 50 | 40 | 22 | 20 | 8 | SDMT 09T3.. | 0,400 |
| 0235.93.063 | 7 | 63 | 50 | 22 | 20 | 8 | SDMT 09T3.. | 0,900 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 0235.93.040 | 1230 | 5508 | 1.2 |
| 0235.93.050 | 1230 | 5508 | 1.2 |
| 0235.93.063 | 1230 | 5508 | 1.2 |

## SDMT

Square positive insert with 15° clearance. F17
Vierkantige positive Wendeschneidplatte mit 15° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SDMT 09T3.. | 9,52 | 3,97 | 9,52 |



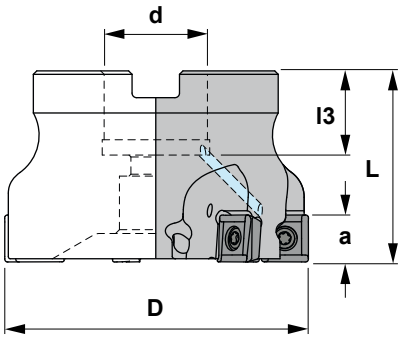

SDMT



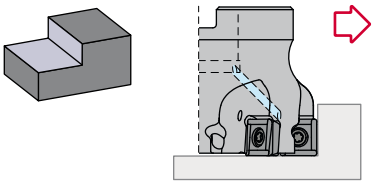


Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.

Axial 7º
Radial -10º




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90º und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



## 0255.93 90º

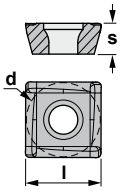
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0255.93.040 | 4 | 40 | 40 | 16 | 18 | 11 | SDMT 1205.. | 0,200 |
| 0255.93.050 | 5 | 50 | 40 | 22 | 20 | 11 | SDMT 1205.. | 0,300 |
| 0255.93.063 | 6 | 63 | 50 | 27 | 22 | 11 | SDMT 1205.. | 0,650 |
| 0255.93.080 | 7 | 80 | 50 | 27 | 22 | 11 | SDMT 1205.. | 1,050 |
| 0255.93.100 | 8 | 100 | 50 | 32 | 25 | 11 | SDMT 1205.. | 1,700 |
| 0255.93.125 | 9 | 125 | 63 | 40 | 30 | 11 | SDMT 1205.. | 2,850 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0255.93.040 | 1240 | 5515 | - | 3.0 |
| 0255.93.050 | 1240 | 5515 | - | 3.0 |
| 0255.93.063 | 1240 | 5515 | - | 3.0 |
| 0255.93.080 | 1240 | 5515 | - | 3.0 |
| 0255.93.100 | 1240 | - | 5615 | 3.0 |
| 0255.93.125 | 1240 | - | 5615 | 3.0 |

### SDMT

Square positive insert with 15º clearance.
Vierkantige positive Wendeschneidplatte mit 15º Freiwinkel. F17

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SDMT 1205.. | 12,35 | 5,00 | 12,35 |




SDMT

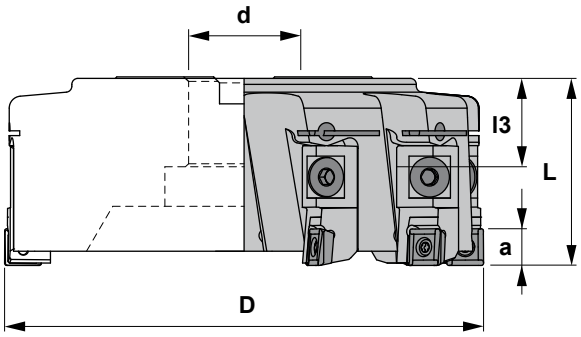




Characteristics:

Positive milling cutter for diversified manufacture with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.

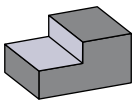
Recommended for conventional milling machines and machining centers.

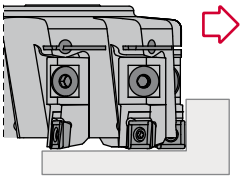



Eigenschaften:

Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.

Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.





# 0255.99 90°

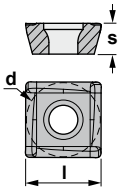
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0255.99.160 | 10 | 160 | 63 | 40 | 30 | 11 | SDMT 1205.. | 4,000 |
| 0255.99.200 | 12 | 200 | 63 | 60 | 40 | 11 | SDMT 1205.. | 7,700 |
| 0255.99.250 | 16 | 250 | 63 | 60 | 40 | 11 | SDMT 1205.. | 10,800 |
| 0255.99.315 | 20 | 315 | 63 | 60 | 40 | 11 | SDMT 1205.. | 31,000 |
| 0255.99.400 | 22 | 400 | 63 | 60 | 40 | 11 | SDMT 1205.. | 47,500 |
| 0255.99.500 | 28 | 500 | 63 | 60 | 40 | 11 | SDMT 1205.. | 85,000 |

| Reference Bezeichnung | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|
| 0255.99.160 | 1240 | 5615 | 6255 | 1788 | 1640 | 40 | 3.0 |
| 0255.99.200 | 1240 | 5615 | 6255 | 1788 | 1640 | 50 | 3.0 |
| 0255.99.250 | 1240 | 5615 | 6255 | 1788 | 1640 | 50 | 3.0 |
| 0255.99.315 | 1240 | 5615 | 6255 | 1788 | 1640 | 50/60 | 3.0 |
| 0255.99.400 | 1240 | 5615 | 6255 | 1788 | 1640 | 50/60 | 3.0 |
| 0255.99.500 | 1240 | 5615 | 6255 | 1788 | 1640 | 50/60 | 3.0 |

## SDMT

Square positive insert with 15° clearance.
Vierkantige positive Wendeschneidplatte mit 15° Freiwinkel. F17

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SDMT 1205.. | 12,35 | 5,00 | 12,35 |

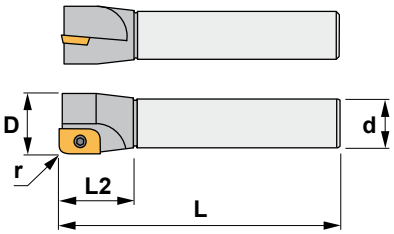



SDMT

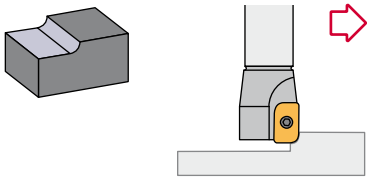




Characteristics:
Milling cutter with convex radius.
It works well on steels, alloyed steels, stainless steels and refractories.




Eigenschaften:
Schaftfräser mit konvexem Radius.
Für Stahl, legierten Stahl, rostfreien Stahl und hitzebeständige Gußteile empfohlen.



# 1135.01

| Reference Bezeichnung | | d | D | L | L2 | rmin | rmax | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1135.01.01610 | 1 | 16 | 16 | 120 | 35 | 1,0 | 3,0 | ADMW-C 1503R1.0 / 3.0 | 0,200 |
| 1135.01.01635 | 1 | 16 | 16 | 120 | 35 | 3,5 | 6,0 | ADMW-C 1503R3.5 / 6.0 | 0,200 |

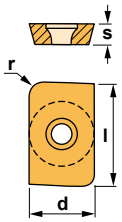
F

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1135.01.01610 | 1440 | 5515 | 3.0 |
| 1135.01.01635 | 1440 | 5515 | 3.0 |

## ADMW-C

Parallelogram positive inserts with 15° clearance.
Parallelogramme positive WSP mit 15° Freiwinkel. F10

| Reference / Bezeichnung | r | s | d |
|---|---|---|---|
| ADMW 1503R1.0-C | 1.00 | 3,18 | 9,52 |
| ADMW 1503R1.5-C | 1.50 | 3,18 | 9,52 |
| ADMW 1503R2.0-C | 2.00 | 3,18 | 9,52 |
| ADMW 1503R2.5-C | 2.50 | 3,18 | 9,52 |
| ADMW 1503R3.0-C | 3.00 | 3,18 | 9,52 |
| ADMW 1503R3.5-C | 3.50 | 3,18 | 9,52 |
| ADMW 1503R4.0-C | 4.00 | 3,18 | 9,52 |
| ADMW 1503R4.5-C | 4.50 | 3,18 | 9,52 |
| ADMW 1503R5.0-C | 5.00 | 3,18 | 9,52 |
| ADMW 1503R6.0-C | 6.00 | 3,18 | 9,52 |

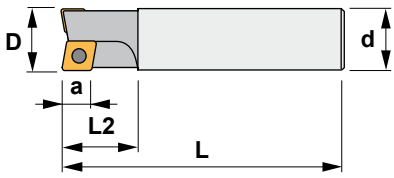



| R1.0-C | R1.5-C | R2.0-C | R2.5-C |
|---|---|---|---|
|  |  |  |  |
| **R3.0-C** | **R3.5-C** | **R4.0-C** | **R4.5-C** |
|  |  |  |  |
| **R5.0-C** | **R6.0-C** | | |
|  |  | | |



Characteristics:
Multi-function centre-cutting end mills for multiple applications: side milling, drilling and face milling.
For inserts CCKT.. see page F12.

Eigenschaften:
Multifunktions-Bohrnuten-Universalfräser zum Konturfräsen, Bohren und Nutenfräsen.
Wendeschneidplatten CCKT.. siehe Seite F12.




## 3314.0$^{0}_{1}$

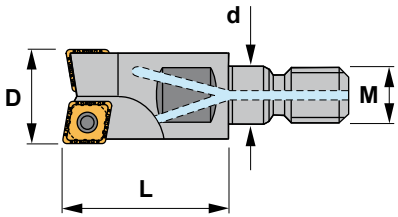
| Reference Bezeichnung | | D | d | L | L2 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 3314.00.012 | 1 | 12 | 16 | 100 | 25 | 5,0 | CCKT 060204 | 0,120 |
| 3314.00.016 | 2 | 16 | 16 | 100 | 25 | 5,0 | CCKT 060204 / 080308 | 0,160 |
| 3314.00.020 | 2 | 20 | 20 | 125 | 32 | 7,0 | CCKT 080308 / 09T308 | 0,300 |
| 3314.00.025 | 2 | 25 | 25 | 125 | 40 | 7,6 | CCKT 09T308 / 120408 | 0,480 |
| 3314.01.012 | 1 | 12 | 16 | 150 | 25 | 5,0 | CCKT 060204 | 0,210 |
| 3314.01.016 | 2 | 16 | 16 | 175 | 25 | 5,0 | CCKT 060204 / 080308 | 0,250 |
| 3314.01.020 | 2 | 20 | 20 | 175 | 32 | 7,0 | CCKT 080308 / 09T308 | 0,400 |
| 3314.01.025 | 2 | 25 | 25 | 200 | 40 | 7,6 | CCKT 09T308 / 120408 | 0,700 |

| Reference Bezeichnung | | | | | Nm¹ | Nm² |
|---|---|---|---|---|---|---|
| 3314.00.012 | 1425 | - | 5507 | - | 0.9 | - |
| 3314.00.016 | 1425 | 1430 | 5507 | 5508 | 0.9 | 1.2 |
| 3314.00.020 | 1430 | 1440 | 5508 | 5515 | 1.2 | 3.0 |
| 3314.00.025 | 1440 | 1445 | 5515 | 5520 | 3.0 | 4.0 |
| 3314.01.012 | 1425 | - | 5507 | - | 0.9 | - |
| 3314.01.016 | 1425 | 1430 | 5507 | 5508 | 0.9 | 1.2 |
| 3314.01.020 | 1430 | 1440 | 5508 | 5515 | 1.2 | 3.0 |
| 3314.01.025 | 1440 | 1445 | 5515 | 5520 | 3.0 | 4.0 |



Characteristics:
Multi-function centre-cutting end mills for multiple applications: side milling, drilling and face milling.
For inserts CCKT.. see page F12.

Eigenschaften:
Multifunktions-Bohrnuten-Universalfräser zum Konturfräsen, Bohren und Nutenfräsen.
Wendeschneidplatten CCKT.. siehe Seite F12.




## 3314.06

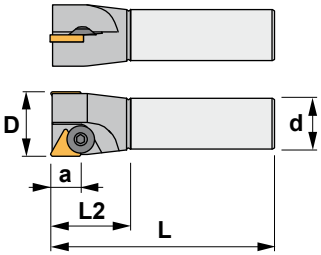
| Reference Bezeichnung | | D | L | M | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 3314.06.012 | 1 | 12 | 23 | M8 | 14 | CCKT 060204 | 0,020 |
| 3314.06.016 | 2 | 16 | 23 | M8 | 14 | CCKT 060204 / 080308 | 0,030 |
| 3314.06.020 | 2 | 20 | 30 | M10 | 18 | CCKT 080308 / 09T308 | 0,060 |
| 3314.06.025 | 2 | 25 | 35 | M12 | 21 | CCKT 09T308 / 120408 | 0,095 |

| Reference Bezeichnung | | | | | Nm¹ | Nm² |
|---|---|---|---|---|---|---|
| 3314.06.012 | 1425 | - | 5507 | - | 0.9 | - |
| 3314.06.016 | 1425 | 1430 | 5507 | 5508 | 0.9 | 1.2 |
| 3314.06.020 | 1430 | 1440 | 5508 | 5515 | 1.2 | 3.0 |
| 3314.06.025 | 1440 | 1245 | 5515 | - | 3.0 | - |

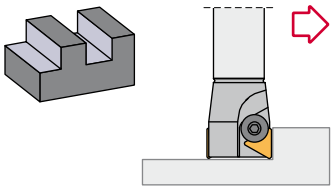
F



Characteristics:
Positive general milling cutter with 90° entering angle and short cylindric shank that uses standard triangular inserts.
Recommended for conventional milling machines and machining centers.
It allows to use TPUN and TPKN inserts.




Eigenschaften:
Positiver Eckfräser mit einem Einstellwinkel von 90° und kurzem Zylinderschaft für dreikantige Standard-Wendeschneidplatten.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.
Für TPUN und TPKN Wendeschneidplatten.



# 0120.00

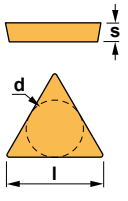
| Reference<br>Bezeichnung | | D | L | L2 | d | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0120.00.020 | 2 | 20 | 110 | 35 | 20 | 9 | TP.. 1103.. | 0,250 |
| 0120.00.025 | 2 | 25 | 110 | 35 | 25 | 9 | TP.. 1103.. | 0,400 |

| Reference<br>Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0120.00.020 | 1005 | 5025 | 2010 | 2.0 |
| 0120.00.025 | 1005 | 5025 | 2010 | 2.0 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. F21-22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1103.. | 11,00 | 3,18 | 6,35 |




TPKN



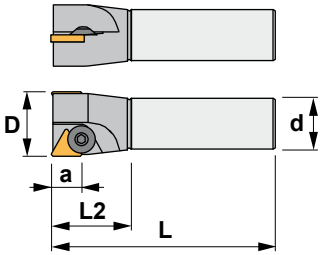
TPUN

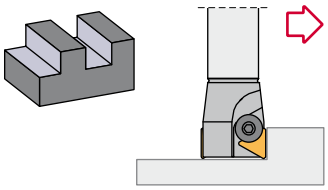




Characteristics:
Positive general milling cutter with 90° entering angle and short cylindrical shank that uses standard triangular inserts for diversified manufacture.
Recommended for conventional milling machines and machining centers.

Eigenschaften:
Positiver Eckfräser mit einem Einstellwinkel von 90° und kurzem Zylinderschaft für dreikantige Standard-Wendeschneidplatten.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 0130.00

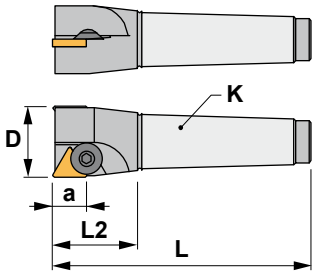
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0130.00.025 | 2 | 25 | 110 | 35 | 25 | 13 | TP.. 1603.. | 0,350 |
| 0130.00.032 | 2 | 32 | 125 | 35 | 32 | 13 | TP.. 1603.. | 0,700 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0130.00.025 | 1016 | 5004 | 2064 | 3.5 |
| 0130.00.032 | 1016 | 5004 | 2064 | 3.5 |



Characteristics:
Positive general milling cutter with 90° entering angle and Morse shank that uses standard triangular inserts for diversified manufacture.
Recommended for conventional milling machines and machining centers.

Eigenschaften:
Positiver Eckfräser mit einem Einstellwinkel von 90° und Morse-Schaft für dreikantige Standard-Wendeschneidplatten.
Für allgemeine Anwendungen in konventionellen Fräsmaschinen und Bearbeitungszentren geeignet.




# 0130.30

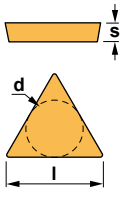
| Reference Bezeichnung | | D | L | L2 | a | K | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0130.30.025 | 2 | 25 | 125 | 38 | 13 | MK3 | TP.. 1603.. | 0,300 |
| 0130.30.032 | 2 | 32 | 125 | 38 | 13 | MK3 | TP.. 1603.. | 0,350 |
| 0130.30.040 | 3 | 40 | 125 | 38 | 13 | MK3 | TP.. 1603.. | 0,450 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 0130.30.025 | 1016 | 5004 | 2064 | 3.5 |
| 0130.30.032 | 1016 | 5004 | 2064 | 3.5 |
| 0130.30.040 | 1016 | 5004 | 2064 | 3.5 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. F21-22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |




TPKN



TPKR



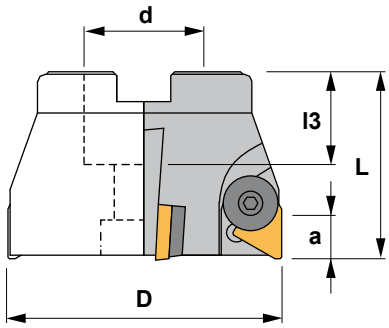
TPUN



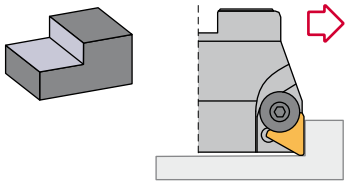


Characteristics:
Positive general milling cutter with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth. Recommended for conventional milling machines and machining centers.
It allows to use TPUN and TPKN inserts.

Axial 6°
Radial 1°




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet. Für TPUN und TPKN Wendeschneidplatten.



# 0130.90 90°

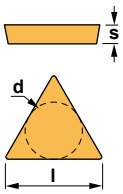
| Reference<br>Bezeichnung | | D | L | d | l3 | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0130.90.040 | 3 | 40 | 40 | 16 | 18 | 13 | TP.. 1603.. | 0,200 |
| 0130.90.050 | 4 | 50 | 40 | 22 | 20 | 13 | TP.. 1603.. | 0,300 |
| 0130.90.050.Z=3 | 3 | 50 | 40 | 22 | 20 | 13 | TP.. 1603.. | 0,350 |
| 0130.90.063 | 4 | 63 | 50 | 27 | 22 | 13 | TP.. 1603.. | 0,650 |
| 0130.90.080 | 5 | 80 | 50 | 32 | 25 | 13 | TP.. 1603.. | 1,050 |
| 0130.90.100 | 6 | 100 | 50 | 40 | 30 | 13 | TP.. 1603.. | 1,650 |
| 0130.90.125 | 6 | 125 | 63 | 40 | 30 | 13 | TP.. 1603.. | 2,850 |
| 0130.90.160 | 7 | 160 | 63 | 40 | 30 | 13 | TP.. 1603.. | 4,400 |
| 0130.90.200 | 8 | 200 | 63 | 60 | 40 | 13 | TP.. 1603.. | 8,250 |

| Reference<br>Bezeichnung | | | | | | | DIN<br>2079 | Nm |
|---|---|---|---|---|---|---|---|---|
| 0130.90.040 | 1006 | 5004 | 2064 | - | - | 1058 | - | 3.5 |
| 0130.90.050 | 1016 | 5004 | 2064 | - | - | 912,10 | - | 3.5 |
| 0130.90.050.Z=3 | 1006 | 5004 | 2064 | - | - | 912,10 | - | 3.5 |
| 0130.90.063 | 1006 | 5004 | 2064 | 3016 | 4016 | 912,12 | - | 3.5 |
| 0130.90.080 | 1006 | 5004 | 2064 | 3016 | 4016 | 912,16 | - | 3.5 |
| 0130.90.100 | 1006 | 5004 | 2064 | 3016 | 4016 | 912,20 | - | 3.5 |
| 0130.90.125 | 1006 | 5004 | 2064 | 3016 | 4016 | - | - | 3.5 |
| 0130.90.160 | 1006 | 5004 | 2064 | 3016 | 4016 | 912,52 | 40 | 3.5 |
| 0130.90.200 | 1006 | 5004 | 2064 | 3016 | 4016 | 912,56 | 50 | 3.5 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. F21-22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |




TPKN

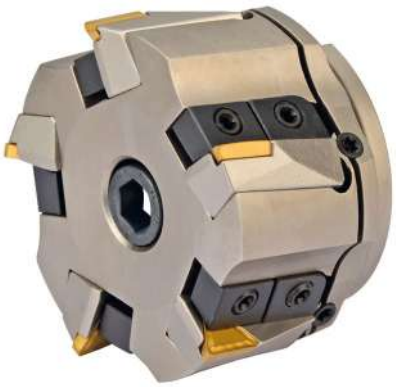


TPKR



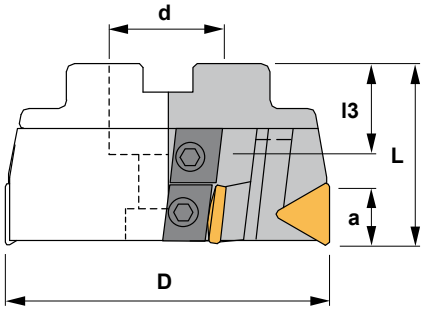
TPUN



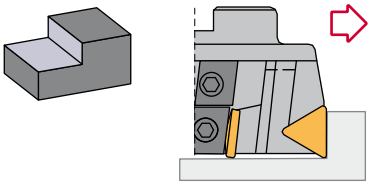


Characteristics:
Positive general milling cutter with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.
It allows to use TPUN and TPKN inserts.

Axial 7°
Radial -1°




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet. Für TPUN und TPKN Wendeschneidplatten.



# 0130.99 90°

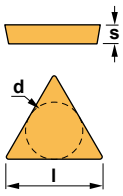
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0130.99.052 | 5 | 52 | 50 | 16 | 18 | 13 | TP.. 1603.. | 0,500 |
| 0130.99.063 | 6 | 63 | 50 | 22 | 20 | 13 | TP.. 1603.. | 0,700 |
| 0130.99.080 | 5 | 80 | 50 | 27 | 22 | 13 | TP.. 1603.. | 1,200 |
| 0130.99.100 | 7 | 100 | 50 | 32 | 25 | 13 | TP.. 1603.. | 1,900 |
| 0130.99.125 | 7 | 125 | 63 | 40 | 30 | 13 | TP.. 1603.. | 3,050 |
| 0130.99.160 | 9 | 160 | 63 | 40 | 30 | 13 | TP.. 1603.. | 5,450 |
| 0130.99.200 | 11 | 200 | 63 | 60 | 40 | 13 | TP.. 1603.. | 7,200 |
| 0130.99.250 | 15 | 250 | 63 | 60 | 40 | 13 | TP.. 1603.. | 13,050 |

| Reference Bezeichnung | | | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0130.99.052 | 1166 | 5515 | - | 6031 | 6032 | 6526 | 1460 | 1058 | - | 3.0 |
| 0130.99.063 | 1166 | 5515 | - | 6031 | 6032 | 6526 | 1460 | 912,10 | - | 3.0 |
| 0130.99.080 | 1077 | 5520 | - | 6433 | 6435 | 6927 | 1460 | 912,12 | - | 4.0 |
| 0130.99.100 | 1077 | - | 5620 | 6433 | 6435 | 6927 | 1460 | 912,16 | - | 4.0 |
| 0130.99.125 | 1077 | - | 5620 | 6433 | 6435 | 6927 | 1460 | - | - | 4.0 |
| 0130.99.160 | 1077 | - | 5620 | 6433 | 6435 | 6927 | 1460 | 912,52 | 40 | 4.0 |
| 0130.99.200 | 1077 | - | 5620 | 6433 | 6435 | 6927 | 1460 | 912,56 | 50 | 4.0 |
| 0130.99.250 | 1077 | - | 5620 | 6433 | 6435 | 6927 | 1460 | 912,56 | 60 | 4.0 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. F21-22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 1603.. | 16,50 | 3,18 | 9,52 |




TPKN



TPKR



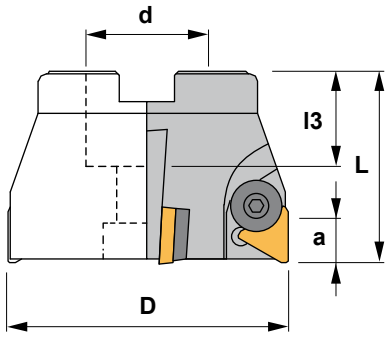
TPUN



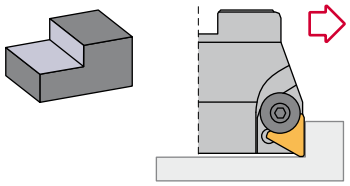


Characteristics:
Positive general milling cutter with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.
It allows to use TPUN and TPKN inserts.

Axial 6°
Radial 1°




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet. Für TPUN und TPKN Wendeschneidplatten.



# 0140.90 90°

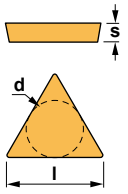
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0140.90.063 | 3 | 63 | 50 | 27 | 22 | 18 | TP.. 2204.. | 0,600 |
| 0140.90.080 | 4 | 80 | 50 | 32 | 25 | 18 | TP.. 2204.. | 0,950 |
| 0140.90.100 | 5 | 100 | 50 | 40 | 30 | 18 | TP.. 2204.. | 1,450 |
| 0140.90.125 | 6 | 125 | 63 | 40 | 30 | 18 | TP.. 2204.. | 2,600 |
| 0140.90.160 | 7 | 160 | 63 | 40 | 30 | 18 | TP.. 2204.. | 4,500 |
| 0140.90.200 | 8 | 200 | 63 | 60 | 40 | 18 | TP.. 2204.. | 7,750 |

| Reference Bezeichnung | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|
| 0140.90.063 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,12 | - | 4.0 |
| 0140.90.080 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,16 | - | 4.0 |
| 0140.90.100 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,20 | - | 4.0 |
| 0140.90.125 | 1008 | 5005 | 2088 | 3022 | 4022 | - | - | 4.0 |
| 0140.90.160 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,52 | 40 | 4.0 |
| 0140.90.200 | 1008 | 5005 | 2088 | 3022 | 4022 | 912,56 | 50 | 4.0 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. F21-22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |




TPKN



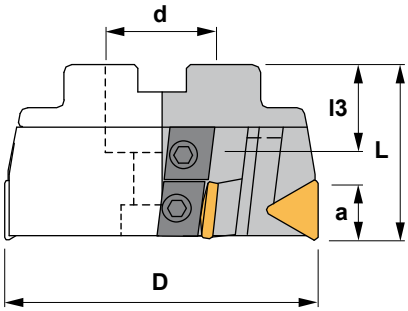
TPUN



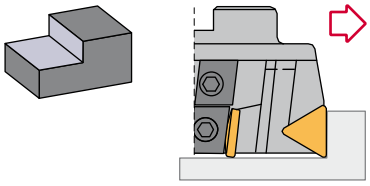


Characteristics:
Positive general milling cutter with an exact angle of 90° that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.
It allows to use TPUN and TPKN inserts.

Axial 7°
Radial -1°




Eigenschaften:
Positiver Eckmesserkopf für allgemeine Anwendungen mit einem genauen Einstellwinkel von 90° und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet. Für TPUN und TPKN Wendeschneidplatten.



# 0140.99 90°

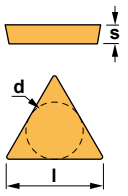
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 0140.99.080 | 5 | 80 | 50 | 27 | 22 | 18 | TP.. 2204.. | 1,150 |
| 0140.99.100 | 7 | 100 | 50 | 32 | 25 | 18 | TP.. 2204.. | 1,850 |
| 0140.99.125 | 7 | 125 | 63 | 40 | 30 | 18 | TP.. 2204.. | 3,100 |
| 0140.99.160 | 9 | 160 | 63 | 40 | 30 | 18 | TP.. 2204.. | 5,150 |
| 0140.99.200 | 11 | 200 | 63 | 60 | 40 | 18 | TP.. 2204.. | 8,900 |
| 0140.99.250 | 15 | 250 | 63 | 60 | 40 | 18 | TP.. 2204.. | 13,200 |

| Reference Bezeichnung | | | | | | | | | DIN 2079 | Nm |
|---|---|---|---|---|---|---|---|---|---|---|
| 0140.99.080 | 1077 | 5520 | - | 6434 | 6436 | 6942 | 1460 | 912,12 | - | 4.0 |
| 0140.99.100 | 1077 | - | 5620 | 6434 | 6436 | 6942 | 1460 | 912,16 | - | 4.0 |
| 0140.99.125 | 1077 | - | 5620 | 6434 | 6436 | 6942 | 1460 | - | - | 4.0 |
| 0140.99.160 | 1077 | - | 5620 | 6434 | 6436 | 6942 | 1460 | 912,52 | 40 | 4.0 |
| 0140.99.200 | 1077 | - | 5620 | 6434 | 6436 | 6942 | 1460 | 912,56 | 50 | 4.0 |
| 0140.99.250 | 1077 | - | 5620 | 6434 | 6436 | 6942 | 1460 | 912,56 | 60 | 4.0 |

## TP..

Triangular positive inserts with 11° clearance.
Dreikantige positive Wendeschneidplatten mit 11° Freiwinkel. F21-22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TP.. 2204.. | 22,00 | 4,76 | 12,70 |




TPKN



TPUN



## *Cutting data for facing square shoulder cutters*

| Material P | HB | Condition | Cutting speed m/min. TIN25 0.3-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.3-0.2-0.1 | PM25 0.4-0.2-0.1 | PM40 0.4-0.2-0.1 | TL40 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|---|
| Unalloyed steel | 110<br>150<br>310 | C<0.25%<br>C<0.80%<br>C<1.40% | 250-300-390<br>155-180-255<br>135-165-210 | 250-350-450<br>100-120-165<br>75-110-135 | 140-160-180<br>120-140-150<br>80-90-100 | 180-250-310<br>120-145-205<br>95-130-170 | 100-130-160<br>65-85-100<br>50-75-85 | 180-250-310<br>120-145-205<br>95-130-170 |
| Low alloyed steel | 125-225<br>220-450 | Hardened | 170-200-250<br>110-130-150 | 100-120-165<br>55-75-95 | 120-140-160<br>90-120-140 | 120-160-200<br>70-100-120 | 95-85-105<br>40-55-65 | 120-160-200<br>70-100-120 |
| High alloyed steel | 150-250<br>250-300 | Hardened | 140-170-225<br>90-110-150 | 90-115-150<br>60-75-90 | 60-80-90<br>55-60-70 | 110-140-180<br>65-90-120 | 60-80-90<br>40-50-60 | 110-140-180<br>65-90-120 |
| High alloyed steel | 150-250<br>250-300 | High speed steel (HSS)<br>Hardened<br>Hardened tool steel | 130-160-195 | 75-105-130 | 60-65-70 | 90-125-155<br>70-95-120 | 50-60-75<br>30-40-50 | 90-125-155<br>70-95-120 |
| Stainless steel | 150-270 | Ferritic,<br>Martensitic | 155-180-250 | 110-150-190 | 130-180-220 | 120-165-210 | 80-105-130 | 120-165-210 |
| Steel castings | 150<br>150-250<br>160-200 | Unalloyed<br>Low alloyed<br>High alloyed | 140-180-250<br>125-150-190<br>90-110-130 | 80-120-150<br>70-100-120<br>55-70-80 | 60-80-90<br>55-60-70 | 100-145-180<br>90-120-150<br>65-90-100 | 60-75-95<br>50-65-80<br>35-45-55 | 100-145-180<br>90-120-150<br>65-90-100 |
| Stainless steel castings | 150-250 | Ferritic, martensitic | | 50-80 | 60-65-70 | 50-70-80 | 30-40-50 | 50-70-80 |

| Material M | HB | Condition | Cutting speed m/min. TIN25 0.4-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.4-0.2-0.1 | KM15 0.2-0.1 | PM25 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|
| Stainless steel annealed | 150-220 | Austenitic | 180-220-280 | 80-150-220 | 130-180-220 | | 150-240-300 |
| Steel castings | 200 | Stainless, austenitic | | 40-70 | 80-120-160 | | 50-60 |
| Iron, nickel and cobalt base castings | 180-300<br>220-300<br>220-300 | | | 40-100 | 70-120-140 | 20-40<br>20-40<br>10-20 | |
| Titanium alloys | 300-400 | | | | 40-80 | | |

| Material K | HB | Condition | Cutting speed m/min. TIN25 0.4-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.4-0.2-0.1 | KM15 0.2-0.1 | PM25 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|
| Tempered steel | HCR<br>50-65 | | | | | | 15-20-30 |
| Stainless steel castings | 250 | Manganese steel<br>12-14% Mn | | | | 12-18-20 | |
| Malleable cast iron | 110-145<br>200-230 | Short chipping<br>Long chipping | | 200-300<br>150-200 | 180-330 | 65-80-95<br>50-65-80 | 100-125-150<br>90-115-135 |
| Grey cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | | 200-400<br>150-350 | 130-240<br>110-200 | 70-95-120<br>50-70-90 | 85-120-155<br>70-90-115 |
| Nodular cast iron | 160<br>250 | Ferritic<br>Pearlitic | 100-130<br>90-110 | 100-250<br>100-180 | 70-140<br>60-120 | 50-65-80<br>45-60-70 | 70-90-115<br>65-80-100 |
| Chilled cast iron | HCR<br>40-60 | | | | | | |
| Aluminium alloys | 60-100<br>75-110 | Non cast<br>Cast | | | | 500-2100<br>400-2000 | |
| Aluminium with high contents of Si | | 10-14% Si<br>14-16% Si<br>16-18% Si | | | | 200-1000<br>110-200 | |

F

## *Schnittdaten für Eckfräser*

| Materialien P | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. TIN25 0.3-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.3-0.2-0.1 | PM25 0.4-0.2-0.1 | PM40 0.4-0.2-0.1 | TL40 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|---|
| Unlegierter Stahl | 110<br>150<br>310 | C<0.25%<br>C<0.80%<br>C<1.40% | 250-300-390<br>155-180-255<br>135-165-210 | 250-350-450<br>100-120-165<br>75-110-135 | 140-160-180<br>120-140-150<br>80-90-100 | 180-250-310<br>120-145-205<br>95-130-170 | 100-130-160<br>65-85-100<br>50-75-85 | 180-250-310<br>120-145-205<br>95-130-170 |
| Niedrig legierter Stahl | 125-225<br>220-450 | Vergütet | 170-200-250<br>110-130-150 | 100-120-165<br>55-75-95 | 120-140-160<br>90-120-140 | 120-160-200<br>70-100-120 | 95-85-105<br>40-55-65 | 120-160-200<br>70-100-120 |
| Hochlegierter Stahl | 150-250<br>250-300 | Vergütet | 140-170-225<br>90-110-150 | 90-115-150<br>60-75-90 | 60-80-90<br>55-60-70 | 110-140-180<br>65-90-120 | 60-80-90<br>40-50-60 | 110-140-180<br>65-90-120 |
| Hochlegierter Stahl | 150-250<br>250-300 | Schnellstahl (HSS)<br>Vergütet<br>Gehärterter Werkzeugstahl | 130-160-195 | 75-105-130 | 60-65-70 | 90-125-155<br>70-95-120 | 50-60-75<br>30-40-50 | 90-125-155<br>70-95-120 |
| Rostfreier Stahl | 150-270 | Ferritisch,<br>Martensitisch | 155-180-250 | 110-150-190 | 130-180-220 | 120-165-210 | 80-105-130 | 120-165-210 |
| Stahlguß | 150<br>150-250<br>160-200 | Unlegiert<br>Niedrig legiert<br>Hochlegiert | 140-180-250<br>125-150-190<br>90-110-130 | 80-120-150<br>70-100-120<br>55-70-80 | 60-80-90<br>55-60-70 | 100-145-180<br>90-120-150<br>65-90-100 | 60-75-95<br>50-65-80<br>35-45-55 | 100-145-180<br>90-120-150<br>65-90-100 |
| Rostfreier Stahlguß | 150-250 | Ferritisch, martensitisch | | 50-80 | 60-65-70 | 50-70-80 | 30-40-50 | 50-70-80 |

| Materialien M | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. TIN25 0.4-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.4-0.2-0.1 | KM15 0.2-0.1 | PM25 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|
| Rostfreier Stahl, geglüht | 150-220 | Austenitisch | 180-220-280 | 80-150-220 | 130-180-220 | | 150-240-300 |
| Stahlguß | 200 | Rostfrei, austenitisch | | 40-70 | 80-120-160 | | 50-60 |
| Eisen- Nickel- und Kobalthaltiger Guß | 180-300<br>220-300<br>220-300 | | | 40-100 | 70-120-140 | 20-40<br>20-40<br>10-20 | |
| Titan-Legierungen | 300-400 | | | | 40-80 | | |

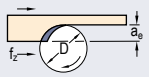
| Materialien K | HB | Beschaffenheit | Schnittgeschwindigkeit m/min. TIN25 0.4-0.2-0.1 | TIN21 0.3-0.2-0.1 | TIN28 0.4-0.2-0.1 | KM15 0.2-0.1 | PM25 0.4-0.2-0.1 |
|---|---|---|---|---|---|---|---|
| Vergüteter Stahl | HCR<br>50-65 | | | | | | 15-20-30 |
| Rostfreier Stahlguß | 250 | Manganstahl<br>12-14% Mn | | | | 12-18-20 | |
| Temperguß | 110-145<br>200-230 | Kurzspanend<br>Langspanend | | 200-300<br>150-200 | 180-330 | 65-80-95<br>50-65-80 | 100-125-150<br>90-115-135 |
| Grauguß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | | 200-400<br>150-350 | 130-240<br>110-200 | 70-95-120<br>50-70-90 | 85-120-155<br>70-90-115 |
| Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | 100-130<br>90-110 | 100-250<br>100-180 | 70-140<br>60-120 | 50-65-80<br>45-60-70 | 70-90-115<br>65-80-100 |
| Kokillenhartguß | HCR<br>40-60 | | | | | | |
| Aluminium-Legierungen | 60-100<br>75-110 | Nicht gegossen<br>Gegossen | | | | 500-2100<br>400-2000 | |
| Aluminium-Legierungen mit hohem Si-Gehalt | | 10-14% Si<br>14-16% Si<br>16-18% Si | | | | 200-1000<br>110-200 | |

## *Cutting data for Drill-Mill cutters*

| Material P | HB | Condition | Tool diameter (D mm.) | Basic grades TIN25 | PM25 | PM40 | TL40 | Feed/tooth complete slot f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Cutting speed m/min. | | | | |
| Unalloyed steel | 110<br>170<br>250 | C=0.25%<br>C=0.8%<br>C=1.4% | 12-16<br>20<br>25<br>32<br>40 | 180-230<br>120-150<br>80-130 | 150-200<br>100-140<br>70-110 | 100-150<br>80-120<br>60-100 | 150-200<br>100-140<br>70-110 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Low alloyed steel | 125-225<br>220-450 | Annealed<br>Hardened | 12-16<br>20<br>25<br>32<br>40 | 100-150<br>60-110 | 90-140<br>60-110 | 70-110<br>45-80 | 90-140<br>60-110 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| High alloyed steel | 150-250<br>250-500 | Annealed<br>Hardened | 12-16<br>20<br>25<br>32<br>40 | 80-120 | 80-120<br>50-80 | 60-100<br>40-70 | 80-120<br>50-80 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Stainless steel | 150-270 | Ferritic / martensitic | 12-16<br>20<br>25<br>32<br>40 | 120-160 | 100-130 | 60-100 | 100-130 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Steel castings | 150<br>150-220<br>160-200 | Unalloyed<br>Low alloyed<br>High alloyed | 12-16<br>20<br>25<br>32<br>40 | | 80-110<br>50-90<br>50-80 | 70-100<br>40-80<br>40-70 | 80-110<br>50-90<br>50-80 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Stainless steel castings | 200 | Ferritic / martensitic | 12-16<br>20<br>25<br>32<br>40 | 50-80 | 40-70 | 35-60 | 40-70 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |

| Material M | HB | Condition | Tool diameter (D mm.) | Basic grades TIN25 | PM25 | PM40 | KM15 | Feed/tooth complete slot f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Cutting speed m/min. | | | | |
| Stainless steel | 150-220 | Austenitic | 12-16<br>20<br>25<br>32<br>40 | 80-160 | 70-130 | 55-90 | | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Stainless steel castings | 200 | Austenitic | 12-16<br>20<br>25<br>32<br>40 | 40-70 | 40-60 | 35-55 | | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |

| Material K | HB | Condition | Tool diameter (D mm.) | Basic grades TIN25 | PM25 | PM40 | KM15 | Feed/tooth complete slot f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Cutting speed m/min. | | | | |
| Malleable cast iron | 110-145<br>200-230 | Short chipping<br>Long chipping | 12-16<br>20<br>25<br>32<br>40 | | | | 90-120<br>80-100 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Grey cast iron | 180<br>260 | Low tensile strength<br>High tensile strength | 12-16<br>20<br>25<br>32<br>40 | | | | 60-120<br>50-100 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Nodular cast iron<br>Spheroidal graphite | 160<br>250 | Ferritic<br>Pearlitic | 12-16<br>20<br>25<br>32<br>40 | | | | 50-80<br>40-70 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Aluminium | 60-150<br>40-180 | Forged<br>Cast | 12-16<br>20<br>25<br>32<br>40 | | | | 300-500<br>250-450 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Bronze-brass alloys | 60-150 | | 12-16<br>20<br>25<br>32<br>40 | | | | 80-120 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |




| $D/a_e$ | 50 | 40 | 20 | 10 | 5 | 2,5 | 2 | 1,5 | 1 |
|---|---|---|---|---|---|---|---|---|---|
| $f_1$ | 4,5 | 4 | 3 | 2 | 1,5 | 1 | 1 | 1 | 1 |

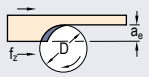
When you trace a contour (side peripherical milling), you must multiply the $f_2$ value of a complete slot (see table) by the correction factor $f_1$ corresponding to the relationship $D/a_e$ (milling cutter diameter/radial cutting depth) in order to get a suitable feed.

## *Schnittdaten für Fräser-Bohrer*

| Materialien P | HB | Beschaffenheit | Werkzeug-durchmesser (D mm.) | Hauptsorten TIN25 | PM25 | PM40 | TL40 | Vorschub/Zahn (komplette Nut) f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Schnittgeschwindigkeit m/min. | | | | |
| Unlegierter Stahl | 110<br>170<br>250 | C=0.25%<br>C=0.8%<br>C=1.4% | 12-16<br>20<br>25<br>32<br>40 | 180-230<br>120-150<br>80-130 | 150-200<br>100-140<br>70-110 | 100-150<br>80-120<br>60-100 | 150-200<br>100-140<br>70-110 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Niedrig legierter Stahl | 125-225<br>220-450 | Geglüht<br>Vergütet | 12-16<br>20<br>25<br>32<br>40 | 100-150<br>60-110 | 90-140<br>60-110 | 70-110<br>45-80 | 90-140<br>60-110 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Hochlegierter Stahl | 150-250<br>250-500 | Geglüht<br>Vergütet | 12-16<br>20<br>25<br>32<br>40 | 80-120 | 80-120<br>50-80 | 60-100<br>40-70 | 80-120<br>50-80 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Rostfreier Stahl | 150-270 | Ferritisch/Martensitisch | 12-16<br>20<br>25<br>32<br>40 | 120-160 | 100-130 | 60-100 | 100-130 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Stahlguß | 150<br>150-220<br>160-200 | Unlegiert<br>Niedrig legiert<br>Hochlegiert | 12-16<br>20<br>25<br>32<br>40 | | 80-110<br>50-90<br>50-80 | 70-100<br>40-80<br>40-70 | 80-110<br>50-90<br>50-80 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Rostfreier Stahlguß | 200 | Ferritisch/Martensitisch | 12-16<br>20<br>25<br>32<br>40 | 50-80 | 40-70 | 35-60 | 40-70 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |

| Materialien M | HB | Beschaffenheit | Werkzeug-durchmesser (D mm.) | Hauptsorten TIN25 | PM25 | PM40 | KM15 | Vorschub/Zahn (komplette Nut) f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Schnittgeschwindigkeit m/min. | | | | |
| Rostfreier Stahl | 150-220 | Austenitisch | 12-16<br>20<br>25<br>32<br>40 | 80-160 | 70-130 | 55-90 | | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Rostfreier Stahlguß | 200 | Austenitisch | 12-16<br>20<br>25<br>32<br>40 | 40-70 | 40-60 | 35-55 | | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |

| Materialien K | HB | Beschaffenheit | Werkzeug-durchmesser (D mm.) | Hauptsorten TIN25 | PM25 | PM40 | KM15 | Vorschub/Zahn (komplette Nut) f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Schnittgeschwindigkeit m/min. | | | | |
| Temperguß | 110-145<br>200-230 | Kurzspanend<br>Langspanend | 12-16<br>20<br>25<br>32<br>40 | | | | 90-120<br>80-100 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Grauguß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 12-16<br>20<br>25<br>32<br>40 | | | | 60-120<br>50-100 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | 12-16<br>20<br>25<br>32<br>40 | | | | 50-80<br>40-70 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Aluminium | 60-150<br>40-180 | Geschmiedet<br>Gegossen | 12-16<br>20<br>25<br>32<br>40 | | | | 300-500<br>250-450 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |
| Bronze- und Messing-Legierungen | 60-150 | | 12-16<br>20<br>25<br>32<br>40 | | | | 80-120 | 0,02-0,11<br>0,11-0,14<br>0,12-0,18<br>0,15-0,21<br>0,18-0,24 |




| $D/a_e$ | 50 | 40 | 20 | 10 | 5 | 2,5 | 2 | 1,5 | 1 |
|---|---|---|---|---|---|---|---|---|---|
| $f_1$ | 4,5 | 4 | 3 | 2 | 1,5 | 1 | 1 | 1 | 1 |

Wenn man eine Kontur fräst (seitlich-peripherisches Fräsen), muss man den $f_2$ Wert von einer kompletten Nut (siehe Tabelle) durch den Korrekturfaktor $f_1$ welcher die Beziehung $D/a_e$ entspricht (Durchmesser des Fräsers/Radiale Schnitttiefe) multiplizieren, damit man einen geeigneten Vorschub erhält.





# SLOT CUTTERS
# NUTENFRÄSER

Code system / Kodifizierung — F102

Applications index / Anwendungen — F103

T-Slot cutters / T-Nutenfräser — F104-105

Slot cutters / Scheibenfräser — F106-112

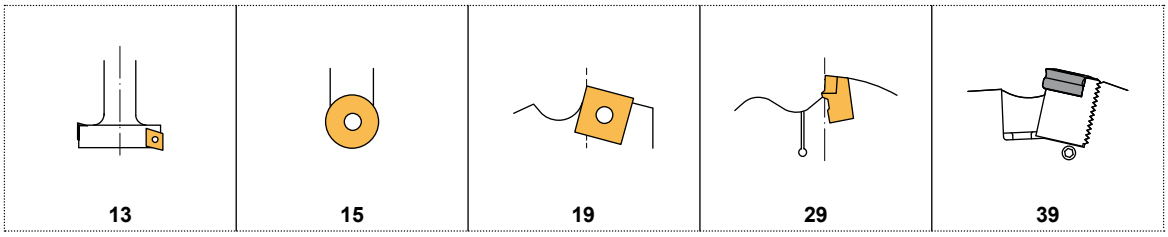
Drive-rings / Mitnehmerringe — F113

Cutting data / Schnittdaten — F114-115

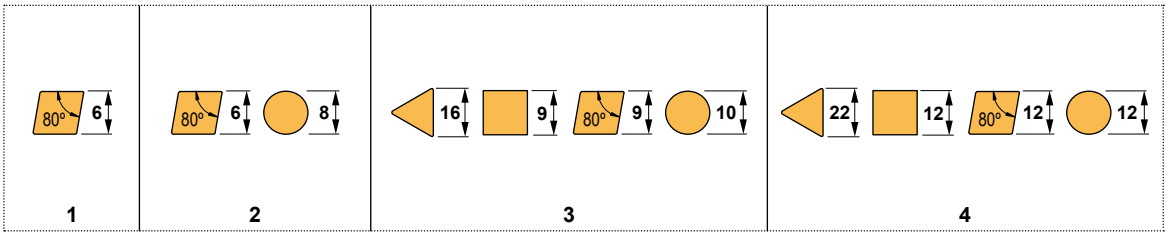
# Code system / Kodifizierung

| 15 | 3 | 0 | 90 | 100 | R 16 |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

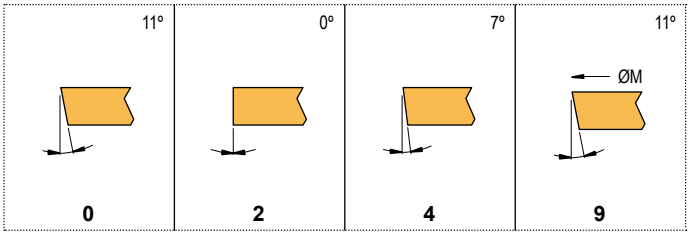
## 1 *Milling cutter type / Fräsertyp*



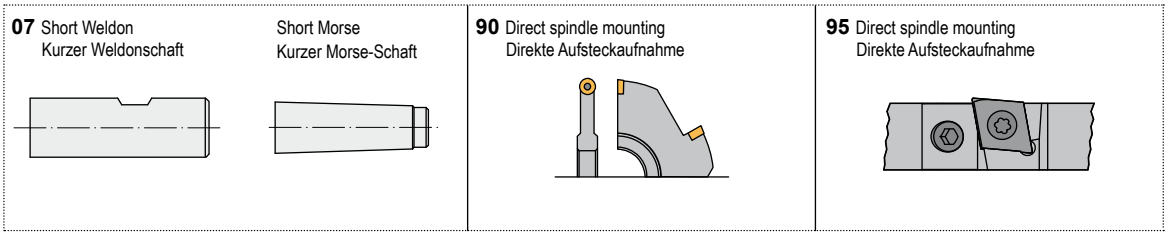

## 2 *Insert size / Wendeschneidplattengröße*



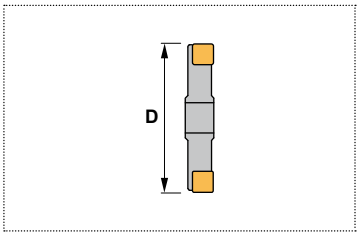

## 3 *Clearance angle of insert / Freiwinkel der Wendeschneidplatte*



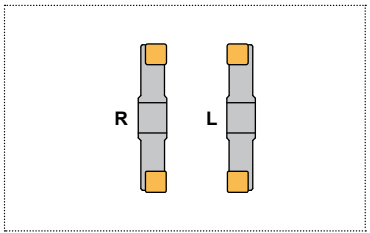

## 4 *Type of coupling / Aufnahmetyp*



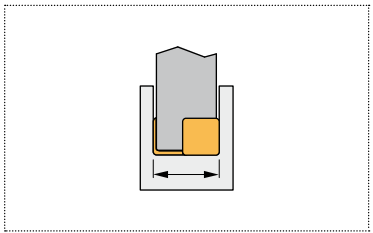

## 5 *Diameter, mm. / Durchmesser, mm.*




## 6* *Cutting hand / Schneidrichtung*

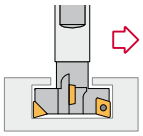



## 6** *Cutting width / Schnittbreite*



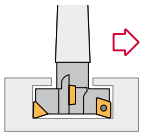
## *T-Slot cutters*
## *T-Nutenfräser*

**$13^{1}_{4}$4.07** "T" Slots 90°
T-Nuten 90°



*Page* CC.. 0602..
*Seite F104* CC.. 1204..

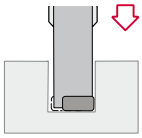
**$13^{1}_{4}$4.$^{30}_{34}$** "T" Slots 90°
T-Nuten 90°



*Page* CC.. 0602..
*Seite F105* CC.. 1204..

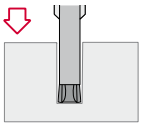
## *Slot cutters*
## *Scheibenfräser*

**3942.95** Slot milling 90°
Nutenfräsen 90°



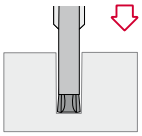
*Page* ENHQ 0904..
*Seite F106* ENHQ 1206..

**2942.90** Cutter blade body
Scheibenfräser-Grundkörper



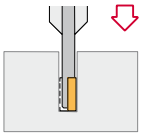
*Page* FRC.. 1,6
*Seite F107* FRC.. 6,0

**2942.07** Circular miller
Zirkularfräsen



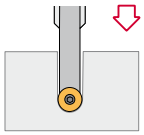
*Page* FRC.. 2,2
*Seite F108* FRC.. 4,0

**1942.90** Slot milling 89°
Nutenfräsen 89°



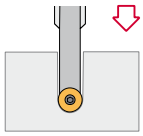
*Page* SNHX 1102..
*Seite F109* SNHX 1207..

**1520.90** Slot milling
Nutenfräsen



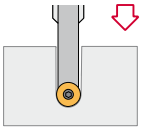
*Page*
*Seite F110* RPMW 0802..

**1530.90** Slot milling
Nutenfräsen



*Page*
*Seite F111* RPMW 1003..

**1549.90** Slot milling
Nutenfräsen



*Page*
*Seite F112* RPMW 1204..

## *Drive-rings*
## *Mitnehmerringe*

**M** Drive-rings
Mitnehmerringe



*Page*
*Seite F113*

**MN** Drive-rings
Mitnehmerringe

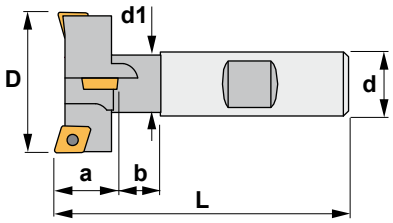


*Page*
*Seite F113*

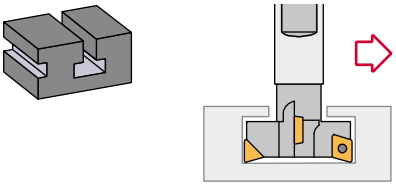
F



Characteristics:
T-Slot cutter with positive chip forming for all kind of materials.
It works well on steels, alloyed steels, stainless steel, refractory casts and aluminium alloys.




Eigenschaften:
T-Nutenfräser mit positiver Spanbildung für Materialien aller Sorten.
Für Stahl, legierten Stahl, rostfreien Stahl, hitzebeständige Gußteile und Aluminium-Legierungen empfohlen.



# 13 1/4 4.07

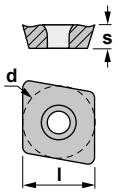
| Reference Bezeichnung | | D | L | d | d1 | a | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1314.07.025.11 | 2+2 | 25 | 85 | 25 | 12 | 11 | 17 | CC.. 0602.. | 0,250 |
| 1324.07.032.14 | 2+2 | 32 | 95 | 25 | 15 | 14 | 22 | CC.. 0803.. | 0,300 |
| 1334.07.040.18 | 2+2 | 40 | 105 | 25 | 19 | 18 | 27 | CC.. 09T3.. | 0,350 |
| 1344.07.050.22 | 2+2 | 50 | 120 | 32 | 25 | 22 | 34 | CC.. 1204.. | 0,700 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1314.07.025.11 | 1225 | 5507 | 0.9 |
| 1324.07.032.14 | 1230 | 5508 | 1.2 |
| 1334.07.040.18 | 1240 | 5515 | 3.0 |
| 1344.07.050.22 | 1250 | 5520 | 4.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL

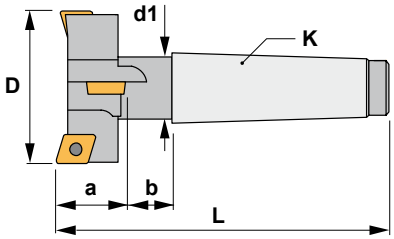


CCMW

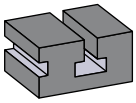


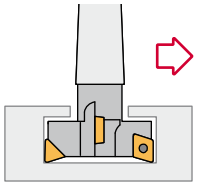


Characteristics:
T-Slot cutter with positive chip forming for all kind of materials.
It works well on steels, alloyed steels, stainless steel, refractory casts and aluminium alloys.




Eigenschaften:
T-Nutenfräser mit positiver Spanbildung für Materialien aller Sorten.
Für Stahl, legierten Stahl, rostfreien Stahl, hitzebeständige Gußteile und Aluminium-Legierungen empfohlen.





## $13^{1}_{4}4.^{30}_{34}$

| Reference Bezeichnung | | D | L | K | d1 | a | b | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 1314.30.025.11 | 2+2 | 25 | 125 | MK3 | 12 | 11 | 17 | CC.. 0602.. | 0,275 |
| 1324.30.032.14 | 2+2 | 32 | 125 | MK3 | 15 | 14 | 22 | CC.. 0803.. | 0,300 |
| 1334.30.040.18 | 2+2 | 40 | 134 | MK3 | 19 | 18 | 27 | CC.. 09T3.. | 0,350 |
| 1344.34.050.22 | 2+2 | 50 | 165 | MK3 | 25 | 22 | 34 | CC.. 1204.. | 0,750 |

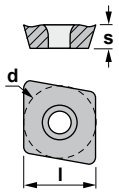
F

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1314.30.025.11 | 1225 | 5507 | 0.9 |
| 1324.30.032.14 | 1230 | 5508 | 1.2 |
| 1334.30.040.18 | 1240 | 5515 | 3.0 |
| 1344.34.050.22 | 1250 | 5520 | 4.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL

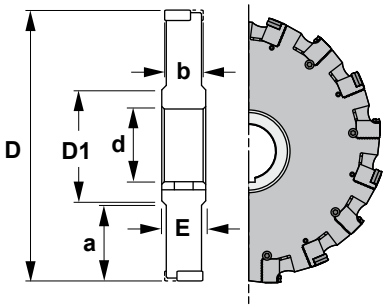


CCMW

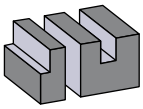


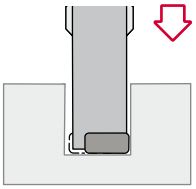


Characteristics:
Slot cutter with an angle of 90º that uses strong inserts allowing deep passes and high feed per teeth. Suitable for flat bottom applications.




Eigenschaften:
Scheibenfräser mit einem Eingriffswinkel von 90º und stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Geeignet für geraden Nutgrund.





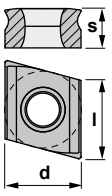
# 3942.95

| Reference Bezeichnung | | D | b min | b max | d | D1 | E | a | | | R/L | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3942.95.100.14 | 4 | 100 | 14,0 | 17,5 | 32 | 47 | 16,0 | 25,5 | 6112 | 1266 | 6938-6939 | ENHQ 0904.. | 0,100 |
| 3942.95.125.14 | 5 | 125 | 14,0 | 17,5 | 40 | 55 | 16,0 | 34,0 | 6112 | 1066 | 6938-6939 | ENHQ 0904.. | 0,900 |
| 3942.95.160.14 | 6 | 160 | 14,0 | 17,5 | 40 | 55 | 16,0 | 51,5 | 6112 | 1066 | 6938-6939 | ENHQ 0904.. | 1,800 |
| 3942.95.200.14 | 8 | 200 | 14,0 | 17,5 | 50 | 69 | 16,0 | 64,5 | 6112 | 1066 | 6938-6939 | ENHQ 0904.. | 2,600 |
| | | | | | | | | | | | | | |
| 3942.95.100.17,5 | 3 | 100 | 17,5 | 20,5 | 32 | 47 | 18,5 | 25,5 | 6113 | 1188 | 6940-6941 | ENHQ 1206.. | 0,760 |
| 3942.95.125.17,5 | 4 | 125 | 17,5 | 20,5 | 40 | 55 | 18,5 | 34,0 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 1,130 |
| 3942.95.160.17,5 | 5 | 160 | 17,5 | 20,5 | 40 | 55 | 18,5 | 51,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 1,000 |
| 3942.95.200.17,5 | 6 | 200 | 17,5 | 20,5 | 50 | 69 | 18,5 | 64,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 3,700 |
| 3942.95.250.17,5 | 8 | 250 | 17,5 | 20,5 | 50 | 69 | 18,5 | 89,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 6,850 |
| 3942.95.315.17,5 | 10 | 315 | 17,5 | 20,5 | 60 | 84 | 18,5 | 114,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 7,000 |
| | | | | | | | | | | | | | |
| 3942.95.125.20,5 | 4 | 125 | 20,5 | 23,5 | 40 | 55 | 21,5 | 34,0 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 1,400 |
| 3942.95.160.20,5 | 5 | 160 | 20,5 | 23,5 | 40 | 55 | 21,5 | 51,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 2,530 |
| 3942.95.200.20,5 | 6 | 200 | 20,5 | 23,5 | 50 | 69 | 21,5 | 64,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 3,640 |
| 3942.95.250.20,5 | 8 | 250 | 20,5 | 23,5 | 50 | 69 | 21,5 | 89,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 1,000 |
| 3942.95.315.20,5 | 10 | 315 | 20,5 | 23,5 | 50 | 84 | 21,5 | 114,5 | 6113 | 1888 | 6940-6941 | ENHQ 1206.. | 7,000 |

## ENHQ

75º rhombic negative insert.
75º rhombische negative Wendeschneidplatte. F13

| Reference / Bezeichnung | l | s | d |
|---|---|---|---|
| ENHQ 090408R/L | 9,86 | 4,76 | 9,52 |
| ENHQ 120610R/L | 13,15 | 6,35 | 12,70 |

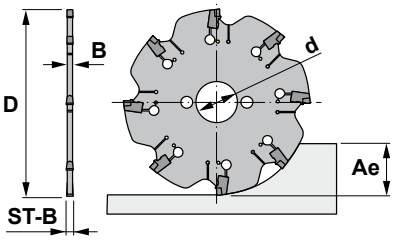



ENHQ

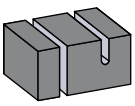


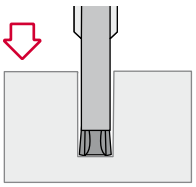


Characteristics:
Side milling cutter blade body.
Self-clamping tool with double prism and fixed reference point. The special shape of the chip groove in the insert slot allows a continuous chip flow.




Eigenschaften:
Zirkularfräser.
Selbstklemmendes Werkzeug mit Doppelprisma und absolutem Festpunkt. Die besondere Form der Spanleitstufe in der Nut erlaubt einen kontinuierlichen Spanfluß.





# 2942.90

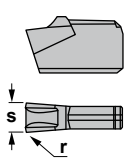
| Reference<br>Bezeichnung | | ST-B | B | D | d | Ae | Rev max. min-1<br>Umdrehungen<br>max. min-1 | | Insert size<br>Wendeschneidplatte | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2942.90.0801.2 | 4 | 1.6 | 1.2 | 80 | 16 | 22 | 1000 | 5733 | FRC.. 1,6 | 0,045 |
| 2942.90.0801.8 | 4 | 2.2 | 1.8 | 80 | 16 | 22 | 1000 | 5733 | FRC.. 2,2 | 0,070 |
| 2942.90.0802.4 | 4 | 3.0 | 2.4 | 80 | 16 | 22 | 1000 | 5733 | FRC.. 3,0 | 0,090 |
| 2942.90.0803.0 | 4 | 4.0 | 3.0 | 80 | 16 | 22 | 1000 | 5733 | FRC.. 4,0 | 0,115 |
| 2942.90.0804.4 | 4 | 5.0+6.0 | 4.4 | 80 | 16 | 22 | 1000 | 5733 | FRC.. 5,0-6,0 | 0,165 |
| 2942.90.1001.2 | 8 | 1.6 | 1.2 | 100 | 22 | 28 | 800 | 5733 | FRC.. 1,6 | 0,070 |
| 2942.90.1001.8 | 8 | 2.2 | 1.8 | 100 | 22 | 28 | 800 | 5733 | FRC.. 2,2 | 0,105 |
| 2942.90.1002.4 | 8 | 3.0 | 2.4 | 100 | 22 | 28 | 800 | 5733 | FRC.. 3,0 | 0,130 |
| 2942.90.1003.0 | 8 | 4.0 | 3.0 | 100 | 22 | 28 | 800 | 5733 | FRC.. 4,0 | 0,175 |
| 2942.90.1004.4 | 8 | 5.0+6.0 | 4.4 | 100 | 22 | 28 | 800 | 5733 | FRC.. 5,0-6,0 | 0,260 |
| 2942.90.1251.2 | 10 | 1.6 | 1.2 | 125 | 22 | 40 | 650 | 5733 | FRC.. 1,6 | 0,110 |
| 2942.90.1251.8 | 10 | 2.2 | 1.8 | 125 | 22 | 40 | 650 | 5733 | FRC.. 2,2 | 0,170 |
| 2942.90.1252.4 | 10 | 3.0 | 2.4 | 125 | 22 | 40 | 650 | 5733 | FRC.. 3,0 | 0,220 |
| 2942.90.1253.0 | 10 | 4.0 | 3.0 | 125 | 22 | 40 | 650 | 5733 | FRC.. 4,0 | 0,280 |
| 2942.90.1254.4 | 10 | 5.0+6.0 | 4.4 | 125 | 22 | 40 | 650 | 5733 | FRC.. 5,0-6,0 | 0,410 |
| 2942.90.1602.4 | 15 | 3.0 | 2.4 | 160 | 32 | 49 | 500 | 5733 | FRC.. 3,0 | 0,360 |
| 2942.90.1603.0 | 15 | 4.0 | 3.0 | 160 | 32 | 49 | 500 | 5733 | FRC.. 4,0 | 0,450 |
| 2942.90.1604.4 | 15 | 5.0+6.0 | 4.4 | 160 | 32 | 49 | 500 | 5733 | FRC.. 5,0-6,0 | 0,660 |
| 2942.90.2002.4 | 20 | 3.0 | 2.4 | 200 | 40 | 63 | 400 | 5733 | FRC.. 3,0 | 0,570 |
| 2942.90.2003.0 | 20 | 4.0 | 3.0 | 200 | 40 | 63 | 400 | 5733 | FRC.. 4,0 | 0,700 |
| 2942.90.2004.4 | 20 | 5.0+6.0 | 4.4 | 200 | 40 | 63 | 400 | 5733 | FRC.. 5,0-6,0 | 1,040 |
| 2942.90.2502.4 | 24 | 3.0 | 2.4 | 250 | 40 | 88 | 300 | 5733 | FRC.. 3,0 | 0,900 |
| 2942.90.2503.0 | 24 | 4.0 | 3.0 | 250 | 40 | 88 | 300 | 5733 | FRC.. 4,0 | 1,125 |
| 2942.90.2504.4 | 24 | 5.0+6.0 | 4.4 | 250 | 40 | 88 | 300 | 5733 | FRC.. 5,0-6,0 | 1,650 |

## FRC..

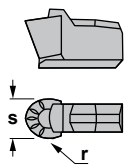
Single-ended inserts.
Einseitige Wendeschneidplatten. F13

| Reference / Bez. | s | r |
|---|---|---|
| FRC 1,6 | 1,6 | 0,15 |
| FRC 2,2 | 2,2 | 0,20 |
| FRC 3,0 | 3,0 | 0,20 |
| FRC 4,0 | 4,0 | 0,20 |
| FRC 5,0 | 5,0 | 0,30 |
| FRC 6,0 | 6,0 | 0,30 |
| FRCR 3,0 | 3,0 | 1,50 |
| FRCR 4,0 | 4,0 | 2,00 |
| FRCR 5,0 | 5,0 | 2,50 |
| FRCR 6,0 | 6,0 | 3,00 |

FRC




FRCR




FRC

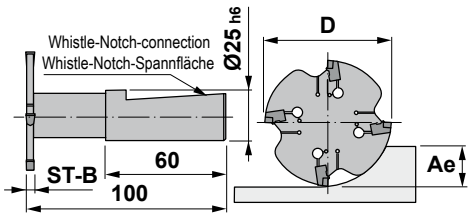


FRCR

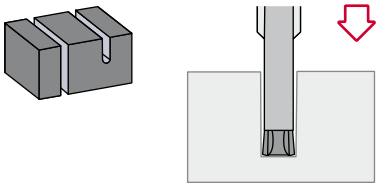




Characteristics:
Circular miller.
Self-clamping tool with double prism and fixed reference point.
Inserts can be changed in less than 10 seconds per insert without removing the cutter from the machine. The inserts are released from the prism with the help of the included assembly-key.




Eigenschaften:
Zirkularfräser.
Selbstklemmendes Werkzeug mit Doppelprisma und absolutem Festpunkt.
Das Austauschen der Wendeplatten dauert pro Schneide kaum 10 Sekunden und kann in der Maschine, ohne Demontage des Scheibenfräsers vorgenommen werden.
Die Wendeplatte wird mit Hilfe des mitgelieferten Montageschlüssels aus dem Prisma gelöst.



# 2942.07

| Reference<br>Bezeichnung | | ST-B | B | D | Ae | Rev max.<br>Umdrehungen max. | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 2942.07.0631.8 | 4 | 2,2 | 1,8 | 63 | 20 | 1250 | FRC.. 2,2 | 0,370 |
| 2942.07.0632.4 | 4 | 3,0 | 2,4 | 63 | 20 | 1250 | FRC.. 3,0 | 0,385 |
| 2942.07.0633.0 | 4 | 4,0 | 3,0 | 63 | 20 | 1250 | FRC.. 4,0 | 0,400 |
| 2942.07.0801.8 | 5 | 2,2 | 1,8 | 80 | 26 | 1000 | FRC.. 2,2 | 0,405 |
| 2942.07.0802.4 | 5 | 3,0 | 2,4 | 80 | 26 | 1000 | FRC.. 3,0 | 0,430 |
| 2942.07.0803.0 | 5 | 4,0 | 3,0 | 80 | 26 | 1000 | FRC.. 4,0 | 0,460 |
| 2942.07.1001.8 | 8 | 2,2 | 1,8 | 100 | 36 | 800 | FRC.. 2,2 | 0,445 |
| 2942.07.1002.4 | 8 | 3,0 | 2,4 | 100 | 36 | 800 | FRC.. 3,0 | 0,480 |
| 2942.07.1003.0 | 8 | 4,0 | 3,0 | 100 | 36 | 800 | FRC.. 4,0 | 0,520 |

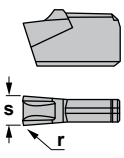
| Reference<br>Bezeichnung | |
|---|---|
| 2942.07.0631.8 | 5733 |
| 2942.07.0632.4 | 5733 |
| 2942.07.0633.0 | 5733 |
| 2942.07.0801.8 | 5733 |
| 2942.07.0802.4 | 5733 |
| 2942.07.0803.0 | 5733 |
| 2942.07.1001.8 | 5733 |
| 2942.07.1002.4 | 5733 |
| 2942.07.1003.0 | 5733 |

## FRC..

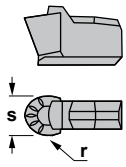
Single-ended inserts.
Einseitige Wendeschneidplatten. F13

| Reference / Bez. | s | r |
|---|---|---|
| FRC 2,2 | 2,2 | 0,20 |
| FRC 3,0 | 3,0 | 0,20 |
| FRC 4,0 | 4,0 | 0,20 |
| FRCR 3,0 | 3,0 | 1,50 |
| FRCR 4,0 | 4,0 | 2,00 |

FRC




FRCR




FRC

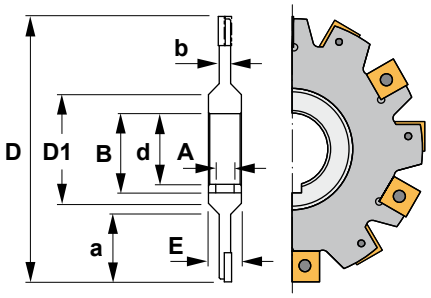


FRCR

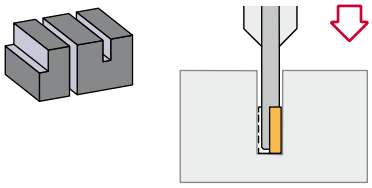




Characteristics:
Slot cutter with an angle of 92° that uses strong inserts allowing deep passes and high feed per teeth. Positive chip forming inserts are available to machine sticky materials.
Warning!! Not suitable for flat bottom applications.




Eigenschaften:
Scheibenfräser mit einem Eingriffswinkel von 92° und starken Wendeschneidplatten, die hohe Schnittiefen und einen hohen Vorschub pro Zahn erlauben.
Wendeschneidplatten mit positivem Spanwinkel sind geeignet, um klebende Materialien zu bearbeiten.
Achtung! Nicht geeignet für geraden Nutgrund.



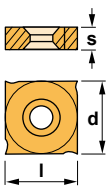
# 1942.90

| Reference<br>Bezeichnung | | D | b | d | A | B | D1 | E | a | | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1942.90.100.04 | 12 | 100 | 4 | 27 | 7 | 29,8 | 41 | 12 | 25 | 1735 5607 | SNHX 1102.. | 0,200 |
| 1942.90.125.04 | 14 | 125 | 4 | 32 | 8 | 34,8 | 48 | 12 | 40 | 1735 5607 | SNHX 1102.. | 0,350 |
| 1942.90.100.05 | 12 | 100 | 5 | 27 | 7 | 29,8 | 41 | 12 | 25 | 1835 5607 | SNHX 1103.. | 0,250 |
| 1942.90.125.05 | 14 | 125 | 5 | 32 | 8 | 34,8 | 48 | 12 | 40 | 1835 5607 | SNHX 1103.. | 0,400 |
| 1942.90.160.05 | 18 | 160 | 5 | 40 | 10 | 43,5 | 58 | 12 | 44 | 1835 5607 | SNHX 1103.. | 0,650 |
| 1942.90.100.06 | 10 | 100 | 6 | 27 | 7 | 29,8 | 41 | 12 | 25 | 1745 5615 | SNHX 1203.. | 0,300 |
| 1942.90.125.06 | 12 | 125 | 6 | 32 | 8 | 34,8 | 48 | 12 | 40 | 1745 5615 | SNHX 1203.. | 0,450 |
| 1942.90.160.06 | 16 | 160 | 6 | 40 | 10 | 43,5 | 58 | 12 | 44 | 1745 5615 | SNHX 1203.. | 0,750 |
| 1942.90.200.06 | 18 | 200 | 6 | 50 | 12 | 53,8 | 72 | 12 | 54 | 1745 5615 | SNHX 1203.. | 1,150 |
| 1942.90.250.06 | 24 | 250 | 6 | 50 | 12 | 53,8 | 72 | 12 | 79 | 1745 5615 | SNHX 1203.. | 1,800 |
| 1942.90.100.08 | 10 | 100 | 8 | 27 | 7 | 29,8 | 41 | 12 | 25 | 1846 5615 | SNHX 12045.. | 0,350 |
| 1942.90.125.08 | 12 | 125 | 8 | 32 | 8 | 34,8 | 48 | 12 | 40 | 1846 5615 | SNHX 12045.. | 0,550 |
| 1942.90.160.08 | 16 | 160 | 8 | 40 | 10 | 43,5 | 58 | 12 | 44 | 1846 5615 | SNHX 12045.. | 0,950 |
| 1942.90.200.08 | 18 | 200 | 8 | 50 | 12 | 53,8 | 72 | 12 | 54 | 1846 5615 | SNHX 12045.. | 1,550 |
| 1942.90.250.08 | 24 | 250 | 8 | 50 | 12 | 53,8 | 72 | 12 | 79 | 1846 5615 | SNHX 12045.. | 2,400 |
| 1942.90.100.10 | 10 | 100 | 10 | 27 | 7 | 29,8 | 41 | 12 | 25 | 1845 5615 | SNHX 1205.. | 0,400 |
| 1942.90.125.10 | 12 | 125 | 10 | 32 | 8 | 34,8 | 48 | 12 | 40 | 1845 5615 | SNHX 1205.. | 0,700 |
| 1942.90.160.10 | 16 | 160 | 10 | 40 | 10 | 43,5 | 58 | 12 | 44 | 1845 5615 | SNHX 1205.. | 1,150 |
| 1942.90.200.10 | 18 | 200 | 10 | 50 | 12 | 53,8 | 72 | 12 | 54 | 1845 5615 | SNHX 1205.. | 1,900 |
| 1942.90.250.10 | 24 | 250 | 10 | 50 | 12 | 53,8 | 72 | 12 | 79 | 1845 5615 | SNHX 1205.. | 3,050 |
| 1942.90.100.12 | 10 | 100 | 12 | 27 | 7 | 29,8 | 41 | 16 | 25 | 1847 5615 | SNHX 1207.. | 0,500 |
| 1942.90.125.12 | 12 | 125 | 12 | 32 | 8 | 34,8 | 48 | 16 | 40 | 1847 5615 | SNHX 1207.. | 0,850 |
| 1942.90.160.12 | 16 | 160 | 12 | 40 | 10 | 43,5 | 58 | 16 | 44 | 1847 5615 | SNHX 1207.. | 1,400 |
| 1942.90.200.12 | 18 | 200 | 12 | 50 | 12 | 53,8 | 72 | 16 | 54 | 1847 5615 | SNHX 1207.. | 2,350 |
| 1942.90.250.12 | 24 | 250 | 12 | 50 | 12 | 53,8 | 72 | 16 | 79 | 1847 5615 | SNHX 1207.. | 3,750 |

## SNHX

Square negative insert.
Vierkantige negative Wendeschneidplatte.
F18

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SNHX 1102.. | 11,00 | 2,38 | 11,00 |
| SNHX 1103.. | 11,00 | 2,70 | 11,00 |
| SNHX 1203.. | 12,70 | 3,18 | 12,70 |
| SNHX 12045.. | 12,70 | 4,50 | 12,70 |
| SNHX 1205.. | 12,70 | 5,40 | 12,70 |
| SNHX 1207.. | 12,70 | 7,00 | 12,70 |




SNHX

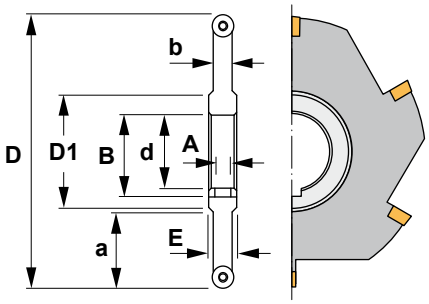




Characteristics:

Slot cutter that uses round strong inserts allowing deep passes and high feed per teeth. Positive chip forming inserts are available to machine sticky materials.

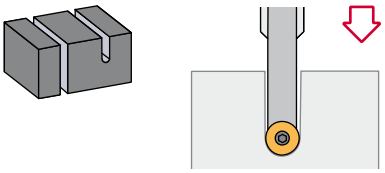
It works well on steels, alloyed steels, stainless steel, refractory casts and aluminium alloys.




Eigenschaften:

Dieser Scheibenfräser hat starke runde Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Wendeschneidplatten mit positivem Spanwinkel sind geeignet um klebende Materialien zu bearbeiten.

Für Stahl, legierten Stahl, rostfreien Stahl, hitzebeständige Gußteile und Aluminium-Legierungen empfohlen.



# 1520.90

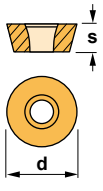
| Reference Bezeichnung | | D | b | d | A | B | D1 | E | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1520.90.050 | 5 | 50 | 8 | 16 | 4 | 18,0 | 28 | 10 | 10 | RPMW 0802M0 | 0,065 |
| 1520.90.063 | 6 | 63 | 8 | 22 | 6 | 24,5 | 35 | 10 | 12 | RPMW 0802M0 | 0,100 |
| 1520.90.080 | 7 | 80 | 8 | 22 | 6 | 24,5 | 35 | 10 | 20 | RPMW 0802M0 | 0,200 |
| 1520.90.100 | 8 | 100 | 8 | 27 | 7 | 29,8 | 41 | 10 | 28 | RPMW 0802M0 | 0,300 |
| 1520.90.125 | 9 | 125 | 8 | 32 | 8 | 34,8 | 48 | 10 | 39 | RPMW 0802M0 | 0,550 |
| 1520.90.160 | 10 | 160 | 8 | 40 | 10 | 43,5 | 58 | 10 | 49 | RPMW 0802M0 | 0,850 |
| 1520.90.200 | 12 | 200 | 8 | 50 | 12 | 53,8 | 72 | 10 | 60 | RPMW 0802M0 | 1,450 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1520.90.050 | 1230 | 5508 | - | 1.2 |
| 1520.90.063 | 1230 | 5508 | - | 1.2 |
| 1520.90.080 | 1230 | 5508 | - | 1.2 |
| 1520.90.100 | 1230 | - | 5608 | 1.2 |
| 1520.90.125 | 1230 | - | 5608 | 1.2 |
| 1520.90.160 | 1230 | - | 5608 | 1.2 |
| 1520.90.200 | 1230 | - | 5608 | 1.2 |

## RPMW

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F16

| Reference / Bezeichnung | s | d |
|---|---|---|
| RPMW 0802M0 | 2,38 | 8,00 |




RPMW

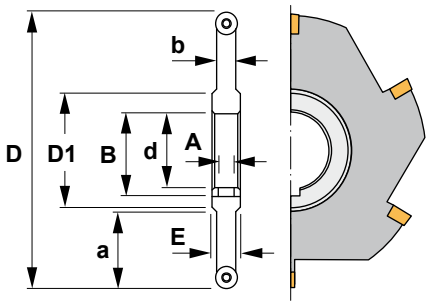




Characteristics:

Slot cutter that uses round strong inserts allowing deep passes and high feed per teeth. Positive chip forming inserts are available to machine sticky materials.

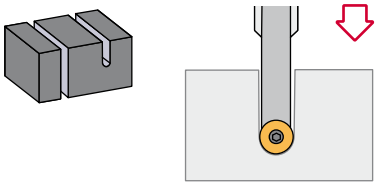
It works well on steels, alloyed steels, stainless steel, refractory casts and aluminium alloys.




Eigenschaften:

Dieser Scheibenfräser hat starke runde Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Wendeschneidplatten mit positivem Spanwinkel sind geeignet um klebende Materialien zu bearbeiten.

Für Stahl, legierten Stahl, rostfreien Stahl, hitzebeständige Gußteile und Aluminium-Legierungen empfohlen.



# 1530.90

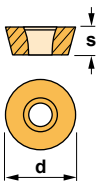
| Reference Bezeichnung | | D | b | d | A | B | D1 | E | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1530.90.050 | 5 | 50 | 10 | 16 | 4 | 18,0 | 28 | 12 | 10 | RPMW 1003M0 | 0,060 |
| 1530.90.063 | 5 | 63 | 10 | 22 | 6 | 24,5 | 35 | 12 | 12 | RPMW 1003M0 | 0,100 |
| 1530.90.080 | 6 | 80 | 10 | 22 | 6 | 24,5 | 35 | 12 | 20 | RPMW 1003M0 | 0,150 |
| 1530.90.100 | 7 | 100 | 10 | 27 | 7 | 29,8 | 41 | 12 | 28 | RPMW 1003M0 | 0,350 |
| 1530.90.125 | 8 | 125 | 10 | 32 | 8 | 34,8 | 48 | 12 | 39 | RPMW 1003M0 | 0,650 |
| 1530.90.160 | 9 | 160 | 10 | 40 | 10 | 43,5 | 58 | 12 | 49 | RPMW 1003M0 | 1,100 |
| 1530.90.200 | 10 | 200 | 10 | 50 | 12 | 53,8 | 72 | 12 | 60 | RPMW 1003M0 | 1,750 |
| 1530.90.250 | 12 | 250 | 10 | 50 | 12 | 53,8 | 72 | 12 | 86 | RPMW 1003M0 | 2,800 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1530.90.050 | 1440 | 5515 | - | 3.0 |
| 1530.90.063 | 1240 | 5515 | - | 3.0 |
| 1530.90.080 | 1240 | 5515 | - | 3.0 |
| 1530.90.100 | 1240 | - | 5615 | 3.0 |
| 1530.90.125 | 1240 | - | 5615 | 3.0 |
| 1530.90.160 | 1240 | - | 5615 | 3.0 |
| 1530.90.200 | 1240 | - | 5615 | 3.0 |
| 1530.90.250 | 1240 | - | 5615 | 3.0 |

## RPMW

Round positive insert with 11° clearance. F16
Runde positive Wendeschneidplatte mit 11° Freiwinkel.

| Reference / Bezeichnung | s | d |
|---|---|---|
| RPMW 1003M0 | 3,18 | 10,00 |




RPMW

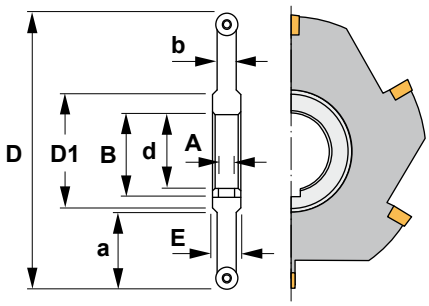




Characteristics:

Slot cutter that uses round strong inserts allowing deep passes and high feed per teeth. Positive chip forming inserts are available to machine sticky materials.

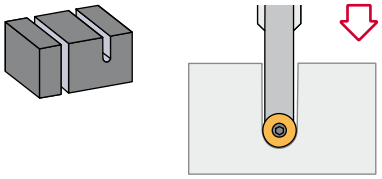
It works well on steels, alloyed steels, stainless steel, refractory casts and aluminium alloys.




Eigenschaften:

Dieser Scheibenfräser hat starke runde Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben. Wendeschneidplatten mit positivem Spanwinkel sind geeignet um klebende Materialien zu bearbeiten.

Für Stahl, legierten Stahl, rostfreien Stahl, hitzebeständige Gußteile und Aluminium-Legierungen empfohlen.



# 1549.90

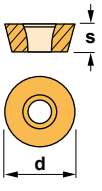
| Reference<br>Bezeichnung | | D | b | d | A | B | D1 | E | a | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1549.90.080 | 6 | 80 | 12 | 22 | 6 | 24,5 | 35 | 14 | 20 | RPMW 1204M0 | 0,250 |
| 1549.90.100 | 7 | 100 | 12 | 27 | 7 | 29,8 | 41 | 14 | 28 | RPMW 1204M0 | 0,400 |
| 1549.90.125 | 8 | 125 | 12 | 32 | 8 | 34,8 | 48 | 14 | 39 | RPMW 1204M0 | 0,750 |
| 1549.90.160 | 9 | 160 | 12 | 40 | 10 | 43,5 | 58 | 14 | 49 | RPMW 1204M0 | 1,200 |
| 1549.90.200 | 10 | 200 | 12 | 50 | 12 | 53,8 | 72 | 14 | 60 | RPMW 1204M0 | 1,900 |
| 1549.90.250 | 12 | 250 | 12 | 50 | 12 | 53,8 | 72 | 14 | 86 | RPMW 1204M0 | 3,250 |

| Reference<br>Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1549.90.080 | 1240 | 5515 | - | 3.0 |
| 1549.90.100 | 1240 | - | 5615 | 3.0 |
| 1549.90.125 | 1240 | - | 5615 | 3.0 |
| 1549.90.160 | 1240 | - | 5615 | 3.0 |
| 1549.90.200 | 1240 | - | 5615 | 3.0 |
| 1549.90.250 | 1240 | - | 5615 | 3.0 |

## RPMW

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F16

| Reference / Bezeichnung | s | d |
|---|---|---|
| RPMW 1204M0 | 4,76 | 12,00 |

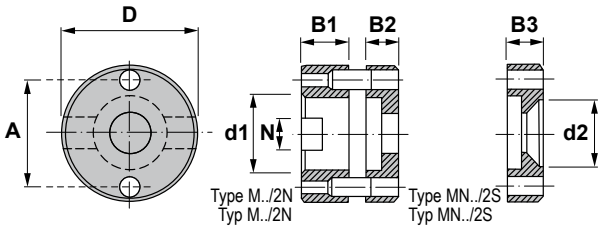



RPMW

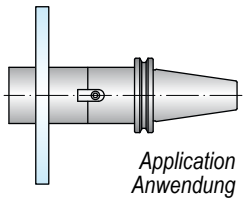




Characteristics:
Drive-rings (set) with cross groove.
For 2942.90 milling cutters.




Eigenschaften:
Mitnehmerringe (Satz) mit Quernut.
Für Scheibenfräser 2942.90.



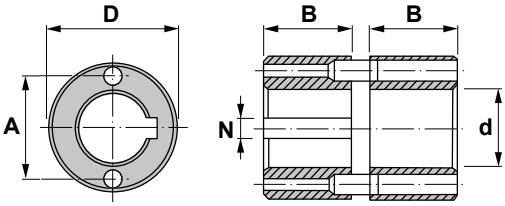
*Application*
*Anwendung*

# M

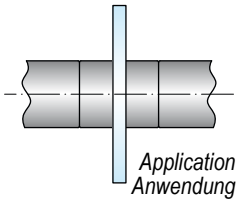
| Reference<br>Bezeichnung | D | d1 | d2 | A | B1 | B2 | B3 | N | For side milling cutter<br>Für Scheibenfräser | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| M 16/2 N | 32 | 16 | 10 | 25 | 13,5 | 10 | - | 8,4 | 80 | 0,130 |
| M 22/2 N | 40 | 22 | 12 | 32 | 14,5 | 10 | - | 10,4 | 100-125 | 0,200 |
| M 32/2 N | 58 | 32 | 18 | 46 | 17,5 | 15 | - | 14,4 | 160 | 0,590 |
| M 40/2 N | 70 | 40 | 22 | 56 | 19,5 | 17 | - | 16,4 | 200-250 | 0,820 |
| M 16/2 S | 32 | 16 | 10 | 25 | 13,5 | - | 10 | 8,4 | 80 | 0,125 |
| M 22/2 S | 40 | 22 | 12 | 32 | 14,5 | - | 10 | 10,4 | 100-125 | 0,190 |
| M 32/2 S | 58 | 32 | 18 | 46 | 17,5 | - | 15 | 14,4 | 160 | 0,570 |
| M 40/2 S | 70 | 40 | 22 | 56 | 19,5 | - | 17 | 16,4 | 200-250 | 0,800 |



Characteristics:
Drive-rings (set) with longitudinal groove.
For 2942.90 milling cutters.




Eigenschaften:
Mitnehmerringe (Satz) mit Längsnut.
Für Scheibenfräser 2942.90.



*Application*
*Anwendung*

# MN

| Reference<br>Bezeichnung | D | d | A | B | N | For side milling cutter<br>Für Scheibenfräser | Kg |
|---|---|---|---|---|---|---|---|
| MN 16/2 | 32 | 16 | 25 | 25 | 4 | 80 | 0,240 |
| MN 22/2 | 40 | 22 | 32 | 25 | 6 | 100-125 | 0,340 |
| MN 32/2 | 58 | 32 | 46 | 25 | 8 | 160 | 0,720 |
| MN 40/2 | 70 | 40 | 56 | 25 | 10 | 200-250 | 1,010 |

F

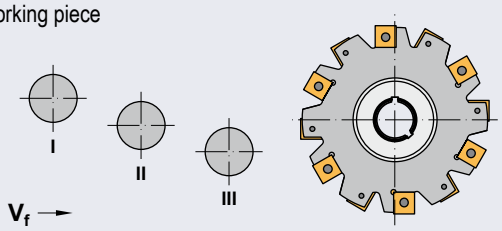
## Cutting data for slot side and face milling cutters

**Cutting speed nominal values**

| Material | HB | Basic grades | | | |
|---|---|---|---|---|---|
| | | TIN25 | PM25 | KM15 | TL40 |
| | | Cutting speed m/min. | | | |
| Unalloyed steel | 90-250 | 100-210 | 80-180 | | 80-180 |
| Low alloyed steel | 130-400 | 50-150 | 50-140 | | 50-140 |
| High alloyed steel | 150-500 | 30-90 | 40-90 | | 40-90 |
| Martensitic, Stainless steel ferritic | 150-270 | 100-200 | 80-130 | | 80-130 |
| Steel castings | 150-200 | 60-130 | 40-90 | | 40-90 |
| **Material** M | **HB** | **Basic grades** | | | |
| | | TIN25 | PM25 | KM15 | TL40 |
| | | Cutting speed m/min. | | | |
| Austenitic, Stainless steel | 150-270 | 80-180 | 50-120 | | 20-50 |
| Titanium | 300-450 | | | 20-80 | |
| **Material** K | **HB** | **Basic grades** | | | |
| | | TIN25 | PM25 | KM15 | TL40 |
| | | Cutting speed m/min. | | | |
| Malleable cast iron | 110-230 | | | 60-90 | |
| Grey cast iron | 180-260 | | | 80-120 | |
| Nodular cast iron | 160-250 | | | 60-80 | |
| Aluminium alloys | | | | 200-600 | |
| Bronze and brass alloys | 60-150 | | | 70-150 | |

**Machining example**

Working piece

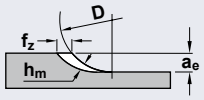



| Examples | Average chip thickness ($h_m$) mm |
|---|---|
| I | 0,08 - 0,09 |
| II | 0,08 |
| III | 0,07 - 0,08 |

**Example I:** $f_z \sim h_m$ **Example III:** $f_z = h_m \sqrt{\frac{D}{a_e}}$

**Example II:** $f_z$ must be calculated between examples I and II

$f_z$ = Feed per tooth
**D** = Milling cutter diameter
$a_e$ = Radial cutting depth
$h_m$ = Average chip thickness




**Feed nominal values**

Depending on the milling cutter situation and in relationship with its diameter and the cutting depth, the average chip thickness ($h_m$) can considerably vary, but it will always be smaller than the feed per tooth.
When you mill a groove, the feed is distributed between two stepped inserts, wich are symmetrically spaced one at each side of the milling cutter, forming together the slot. Therefore, when you use the formulae, the z value (number of teeth) must always be divided by two.

F

## Cutting data for slot side and face milling cutters

**Cutting speed nominal values - hm 0,05-0,12**

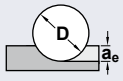
| Material | HB | TIN25 | PM25 | TL40 |
|---|---|---|---|---|
| | | Cutting speed m/min. | | |
| Unalloyed steel | 110-310 | 140-240 | 130-250 | 130-250 |
| Low alloyed steel | 125-450 | 130-210 | 85-180 | 85-180 |
| High alloyed steel | 150-500 | 120-80 | 60-120 | 60-120 |
| Stainless | 150-270 | | | |
| Steel castings | 150-250 | 130-210 | 55-115 | 55-115 |
| **Material** M | **HB** | **TIN25** | | **TL40** |
| | | Cutting speed m/min. | | |
| Austenitic, Stainless steel | | 40-90 | | |
| Titanium | | | | 20-80 |
| **Material** K | **HB** | **KM15** | | **PM25** |
| | | Cutting speed m/min. | | |
| Malleable cast iron | 110-230 | 60-90 | | 55-100 |
| Grey cast iron | 180-260 | 80-120 | | 60-120 |
| Nodular cast iron-S. graphite | 160-250 | 60-80 | | 40-80 |
| Alumimium alloys | 30-100 | 200-600 | | |
| Bronze and brass alloys | 60-150 | 70-150 | | |

**Feed nominal values**

The chip average thickness ($h_m$) must be 0,10 mm.

This corresponds to a feed per tooth of 0,3 mm in most of the operations made by a side and face milling cutter.

If the radial cutting depth (a2) is too small compared with the milling cutter diameter, use the following formula:




$f_z = 0{,}10 \sqrt{\frac{D}{a_e}}$

**NOTE:**
In order to calculate the table feeds, use the half of the inserts in a three cut milling cutter and a face milling cutter in order to get the effective number of teeth.

Table feed = rpm x number of effective teeth x $f_z$

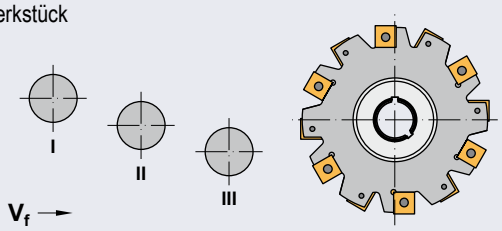
## Schnittdaten für Scheiben- und Nutenfräser

**Nennwerte der Schnittgeschwindigkeit**

| Materialien P | HB | Hauptsorten TIN25 | PM25 | KM15 | TL40 |
|---|---|---|---|---|---|
| | | Schnittgeschwindigkeit M/min. | | | |
| Unlegierter Stahl | 90-250 | 100-210 | 80-180 | | 80-180 |
| Niedriglegierter Stahl | 130-400 | 50-150 | 50-140 | | 50-140 |
| Hochlegierter Stahl | 150-500 | 30-90 | 40-90 | | 40-90 |
| Martensitisch, rostfreier Stahl, ferritisch | 150-270 | 100-200 | 80-130 | | 80-130 |
| Stahlguß | 150-200 | 60-130 | 40-90 | | 40-90 |
| **Materialien M** | **HB** | **Hauptsorten TIN25** | **PM25** | **KM15** | **TL40** |
| | | Schnittgeschwindigkeit M/min. | | | |
| Austenitisch, rostfreier Stahl | 150-270 | 80-180 | 50-120 | | 20-50 |
| Titan | 300-450 | | | 20-80 | |
| **Materialien K** | **HB** | **Hauptsorten TIN25** | **PM25** | **KM15** | **TL40** |
| | | Schnittgeschwindigkeit M/min. | | | |
| Temperguß | 110-230 | | | 60-90 | |
| Grauguß | 180-260 | | | 80-120 | |
| Kugelgraphitguß | 160-250 | | | 60-80 | |
| Aluminium-Legierungen | | | | 200-600 | |
| Bronze- und Messinglegierungen | 60-150 | | | 70-150 | |

**Bearbeitungsbeispiel**

Werkstück

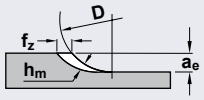



| Beispiele | Durchschnittliche Dicke der Späne ($h_m$) mm |
|---|---|
| I | 0,08 - 0,09 |
| II | 0,08 |
| III | 0,07 - 0,08 |

**Beispiel I:** $f_z \sim h_m$ **Beispiel III:** $f_z = h_m \sqrt{\frac{D}{a_e}}$

**Beispiel II:** $f_z$ soll zwischen Beispiel I und Beispiel II kalkuliert werden

$f_z$ = Vorschub pro Zahn
**D** = Durchmesser des Fräsers
$a_e$ = Radiale Schnittiefe
$h_m$ = Durchschnittliche Spandicke




**Nennwerte des Vorschubs**

Die durchschnittliche Spandicke ($h_m$) kann erheblich variieren, es kommt auf die Situation des Fräsers und seine Beziehung mit dem Durchmesser und der Schnitttiefe an, aber sie wird immer kleiner als der Vorschub pro Zahn sein.
Wenn man eine Nut fräst, ist der Vorschub zwischen zwei gestuften Wendeplatten ausgeteilt, eine auf jeder Seite des Fräsers, die zusammen die Nute bilden. Deswegen muß der Wert z (Zähnezahl) immer durch zwei geteilt werden, wenn man diese Formel verwendet.

F

## Schnittdaten für Nuten- Kontur- und Planfräser

**Nennwerte der Schnittgeschwindigkeit - hm 0,05-0,12**

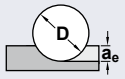
| Materialien P | HB | TIN25 | PM25 | TL40 |
|---|---|---|---|---|
| | | Schnittgeschwindigkeit M/min. | | |
| Unlegierter Stahl | 110-310 | 140-240 | 130-250 | 130-250 |
| Niedriglegierter Stahl | 125-450 | 130-210 | 85-180 | 85-180 |
| Hochlegierter Stahl | 150-500 | 120-80 | 60-120 | 60-120 |
| Rostfreier Stahl | 150-270 | | | |
| Stahlguß | 150-250 | 130-210 | 55-115 | 55-115 |
| **Materialien M** | **HB** | **TIN25** | | **TL40** |
| | | Schnittgeschwindigkeit M/min. | | |
| Austenitisch, rostfreier Stahl | | 40-90 | | |
| Titan | | | | 20-80 |
| **Materialien K** | **HB** | **KM15** | | **PM25** |
| | | Schnittgeschwindigkeit M/min. | | |
| Temperguß | 110-230 | 60-90 | | 55-100 |
| Grauguß | 180-260 | 80-120 | | 60-120 |
| Kugelgraphitguß-S. Graphit | 160-250 | 60-80 | | 40-80 |
| Aluminium-Legierungen | 30-100 | 200-600 | | |
| Bronze- und Messinglegierungen | 60-150 | 70-150 | | |

**Nennwerte des Vorschubs**

Die durchschnittliche Dicke der Späne ($h_m$) muss 0,10 mm sein.

Das entspricht einem Vorschub pro Zahn von 0,3 mm, gültig für die meisten Anwendungsfälle für einen Nutenfräser.

Falls die Radialschnittiefe (a2) zu klein im Vergleich mit dem Fräserdurchmesser ist, sollte man folgende Formel verwenden:




$f_z = 0{,}10 \sqrt{\frac{D}{a_e}}$

**BEMERKUNG:**
Um den Vorschub zu berechnen, beachten Sie, daß Sie bei einem dreiseitig schneidenden Werkzeug die halbe Zähnezahl und bei einem einseitig schneidenden Werkzeug die volle Zähnezahl verwenden müssen.

Frästisch-Vorschub = rpm x effektive Zähnezahl x $f_z$





# PROFILE MILLING CUTTERS
# PROFILFRÄSEN

Applications index F119
Anwendungen

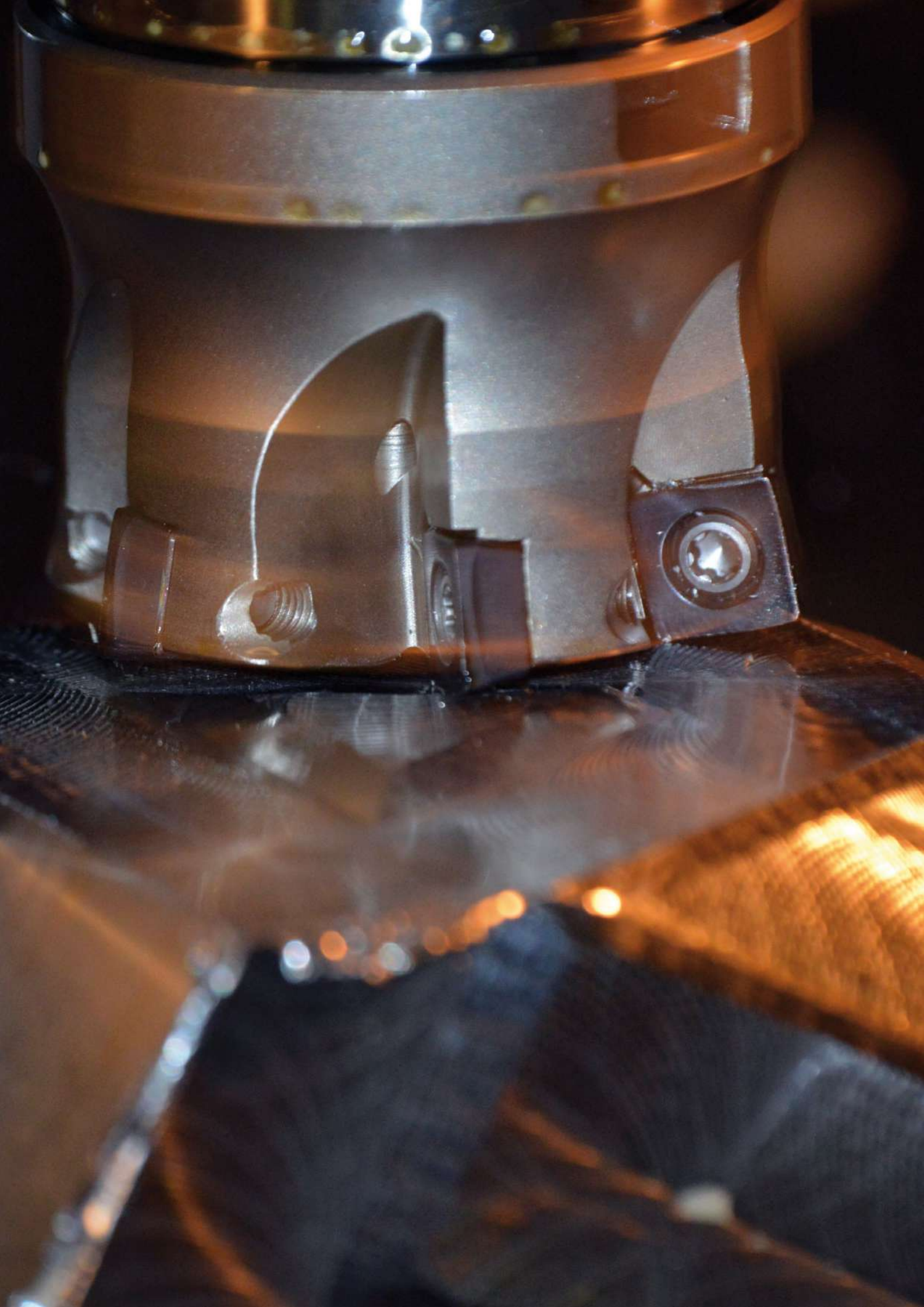
High feed F120-127
Hoher Vorschub

Round inserts F128-135
Fräser mit runden Wendeschneidplatten

Aluminium die cutting F136-138
Fräser für Aluminium-Formen

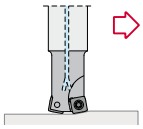
Finishing ball nose F139-146
Kugelbahnfräser zum Schlichten

F



## High feed
## Hoher Vorschub

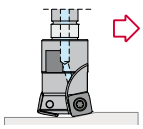
**16$\frac{2}{4}$9.03** High feed / Hoher Vorschub



SPMX 0735..
SPMX 0945..
SPMX 1155..

*Page* / *Seite F120*

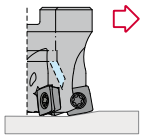
**16$\frac{2}{4}$9.06** High feed / Hoher Vorschub



SPMX 0735..
SPMX 0945..
SPMX 1155..

*Page* / *Seite F121*

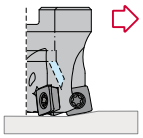
**1639.93** High feed / Hoher Vorschub



SPMX 0945..

*Page* / *Seite F122*

**1649.93** High feed / Hoher Vorschub

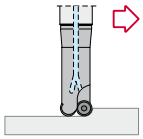


SPMX 1155..

*Page* / *Seite F123*

## Round inserts
## Runde Wendeschneidplatten

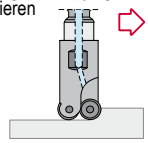
**55_5** Facing and copying / Kopieren



RD.. 0702..
RD.. 1604..

*Page* / *Seite F128*

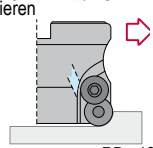
**55_5.06** Facing and copying / Kopieren



RD.. 0702..
RD.. 1604..

*Page* / *Seite F129*

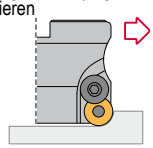
**55$\frac{4}{5}$5.93** Facing and copying / Kopieren



RD.. 12T3..
RD.. 1604..

*Page* / *Seite F130*

**5549.90** Facing and copying / Kopieren

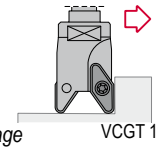


RPM.. 1204..

*Page* / *Seite F131*

## Aluminium die cutting
## Fräser für Aluminium-Formen

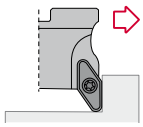
**0344.06** General application / Allgemeine Anwendungen



VCGT 1103..
VCGT 2205..

*Page* / *Seite F136*

**0344.90** General application / Allgemeine Anwendungen

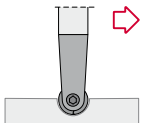


VCGT 2205..

*Page* / *Seite F137*

## Finishing ball nose
## Kugelbahnfräser zum Schlichten

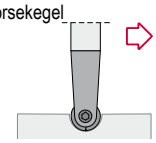
**85_0** Copy applic.-Cylindric / Kopieranwendungen-Zylindrisch



HPR 10
HPR 32

*Page* / *Seite F139*

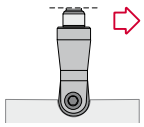
**85_3** Copy applic.-Morse / Kopieranwendungen-Morsekegel



HPR 25
HPR 32

*Page* / *Seite F140*

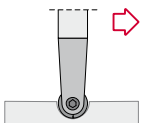
**85_06** Copy applications / Kopieranwendungen-Modular



HPR 10
HPR 25

*Page* / *Seite F141*

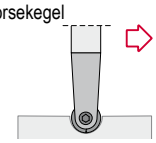
**88_0** Copy applic.-Cylindric / Kopieranwendungen-Zylindrisch



RPR 10
RPR 32

*Page* / *Seite F142*

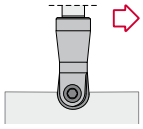
**88_3** Copy applic.-Morse / Kopieranwendungen-Morsekegel



RPR 20
RPR 32

*Page* / *Seite F143*

**88_06** Copy applications / Kopieranwendungen-Modular



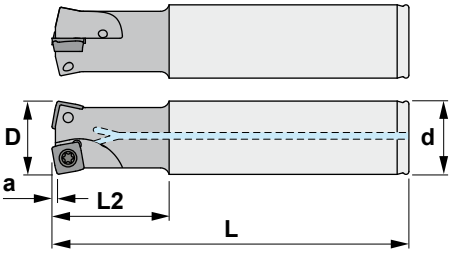
RPR 10
RPR 25

*Page* / *Seite F144*

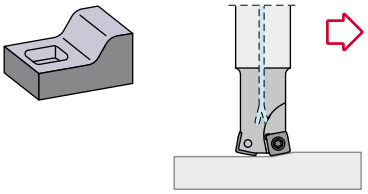
F



Characteristics:
High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.




Eigenschaften:
Hoher Vorschubfräser mit vierkantigen Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).
Empfohlen für Bearbeitungszentren.



## 16$^{2}_{4}$9.03

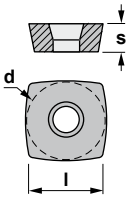
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1629.03.016 | 2 | 16 | 110 | 20 | 16 | 0,6 | SPMX 0735.. | 0,250 |
| 1629.03.020 | 3 | 20 | 130 | 30 | 20 | 0,9 | SPMX 0735.. | 0,300 |
| 1629.03.025 | 4 | 25 | 140 | 40 | 25 | 0,9 | SPMX 0735.. | 0,440 |
| 1629.03.032 | 5 | 32 | 150 | 50 | 32 | 0,9 | SPMX 0735.. | 0,780 |
| 1639.03.025 | 2 | 25 | 140 | 40 | 25 | 1,4 | SPMX 0945.. | 0,440 |
| 1639.03.032 | 4 | 32 | 150 | 50 | 32 | 1,4 | SPMX 0945.. | 0,780 |
| 1639.03.035 | 4 | 35 | 150 | 50 | 32 | 1,4 | SPMX 0945.. | 0,830 |
| 1649.03.032 | 3 | 32 | 150 | 50 | 32 | 1,8 | SPMX 1155.. | 0,760 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1629.03.016 | 1430-IP | 5510-IP | 2.5 |
| 1629.03.020 | 1430-IP | 5510-IP | 2.5 |
| 1629.03.025 | 1430-IP | 5510-IP | 2.5 |
| 1629.03.032 | 1430-IP | 5510-IP | 2.5 |
| 1639.03.025 | 1440-IP | 5515-IP | 3.5 |
| 1639.03.032 | 1440-IP | 5515-IP | 3.5 |
| 1639.03.035 | 1440-IP | 5515-IP | 3.5 |
| 1649.03.032 | 1240-IP | 5515-IP | 3.5 |

## SPMX

High feed. Hoher Vorschub. F20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMX 0735.. | 7,00 | 3,50 | 7,00 |
| SPMX 0945.. | 9,70 | 4,40 | 9,70 |
| SPMX 1155.. | 11,60 | 5,40 | 11,60 |

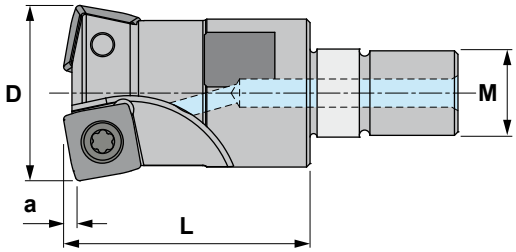



SPMX

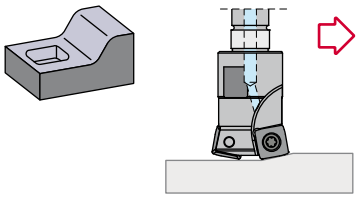




Characteristics:
High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.




Eigenschaften:
Hoher Vorschubfräser mit vierkantigen Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).
Empfohlen für Bearbeitungszentren.



## 16$^{2}_{4}$9.06

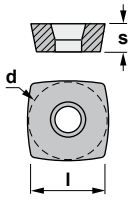
| Reference Bezeichnung | | D | L | M | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 1629.06.016 | 2 | 16 | 23 | M8 | 0,6 | SPMX 0735.. | 0,040 |
| 1629.06.020 | 3 | 20 | 30 | M10 | 0,9 | SPMX 0735.. | 0,050 |
| 1629.06.025 | 4 | 25 | 35 | M12 | 0,9 | SPMX 0735.. | 0,080 |
| 1629.06.032 | 5 | 32 | 43 | M16 | 0,9 | SPMX 0735.. | 0,180 |
| 1639.06.025 | 2 | 25 | 35 | M12 | 1,4 | SPMX 0945.. | 0,080 |
| 1639.06.032 | 4 | 32 | 43 | M16 | 1,4 | SPMX 0945.. | 0,180 |
| 1639.06.035 | 4 | 35 | 43 | M16 | 1,4 | SPMX 0945.. | 0,200 |
| 1639.06.042 | 5 | 42 | 43 | M16 | 1,4 | SPMX 0945.. | 0,240 |
| 1649.06.032 | 3 | 32 | 43 | M16 | 1,8 | SPMX 1155.. | 0,170 |
| 1649.06.035 | 3 | 35 | 43 | M16 | 1,8 | SPMX 1155.. | 0,180 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 1629.06.016 | 1430-IP | 5510-IP | 2.5 |
| 1629.06.020 | 1430-IP | 5510-IP | 2.5 |
| 1629.06.025 | 1430-IP | 5510-IP | 2.5 |
| 1629.06.032 | 1430-IP | 5510-IP | 2.5 |
| 1639.06.025 | 1440-IP | 5515-IP | 3.5 |
| 1639.06.032 | 1440-IP | 5515-IP | 3.5 |
| 1639.06.035 | 1440-IP | 5515-IP | 3.5 |
| 1639.06.042 | 1440-IP | 5515-IP | 3.5 |
| 1649.06.032 | 1240-IP | 5515-IP | 3.5 |
| 1649.06.035 | 1240-IP | 5515-IP | 3.5 |

## SPMX

High feed.
Hoher Vorschub. F20

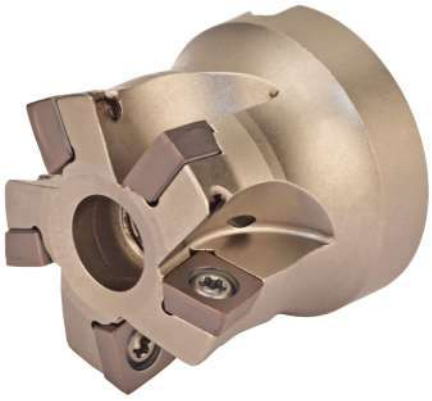
| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMX 0735.. | 7,00 | 3,50 | 7,00 |
| SPMX 0945.. | 9,70 | 4,40 | 9,70 |
| SPMX 1155.. | 11,60 | 5,40 | 11,60 |




SPMX



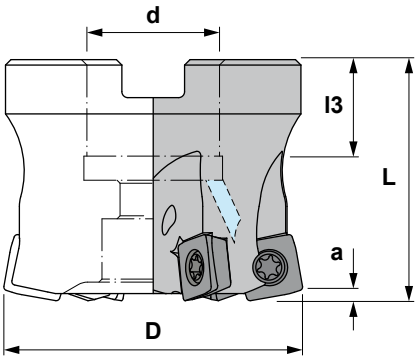
F



Characteristics:

High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.

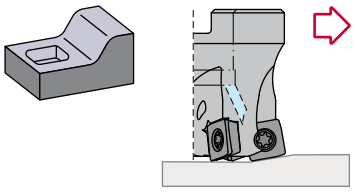
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.




Eigenschaften:

Hoher Vorschubfräser mit vierkantigen Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.

Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten). Empfohlen für Bearbeitungszentren.



# 1639.93

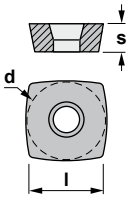
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1639.93.040 | 5 | 40 | 40 | 16 | 18 | 1,4 | SPMX 0945.. | 0,190 |
| 1639.93.042 | 5 | 42 | 40 | 16 | 18 | 1,4 | SPMX 0945.. | 0,210 |
| 1639.93.050 | 6 | 50 | 40 | 22 | 20 | 1,4 | SPMX 0945.. | 0,320 |
| 1639.93.052 | 7 | 52 | 40 | 22 | 20 | 1,4 | SPMX 0945.. | 0,340 |
| 1639.93.066 | 8 | 66 | 50 | 27 | 22 | 1,4 | SPMX 0945.. | 0,780 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1639.93.040 | 1440-IP | 5515-IP | 1058 | 3.5 |
| 1639.93.042 | 1440-IP | 5515-IP | 1058 | 3.5 |
| 1639.93.050 | 1440-IP | 5515-IP | 912,10 | 3.5 |
| 1639.93.052 | 1440-IP | 5515-IP | 912,10 | 3.5 |
| 1639.93.066 | 1440-IP | 5515-IP | 912,12 | 3.5 |

## SPMX

High feed. Hoher Vorschub. F20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMX 0945.. | 9,70 | 4,40 | 9,70 |




SPMX

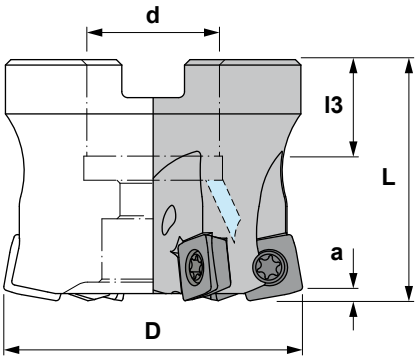




Characteristics:

High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.

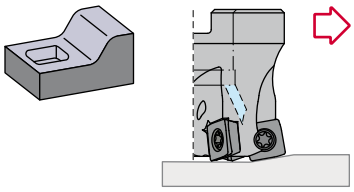
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.




Eigenschaften:

Hoher Vorschubfräser mit vierkantigen Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.

Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten). Empfohlen für Bearbeitungszentren.



# 1649.93

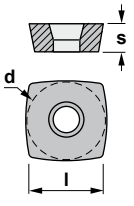
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 1649.93.050 | 5 | 50 | 40 | 22 | 20 | 1,8 | SPMX 1155.. | 0,290 |
| 1649.93.052 | 5 | 52 | 40 | 22 | 20 | 1,8 | SPMX 1155.. | 0,310 |
| 1649.93.063 | 6 | 63 | 50 | 27 | 22 | 1,8 | SPMX 1155.. | 0,720 |
| 1649.93.066 | 7 | 66 | 50 | 27 | 22 | 1,8 | SPMX 1155.. | 0,740 |
| 1649.93.080 | 8 | 80 | 50 | 27 | 22 | 1,8 | SPMX 1155.. | 0,980 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 1649.93.050 | 1240-IP | 5515-IP | 912,10 | 3.5 |
| 1649.93.052 | 1240-IP | 5515-IP | 912,10 | 3.5 |
| 1649.93.063 | 1240-IP | 5515-IP | 912,12 | 3.5 |
| 1649.93.066 | 1240-IP | 5515-IP | 912,12 | 3.5 |
| 1649.93.080 | 1240-IP | 5515-IP | 912,12 | 3.5 |

## SPMX

High feed.
Hoher Vorschub. F20

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMX 1155.. | 11,60 | 5,40 | 11,60 |




SPMX



## Recommended cutting conditions

| Material P | Hardness | Insert | Grade | Standard milling | | | | High feed milling | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Mild steel | <180HB | SPMX 073505 | TL20 | 170 (120-220) | 1,0 | 0,5/0,8 | 100% | 200 | 1,0 | 0,4 | 100% |
| | | SPMX 094506 | | | 1,2 | 0,5/1,0 | 100% | | 1,4 | 0,5 | 100% |
| | | SPMX 115506 | | | 1,5 | 0,8/1,5 | 100% | | 1,4 | 0,8 | 100% |
| Carbon steel, alloyed steel | 180-280HB | SPMX 073505 | TL20 | 150 (100-200) | 0,8 | 0,5/0,7 | 100% | 200 | 1,0 | 0,4 | 100% |
| | | SPMX 094506 | | | 1,0 | 0,5/0,7 | 100% | | 1,2 | 0,5 | 100% |
| | | SPMX 115506 | | | 1,2 | 0,6/1,5 | 100% | | 1,2 | 0,8 | 100% |
| Carbon steel, alloyed steel | 280-350HB | SPMX 073505 | TL20 | 120 (80-150) | 0,8 | 0,5/0,7 | 100% | 180 | 1,0 | 0,3 | 100% |
| | | SPMX 094506 | | | 1,0 | 0,5/0,7 | 100% | | 1,2 | 0,4 | 100% |
| | | SPMX 115506 | | | 1,2 | 0,5/1,0 | 100% | | 1,2 | 0,6 | 100% |
| Alloyed tool steel | <350HB | SPMX 073505 | TL20 | 120 (80-140) | 0,8 | 0,5/0,7 | 100% | 180 | 0,6 | 0,3 | 100% |
| | | SPMX 094506 | | | 1,0 | 0,5/0,7 | 100% | | 0,8 | 0,4 | 100% |
| | | SPMX 115506 | | | 1,0 | 0,5/1,0 | 100% | | 0,8 | 0,6 | 100% |
| Prehardened steel | 35-45HRC | SPMX 073505 | TL20 | 100 (70 (50-90) | 0,6 | 0,4/0,6 | 100% | 150 | 0,6 | 0,3 | 100% |
| | | SPMX 094506 | | | 0,8 | 0,4/0,6 | 100% | | 0,8 | 0,4 | 100% |
| | | SPMX 115506 | | | 0,8 | 0,4/0,8 | 100% | | 0,8 | 0,5 | 100% |

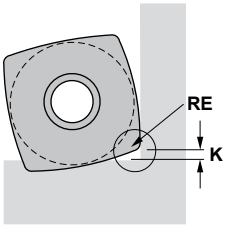
| Material M | Hardness | Insert | Grade | Standard milling | | | | High feed milling | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Stainless steel | <200HB | SPMX 073505 | TL20 | 100 (60-120) | 0,4 | 0,5/0,7 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 0,4 | 0,5/1,0 | 100% | | - | - | - |
| | | SPMX 115506 | | | 0,4 | 0,6/1,5 | 100% | | - | - | - |
| PH, Duplex | <200HB | SPMX 073505 | TL20 | 70 (50-90) | 0,4 | 0,3/0,5 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 0,4 | 0,3/0,5 | 100% | | - | - | - |
| | | SPMX 115506 | | | 0,4 | 0,4/0,8 | 100% | | - | - | - |

| Material K | Hardness | Insert | Grade | Standard milling | | | | High feed milling | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Grey cast iron | <200HB | SPMX 073505 | TL20 | 150 (100-200) | 1,0 | 0,5/0,7 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 1,2 | 0,5/0,8 | 100% | | - | - | - |
| | | SPMX 115506 | | | 1,2 | 0,6/1,5 | 100% | | - | - | - |
| Ductile cast iron | <450MPa | SPMX 073505 | TL20 | 120 (80-160) | 1,0 | 0,4/0,6 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 1,0 | 0,4/0,6 | 100% | | - | - | - |
| | | SPMX 115506 | | | 1,0 | 0,5/0,8 | 100% | | - | - | - |

| Material H | Hardness | Insert | Grade | Standard milling | | | | High feed milling | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Hardened steel | 40-55HRC | SPMX 073505 | TL20 | 70 (50-90) | 0,5 | 0,3/0,5 | 100% | 120 | 0,6 | 0,3 | 100% |
| | | SPMX 094506 | | | 0,6 | 0,3/0,5 | 100% | | 0,6 | 0,3 | 100% |
| | | SPMX 115506 | | | 0,6 | 0,3/0,6 | 100% | | 0,6 | 0,4 | 100% |

## Configuration note

When using the milling cutter 1629, 1639 or 1649 it must be configurated as a milling cutter with radius RE.
The approximate uncut portions cut of the configurations are the following:




| Insert size | RE | K mm |
|---|---|---|
| SPMX 073505 | 1,7 | 0,8 |
| SPMX 094506 | 2,3 | 1,6 |
| SPMX 115506 | 2,695 | 2,1 |

**Ø16 max. Ap. 0,5**

## Empfohlene Schnittdaten

| Materialien P | Härte | WSP | Sorte | Standard-Fräsen | | | | Fräsen mit hohem Vorschub | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Baustahl | <180HB | SPMX 073505 | TL20 | 170 (120-220) | 1,0 | 0,5/0,8 | 100% | 200 | 1,0 | 0,4 | 100% |
| | | SPMX 094506 | | | 1,2 | 0,5/1,0 | 100% | | 1,4 | 0,5 | 100% |
| | | SPMX 115506 | | | 1,5 | 0,8/1,5 | 100% | | 1,4 | 0,8 | 100% |
| Kohlenstoffstahl, legierter Stahl | 180-280HB | SPMX 073505 | TL20 | 150 (100-200) | 0,8 | 0,5/0,7 | 100% | 200 | 1,0 | 0,4 | 100% |
| | | SPMX 094506 | | | 1,0 | 0,5/0,7 | 100% | | 1,2 | 0,5 | 100% |
| | | SPMX 115506 | | | 1,2 | 0,6/1,5 | 100% | | 1,2 | 0,8 | 100% |
| Kohlenstoffstahl, legierter Stahl | 280-350HB | SPMX 073505 | TL20 | 120 (80-150) | 0,8 | 0,5/0,7 | 100% | 180 | 1,0 | 0,3 | 100% |
| | | SPMX 094506 | | | 1,0 | 0,5/0,7 | 100% | | 1,2 | 0,4 | 100% |
| | | SPMX 115506 | | | 1,2 | 0,5/1,0 | 100% | | 1,2 | 0,6 | 100% |
| Legierter Werkzeugstahl | <350HB | SPMX 073505 | TL20 | 120 (80-140) | 0,8 | 0,5/0,7 | 100% | 180 | 0,6 | 0,3 | 100% |
| | | SPMX 094506 | | | 1,0 | 0,5/0,7 | 100% | | 0,8 | 0,4 | 100% |
| | | SPMX 115506 | | | 1,0 | 0,5/1,0 | 100% | | 0,8 | 0,6 | 100% |
| Vorgehärteter Stahl | 35-45HRC | SPMX 073505 | TL20 | 100 (70 (50-90) | 0,6 | 0,4/0,6 | 100% | 150 | 0,6 | 0,3 | 100% |
| | | SPMX 094506 | | | 0,8 | 0,4/0,6 | 100% | | 0,8 | 0,4 | 100% |
| | | SPMX 115506 | | | 0,8 | 0,4/0,8 | 100% | | 0,8 | 0,5 | 100% |

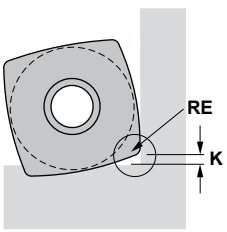
| Materialien M | Härte | WSP | Sorte | Standard-Fräsen | | | | Fräsen mit hohem Vorschub | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Rostfreier Stahl | <200HB | SPMX 073505 | TL20 | 100 (60-120) | 0,4 | 0,5/0,7 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 0,4 | 0,5/1,0 | 100% | | - | - | - |
| | | SPMX 115506 | | | 0,4 | 0,6/1,5 | 100% | | - | - | - |
| PH, Duplex | <200HB | SPMX 073505 | TL20 | 70 (50-90) | 0,4 | 0,3/0,5 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 0,4 | 0,3/0,5 | 100% | | - | - | - |
| | | SPMX 115506 | | | 0,4 | 0,4/0,8 | 100% | | - | - | - |

| Materialien K | Härte | WSP | Sorte | Standard-Fräsen | | | | Fräsen mit hohem Vorschub | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Grauguß | <200HB | SPMX 073505 | TL20 | 150 (100-200) | 1,0 | 0,5/0,7 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 1,2 | 0,5/0,8 | 100% | | - | - | - |
| | | SPMX 115506 | | | 1,2 | 0,6/1,5 | 100% | | - | - | - |
| Duktiles Gußeisen | <450MPa | SPMX 073505 | TL20 | 120 (80-160) | 1,0 | 0,4/0,6 | 100% | - | - | - | - |
| | | SPMX 094506 | | | 1,0 | 0,4/0,6 | 100% | | - | - | - |
| | | SPMX 115506 | | | 1,0 | 0,5/0,8 | 100% | | - | - | - |

| Materialien H | Härte | WSP | Sorte | Standard-Fräsen | | | | Fräsen mit hohem Vorschub | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Vc | fz | ap | ae | Vc | fz | ap | ae |
| Gehärteter Stahl | 40-55HRC | SPMX 073505 | TL20 | 70 (50-90) | 0,5 | 0,3/0,5 | 100% | 120 | 0,6 | 0,3 | 100% |
| | | SPMX 094506 | | | 0,6 | 0,3/0,5 | 100% | | 0,6 | 0,3 | 100% |
| | | SPMX 115506 | | | 0,6 | 0,3/0,6 | 100% | | 0,6 | 0,4 | 100% |

## Einstellungshinweis

Beim Einsatz des Fräsers 1629, 1639 oder 1649 empfehlen wir, den Fräser wie ein RE-Radiusfräser einzustellen.
Die ungefähre ungeschnittene Teile der Einstellung sind wie folgt:



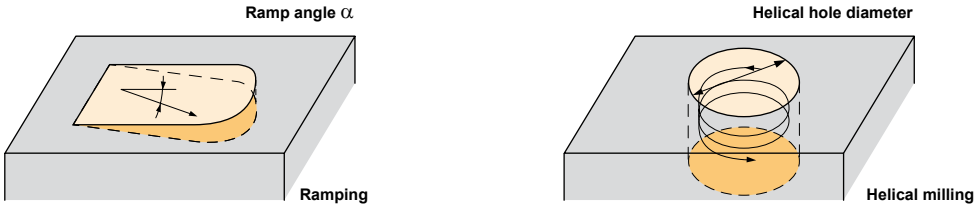

| WSP-Größe | RE | K mm |
|---|---|---|
| SPMX 073505 | 1,7 | 0,8 |
| SPMX 094506 | 2,3 | 1,6 |
| SPMX 115506 | 2,695 | 2,1 |

**Ø16 max. Ap. 0,5**

F

## *Processing by direct milling is also possible*

Since the cutting flute does not extend to the center, there are limitations on the ramp angle and hole diameter, but as shown below, processing by direct milling without a pilot hole is possible for ramping and helical milling.




| Insert size | SPMX 0735.. | | | |
|---|---|---|---|---|
| **Tool diameter** | **Ø16** | **Ø20** | **Ø25** | **Ø32** |
| Maximum ramp angle α | 2º | 2º | 2º | 1º |
| Hole diameter | Ø21-30 | Ø29-38 | Ø39-48 | Ø52-61 |

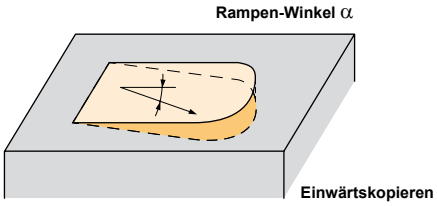
| Insert size | SPMX 0945.. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Tool diameter** | **Ø25** | **Ø32** | **Ø35** | **Ø40** | **Ø42** | **Ø50** | **Ø52** | **Ø66** |
| Maximum ramp angle α | 2º | 2º | 2º | 1º | 1º | 1º | 1º | 0,5º |
| Hole diameter | Ø36-48 | Ø50-62 | Ø56-68 | Ø66-78 | Ø70-82 | Ø86-98 | Ø90-102 | Ø118-130 |

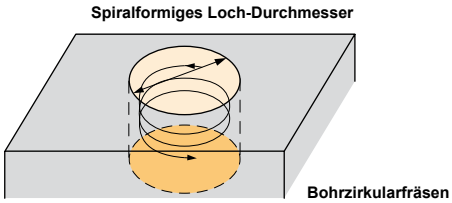
| Insert size | SPMX 1155.. | | | | | | |
|---|---|---|---|---|---|---|---|
| **Tool diameter** | **Ø32** | **Ø35** | **Ø50** | **Ø52** | **Ø63** | **Ø66** | **Ø80** |
| Maximum ramp angle α | 2º | 2º | 1º | 1º | 0,5º | 0,5º | 0,5º |
| Hole diameter | Ø47-62 | Ø53-68 | Ø83-98 | Ø87-102 | Ø109-124 | Ø115-130 | Ø143-158 |

**Note**
- The ramp angle α should be set within the ranges listed above. Use at ramp angles of 1º or less recommended.
- For hole diameters outside the ranges listed above, a pilot hole should be drilled before milling.

## *Verarbeitung durch das direkte Fräsen ist auch möglich*

Da sich die Schneide bis zu das Zentrum nicht ausstreckt, gibt es Beschränkungen auf den Rampen-Winkel, und den Loch-Durchmesser. Aber zum Einwärtskopieren und zum Bohrzirkularfräsen, wie unten gezeigt, ist die Verarbeitung durch das direkte Fräsen ohne eine Vorbohrung möglich.




| **Wendeschneidplatte** | **SPMX 0735..** | | | |
|---|---|---|---|---|
| **Werkzeugdurchmesser** | **Ø16** | **Ø20** | **Ø25** | **Ø32** |
| Maximaler Rampen-Winkel α | 2° | 2° | 2° | 1° |
| Lochdurchmesser | Ø21-30 | Ø29-38 | Ø39-48 | Ø52-61 |

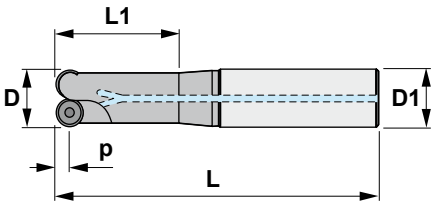
| **Wendeschneidplatte** | **SPMX 0945..** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Werkzeugdurchmesser** | **Ø25** | **Ø32** | **Ø35** | **Ø40** | **Ø42** | **Ø50** | **Ø52** | **Ø66** |
| Maximaler Rampen-Winkel α | 2° | 2° | 2° | 1° | 1° | 1° | 1° | 0,5° |
| Lochdurchmesser | Ø36-48 | Ø50-62 | Ø56-68 | Ø66-78 | Ø70-82 | Ø86-98 | Ø90-102 | Ø118-130 |

| **Wendeschneidplatte** | **SPMX 1155..** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Werkzeugdurchmesser** | **Ø32** | **Ø35** | **Ø50** | **Ø52** | **Ø63** | **Ø66** | **Ø80** |
| Maximaler Rampen-Winkel α | 2° | 2° | 1° | 1° | 0,5° | 0,5° | 0,5° |
| Lochdurchmesser | Ø47-62 | Ø53-68 | Ø83-98 | Ø87-102 | Ø109-124 | Ø115-130 | Ø143-158 |

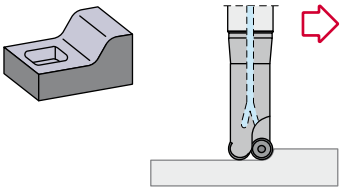
**Bemerkung**
- Der Rampen-Winkel α sollte innerhalb der Auswahl gesetzt werden, die oben verzeichnet ist. Die Verwendung von Rampen-Winkeln von 1° oder weniger ist empfohlen.
- Für Loch-Diameter außerhalb der Auswahl, die oben verzeichnet ist, sollte ein Loch vor dem Fräsen gebohrt werden.



Characteristics:
Round insert end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.




Eigenschaften:
Fräser mit runden Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).
Empfohlen für konvenzionelle Fräsmaschinen und Bearbeitungszentren.



## 55_5

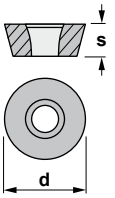
| Reference Bezeichnung | | D | L | D1 | L1 | p | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 5525.00.015 | 2 | 15 | 100 | 20 | 40 | 3,5 | RD.. 0702M0 | 0,180 |
| 5525.01.015 | 2 | 15 | 150 | 20 | 40 | 3,5 | RD.. 0702M0 | 0,300 |
| 5525.00.016 | 2 | 16 | 100 | 20 | 40 | 3,5 | RD.. 0702M0 | 0,185 |
| 5525.01.016 | 2 | 16 | 150 | 20 | 40 | 3,5 | RD.. 0702M0 | 0,310 |
| 5535.00.020 | 2 | 20 | 100 | 20 | 40 | 5,0 | RD.. 1003M0 | 0,220 |
| 5535.01.020 | 2 | 20 | 150 | 20 | 40 | 5,0 | RD.. 1003M0 | 0,340 |
| 5545.00.025 | 2 | 25 | 125 | 25 | 50 | 6,0 | RD.. 12T3M0 | 0,460 |
| 5545.01.025 | 2 | 25 | 180 | 25 | 60 | 6,0 | RD.. 12T3M0 | 0,670 |
| 5545.00.032 | 3 | 32 | 125 | 32 | 50 | 6,0 | RD.. 12T3M0 | 0,740 |
| 5545.01.032 | 3 | 32 | 180 | 32 | 60 | 6,0 | RD.. 12T3M0 | 1,080 |
| 5555.01.032 | 2 | 32 | 180 | 32 | 60 | 8,0 | RD.. 1604M0 | 1,080 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 5525.00.015 | 1425 | 5507 | 0.9 |
| 5525.01.015 | 1425 | 5507 | 0.9 |
| 5525.00.016 | 1425 | 5507 | 0.9 |
| 5525.01.016 | 1425 | 5507 | 0.9 |
| 5535.00.020 | 1435 | 5515 | 3.0 |
| 5535.01.020 | 1435 | 5515 | 3.0 |
| 5545.00.025 | 1435 | 5515 | 3.0 |
| 5545.01.025 | 1435 | 5515 | 3.0 |
| 5545.00.032 | 1435 | 5515 | 3.0 |
| 5545.01.032 | 1435 | 5515 | 3.0 |
| 5555.01.032 | 1245 | 5515 | 3.0 |

### RD..

Round positive inserts with 15° clearance.
Runde positive Wendeschneidplatten mit 15° Freiwinkel. F15-16

| Reference / Bez. | s | d |
|---|---|---|
| RD.. 0702M0 | 2,38 | 7,00 |
| RD.. 1003M0 | 3,18 | 10,00 |
| RD.. 12T3M0 | 3,97 | 12,00 |
| RD.. 1604M0 | 4,76 | 16,00 |




RDHW



RDMT

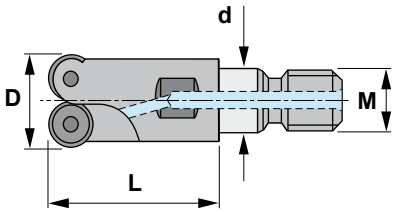


RDMW

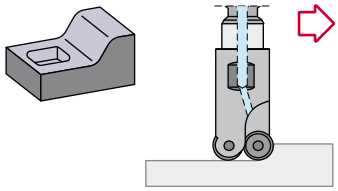




Characteristics:
Round insert end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.




Eigenschaften:
Fräser mit runden Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).
Empfohlen für konvenzionelle Fräsmaschinen und Bearbeitungszentren.



# 55_5.06

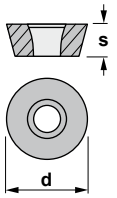
| Reference<br>Bezeichnung | | D | L | M | d | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 5525.06.016 | 2 | 16 | 23 | M8 | 14 | RD.. 0702.. | 0,030 |
| 5535.06.020 | 2 | 20 | 30 | M10 | 18 | RD.. 1003.. | 0,060 |
| 5535.06.025 | 3 | 25 | 35 | M12 | 21 | RD.. 1003.. | 0,095 |
| 5535.06.035 | 4 | 35 | 43 | M16 | 29 | RD.. 1003.. | 0,225 |
| 5535.06.042 | 5 | 42 | 43 | M16 | 29 | RD.. 1003.. | 0,320 |
| 5545.06.025 | 2 | 25 | 43 | M12 | 21 | RD.. 12T3.. | 0,095 |
| 5545.06.032 | 3 | 32 | 43 | M16 | 29 | RD.. 12T3.. | 0,230 |
| 5545.06.035 | 3 | 35 | 43 | M16 | 29 | RD.. 12T3.. | 0,250 |
| 5545.06.042 | 4 | 42 | 43 | M16 | 29 | RD.. 12T3.. | 0,320 |
| 5545.06.042Z=5 | 5 | 42 | 43 | M16 | 29 | RD.. 12T3.. | 0,320 |
| 5555.06.032 | 2 | 32 | 43 | M16 | 29 | RD.. 1604.. | 0,250 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 5525.06.016 | 1425 | 5507 | 0.9 |
| 5535.06.020 | 1435 | 5515 | 3.0 |
| 5535.06.025 | 1435 | 5515 | 3.0 |
| 5535.06.035 | 1435 | 5515 | 3.0 |
| 5535.06.042 | 1435 | 5515 | 3.0 |
| 5545.06.025 | 1435 | 5515 | 3.0 |
| 5545.06.032 | 1435 | 5515 | 3.0 |
| 5545.06.035 | 1435 | 5515 | 3.0 |
| 5545.06.042 | 1435 | 5515 | 3.0 |
| 5545.06.042Z=5 | 1435 | 5515 | 3.0 |
| 5555.06.032 | 1245 | 5515 | 3.0 |

## RD..

Round positive inserts with 15° clearance.
Runde positive Wendeschneidplatten mit 15° Freiwinkel. F15-16

| Reference / Bez. | s | d |
|---|---|---|
| RD.. 0702M0 | 2,38 | 7,00 |
| RD.. 1003M0 | 3,18 | 10,00 |
| RD.. 12T3M0 | 3,97 | 12,00 |
| RD.. 1604M0 | 4,76 | 16,00 |




RDHW



RDMT



RDMW

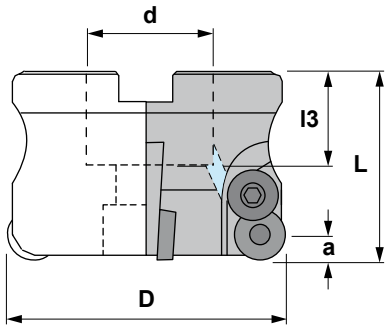




Characteristics:

Round insert cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.

It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.

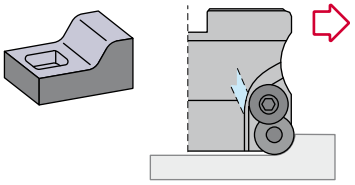



Eigenschaften:

Fräser mit runden Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.

Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).

Empfohlen für konvenzionelle Fräsmaschinen und Bearbeitungszentren.



## 55$\frac{4}{5}$5.93

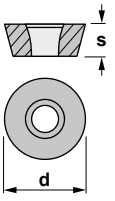
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 5545.93.052 | 5 | 52 | 50 | 22 | 20 | 6 | RD.. 12T3.. | 0,450 |
| 5545.93.066 | 6 | 66 | 50 | 27 | 22 | 6 | RD.. 12T3.. | 0,770 |
| 5545.93.080 | 7 | 80 | 50 | 27 | 22 | 6 | RD.. 12T3.. | 1,200 |
| 5555.93.052 | 4 | 52 | 50 | 22 | 20 | 8 | RD.. 1604.. | 0,350 |
| 5555.93.066 | 5 | 66 | 50 | 27 | 22 | 8 | RD.. 1604.. | 0,700 |
| 5555.93.080 | 6 | 80 | 50 | 27 | 22 | 8 | RD.. 1604.. | 1,050 |
| 5555.93.100 | 7 | 100 | 55 | 32 | 25 | 8 | RD.. 1604.. | 1,800 |
| 5555.90.125 | 8 | 125 | 55 | 40 | 30 | 8 | RD.. 1604.. | 3,500 |
| 5555.90.160 | 9 | 160 | 55 | 40 | 30 | 8 | RD.. 1604.. | 5,600 |

| Reference Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| 5545.93.052 | 1235 | 2009 | 912,10 | 5515 | - | 3.0 |
| 5545.93.066 | 1235 | 2009 | 912,12 | 5515 | - | 3.0 |
| 5545.93.080 | 1235 | 2009 | 912,12 | 5515 | - | 3.0 |
| 5555.93.052 | 1245 | 2010 | 912,10 | 5515 | - | 3.0 |
| 5555.93.066 | 1245 | 2010 | 912,12 | 5515 | - | 3.0 |
| 5555.93.080 | 1245 | 2010 | 912,12 | 5515 | - | 3.0 |
| 5555.93.100 | 1245 | 2010 | 912,17 | - | 5615 | 3.0 |
| 5555.90.125 | 1245 | 2010 | - | - | 5615 | 3.0 |
| 5555.90.160 | 1245 | 2010 | 912,52 | - | 5615 | 3.0 |

## RD..

Round positive inserts with 15° clearance.
Runde positive Wendeschneidplatten mit 15° Freiwinkel. F15-16

| Reference / Bez. | s | d |
|---|---|---|
| RD.. 12T3M0 | 3,97 | 12,00 |
| RD.. 1604M0 | 4,76 | 16,00 |




RDHW



RDMT

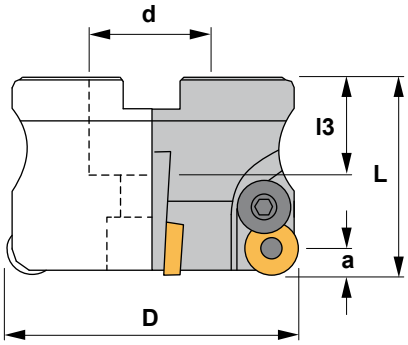


RDMW

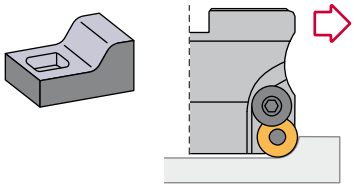




Characteristics:
Round insert cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.




Eigenschaften:
Fräser mit runden Wendeschneidplatten zum Zirkularfräsen (Bohrlocherweiterung), Stufenfräsen, Bohren, Taschenfräsen und Kopierfräsen.
Für allgemeine Bearbeitungen mit nur einem Durchgang (Schruppen und Schlichten).
Empfohlen für konvenzionelle Fräsmaschinen und Bearbeitungszentren.



# 5549.90

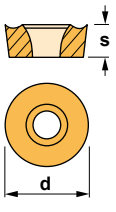
| Reference Bezeichnung | | D | L | d | l3 | a | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 5549.90.040 | 3 | 40 | 40 | 16 | 18 | 6 | RPM.. 1204M0 | 0,200 |
| 5549.90.050 | 4 | 50 | 40 | 22 | 20 | 6 | RPM.. 1204M0 | 0,300 |
| 5549.90.063 | 5 | 63 | 50 | 27 | 22 | 6 | RPM.. 1204M0 | 0,650 |
| 5549.90.080 | 6 | 80 | 50 | 32 | 25 | 6 | RPM.. 1204M0 | 1,150 |
| 5549.90.100 | 7 | 100 | 50 | 40 | 30 | 6 | RPM.. 1204M0 | 1,750 |
| 5549.90.125 | 7 | 125 | 63 | 40 | 30 | 6 | RPM.. 1204M0 | 3,100 |

| Reference Bezeichnung | | | | | | | Nm |
|---|---|---|---|---|---|---|---|
| 5549.90.040 | 1025 | 5003 | 1240 | 5515 | - | 1058 | 3.0 |
| 5549.90.050 | 1025 | 5003 | 1240 | 5515 | - | 912,10 | 3.0 |
| 5549.90.063 | 1025 | 5003 | 1240 | 5515 | - | 912,12 | 3.0 |
| 5549.90.080 | 1025 | 5003 | 1240 | 5515 | - | 912,17 | 3.0 |
| 5549.90.100 | 1025 | 5003 | 1240 | - | 5615 | 912,20 | 3.0 |
| 5549.90.125 | 1025 | 5003 | 1240 | - | 5615 | - | 3.0 |

## RPM..

Round positive inserts with 11° clearance.
Runde positive Wendeschneidplatten mit 11° Freiwinkel. F16

| Reference / Bez. | s | d |
|---|---|---|
| RPM.. 1204M0 | 4,76 | 12,00 |




RPMT



RPMW



| Material | Cutting speed Vc (m/min) | Per-flute feed rate fz (mm/tooth) | Ø12 - Ø20 | | | Ø24 - Ø25 | | | Ø32 - Ø35 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min |
| Mild steels (200 HB) | 150-250 | 0,3-0,8 | 3980 | 3180 | 28,6 | 3180 | 2540 | 28,6 | 2490 | 2990 | 43,1 |
| | | | Vc=250m/min fz=0,4mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 3980 | 3180 | 47,7 | 3180 | 2540 | 47,6 | 2490 | 2990 | 71,8 |
| | | | Vc=250m/min fz=0,4mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (30 HRC) | 120-230 | 0,3-0,8 | 3180 | 2540 | 22,9 | 2550 | 2040 | 23 | 1990 | 2390 | 34,4 |
| | | | Vc=200m/min fz=0,4mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 3180 | 2540 | 38,1 | 2550 | 2040 | 38,3 | 1990 | 2390 | 57,4 |
| | | | Vc=200m/min fz=0,4mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (30-40 HRC) | 100-200 | 0,2-0,6 | 2390 | 960 | 8,6 | 1910 | 760 | 8,6 | 1490 | 890 | 12,8 |
| | | | Vc=150m/min fz=0,2mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 2390 | 1430 | 21,5 | 1910 | 1150 | 21,6 | 1490 | 1340 | 32,2 |
| | | | Vc=150m/min fz=0,2mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (40-45 HRC) | 60-150 | 0,15-0,3 | 1590 | 480 | 2,9 | 1270 | 380 | 2,9 | 990 | 450 | 4,3 |
| | | | Vc=100m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| | | | 1590 | 640 | 6,4 | 1270 | 510 | 6,4 | 990 | 590 | 9,4 |
| | | | Vc=100m/min fz=0,2mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (45-50 HRC) | 60-100 | 0,15-0,3 | 1270 | 380 | 2,3 | 1020 | 310 | 2,3 | 800 | 360 | 3,5 |
| | | | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| | | | 1270 | 380 | 3,8 | 1020 | 310 | 3,9 | 800 | 360 | 5,8 |
| | | | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Alloyed steels (50-60 HRC) | 50-100 | 0,05-0,2 | 1110 | 220 | 1,3 | 890 | 170 | 1,2 | 690 | 200 | 1,9 |
| | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| | | | 1110 | 220 | 2,2 | 890 | 170 | 2,1 | 690 | 200 | 3,2 |
| | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Stainless steels | 150-240 | 0,2-0,8 | 3180 | 1590 | 14,3 | 2550 | 1280 | 14,4 | 1990 | 1490 | 21,5 |
| | | | Vc=200m/min fz=0,25mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 2860 | 1716 | 25,7 | 2290 | 1370 | 25,7 | 1790 | 1610 | 38,6 |
| | | | Vc=180m/min fz=0,3mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Cast iron | 100-220 | 0,3-1,0 | 2860 | 2290 | 20,6 | 2290 | 1830 | 20,6 | 1790 | 2150 | 31 |
| | | | Vc=180m/min fz=0,4mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 2860 | 2860 | 42,9 | 2290 | 2290 | 42,9 | 1790 | 2690 | 64,6 |
| | | | Vc=180m/min fz=0,5mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |

| Material | Ø40 - Ø42 (R6) | | | Ø50 - Ø52 (R6) | | | Ø40 - Ø42 (R8) | | | Ø50 - Ø52 (R8) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min | Rotation speed min-1 | Feed rate mm/min | Q value cm3/min |
| Mild steels (200 HB) | 1990 | 2990 | 71,8 | 1590 | 3180 | 95,4 | 1990 | 1990 | 47,8 | 1590 | 2390 | 71,7 |
| | Vc=250m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | Vc=250m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | |
| | 1990 | 4780 | 191,2 | 1590 | 5090 | 254,5 | 1990 | 3180 | 159 | 1590 | 3820 | 238,8 |
| | Vc=250m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | Vc=250m/min fz=0,8mm/tooth ap=2,5mm ae=0,5D | | | | | |
| Carbon steels Alloyed steels (30 HRC) | 1590 | 1910 | 45,8 | 1270 | 2030 | 60,9 | 1590 | 1270 | 30,5 | 1270 | 1520 | 45,6 |
| | Vc=200m/min fz=0,4mm/tooth ap=2mm ae=0,3D | | | | | | Vc=200m/min fz=0,4mm/tooth ap=2mm ae=0,3D | | | | | |
| | 1590 | 2860 | 114,4 | 1270 | 3050 | 152,5 | 1590 | 1910 | 95,5 | 1270 | 2290 | 143,1 |
| | Vc=200m/min fz=0,6mm/tooth ap=2mm ae=0,5D | | | | | | Vc=200m/min fz=0,6mm/tooth ap=2,5mm ae=0,5D | | | | | |
| Carbon steels Alloyed steels (30-40 HRC) | 1190 | 710 | 17 | 960 | 770 | 23,1 | 1190 | 480 | 11,5 | 960 | 580 | 17,4 |
| | Vc=150m/min fz=0,2mm/tooth ap=2mm ae=0,3D | | | | | | Vc=150m/min fz=0,2mm/tooth ap=2mm ae=0,3D | | | | | |
| | 1190 | 1070 | 42,8 | 960 | 1150 | 57,5 | 1190 | 950 | 47,5 | 960 | 1150 | 71,9 |
| | Vc=150m/min fz=0,3mm/tooth ap=2mm ae=0,5D | | | | | | Vc=150m/min fz=0,4mm/tooth ap=2,5mm ae=0,5D | | | | | |
| Carbon steels Alloyed steels (40-45 HRC) | 800 | 360 | 6,5 | 640 | 380 | 8,6 | 800 | 240 | 4,3 | 640 | 290 | 6,5 |
| | Vc=100m/min fz=0,15mm/tooth ap=1,5mm ae=0,3D | | | | | | Vc=100m/min fz=0,15mm/tooth ap=1,5mm ae=0,3D | | | | | |
| | 800 | 480 | 14,4 | 640 | 510 | 19,1 | 800 | 320 | 12,8 | 640 | 380 | 19 |
| | Vc=100m/min fz=0,2mm/tooth ap=1,5mm ae=0,5D | | | | | | Vc=100m/min fz=0,2mm/tooth ap=2mm ae=0,5D | | | | | |
| Carbon steels Alloyed steels (45-50 HRC) | 640 | 290 | 3,5 | 510 | 310 | 4,7 | 640 | 220 | 4 | 510 | 260 | 5,9 |
| | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | Vc=80m/min fz=0,17mm/tooth ap=1,5mm ae=0,3D | | | | | |
| | 640 | 330 | 6,6 | 510 | 350 | 8,8 | 640 | 260 | 7,8 | 510 | 310 | 11,6 |
| | Vc=80m/min fz=0,17mm/tooth ap=1mm ae=0,5D | | | | | | Vc=80m/min fz=0,2mm/tooth ap=1,5mm ae=0,5D | | | | | |
| Alloyed steels (50-60 HRC) | 550 | 160 | 1,9 | 440 | 170 | 2,5 | 550 | 110 | 1,3 | 440 | 130 | 1,9 |
| | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | |
| | 550 | 160 | 3,2 | 440 | 170 | 4,2 | 550 | 110 | 2,2 | 440 | 130 | 3,2 |
| | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,5D | | | | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,5D | | | | | |
| Stainless steels | 1590 | 1430 | 34,3 | 1270 | 1520 | 45,6 | 1590 | 950 | 22,8 | 1270 | 1140 | 34,2 |
| | Vc=200m/min fz=0,3mm/tooth ap=2mm ae=0,3D | | | | | | Vc=200m/min fz=0,3mm/tooth ap=2mm ae=0,3D | | | | | |
| | 1430 | 2150 | 86 | 1150 | 2300 | 115 | 1430 | 1720 | 86 | 1150 | 2070 | 129,4 |
| | Vc=180m/min fz=0,5mm/tooth ap=2mm ae=0,5D | | | | | | Vc=180m/min fz=0,6mm/tooth ap=2,5mm ae=0,5D | | | | | |
| Cast iron | 1430 | 2150 | 51,6 | 1150 | 2300 | 69 | 1430 | 1430 | 34,3 | 1150 | 1730 | 51,9 |
| | Vc=180m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | Vc=180m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | |
| | 1430 | 3430 | 137,2 | 1150 | 3680 | 184 | 1430 | 2290 | 114,5 | 1150 | 2760 | 172,5 |
| | Vc=180m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | Vc=180m/min fz=0,8mm/tooth ap=2,5mm ae=0,5D | | | | | |

| Materialien | Schnittgeschwindigkeit M/Min | Vorschubwert pro Schneide Mm/Zahn | Ø12 - Ø20 | | | Ø24 - Ø25 | | | Ø32 - Ø35 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 |
| Weicher Stahl (200 HB) | 150-250 | 0,3-0,8 | 3980 | 3180 | 28,6 | 3180 | 2540 | 28,6 | 2490 | 2990 | 43,1 |
| | | | Vc=250m/min fz=0,4mm/Zahn ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 3980 | 3180 | 47,7 | 3180 | 2540 | 47,6 | 2490 | 2990 | 71,8 |
| | | | Vc=250m/min fz=0,4mm/Zahn ap=1,5mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (30 HRC) | 120-230 | 0,3-0,8 | 3180 | 2540 | 22,9 | 2550 | 2040 | 23 | 1990 | 2390 | 34,4 |
| | | | Vc=200m/min fz=0,4mm/Zahn ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 3180 | 2540 | 38,1 | 2550 | 2040 | 38,3 | 1990 | 2390 | 57,4 |
| | | | Vc=200m/min fz=0,4mm/Zahn ap=1,5mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (30-40 HRC) | 100-200 | 0,2-0,6 | 2390 | 960 | 8,6 | 1910 | 760 | 8,6 | 1490 | 890 | 12,8 |
| | | | Vc=150m/min fz=0,2mm/Zahn ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 2390 | 1430 | 21,5 | 1910 | 1150 | 21,6 | 1490 | 1340 | 32,2 |
| | | | Vc=150m/min fz=0,2mm/Zahn ap=1,5mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (40-45 HRC) | 60-150 | 0,15-0,3 | 1590 | 480 | 2,9 | 1270 | 380 | 2,9 | 990 | 450 | 4,3 |
| | | | Vc=100m/min fz=0,15mm/Zahn ap=1mm ae=0,3D | | | | | | | | |
| | | | 1590 | 640 | 6,4 | 1270 | 510 | 6,4 | 990 | 590 | 9,4 |
| | | | Vc=100m/min fz=0,2mm/Zahn ap=1mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (45-50 HRC) | 60-100 | 0,15-0,3 | 1270 | 380 | 2,3 | 1020 | 310 | 2,3 | 800 | 360 | 3,5 |
| | | | Vc=80m/min fz=0,15mm/Zahn ap=1mm ae=0,3D | | | | | | | | |
| | | | 1270 | 380 | 3,8 | 1020 | 310 | 3,9 | 800 | 360 | 5,8 |
| | | | Vc=80m/min fz=0,15mm/Zahn ap=1mm ae=0,5D | | | | | | | | |
| Legierter Stahl (50-60 HRC) | 50-100 | 0,05-0,2 | 1110 | 220 | 1,3 | 890 | 170 | 1,2 | 690 | 200 | 1,9 |
| | | | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,3D | | | | | | | | |
| | | | 1110 | 220 | 2,2 | 890 | 170 | 2,1 | 690 | 200 | 3,2 |
| | | | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,5D | | | | | | | | |
| Rostfreier Stahl | 150-240 | 0,2-0,8 | 3180 | 1590 | 14,3 | 2550 | 1280 | 14,4 | 1990 | 1490 | 21,5 |
| | | | Vc=200m/min fz=0,25mm/Zahn ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 2860 | 1716 | 25,7 | 2290 | 1370 | 25,7 | 1790 | 1610 | 38,6 |
| | | | Vc=180m/min fz=0,3mm/Zahn ap=1,5mm ae=0,5D | | | | | | | | |
| Guß | 100-220 | 0,3-1,0 | 2860 | 2290 | 20,6 | 2290 | 1830 | 20,6 | 1790 | 2150 | 31 |
| | | | Vc=180m/min fz=0,4mm/Zahn ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 2860 | 2860 | 42,9 | 2290 | 2290 | 42,9 | 1790 | 2690 | 64,6 |
| | | | Vc=180m/min fz=0,5mm/Zahn ap=1,5mm ae=0,5D | | | | | | | | |

| Materialien | Ø40 - Ø42 (R6) | | | Ø50 - Ø52 (R6) | | | Ø40 - Ø42 (R8) | | | Ø50 - Ø52 (R8) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 |
| Weicher Stahl (200 HB) | 1990 | 2990 | 71,8 | 1590 | 3180 | 95,4 | 1990 | 1990 | 47,8 | 1590 | 2390 | 71,7 |
| | Vc=250m/min fz=0,5mm/Zahn ap=2mm ae=0,3D | | | | | | Vc=250m/min fz=0,5mm/Zahn ap=2mm ae=0,3D | | | | | |
| | 1990 | 4780 | 191,2 | 1590 | 5090 | 254,5 | 1990 | 3180 | 159 | 1590 | 3820 | 238,8 |
| | Vc=250m/min fz=0,8mm/Zahn ap=2mm ae=0,5D | | | | | | Vc=250m/min fz=0,8mm/Zahn ap=2,5mm ae=0,5D | | | | | |
| Kohlenstoffstahl Legierter Stahl (30 HRC) | 1590 | 1910 | 45,8 | 1270 | 2030 | 60,9 | 1590 | 1270 | 30,5 | 1270 | 1520 | 45,6 |
| | Vc=200m/min fz=0,4mm/Zahn ap=2mm ae=0,3D | | | | | | Vc=200m/min fz=0,4mm/Zahn ap=2mm ae=0,3D | | | | | |
| | 1590 | 2860 | 114,4 | 1270 | 3050 | 152,5 | 1590 | 1910 | 95,5 | 1270 | 2290 | 143,1 |
| | Vc=200m/min fz=0,6mm/Zahn ap=2mm ae=0,5D | | | | | | Vc=200m/min fz=0,6mm/Zahn ap=2,5mm ae=0,5D | | | | | |
| Kohlenstoffstahl Legierter Stahl (30-40 HRC) | 1190 | 710 | 17 | 960 | 770 | 23,1 | 1190 | 480 | 11,5 | 960 | 580 | 17,4 |
| | Vc=150m/min fz=0,2mm/Zahn ap=2mm ae=0,3D | | | | | | Vc=150m/min fz=0,2mm/Zahn ap=2mm ae=0,3D | | | | | |
| | 1190 | 1070 | 42,8 | 960 | 1150 | 57,5 | 1190 | 950 | 47,5 | 960 | 1150 | 71,9 |
| | Vc=150m/min fz=0,3mm/Zahn ap=2mm ae=0,5D | | | | | | Vc=150m/min fz=0,4mm/Zahn ap=2,5mm ae=0,5D | | | | | |
| Kohlenstoffstahl Legierter Stahl (40-45 HRC) | 800 | 360 | 6,5 | 640 | 380 | 8,6 | 800 | 240 | 4,3 | 640 | 290 | 6,5 |
| | Vc=100m/min fz=0,15mm/Zahn ap=1,5mm ae=0,3D | | | | | | Vc=100m/min fz=0,15mm/Zahn ap=1,5mm ae=0,3D | | | | | |
| | 800 | 480 | 14,4 | 640 | 510 | 19,1 | 800 | 320 | 12,8 | 640 | 380 | 19 |
| | Vc=100m/min fz=0,2mm/Zahn ap=1,5mm ae=0,5D | | | | | | Vc=100m/min fz=0,2mm/Zahn ap=2mm ae=0,5D | | | | | |
| Kohlenstoffstahl Legierter Stahl (45-50 HRC) | 640 | 290 | 3,5 | 510 | 310 | 4,7 | 640 | 220 | 4 | 510 | 260 | 5,9 |
| | Vc=80m/min fz=0,15mm/Zahn ap=1mm ae=0,3D | | | | | | Vc=80m/min fz=0,17mm/Zahn ap=1,5mm ae=0,3D | | | | | |
| | 640 | 330 | 6,6 | 510 | 350 | 8,8 | 640 | 260 | 7,8 | 510 | 310 | 11,6 |
| | Vc=80m/min fz=0,17mm/Zahn ap=1mm ae=0,5D | | | | | | Vc=80m/min fz=0,2mm/Zahn ap=1,5mm ae=0,5D | | | | | |
| Legierter Stahl (50-60 HRC) | 550 | 160 | 1,9 | 440 | 170 | 2,5 | 550 | 110 | 1,3 | 440 | 130 | 1,9 |
| | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,3D | | | | | | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,3D | | | | | |
| | 550 | 160 | 3,2 | 440 | 170 | 4,2 | 550 | 110 | 2,2 | 440 | 130 | 3,2 |
| | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,5D | | | | | | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,5D | | | | | |
| Rostfreier Stahl | 1590 | 1430 | 34,3 | 1270 | 1520 | 45,6 | 1590 | 950 | 22,8 | 1270 | 1140 | 34,2 |
| | Vc=200m/min fz=0,3mm/Zahn ap=2mm ae=0,3D | | | | | | Vc=200m/min fz=0,3mm/Zahn ap=2mm ae=0,3D | | | | | |
| | 1430 | 2150 | 86 | 1150 | 2300 | 115 | 1430 | 1720 | 86 | 1150 | 2070 | 129,4 |
| | Vc=180m/min fz=0,5mm/Zahn ap=2mm ae=0,5D | | | | | | Vc=180m/min fz=0,6mm/Zahn ap=2,5mm ae=0,5D | | | | | |
| Guß | 1430 | 2150 | 51,6 | 1150 | 2300 | 69 | 1430 | 1430 | 34,3 | 1150 | 1730 | 51,9 |
| | Vc=180m/min fz=0,5mm/Zahn ap=2mm ae=0,3D | | | | | | Vc=180m/min fz=0,5mm/Zahn ap=2mm ae=0,3D | | | | | |
| | 1430 | 3430 | 137,2 | 1150 | 3680 | 184 | 1430 | 2290 | 114,5 | 1150 | 2760 | 172,5 |
| | Vc=180m/min fz=0,8mm/Zahn ap=2mm ae=0,5D | | | | | | Vc=180m/min fz=0,8mm/Zahn ap=2,5mm ae=0,5D | | | | | |

**Note for above table**

- In the table shown above, cutting conditions indicate regular type conditions for flank wear to be 0,3mm in 30 minutes.
- The following formula shows the chip removal volume (Q) per unit time.
  Q(cm³/min) = ap(mm) x ae(mm) x Vf(mm/min) / 1000
- In the case of slotting, feed speed could be down to 70% of the whole.
- Above table shows starting points of general cutting conditions. Please adjust according to rigidity of machine tools, tooling, conditions of work-pieces and so on.
- In steel exceeding 60HRC, please set the feed value (fz) per one edge about 1/2.

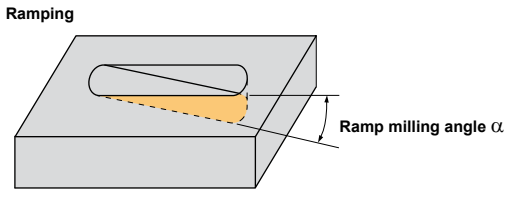
## Recommended cutting conditions

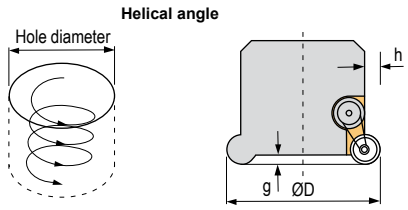
| Material | Cutting speed Vc (m/min) | Per-flute feed rate fz (mm/tooth) | Ø63 (R6) Rotation speed min-1 | Ø63 (R6) Feed rate mm/min | Ø63 (R6) Q value cm³/min | Ø80 (R6) Rotation speed min-1 | Ø80 (R6) Feed rate mm/min | Ø80 (R6) Q value cm³/min | Ø100 (R6) Rotation speed min-1 | Ø100 (R6) Feed rate mm/min | Ø100 (R6) Q value cm³/min |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mild steels (200 HB) | 150-250 | 0,3-0,8 | - | 3780 | 142,9 | - | - | - | - | - | - |
| | | | Vc=250m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 1260 | 6050 | 381,2 | 1000 | 4800 | 384 | 800 | 3200 | 320 |
| | | | Vc=250m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (30 HRC) | 120-230 | 0,3-0,8 | 1010 | 2420 | 91,5 | - | - | - | - | - | - |
| | | | Vc=200m/min fz=0,4mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 1010 | 3640 | 229,3 | 800 | 2800 | 230,4 | 640 | 1920 | 192 |
| | | | Vc=200m/min fz=0,6mm/tooth ap=2mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (30-40 HRC) | 100-200 | 0,2-0,6 | 760 | 910 | 34,4 | - | - | - | - | - | - |
| | | | Vc=150m/min fz=0,2mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 760 | 1370 | 86,3 | 600 | 1080 | 86,4 | 480 | 720 | 72 |
| | | | Vc=150m/min fz=0,3mm/tooth ap=2mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (40-45 HRC) | 60-150 | 0,15-0,3 | 510 | 460 | 13 | - | - | - | - | - | - |
| | | | Vc=100m/min fz=0,15mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 510 | 610 | 28,8 | 400 | 480 | 28,8 | 320 | 320 | 24 |
| | | | Vc=100m/min fz=0,2mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Carbon steels Alloyed steels (45-50 HRC) | 60-100 | 0,15-0,3 | 400 | 360 | 6,8 | - | - | - | - | - | - |
| | | | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| | | | 400 | 410 | 12,9 | 320 | 330 | 13,2 | 250 | 210 | 10,5 |
| | | | Vc=80m/min fz=0,17mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Alloyed steels (50-60 HRC) | 50-100 | 0,05-0,2 | 350 | 210 | 3,9 | 270 | 160 | 3,8 | 220 | 110 | 3,3 |
| | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| | | | 350 | 210 | 6,6 | 270 | 160 | 6,4 | 220 | 110 | 5,5 |
| | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Stainless steels | 150-240 | 0,2-0,8 | 1010 | 1820 | 68,8 | - | - | - | - | - | - |
| | | | Vc=200m/min fz=0,3mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 910 | 2730 | 172 | 720 | 2160 | 172,8 | 570 | 1430 | 143 |
| | | | Vc=180m/min fz=0,5mm/tooth ap=2mm ae=0,5D | | | | | | | | |
| Cast iron | 100-220 | 0,3-1,0 | 910 | 2730 | 103,2 | - | - | - | - | - | - |
| | | | Vc=180m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 910 | 4370 | 275,3 | 720 | 3640 | 276,8 | 570 | 2280 | 228 |
| | | | Vc=180m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | | | |

## Field data

**Ramping, helical milling, feeding toward Z-AXIS**

There are restrictions to ramp angle (α) and cutting depth (g) toward Z-axis because of the design of the cutting edge.




| ØD | Ø40 | Ø50 - Ø52 | Ø63 - Ø66 | Ø80 | Ø100 | Ø125 - Ø160 |
|---|---|---|---|---|---|---|
| Recommended α | Below 3 degrees | | | | | Below 2 degrees |
| h | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 |
| g | 3,7 | 3,3 | 5,5 | 5,5 | 5,5 | 5,5 |
| Helical hole diameter | 60-78 | 77-100 | 101-124 | 135-158 | 175-198 | 248-255 |

**Note**

- Chips may be shattered. The wearing of safety glasses and the guard are required in the vicinity of machining.

**Bemerkung zur oberer Tabelle**

- Auf dieser Tabelle zeigen sich die Schnittbedingungen, die regelmäßige Fräs-Bedingungen für das Flankenverschleiß um 0,3 Mm in 30 Minuten sind.
- Folgende Formel zeigt das Spanabfuhrvolumen (Q) pro Einheitszeit.
  Q (Cm3/Min) = ap (mm) x ae (mm) x Vf (Mm/Min) / 1000
- Beim Nuteneinstechen sollte die Vorschub-Geschwindigkeit bis zu 70 % des Ganzen niedriger sein.
- Diese Tabelle zeigt die Startpunkte von allgemeinen Schnittbedingungen. Diese sollen entsprechend der Stabilität der Werkzeugmaschinen, der Bearbeitung, den Bedingungen von Werkstücken usw. angepaßt werden.
- In Stahl, der härter als 60 HRC ist, setzen Sie bitte das Schneidenwert (fz) auf die Hälfte.

## *Empfohlene Schnittdaten*

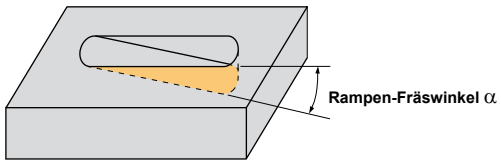
| Materialien | Schnitt-Geschwindigkeit M/Min | Vorschubwert pro Schneide Mm/Zahn | Ø63 (R6) | | | Ø80 (R6) | | | Ø100 (R6) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 | Drehung-Geschwindigkeit min-1 | Vorschubwert mm/min | Q-Wert cm/min3 |
| Weicher Stahl (200 HB) | 150-250 | 0,3-0,8 | - | 3780 | 142,9 | - | - | - | - | - | - |
| | | | Vc=250m/min fz=0,5mm/Zahn ap=2mm ae=0,3D | | | | | | | | |
| | | | 1260 | 6050 | 381,2 | 1000 | 4800 | 384 | 800 | 3200 | 320 |
| | | | Vc=250m/min fz=0,8mm/Zahn ap=2mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (30 HRC) | 120-230 | 0,3-0,8 | 1010 | 2420 | 91,5 | - | - | - | - | - | - |
| | | | Vc=200m/min fz=0,4mm/Zahn ap=2mm ae=0,3D | | | | | | | | |
| | | | 1010 | 3640 | 229,3 | 800 | 2800 | 230,4 | 640 | 1920 | 192 |
| | | | Vc=200m/min fz=0,6mm/Zahn ap=2mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (30-40 HRC) | 100-200 | 0,2-0,6 | 760 | 910 | 34,4 | - | - | - | - | - | - |
| | | | Vc=150m/min fz=0,2mm/Zahn ap=2mm ae=0,3D | | | | | | | | |
| | | | 760 | 1370 | 86,3 | 600 | 1080 | 86,4 | 480 | 720 | 72 |
| | | | Vc=150m/min fz=0,3mm/Zahn ap=2mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (40-45 HRC) | 60-150 | 0,15-0,3 | 510 | 460 | 13 | - | - | - | - | - | - |
| | | | Vc=100m/min fz=0,15mm/Zahn ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 510 | 610 | 28,8 | 400 | 480 | 28,8 | 320 | 320 | 24 |
| | | | Vc=100m/min fz=0,2mm/Zahn ap=1,5mm ae=0,5D | | | | | | | | |
| Kohlenstoffstahl Legierter Stahl (45-50 HRC) | 60-100 | 0,15-0,3 | 400 | 360 | 6,8 | - | - | - | - | - | - |
| | | | Vc=80m/min fz=0,15mm/Zahn ap=1mm ae=0,3D | | | | | | | | |
| | | | 400 | 410 | 12,9 | 320 | 330 | 13,2 | 250 | 210 | 10,5 |
| | | | Vc=80m/min fz=0,17mm/Zahn ap=1mm ae=0,5D | | | | | | | | |
| Legierter Stahl (50-60 HRC) | 50-100 | 0,05-0,2 | 350 | 210 | 3,9 | 270 | 160 | 3,8 | 220 | 110 | 3,3 |
| | | | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,3D | | | | | | | | |
| | | | 350 | 210 | 6,6 | 270 | 160 | 6,4 | 220 | 110 | 5,5 |
| | | | Vc=70m/min fz=0,1mm/Zahn ap=1mm ae=0,5D | | | | | | | | |
| Rostreier Stahl | 150-240 | 0,2-0,8 | 1010 | 1820 | 68,8 | - | - | - | - | - | - |
| | | | Vc=200m/min fz=0,3mm/Zahn ap=2mm ae=0,3D | | | | | | | | |
| | | | 910 | 2730 | 172 | 720 | 2160 | 172,8 | 570 | 1430 | 143 |
| | | | Vc=180m/min fz=0,5mm/Zahn ap=2mm ae=0,5D | | | | | | | | |
| Guß | 100-220 | 0,3-1,0 | 910 | 2730 | 103,2 | - | - | - | - | - | - |
| | | | Vc=180m/min fz=0,5mm/Zahn ap=2mm ae=0,3D | | | | | | | | |
| | | | 910 | 4370 | 275,3 | 720 | 3640 | 276,8 | 570 | 2280 | 228 |
| | | | Vc=180m/min fz=0,8mm/Zahn ap=2mm ae=0,5D | | | | | | | | |

## *Beispiel*

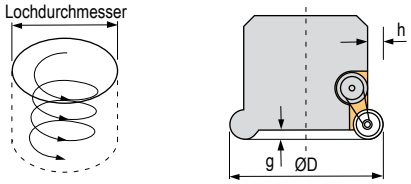
**Einwärtskopieren, Zirkularfräsen, Vorschub zur Z-Achse**

Es gibt Beschränkungen zum Rampen-Winkel (α) und Schnittiefe (g) zur Z-Achse wegen des Designs der Schneide.

**Einwärtskopieren**




**Zirkularfräsen**




| ØD | Ø40 | Ø50 - Ø52 | Ø63 - Ø66 | Ø80 | Ø100 | Ø125 - Ø160 |
|---|---|---|---|---|---|---|
| Empfohlenes α | Unter 3 Grad | | | | | Unter 2 Grad |
| h | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 |
| g | 3,7 | 3,3 | 5,5 | 5,5 | 5,5 | 5,5 |
| Spiral-Lochdurchmesser | 60-78 | 77-100 | 101-124 | 135-158 | 175-198 | 248-255 |

**Bemerkung**

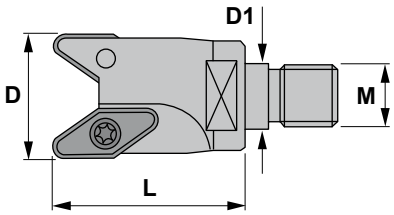
- Späne können zerschmettert werden. Das Tragen der Sicherheitsbrille und die Sicherheitsabdeckung sind erforderlich in der Nähe des Bearbeitungsplatzes.



Characteristics:

General application end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.

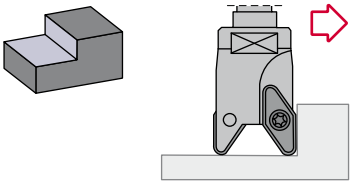
Recommended for the machining of aluminium, plastics and exotic materials.




Eigenschaften:

Einschraubfräser für allgemeine Anwendungen wie Nutenfräsen, Konturfräsen, Stufenfräsen, Bohren, Taschenfräsen und Kopieren.

Für die Bearbeitung von Aluminium, Kunststoff und exotische Materialien empfohlen.



# 0344.06

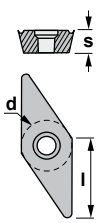
| Reference Bezeichnung | | D | L | M | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 0344.06.015 | 2 | 15 | 35 | M8 | 8,5 | VCGT 1103.. | 0,040 |
| 0344.06.020 | 2 | 20 | 35 | M10 | 10,5 | VCGT 1103.. | 0,070 |
| 0344.06.025 | 2 | 25 | 50 | M12 | 12,5 | VCGT 1604.. | 0,110 |
| 0344.06.032 | 2 | 32 | 50 | M16 | 17,0 | VCGT 2205.. | 0,240 |
| 0344.06.042 | 3 | 42 | 50 | M16 | 17,0 | VCGT 2205.. | 0,400 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0344.06.015 | 1225 | 5507 | 0.9 |
| 0344.06.020 | 1225 | 5507 | 0.9 |
| 0344.06.025 | 1341 | 5515 | 3.0 |
| 0344.06.032 | 1250 | 5520 | 4.0 |
| 0344.06.042 | 1250 | 5520 | 4.0 |

## VCGT

35° rhombic positive inserts with 7° clearance.
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F22

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VCGT 1103.. | 11,00 | 3,18 | 6,35 |
| VCGT 1604.. | 16,50 | 4,76 | 9,52 |
| VCGT 2205.. | 22,10 | 5,56 | 12,70 |




VCGT-AL



VCGT-AP

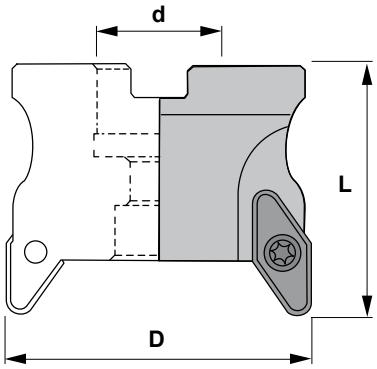




Characteristics:

General application bottom cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.

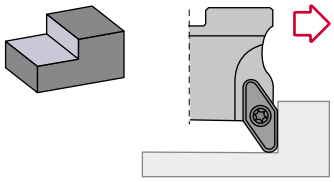
Recommended for the machining of aluminium, plastics and exotic materials.




Eigenschaften:

Messerkopf für allgemeine Anwendungen wie Nutenfräsen, Konturfräsen, Stufenfräsen, Bohren, Taschenfräsen und Kopieren.

Für die Bearbeitung von Aluminium, Kunststoff und exotische Materialien empfohlen.



# 0344.90

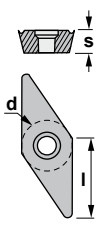
| Reference Bezeichnung | | D | d | L | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|
| 0344.90.042 | 3 | 42 | 16 | 55 | VCGT 2205.. | 0,180 |
| 0344.90.052 | 3 | 52 | 22 | 55 | VCGT 2205.. | 0,350 |
| 0344.90.066 | 4 | 66 | 27 | 55 | VCGT 2205.. | 0,800 |
| 0344.90.080 | 5 | 80 | 27 | 55 | VCGT 2205.. | 1,150 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 0344.90.042 | 1250 | 5520 | 4.0 |
| 0344.90.052 | 1250 | 5520 | 4.0 |
| 0344.90.066 | 1250 | 5520 | 4.0 |
| 0344.90.080 | 1250 | 5520 | 4.0 |

## VCGT

35° rhombic positive inserts with 7° clearance. F22
35° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| VCGT 2205.. | 22,10 | 5,56 | 12,70 |




VCGT-AL



VCGT-AP



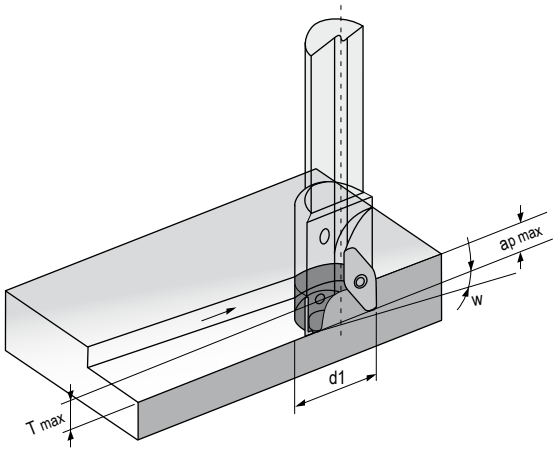
## *Recommended cutting conditions*
## *Empfohlene Schnittdaten*

| Material / Materialien | | Cutting speed / Schnittgeschwindigkeit ZR 10 Vc (mm/min) | KM 15 Vc (mm/min) |
|---|---|---|---|
| Aluminium alloys / Aluminium-Legierungen | Rm < 280 N/mm² | 1500 | 1000 |
| | Rm < 280 N/mm² | 1000 | 800 |
| Copper alloys / Kupfer-Legierungen | Long chipping / Langspanend | 300 | 250 |
| Thermoplastics / Thermoplaste | | | 300 |
| Aluminium alloys / Aluminium-Legierungen | Si < 12 % | 100 | 800 |
| | Si < 12 % | 200 | |
| Copper alloys / Kupfer-Legierungen | Short chipping / Kurzspanend | 500 | 400 |
| Magnesium alloys / Magnesium-Legierungen | | | 400 |
| Duroplastics / Duroplaste | | 200 | 150 |

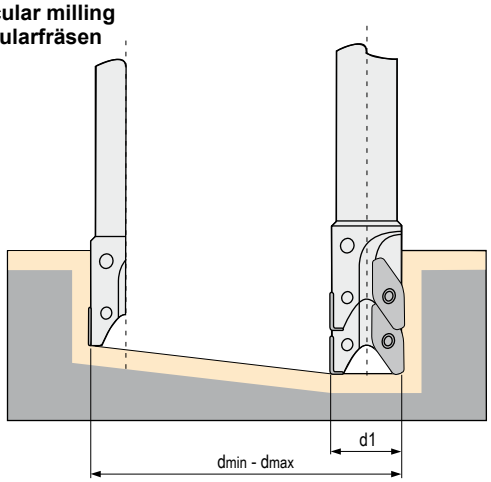
| Maximum feed per tooth / Maximales Vorschub pro Zahn fz (mm/z) in mm | | |
|---|---|---|
| VCGT 1103.. | VCGT 1604.. | VCGT 2205.. |
| 0,25 | 0,35 | 0,5 |
| 0,2 | 0,3 | 0,4 |

## *Recommendations for further applications*
## *Weitere Anwendungsempfehlungen*

**Pocket milling and axial plunging**
**Taschenfräsen und axiales Eintauchen**




**Circular milling**
**Zirkularfräsen**

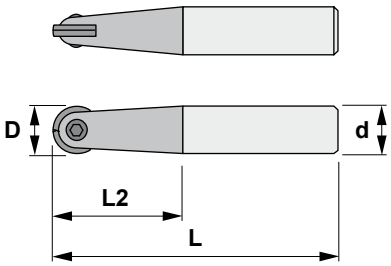



| Helix angle W1 max and internal depth of cut Tmax<br>Helixwinkel W1 max und innere Schnittiefe Tmax | | | |
|---|---|---|---|
| | VCGT 110304-ALM | VCGT 160412-ALM | VCGT 220530-ALM |
| $a_{p\ max}$ | 10 | 13,5 | 15 |
| $T_{max}$ | 6 | 8 | 9 |
| $W_{1\ max}$ degree / Grad | | | |
| 15 | | | |
| 20 | 25 | | |
| 25 | | 24 | |
| 32 | | | 22 |
| 42 | | | 15 |
| 52 | | | 12 |
| 66 | | | 9 |
| 80 | | | 7 |

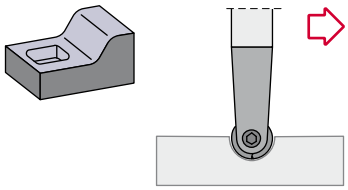
| d1 mm | dmin mm | dmax mm |
|---|---|---|
| 15 | 15 | 15 |
| 20 | 20 | 20 |
| 25 | 25 | 25 |
| 32 | 32 | 32 |
| 42 | 42 | 42 |
| 52 | 52 | 52 |
| 66 | 66 | 66 |
| 80 | 80 | 80 |



Characteristics:
Indexable ball nose semi-finishing and finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.




Eigenschaften:
Kugelbahnfräser zum Halb-Schlichten und Schlichten mit positiven Wendeschneidplatten, die niedrige Schnittkräfte und reduzierte Vibrationen bieten.
Für Stahl, gehärteten Stahl, rostfreien Stahl und Guß empfohlen.



# 85_0

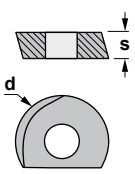
| Reference Bezeichnung | | D | L | L2 | d | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 8530.00.010 | 2 | 10 | 105 | 35 | 12 | HPR 10 | 0,100 |
| 8540.00.012 | 2 | 12 | 105 | 35 | 16 | HPR 12 | 0,240 |
| 8550.00.016 | 2 | 16 | 105 | 45 | 20 | HPR 16 | 0,260 |
| 8560.00.020 | 2 | 20 | 125 | 50 | 25 | HPR 20 | 0,500 |
| 8580.00.025 | 2 | 25 | 125 | 55 | 32 | HPR 25 | 0,750 |
| 8590.00.032 | 2 | 32 | 125 | 55 | 32 | HPR 32 | 0,800 |
| 8530.01.010 | 2 | 10 | 150 | 50 | 12 | HPR 10 | 0,200 |
| 8540.01.012 | 2 | 12 | 160 | 50 | 16 | HPR 12 | 0,300 |
| 8550.01.016 | 2 | 16 | 180 | 70 | 20 | HPR 16 | 0,400 |
| 8560.01.020 | 2 | 20 | 200 | 70 | 25 | HPR 20 | 0,700 |
| 8580.01.025 | 2 | 25 | 220 | 100 | 32 | HPR 25 | 1,250 |
| 8590.01.032 | 2 | 32 | 250 | 100 | 32 | HPR 32 | 1,550 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 8530.00.010 | 1359 | 5515 | - | 3.0 |
| 8540.00.012 | 1509 | 5520 | - | 4.0 |
| 8550.00.016 | 1519 | 5520 | - | 4.0 |
| 8560.00.020 | 1529 | 5520 | - | 4.0 |
| 8580.00.025 | 1609 | - | 5530 | 7.0 |
| 8590.00.032 | 1809 | - | 5530 | 7.0 |
| 8530.01.010 | 1359 | 5515 | - | 3.0 |
| 8540.01.012 | 1509 | 5520 | - | 4.0 |
| 8550.01.016 | 1519 | 5520 | - | 4.0 |
| 8560.01.020 | 1529 | 5520 | - | 4.0 |
| 8580.01.025 | 1609 | - | 5530 | 7.0 |
| 8590.01.032 | 1809 | - | 5530 | 7.0 |

## HPR

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F14

| Reference / Bezeichnung | s | d |
|---|---|---|
| HPR 10 | 2,40 | 10,00 |
| HPR 12 | 2,50 | 12,00 |
| HPR 16 | 3,00 | 16,00 |
| HPR 20 | 3,00 | 20,00 |
| HPR 25 | 4,00 | 25,00 |
| HPR 32 | 5,00 | 32,00 |

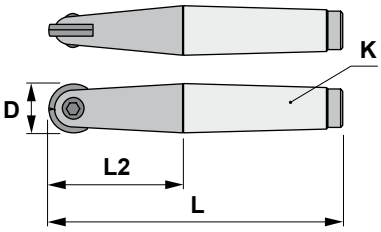



HPR

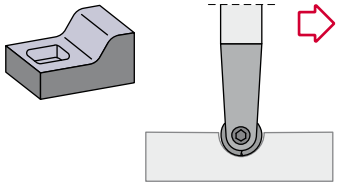




Characteristics:
Indexable ball nose semi-finishing and finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.




Eigenschaften:
Kugelbahnfräser zum Halb-Schlichten und Schlichten mit positiven Wendeschneidplatten, die niedrige Schnittkräfte und reduzierte Vibrationen bieten.
Für Stahl, gehärteten Stahl, rostfreien Stahl und Guß empfohlen.



# 85_3

| Reference Bezeichnung | | D | L | K | L2 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 8580.34.025 | 2 | 25 | 215 | 4 | 135 | HPR 25 | 1,150 |
| 8590.34.032 | 2 | 32 | 268 | 4 | 160 | HPR 32 | 1,550 |

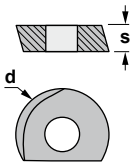
F

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 8580.34.025 | 1609 | - | 5530 | 7.0 |
| 8590.34.032 | 1809 | 5515 | - | 3.0 |

## HPR

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F14

| Reference / Bez. | s | d |
|---|---|---|
| HPR 25 | 4,00 | 25,00 |
| HPR 32 | 5,00 | 32,00 |




HPR

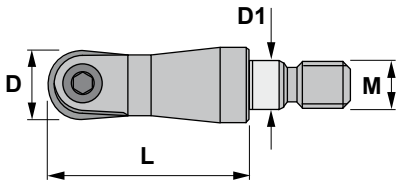




Characteristics:

Indexable ball nose semi-finishing and finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.

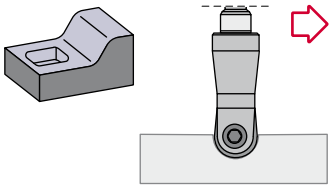
It works well on steels, hardened steels, stainless steels and casts.




Eigenschaften:

Kugelbahnfräser zum Halb-Schlichten und Schlichten mit positiven Wendeschneidplatten, die niedrige Schnittkräfte und reduzierte Vibrationen bieten.

Für Stahl, gehärteten Stahl, rostfreien Stahl und Guß empfohlen.



# 85_06

| Reference Bezeichnung | | D | L | M | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 8530.06.010 | 2 | 10 | 23 | M6 | 6,5 | HPR 10 | 0,016 |
| 8540.06.012 | 2 | 12 | 23 | M6 | 6,5 | HPR 12 | 0,030 |
| 8550.06.016 | 2 | 16 | 30 | M8 | 8,5 | HPR 16 | 0,050 |
| 8560.06.020 | 2 | 20 | 35 | M10 | 10,5 | HPR 20 | 0,095 |
| 8580.06.025 | 2 | 25 | 40 | M12 | 12,5 | HPR 25 | 0,160 |

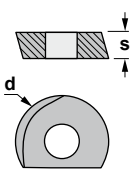
F

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 8530.06.010 | 1359 | 5515 | - | 3.0 |
| 8540.06.012 | 1509 | 5520 | - | 4.0 |
| 8550.06.016 | 1519 | 5520 | - | 4.0 |
| 8560.06.020 | 1529 | 5520 | - | 4.0 |
| 8580.06.025 | 1609 | - | 5530 | 7.0 |

## HPR

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F14

| Reference / Bezeichnung | s | d |
|---|---|---|
| HPR 10 | 2,40 | 10,00 |
| HPR 12 | 2,50 | 12,00 |
| HPR 16 | 3,00 | 16,00 |
| HPR 20 | 3,00 | 20,00 |
| HPR 25 | 4,00 | 25,00 |




HPR

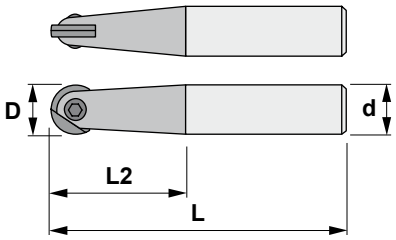




Characteristics:

Indexable ball nose mirror finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.

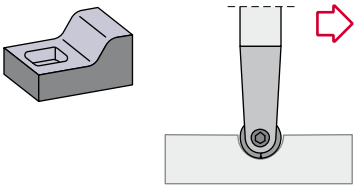
It works well on steels, hardened steels, stainless steels and casts.




Eigenschaften:

Kugelbahnfräser zum Schlichten mit positiven Wendeschneidplatten, die niedrige Schnittkräfte und reduzierte Vibrationen bieten.

Für Stahl, gehärteten Stahl, rostfreien Stahl und Guß empfohlen.



# 88_0

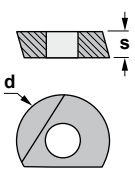
| Reference<br>Bezeichnung | | D | L | d | L2 | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 8830.00.010 | 2 | 10 | 105 | 10 | 50 | RPR 10 | 0,100 |
| 8840.00.012 | 2 | 12 | 105 | 12 | 50 | RPR 12 | 0,240 |
| 8850.00.016 | 2 | 16 | 105 | 16 | 50 | RPR 16 | 0,260 |
| 8860.00.020 | 2 | 20 | 125 | 20 | 70 | RPR 20 | 0,500 |
| 8880.00.025 | 2 | 25 | 125 | 25 | 70 | RPR 25 | 0,750 |
| 8890.00.032 | 2 | 32 | 125 | 32 | 70 | RPR 32 | 0,800 |
| 8830.01.010 | 2 | 10 | 150 | 10 | 80 | RPR 10 | 0,200 |
| 8840.01.012 | 2 | 12 | 160 | 12 | 90 | RPR 12 | 0,300 |
| 8850.01.016 | 2 | 16 | 180 | 16 | 100 | RPR 16 | 0,400 |
| 8860.01.020 | 2 | 20 | 200 | 20 | 120 | RPR 20 | 0,700 |
| 8880.01.025 | 2 | 25 | 220 | 25 | 140 | RPR 25 | 1,250 |
| 8890.01.032 | 2 | 32 | 250 | 32 | 160 | RPR 32 | 1,550 |

| Reference<br>Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 8830.00.010 | 1353 | 5508 | - | 1.2 |
| 8840.00.012 | 1354 | 5510 | - | 2.0 |
| 8850.00.016 | 1619 | 5515 | - | 3.0 |
| 8860.00.020 | 1529 | 5520 | - | 4.0 |
| 8880.00.025 | 1609 | - | 5530 | 7.0 |
| 8890.00.032 | 1809 | - | 5530 | 7.0 |
| 8830.01.010 | 1353 | 5508 | - | 1.2 |
| 8840.01.012 | 1354 | 5510 | - | 2.0 |
| 8850.01.016 | 1619 | 5515 | - | 3.0 |
| 8860.01.020 | 1529 | 5520 | - | 4.0 |
| 8880.01.025 | 1609 | - | 5530 | 7.0 |
| 8890.01.032 | 1809 | - | 5530 | 7.0 |

## RPR

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F14

| Reference / Bezeichnung | s | d |
|---|---|---|
| RPR 10 | 2,60 | 10,00 |
| RPR 12 | 3,00 | 12,00 |
| RPR 16 | 4,00 | 16,00 |
| RPR 20 | 5,00 | 20,00 |
| RPR 25 | 6,00 | 25,00 |
| RPR 32 | 7,00 | 32,00 |

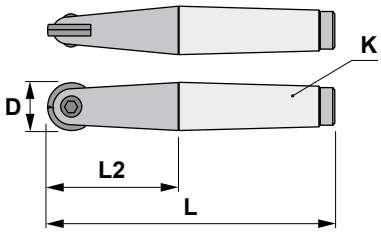



RPR

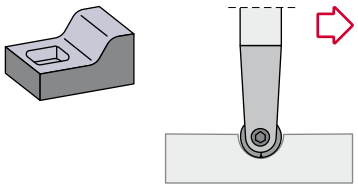




Characteristics:
Indexable ball nose mirror finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.




Eigenschaften:
Kugelbahnfräser zum Schlichten mit positiven Wendeschneidplatten, die niedrige Schnittkräfte und reduzierte Vibrationen bieten.
Für Stahl, gehärteten Stahl, rostfreien Stahl und Guß empfohlen.



# 88_3

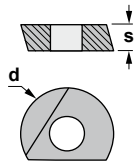
| Reference Bezeichnung | | D | L | K | L2 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 8860.30.020 | 2 | 20 | 190 | 3 | 115 | RPR 20 | 0,670 |
| 8880.34.025 | 2 | 25 | 215 | 4 | 135 | RPR 25 | 1,200 |
| 8890.34.032 | 2 | 32 | 268 | 4 | 160 | RPR 32 | 1,650 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 8860.30.020 | 1529 | 5520 | - | 4.0 |
| 8880.34.025 | 1609 | - | 5530 | 7.0 |
| 8890.34.032 | 1809 | - | 5530 | 7.0 |

## RPR

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F16

| Reference / Bezeichnung | s | d |
|---|---|---|
| RPR 20 | 5,00 | 20,00 |
| RPR 25 | 6,00 | 25,00 |
| RPR 32 | 7,00 | 32,00 |

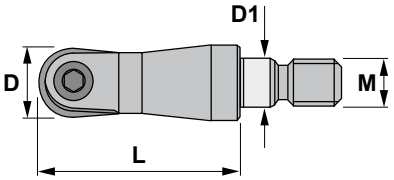



RPR

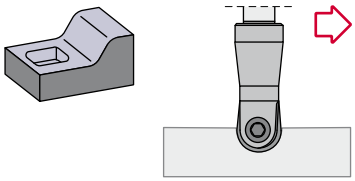




Characteristics:
Indexable ball nose mirror finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.




Eigenschaften:
Kugelbahnfräser zum Schlichten mit positiven Wendeschneidplatten, die niedrige Schnittkräfte und reduzierte Vibrationen bieten.
Für Stahl, gehärteten Stahl, rostfreien Stahl und Guß empfohlen.



# 88_06

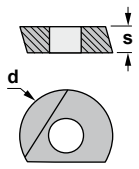
| Reference Bezeichnung | | D | L | K | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 8830.06.010 | 2 | 10 | 23 | M6 | 6,5 | RPR 10 | 0,016 |
| 8840.06.012 | 2 | 12 | 23 | M6 | 6,5 | RPR 12 | 0,030 |
| 8850.06.016 | 2 | 16 | 30 | M8 | 8,5 | RPR 16 | 0,050 |
| 8860.06.020 | 2 | 20 | 30 | M10 | 10,5 | RPR 20 | 0,095 |
| 8880.06.025 | 2 | 25 | 35 | M12 | 12,5 | RPR 25 | 0,160 |

| Reference Bezeichnung | | | | Nm |
|---|---|---|---|---|
| 8830.06.010 | 1353 | 5508 | - | 1.2 |
| 8840.06.012 | 1354 | 5510 | - | 2.0 |
| 8850.06.016 | 1619 | 5515 | - | 3.0 |
| 8860.06.020 | 1529 | 5520 | - | 4.0 |
| 8880.06.025 | 1609 | - | 5530 | 7.0 |

## RPR

Round positive insert with 11° clearance.
Runde positive Wendeschneidplatte mit 11° Freiwinkel. F16

| Reference / Bezeichnung | s | d |
|---|---|---|
| RPR 10 | 2,60 | 10,00 |
| RPR 12 | 3,00 | 12,00 |
| RPR 16 | 4,00 | 16,00 |
| RPR 20 | 5,00 | 20,00 |
| RPR 25 | 6,00 | 25,00 |




RPR



## *Recommended cutting conditions*

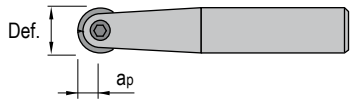
| Material | m/min Cutting speed | mm/tooth Feed rate | Ø8 | | Ø10 | | Ø12 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | |
| Carbon steels<br>Alloyed steels<br>(30 HRC) | 100-200 | 0,2-0,3 | 6370 | 2550 | 5090 | 2040 | 4240 | 1700 | |
| | | | Vc=160m/min fz=0,2mm/tooth ap=0,025D ae=0,1D | | | | | | |
| Carbon steels<br>Alloyed steels<br>(30-40 HRC) | 80-150 | 0,2-0,3 | 4770 | 1910 | 3820 | 1530 | 3180 | 1270 | |
| | | | Vc=120m/min fz=0,2mm/tooth ap=0,025D ae=0,1D | | | | | | |
| Die tool steels<br>Pre-hardened steels<br>(30-40 HRC) | 70-100 | 0,1-0,15 | 3180 | 640 | 2550 | 510 | 2120 | 420 | |
| | | | Vc=80m/min fz=0,1mm/tooth ap=0,025D ae=0,1D | | | | | | |
| Hardened steels<br>(55-65 HRC) | 200-250 | 0,2-0,4 | 9150 | 3660 | 7320 | 2930 | 6100 | 2440 | |
| | | | Vc=230m/min fz=0,2mm/tooth ap=0,01D ae=0,02D | | | | | | |
| Cast iron | 100-200 | 0,3-0,4 | 6730 | 3820 | 5090 | 3050 | 4240 | 2550 | |
| | | | Vc=160m/min fz=0,3mm/tooth ap=0,025D ae=0,1D | | | | | | |

| Material | m/min Cutting speed | mm/tooth Feed rate | Ø16 | | Ø20 | | Ø25 | | Ø30(32) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min |
| Carbon steels<br>Alloyed steels<br>(30 HRC) | 100-200 | 0,2-0,3 | 2400 | 1600 | 2550 | 1300 | 2050 | 1030 | 1700 | 850 |
| | | | Vc=160m/min fz=0,25mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Carbon steels<br>Alloyed steels<br>(30-40 HRC) | 80-150 | 0,2-0,3 | 1600 | 1200 | 1910 | 955 | 1530 | 765 | 1280 | 640 |
| | | | Vc=120m/min fz=0,25mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Die tool steels<br>Pre-hardened steels<br>(30-40 HRC) | 70-100 | 0,1-0,15 | 3200 | 385 | 1280 | 310 | 1020 | 245 | 850 | 205 |
| | | | Vc=80m/min fz=0,12mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Hardened steels<br>(55-65 HRC) | 200-250 | 0,2-0,4 | 4575 | 2740 | 3660 | 2200 | 2930 | 1760 | 2440 | 1460 |
| | | | Vc=230m/min fz=0,3mm/tooth ap=0,01D ae=0,02D | | | | | | | |
| Cast iron | 100-200 | 0,3-0,4 | 3200 | 2240 | 2550 | 1790 | 2050 | 1440 | 1700 | 1190 |
| | | | Vc=160m/min fz=0,35mm/tooth ap=0,05D ae=0,1D | | | | | | | |

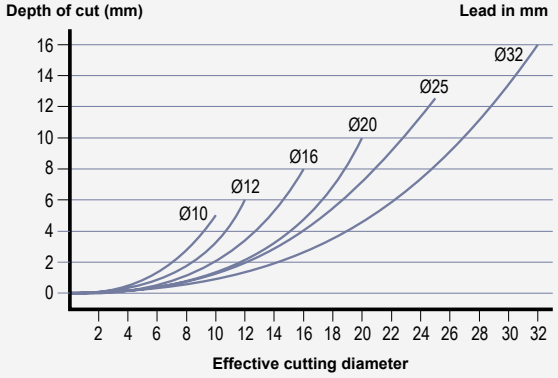
**Note**

- According to the machining situation, refer to the table above to determine the cutting conditions.
- Be sure to practice safety instructions and precautions such as wearing glasses and safety shoes, and placing safety covers when you use this tool. This tool can be broken during machining, so failure to follow these instructions may cause personal injury.

$$n = \frac{Vc \cdot 1000}{\pi \cdot Def.} \text{ (Rev/min.)}$$




N = Spindle speed (Rev/min.)
Vc = Cutting speed
Def. = Effective cutting diameter
$a_p$ = Max. Depth of cut (mm)




F

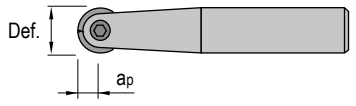
## *Empfohlene Schnittdaten*

| Materialien | mm/min Schnittgeschwindigkeit | mm/Zahn Vorschubwert | Ø8 | | Ø10 | | Ø12 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | | |
| Kohlenstoffstahl<br>Legierter Stahl | 100-200 | 0,2-0,3 | 6370 | 2550 | 5090 | 2040 | 4240 | 1700 | | |
| | | | Vc=160m/min fz=0,2mm/Zahn ap=0,025D ae=0,1D | | | | | | | |
| Kohlenstoffstahl<br>Legierter Stahl | 80-150 | 0,2-0,3 | 4770 | 1910 | 3820 | 1530 | 3180 | 1270 | | |
| | | | Vc=120m/min fz=0,2mm/Zahn ap=0,025D ae=0,1D | | | | | | | |
| Formenbaustahl<br>Vorgehärteter Stahl | 70-100 | 0,1-0,15 | 3180 | 640 | 2550 | 510 | 2120 | 420 | | |
| | | | Vc=80m/min fz=0,1mm/Zahn ap=0,025D ae=0,1D | | | | | | | |
| Gehärteter Stahl | 200-250 | 0,2-0,4 | 9150 | 3660 | 7320 | 2930 | 6100 | 2440 | | |
| | | | Vc=230m/min fz=0,2mm/Zahn ap=0,01D ae=0,02D | | | | | | | |
| Guß | 100-200 | 0,3-0,4 | 6730 | 3820 | 5090 | 3050 | 4240 | 2550 | | |
| | | | Vc=160m/min fz=0,3mm/Zahn ap=0,025D ae=0,1D | | | | | | | |

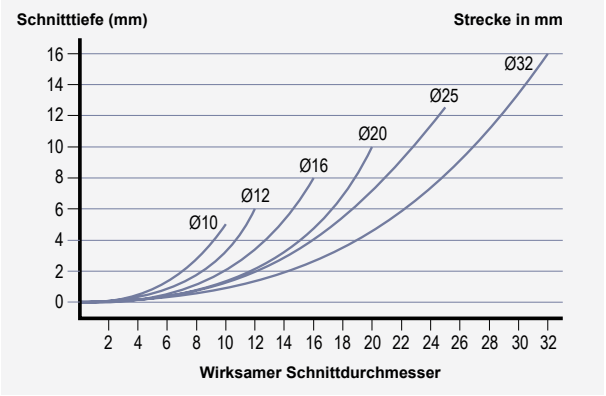
| Materialien | mm/min Schnittgeschwindigkeit | mm/Zahn Vorschubwert | Ø16 | | Ø20 | | Ø25 | | Ø30(32) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min | min$^{-1}$ | mm/min |
| Kohlenstoffstahl<br>Legierter Stahl | 100-200 | 0,2-0,3 | 2400 | 1600 | 2550 | 1300 | 2050 | 1030 | 1700 | 850 |
| | | | Vc=160m/min fz=0,25mm/Zahn ap=0,05D ae=0,1D | | | | | | | |
| Kohlenstoffstahl<br>Legierter Stahl | 80-150 | 0,2-0,3 | 1600 | 1200 | 1910 | 955 | 1530 | 765 | 1280 | 640 |
| | | | Vc=120m/min fz=0,25mm/Zahn ap=0,05D ae=0,1D | | | | | | | |
| Formenbaustahl<br>Vorgehärteter Stahl | 70-100 | 0,1-0,15 | 3200 | 385 | 1280 | 310 | 1020 | 245 | 850 | 205 |
| | | | Vc=80m/min fz=0,12mm/Zahn ap=0,05D ae=0,1D | | | | | | | |
| Gehärteter Stahl | 200-250 | 0,2-0,4 | 4575 | 2740 | 3660 | 2200 | 2930 | 1760 | 2440 | 1460 |
| | | | Vc=230m/min fz=0,3mm/Zahn ap=0,01D ae=0,02D | | | | | | | |
| Guß | 100-200 | 0,3-0,4 | 3200 | 2240 | 2550 | 1790 | 2050 | 1440 | 1700 | 1190 |
| | | | Vc=160m/min fz=0,35mm/Zahn ap=0,05D ae=0,1D | | | | | | | |

**Bemerkung**
- Gemäß der Bearbeitungssituation, beziehen Sie sich auf der Tabelle oben, um die Schnittbedingungen zu bestimmen.
- Sorgen Sie dafür, dass Sicherheitsinstruktionen und Vorsichtsmaßnahmen (wie das Tragen der Brille und Sicherheitsschuhe) eingehalten werden und verwenden Sie Sicherheitsabdeckungen, immer wenn Sie dieses Werkzeug einsetzen.
  Da dieses Werkzeug während der Bearbeitung brechen kann, könnte das nicht Beachten von diesen Instruktionen persönliche Verletzungen verursachen.

$$n = \frac{Vc \cdot 1000}{\pi \cdot Def.}$$




N = Spindel-Geschwindigkeit (Umdrehungen/Minute)
Vc = Schnittgeschwindigkeit
Def. = Wirksamer Schnittdurchmesser
$a_p$ = Maximale Schnittiefe (mm)





# PORCUPINE CUTTERS IGELFRÄSER

Code system
Kodifizierung F148

Applications index
Anwendungen F149

Porcupine cutters
Igelfräser F150-152

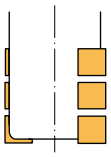
Cutting data
Schnittdaten F153-154

F

# Code system / Kodifizierung

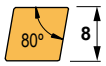
| 2 3 | 3 | 0 | 50 | 063 | 65 |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

## 1 *Milling cutter type*
## *Fräsertyp*



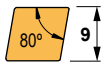
23

## 2 *Insert size*
## *Wendeschneidplattengröße*




2







3

## 3 *Clearance angle of insert*
## *Freiwinkel der Wendeschneidplatte*

11°



0

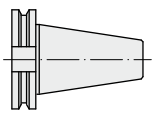
## 4 *Type of coupling*
## *Aufnahmetyp*

Short weldon
Kurzer Weldonschaft



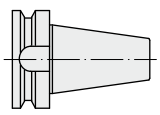
Ø12 Ø16 Ø20 Ø25 Ø32 Ø40
**07**

ISO 7388 DIN 69871/A



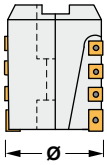
7388 40 — **47**
7388 50 — **48**

ISO JIS B 6339-BT

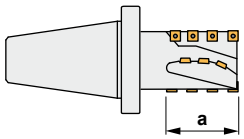


BT 40 — **49**
BT 50 — **50**

## 5 *Diameter, mm.*
## *Durchmesser, mm.*



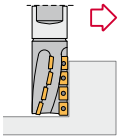

## 6 *Cutting length*
## *Schnittlänge*




F

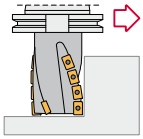
## *Porcupine cutters*
## *Igelfräser*

**$23^{2}_{3}0.07$**
Slot and side milling 90°
Nuten- und Konturfräser 90°



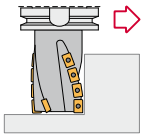
AP.. 1003..
AP.. 1604..
*P. / S. F150*

**$2330.^{47}_{48}$**
Slot and side milling 90°
Nuten- und Konturfräser 90°



*P. / S. F151* AP.. 1604..

**$2330.^{49}_{50}$**
Slot and side milling 90°
Nuten- und Konturfräser 90°

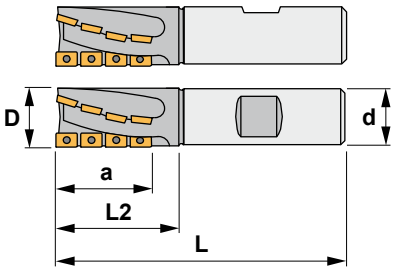


*P. / S. F152* AP.. 1604..

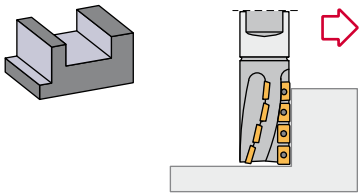
F



Characteristics:
Heavy roughing milling cutter for diversified manufacture that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centres.




Eigenschaften:
Fräser zum schweren Schruppen mit stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für allgemeine Anwendungen in konventionellen Fräsmaschinen und Bearbeitungszentren geeignet.



## 23$\frac{2}{3}$0.07

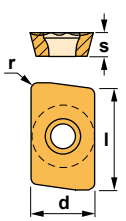
| Reference Bezeichnung | | D | L | L2 | d | a | Insert size Wendeschneidplatte | No. of inserts WSP-Anzahl | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 2320.07.025.37 | 2 | 25 | 110 | 50 | 25 | 37 | AP.. 1003.. | 8 | 0,400 |
| 2330.07.032.45 | 2 | 32 | 125 | 55 | 32 | 45 | AP.. 1604.. | 6 | 0,650 |
| 2330.07.040.50 | 3 | 40 | 125 | 65 | 32 | 50 | AP.. 1604.. | 12 | 0,800 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 2320.07.025.37 | 1425 | 5507 | 0.9 |
| 2330.07.032.45 | 1440 | 5515 | 3.0 |
| 2330.07.040.50 | 1440 | 5515 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance. F11
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1003.. | 9,52 | 3,18 | 6,35 |
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT

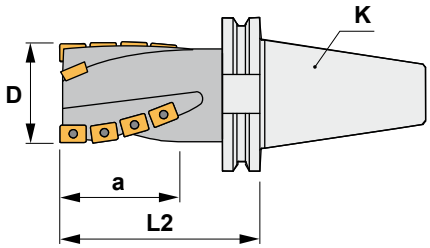


APMT

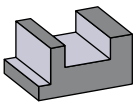


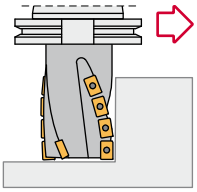


Characteristics:
Heavy roughing milling cutter for diversified manufacture that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centres.




Eigenschaften:
Fräser zum schweren Schruppen mit stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für allgemeine Anwendungen in konventionellen Fräsmaschinen und Bearbeitungszentren geeignet.





## 2330.47/48

| Reference Bezeichnung | | D | L2 | K | a | Insert size Wendeschneidplatte | No. of inserts WSP-Anzahl | Kg |
|---|---|---|---|---|---|---|---|---|
| 2330.47.050.65 | 3 | 50 | 120 | 40 | 65 | AP.. 1604.. | 15 | 1,650 |
| 2330.48.050.65 | 3 | 50 | 130 | 50 | 65 | AP.. 1604.. | 15 | 3,700 |
| 2330.48.063.65 | 3 | 63 | 130 | 50 | 65 | AP.. 1604.. | 15 | 4,450 |
| 2330.48.080.85 | 3 | 80 | 140 | 50 | 80 | AP.. 1604.. | 18 | 5,950 |

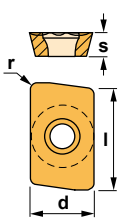
F

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 2330.47.050.65 | 1240 | 5515 | 3.0 |
| 2330.48.050.65 | 1240 | 5515 | 3.0 |
| 2330.48.063.65 | 1240 | 5515 | 3.0 |
| 2330.48.080.85 | 1240 | 5515 | 3.0 |

## AP..

Parallelogram positive inserts with 11° clearance.
Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT

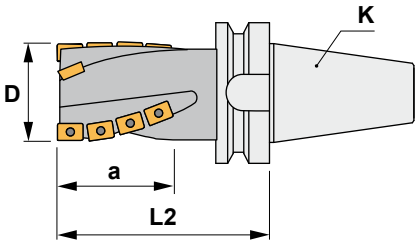


APMT

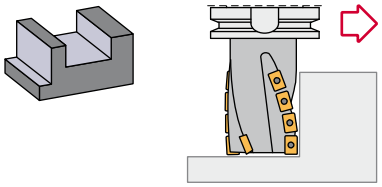




Characteristics:
Heavy roughing milling cutter for diversified manufacture that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centres.




Eigenschaften:
Fräser zum schweren Schruppen mit stabilen Wendeschneidplatten, die hohe Schnitttiefen und einen hohen Vorschub pro Zahn erlauben.
Für allgemeine Anwendungen in konventionellen Fräsmaschinen und Bearbeitungszentren geeignet.



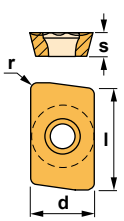
## 2330.$^{49}_{50}$

| Reference<br>Bezeichnung | | D | L2 | K | a | Insert size<br>Wendeschneidplatte | No. of inserts<br>WSP-Anzahl | Kg |
|---|---|---|---|---|---|---|---|---|
| 2330.49.050.65 | 3 | 50 | 105 | 40 | 65 | AP.. 1604.. | 12 | 1,700 |
| 2330.50.050.65 | 3 | 50 | 105 | 50 | 65 | AP.. 1604.. | 15 | 3,800 |
| 2330.50.063.65 | 3 | 63 | 130 | 50 | 65 | AP.. 1604.. | 15 | 5,100 |
| 2330.50.080.85 | 3 | 80 | 140 | 50 | 80 | AP.. 1604.. | 18 | 6,100 |

| Reference<br>Bezeichnung | | | Nm |
|---|---|---|---|
| 2330.49.050.65 | 1240 | 5515 | 3.0 |
| 2330.50.050.65 | 1240 | 5515 | 3.0 |
| 2330.50.063.65 | 1240 | 5515 | 3.0 |
| 2330.50.080.85 | 1240 | 5515 | 3.0 |

**AP..** Parallelogram positive inserts with 11° clearance. Parallelogramme positive Wendeschneidplatten mit 11° Freiwinkel. F11

| Reference / Bez. | l | s | d |
|---|---|---|---|
| AP.. 1604.. | 17,00 | 4,76 | 9,52 |




APHT-AL



APKT



APMT

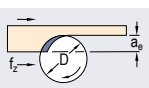


## *Cutting data for porcupine milling cutters*

| Material P | HB | Condition | Tool diameter (D mm.) | Basic grades TIN25 | TIN21 | PM25 | TL40 | Feed/tooth complete slot f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Cutting speed m/min. | | | | |
| Unalloyed steel | 110<br>170<br>250 | C=0.25%<br>C=0.8%<br>C=1.4% | 20-32<br>40-50 | 250-300<br>150-200<br>100-150 | | 150-200<br>100-140<br>70-110 | 150-200<br>100-140<br>70-110 | 0,12-0,22<br>0,15-0,39 |
| Low alloyed steel | 125-225<br>220-450 | Annealed<br>Hardened | 20-32<br>40-50 | 150-200<br>90-140 | 100-150<br>60-110 | 90-140<br>60-110 | 90-140<br>60-110 | 0,10-0,21<br>0,15-0,34 |
| High alloyed steel | 150-250<br>250-500 | Annealed<br>Hardened | 20-32<br>40-50 | 130-170<br>90-120 | 80-120 | 80-120<br>50-80 | 80-120<br>50-80 | 0,10-0,21<br>0,15-0,34 |
| Stainless steel | 150-270 | Ferritic / martensitic | 20-32<br>40-50 | 140-190 | 120-160 | 100-130 | 100-130 | 0,12-0,22<br>0,15-0,34 |
| Steel castings | 150<br>150-220<br>160-200 | Unalloyed<br>Low alloyed<br>High alloyed | 20-32<br>40-50 | 130-170<br>110-150<br>80-120 | | 80-110<br>50-90<br>50-80 | 80-110<br>50-90<br>50-80 | 0,12-0,22<br>0,15-0,34 |
| Stainless steel castings | 200 | Ferritic / martensitic | 20-32 | | 50-80 | | | 0,10-0,21<br>0,15-0,34 |

| Material M | HB | Condition | Tool diameter (D mm.) | Basic grades TIN25 | TIN21 | PM40 | KM15 | Feed/tooth complete slot f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Cutting speed m/min. | | | | |
| Stainless steel | 150-220 | Austenitic | 20-32<br>40-50 | | 80-160 | 70-130 | | 0,12-0,23<br>0,15-0,37 |
| Stainless steel castings | 200 | Austenitic | 20-32<br>40-50 | | 40-70 | 40-60 | | 0,12-0,21<br>0,15-0,34 |
| Heat resistant alloys<br>Nickel or cobalt base | 140-300<br>300-475 | Annealed or solution treated<br>Aged | 20-32<br>40-50 | | | | 15-25<br>12-20 | 0,05-0,07<br>0,07-0,10 |
| Titanium alloys | 300-340<br>320-380 | Annealed or solution treated | 20-32<br>40-50 | | | | 40-80<br>30-60 | 0,07-0,10<br>0,10-0,15 |

| Material K | HB | Condition | Tool diameter (D mm.) | Basic grades TIN25 | TIN21 | PM25 | KM15 | Feed/tooth complete slot f2 |
|---|---|---|---|---|---|---|---|---|
| | | | | Cutting speed m/min. | | | | |
| Malleable cast iron | 110-145<br>200-230 | Short chipping<br>Long chipping | 20-32<br>40-50 | | | | 60-80<br>50-70 | 0,12-0,23<br>0,15-0,37 |
| Grey cast iron | 180<br>260 | Low tensile strength<br>High tensile strength, alloyed | 20-32<br>40-50 | | | | 70-100<br>50-80 | 0,12-0,23<br>0,15-0,37 |
| Nodular cast iron<br>Spheroidal graphite | 160<br>250 | Ferritic<br>Pearlitic | 20-32<br>40-50 | | | | 40-60<br>30-50 | 0,10-0,21<br>0,15-0,34 |
| Aluminium | 60-150<br>40-180 | Forged<br>Cast | 20-32<br>40-50 | | | | 300-500<br>250-450 | 0,23-0,39<br>0,31-0,60 |
| Bronze-brass alloys | 60-150 | | 20-32<br>40-50 | | | | 80-120 | 0,15-0,31<br>0,23-0,39 |




| $D/a_e$ | 50 | 40 | 20 | 10 | 5 | 2,5 | 2 | 1,5 | 1 |
|---|---|---|---|---|---|---|---|---|---|
| $f_1$ | 4,5 | 4 | 3 | 2 | 1,5 | 1 | 1 | 1 | 1 |

When you trace a contour (side peripherical milling), you must multiply the $f_2$ value of a complete slot (see table) by the correction factor $f_1$ corresponding to the relationship $D/a_e$ (milling cutter diameter/radial cutting depth) in order to get a suitable feed.

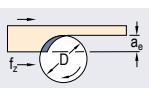
F

## *Schnittdaten für Igelfräser*

| Materialien P | HB | Beschaffenheit | Werkzeug-durchmesser (D mm.) | Hauptsorten TIN25 | TIN21 | PM25 | TL40 | Vorschub/Zahn (komplete Nut f2) |
|---|---|---|---|---|---|---|---|---|
| | | | | Schnittgeschwindigkeit M/Min. | | | | |
| Unlegierter Stahl | 110<br>170<br>250 | C=0.25%<br>C=0.8%<br>C=1.4% | 20-32<br>40-50 | 250-300<br>150-200<br>100-150 | | 150-200<br>100-140<br>70-110 | 150-200<br>100-140<br>70-110 | 0,12-0,22<br>0,15-0,39 |
| Niedrig legierter Stahl | 125-225<br>220-450 | Geglüht<br>Vergütet | 20-32<br>40-50 | 150-200<br>90-140 | 100-150<br>60-110 | 90-140<br>60-110 | 90-140<br>60-110 | 0,10-0,21<br>0,15-0,34 |
| Hochlegierter Stahl | 150-250<br>250-500 | Geglüht<br>Vergütet | 20-32<br>40-50 | 130-170<br>90-120 | 80-120 | 80-120<br>50-80 | 80-120<br>50-80 | 0,10-0,21<br>0,15-0,34 |
| Rostfreier Stahl | 150-270 | Martensitisch/Ferritisch | 20-32<br>40-50 | 140-190 | 120-160 | 100-130 | 100-130 | 0,12-0,22<br>0,15-0,34 |
| Stahlguß | 150<br>150-220<br>160-200 | Unlegiert<br>Niedrig legiert<br>Hochlegiert | 20-32<br>40-50 | 130-170<br>110-150<br>80-120 | | 80-110<br>50-90<br>50-80 | 80-110<br>50-90<br>50-80 | 0,12-0,22<br>0,15-0,34 |
| Rostfreier Stahlguß | 200 | Martensitisch/Ferritisch | 20-32 | | 50-80 | | | 0,10-0,21<br>0,15-0,34 |

| Materialien M | HB | Beschaffenheit | Werkzeug-durchmesser (D mm.) | Hauptsorten TIN25 | TIN21 | PM40 | KM15 | Vorschub/Zahn (komplete Nut f2) |
|---|---|---|---|---|---|---|---|---|
| | | | | Schnittgeschwindigkeit M/Min. | | | | |
| Rostfreier Stahl | 150-220 | Austenitisch | 20-32<br>40-50 | | 80-160 | 70-130 | | 0,12-0,23<br>0,15-0,37 |
| Rostfreier Stahlguß | 200 | Austenitisch | 20-32<br>40-50 | | 40-70 | 40-60 | | 0,12-0,21<br>0,15-0,34 |
| Warmfeste Legierungen, Nickel- und Kobalthaltig | 140-300<br>300-475 | Geglüht oder lösungsbehandelt<br>Gealtert | 20-32<br>40-50 | | | | 15-25<br>12-20 | 0,05-0,07<br>0,07-0,10 |
| Titanlegierungen | 300-340<br>320-380 | Geglüht oder lösungsbehandelt | 20-32<br>40-50 | | | | 40-80<br>30-60 | 0,07-0,10<br>0,10-0,15 |

| Materialien K | HB | Beschaffenheit | Werkzeug-durchmesser (D mm.) | Hauptsorten TIN25 | TIN21 | PM25 | KM15 | Vorschub/Zahn (komplete Nut f2) |
|---|---|---|---|---|---|---|---|---|
| | | | | Schnittgeschwindigkeit M/Min. | | | | |
| Temperguß | 110-145<br>200-230 | Kurzspanend<br>Langspanend | 20-32<br>40-50 | | | | 60-80<br>50-70 | 0,12-0,23<br>0,15-0,37 |
| Grauguß | 180<br>260 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit, legiert | 20-32<br>40-50 | | | | 70-100<br>50-80 | 0,12-0,23<br>0,15-0,37 |
| Kugelgraphitguß | 160<br>250 | Ferritisch<br>Perlitisch | 20-32<br>40-50 | | | | 40-60<br>30-50 | 0,10-0,21<br>0,15-0,34 |
| Aluminium | 60-150<br>40-180 | Geschmiedet<br>Gegossen | 20-32<br>40-50 | | | | 300-500<br>250-450 | 0,23-0,39<br>0,31-0,60 |
| Bronze- und Messinglegierungen | 60-150 | | 20-32<br>40-50 | | | | 80-120 | 0,15-0,31<br>0,23-0,39 |




| $D/a_e$ | 50 | 40 | 20 | 10 | 5 | 2,5 | 2 | 1,5 | 1 |
|---|---|---|---|---|---|---|---|---|---|
| $f_1$ | 4,5 | 4 | 3 | 2 | 1,5 | 1 | 1 | 1 | 1 |

Wenn man eine Kontur fräst (seitlich-peripherisches Fräsen), muss man den $f_2$ Wert von einer kompletten Nut (siehe Tabelle) durch den Korrekturfaktor $f_1$ welcher die Beziehung $D/a_e$ entspricht (Durchmesser des Fräsers/Radiale Schnitttiefe) multiplizieren, damit man einen geeigneten Vorschub erhält.



# SOLID CARBIDE
# VOLLHARTMETALL

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Hochleistung G10-43

Solid carbide
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Bohrer G73-88

Tungsten carbide burrs
Rotierfräser G89-93

**HIGH PERFORMANCE / HOCHLEISTUNG**

» *Suitable*
*Geeignet*

»» *Especially suitable*
*Besonders geeignet*



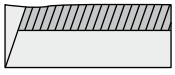
| Reference / Bezeichnung | 6230 | 6240 | 6440 | 6054 | 6064 | 6164 | 6022 |
|---|---|---|---|---|---|---|---|
| **Norm / Standard** | WN | WN | DIN 6527L | DIN 6527L | DIN 6527L | DIN 6527L | WN |
| **Type / Typ** | N | N | N | N | N | N | H |
| **Length / Länge** | Short / Kurz | Short / Kurz | Short / Kurz | Short / Kurz | Short / Kurz | Long / Lang | Short / Kurz |
| **Number of flutes / Schneidenzahl** | 3 | 4 | 4 | 5 | 4-6 | 4-6 | 2 |
| **Spiral angle / Drallwinkel** | 45° | 30° | 39°-42° | 45° | 45° | 45° | 30° |
| **Ø mm** | 3-20 | 3-20 | 3-20 | 6-20 | 3-25 | 3-25 | 1-4 |
| **Page / Seite** | G10 | G13 | G15 | G17 | G20 | G23 | G26 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Steels Stähle** | <850 N/mm² | »» | » | »» | »» | »» | »» | » |
| | >850 N/mm² | » | | »» | »» | »» | »» | |
| **INOX Rostfreier Stahl** | <850 N/mm² | »» | » | »» | »» | »» | »» | » |
| | >850 N/mm² | » | | »» | »» | »» | »» | |
| **CAST IRON Guß** | Cast iron, malleable cast iron Grauguß, Temperguß | »» | »» | | »» | »» | »» | |
| **Ti** | Titanium and titanium alloys Titan- und Titanlegierung | | | » | » | » | » | |
| **Cu, Ms** | Copper, brass Kupfer, Messing | | | | | » | » | |
| **Al** | Aluminium | » | » | » | | »» | »» | » |
| | Plastics Kunststoffe | | | | | | | |

### Type / Typ N

For materials with normal tensile strength and hardness, up to approx. 1.100 N/mm².

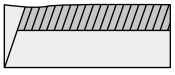
Für Werkstoffe mit normaler Festigkeit und Härte, bis ca. 1.100 N/mm².



### Type / Typ H

For hard and short chipping materials, up to approx. 1.400 N/mm² tensile strength.

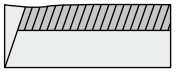
Für harte, zähharte und kurzspanende Werkstoffe, bis ca. 1.400 N/mm² Festigkeit.



### Type / Typ W

For soft, tough and long chipping materials.

Für weiche, zähe und langspanende Werkstoffe.



## HIGH PERFORMANCE / HOCHLEISTUNG



| 6023 | 6043 | 6143 | 6243 | 6342 | 6343 | 6322 | 6323 | 6324 | 6325 |
|---|---|---|---|---|---|---|---|---|---|
| DIN 6527L | DIN 6527L | DIN 6527L | DIN 6527L | DIN 6527L | DIN 6527L | | | WN | WN |
| N | N | N | N | N | N | H | H | H | H |
| Long / Lang | Long / Lang | Short / Kurz | Long / Lang | Short / Kurz | Short / Kurz | Short / Kurz | Long / Lang | | Short / Kurz |
| 2 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 |
| 35°-38° | 35°-38° | 35°-38° | 35°-38° | 35°-38° | 35°-38° | 30° | 30° | 30° | 30° |
| 1-12 | 2-12 | 3-12 | 3-12 | 6-12 | 6-8 | 2-5 | 2-12 | 0,4-1,2 | 1-5 |
| G28-29 | G30-31 | G32 | G32 | G34 | G34 | G36 | G38 | G40 | G41 |

**SOLID CARBIDE / VOLLHARTMETALL**

*Suitable*
*Geeignet*

*Especially suitable*
*Besonders geeignet*



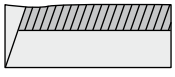
| Reference / Bezeichnung | 6510 | 6610 | 6520 | 6530 | 6640 |
|---|---|---|---|---|---|
| Norm / Standard | WN | WN | WN | WN | DIN 6527L |
| Type / Typ | W | W | W | W | HR |
| Length / Länge | Short / Kurz | Long / Lang | Short / Kurz | Short / Kurz | Short / Kurz |
| Number of flutes / Schneidenzahl | 1 | 1 | 2 | 3 | 4 |
| Spiral angle / Drallwinkel | 30° | 30° | 45° | 45° | 45° |
| Ø mm | 3-12 | 6-12 | 3-16 | 3-16 | 6-20 |
| Page / Seite | G44 | G45 | G46 | G47 | G48 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Steels Stähle** | <850 N/mm² | | | | | » |
| | >850 N/mm² | | | | | »» |
| **INOX Rostfreier Stahl** | <850 N/mm² | | | | | » |
| | >850 N/mm² | | | | | »» |
| **CAST IRON GUß** | Cast iron, malleable cast iron<br>Grauguß, Temperguß | | | | | »» |
| **Ti** | Titanium and titanium alloys<br>Titan- und Titanlegierung | | | | | |
| **Cu, Ms** | Copper, brass<br>Kupfer, Messing | | | »» | »» | |
| **Al** | Aluminium | »» | »» | »» | »» | » |
| | Plastics<br>Kunststoffe | »» | »» | » | » | |

### Type / Typ N

For materials with normal tensile strength and hardness, up to approx. 1.100 N/mm².

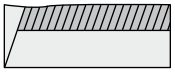
Für Werkstoffe mit normaler Festigkeit und Härte, bis ca. 1.100 N/mm².



### Type / Typ H

For hard and short chipping materials, up to approx. 1.400 N/mm² tensile strength.

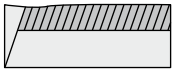
Für harte, zähharte und kurzspanende Werkstoffe, bis ca. 1.400 N/mm² Festigkeit.



### Type / Typ W

For soft, tough and long chipping materials.

Für weiche, zähe und langspanende Werkstoffe.



## SOLID CARBIDE / VOLLHARTMETALL



| 6020 | 6021 | 6030 | 6031 | 6040 | 6041 | 6320 | 6321 |
|---|---|---|---|---|---|---|---|
| WN | WN | WN | WN | WN | WN | WN | WN |
| N | N | N | N | N | N | N | N |
| Short / Kurz | Long / Lang | Short / Kurz | Long / Lang | Short / Kurz | Long / Lang | Short / Kurz | Long / Lang |
| 2 | 2 | 3 | 3 | 4 | 4 | 2 | 2 |
| 30° | 30° | 45° | 45° | 30° | 30° | 30° | 30° |
| 1-20 | 1-20 | 1-20 | 1-20 | 1-20 | 1-20 | 2-20 | 2-20 |
| G50 | G52 | G54 | G57 | G60 | G62 | G64 | G66 |

**OTHERS / ANDERE**

*Suitable*
*Geeignet*

*Especially suitable*
*Besonders geeignet*

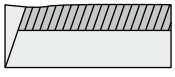


| Reference / Bezeichnung | 84 | 86 | 87 | 88 |
|---|---|---|---|---|
| **Norm / Standard** | WN | DIN 6527 | DIN 6527 | WN |
| **Type / Typ** | N | N | N | N |
| **Length / Länge** | | | | |
| **Number of flutes / Schneidenzahl** | 4 | 4-6 | 4-6 | 4 |
| **Spiral angle / Drallwinkel** | | | | 90° |
| **Ø mm** | 8-16 | 4-16 | 4-16 | 4-12 |
| **Page / Seite** | G68 | G69 | G70 | G71 |
| **Steels Stähle** <850 N/mm² | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| **Steels Stähle** >850 N/mm² | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| **INOX Rostfreier Stahl** <850 N/mm² | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| **INOX Rostfreier Stahl** >850 N/mm² | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| **CAST IRON Guß** Cast iron, malleable cast iron Grauguß, Temperguß | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| **Ti** Titanium and titanium alloys Titan- und Titanlegierung | | | | |
| **Cu, Ms** Copper, brass Kupfer, Messing | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| **Al** Aluminium | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
| Plastics Kunststoffe | ➤➤ | ➤➤ | ➤➤ | ➤➤ |

### Type / Typ N

For materials with normal tensile strength and hardness, up to approx. 1.100 N/mm².

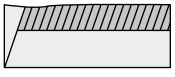
Für Werkstoffe mit normaler Festigkeit und Härte, bis ca. 1.100 N/mm².



### Type / Typ H

For hard and short chipping materials, up to approx. 1.400 N/mm² tensile strength.

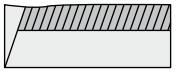
Für harte, zähharte und kurzspanende Werkstoffe, bis ca. 1.400 N/mm² Festigkeit.



### Type / Typ W

For soft, tough and long chipping materials.

Für weiche, zähe und langspanende Werkstoffe.



## DRILLS / BOHRER

*Suitable*
*Geeignet*

*Especially suitable*
*Besonders geeignet*



| Reference / Bezeichnung | 7320 | 7520 | 7323 | 7523 |
|---|---|---|---|---|
| **Norm / Standard** | DIN 6537K | DIN 6537L | DIN 6537L | DIN 6537L |
| **Type / Typ** | N | N | N | N |
| **Depth of drilling / Bohrtiefe** | **3xd** | **5xd** | **3xd** | **5xd** |
| **Number of flutes / Schneidenzahl** | 2 | 2 | 2 | 2 |
| **Coolant supply / Kühlkanäle** | No / Nein | No / Nein | Yes / Ja | Yes / Ja |
| **Spiral angle / Drallwinkel** | 140° | 140° | 140° | 140° |
| **Ø mm** | 3-20 | 3-20 | 3-20 | 3-20 |
| **Page / Seite** | G73-75 | G77-79 | G81-83 | G85-87 |

| | | | | | |
|---|---|---|---|---|---|
| **Steels Stähle** | <850 N/mm² | » | » | » | » |
| | >850 N/mm² | » | » | » | » |
| **INOX Rostfreier Stahl** | <850 N/mm² | » | » | » | » |
| | >850 N/mm² | » | » | » | » |
| **CAST IRON Guß** | Cast iron, malleable cast iron<br>Grauguß, Temperguß | » | » | » | » |
| **Ti** | Titanium and titanium alloys<br>Titan- und Titanlegierung | » | » | » | » |
| **Cu, Ms** | Copper, brass<br>Kupfer, Messing | » | » | » | » |
| **Al** | Aluminium | » | » | » | » |
| | Plastics<br>Kunststoffe | » | » | » | » |

G

## TUNGSTEN CARBIDE BURRS / ROTIERFRÄSER

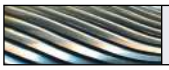
*Suitable*
*Geeignet*

*Especially suitable*
*Besonders geeignet*



| Reference / Bezeichnung | 900 | 901 | 910 | 911 | 920 | 921 | 930 | 931 |
|---|---|---|---|---|---|---|---|---|
| Ø mm | 3-16 | 3-16 | 3-16 | 3-16 | 3-16 | 3-16 | 3-16 | 3-16 |
| Page / Seite | G89 | G89 | G89 | G89 | G90 | G90 | G90 | G90 |

## *Cutting profile*
## *Zahnung*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  | **A** Straight<br>Gerade Zahnung | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ |
|  | **B** Crossed<br>Wechselzahnung | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ | ➤➤ |



### Straight
### Gerade Zahnung

For general purposes such as deburring, chamfering and smoothing edges with clean surface.
Suitable for steels with high tensile strength and welding seams.

Für allgemeine Arbeiten wie Entgraten, Fasen, Kantenbrechen mit sauberer Oberfläche.
Für Stähle mit hoher Festigkeit und für Schweißnähte.



### Crossed
### Wechselzahnung

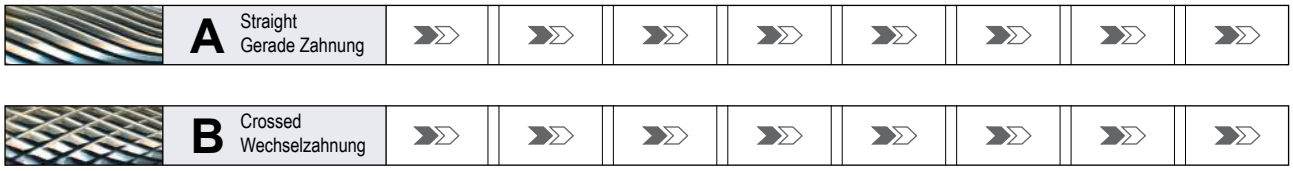
Suitable for hardened steels with excellent surface quality and welding seams with high tensile strength.
Hohe Oberflächengüte für gehärtete Stähle und für Schweißnähte mit hoher Festigkeit.

## TUNGSTEN CARBIDE BURRS / ROTIERFRÄSER



| 940 | 941 | 950 | 951 | 960 | 961 | 970 | 971 | 98 | 99 |
|---|---|---|---|---|---|---|---|---|---|
| 3-16<br>G91 | 3-16<br>G91 | 3-16<br>G91 | 3-16<br>G91 | 3-16<br>G92 | 3-16<br>G92 | 3-16<br>G92 | 3-16<br>G92 | 6-16<br>G93 | 6-16<br>G93 |

## *Cutting profile*
## *Zahnung*






**Straight**
**Gerade Zahnung**

For general purposes such as deburring, chamfering and smoothing edges with clean surface.
Suitable for steels with high tensile strength and welding seams.

Für allgemeine Arbeiten wie Entgraten, Fasen, Kantenbrechen mit sauberer Oberfläche.
Für Stähle mit hoher Festigkeit und für Schweißnähte.



**Crossed**
**Wechselzahnung**

Suitable for hardened steels with excellent surface quality and welding seams with high tensile strength.
Hohe Oberflächengüte für gehärtete Stähle und für Schweißnähte mit hoher Festigkeit.



# High performance solid carbide End Mills - Helix (Hyperlink)

*Short series, three flutes*

# Hochleistung-VHM-Schaftfräser - Helix (Hyperlink)

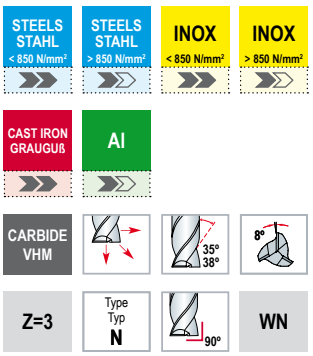
*Kurze Ausführung, drei Schneiden*

Characteristics:

3 Fluted cutting to centre high performance solid carbide end mills with TiAlN coating. Spiral angle 35°/38°. Especially designed for slotting, contouring and finishing exotic materials. Due to the double helix angle we avoid the vibrations and get extremely high performance. The special geometry together with this coating will help you to get a soft cutting with a very long tool life. Also for universal purpose. For materials up to 55 HRC.

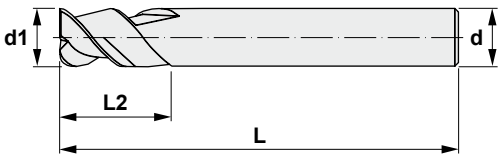
Eigenschaften:

3-Schneiden Hochleistung-Vollhartmetallfräser mit Zentrumschnitt und TiAlN-Beschichtung. Besonders geeignet zum Nuteneinstechen, Konturfräsen und Schlichten von exotischen Materialien. Aufgrund des doppelten Drallwinkels kann man Schwingungen vermeiden und eine höhere Leistung erreichen. Die besondere Geometrie zusammen mit der Beschichtung helfen Ihnen, einen weichen Schnitt mit einer sehr langen Standzeit zu erreichen. Auch für allgemeine Anwendungen geeignet. Für Materialien bis 55 HRC.







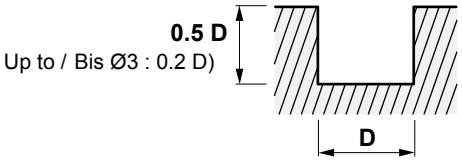



## 6230

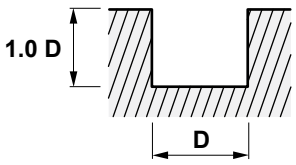
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 623003 | 3 | 3 | 6 | 8 | 50 |
| 623004 | 3 | 4 | 6 | 11 | 50 |
| 623005 | 3 | 5 | 6 | 13 | 50 |
| 623006 | 3 | 6 | 6 | 16 | 50 |
| 623008 | 3 | 8 | 8 | 19 | 60 |
| 623010 | 3 | 10 | 10 | 22 | 73 |
| 623012 | 3 | 12 | 12 | 26 | 75 |
| 623014 | 3 | 14 | 14 | 30 | 85 |
| 623016 | 3 | 16 | 16 | 32 | 92 |
| 623020 | 3 | 20 | 20 | 38 | 100 |

# 6230 *High performance solid carbide End Mills - Helix (Hyperlink). Hochleistung-VHM-Schaftfräser- Helix (Hyperlink).*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **3.0** | 6100 | 125 | 55 | 0.007 | 3800 | 85 | 35 | 0.007 | 3150 | 70 | 30 | 0.007 |
| **4.0** | 5150 | 180 | 65 | 0.012 | 3150 | 110 | 40 | 0.012 | 2650 | 90 | 35 | 0.011 |
| **5.0** | 4300 | 190 | 70 | 0.015 | 2550 | 110 | 40 | 0.014 | 2150 | 95 | 35 | 0.015 |
| **6.0** | 3800 | 210 | 70 | 0.018 | 2300 | 135 | 45 | 0.020 | 1950 | 110 | 35 | 0.019 |
| **8.0** | 2850 | 230 | 70 | 0.027 | 1700 | 120 | 45 | 0.024 | 1450 | 110 | 35 | 0.025 |
| **10.0** | 2200 | 195 | 70 | 0.030 | 1350 | 95 | 40 | 0.023 | 1150 | 95 | 35 | 0.028 |
| **12.0** | 1850 | 170 | 70 | 0.031 | 1150 | 75 | 45 | 0.022 | 950 | 75 | 35 | 0.026 |
| **14.0** | 1700 | 150 | 75 | 0.029 | 1050 | 70 | 45 | 0.022 | 850 | 70 | 35 | 0.027 |
| **16.0** | 1500 | 130 | 75 | 0.029 | 950 | 65 | 50 | 0.023 | 700 | 65 | 35 | 0.031 |
| **20.0** | 1150 | 100 | 70 | 0.029 | 700 | 50 | 45 | 0.024 | 550 | 50 | 35 | 0.030 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **3.0** | 6050 | 200 | 55 | 0.011 | 15400 | 430 | 145 | 0.009 | 11000 | 310 | 105 | 0.009 |
| **4.0** | 4600 | 185 | 60 | 0.013 | 11000 | 420 | 140 | 0.013 | 8800 | 310 | 110 | 0.012 |
| **5.0** | 3650 | 200 | 55 | 0.018 | 9150 | 420 | 145 | 0.015 | 6800 | 310 | 105 | 0.015 |
| **6.0** | 2950 | 230 | 55 | 0.026 | 7600 | 440 | 145 | 0.019 | 5700 | 340 | 105 | 0.020 |
| **8.0** | 2200 | 240 | 55 | 0.036 | 5700 | 440 | 145 | 0.026 | 4400 | 330 | 110 | 0.025 |
| **10.0** | 1850 | 255 | 60 | 0.046 | 4600 | 440 | 145 | 0.032 | 3400 | 330 | 105 | 0.032 |
| **12.0** | 1450 | 275 | 55 | 0.063 | 3750 | 430 | 140 | 0.038 | 2850 | 330 | 105 | 0.039 |
| **14.0** | 1300 | 285 | 55 | 0.073 | 3300 | 430 | 145 | 0.043 | 2400 | 330 | 105 | 0.046 |
| **16.0** | 1100 | 285 | 55 | 0.086 | 2850 | 430 | 145 | 0.050 | 2200 | 330 | 110 | 0.050 |
| **20.0** | 900 | 310 | 55 | 0.115 | 2200 | 430 | 140 | 0.065 | 1700 | 330 | 105 | 0.065 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

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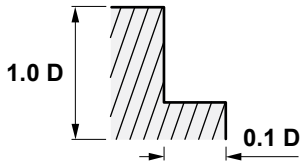
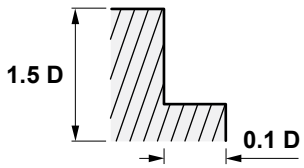
# 6230 *High performance solid carbide End Mills - Helix (Hyperlink). Hochleistung-VHM-Schaftfräser- Helix (Hyperlink).*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **3.0** | 7600 | 205 | 70 | 0.009 | 4750 | 130 | 45 | 0.009 | 3950 | 105 | 35 | 0.009 |
| **4.0** | 6450 | 365 | 80 | 0.019 | 3950 | 220 | 50 | 0.019 | 3300 | 180 | 40 | 0.018 |
| **5.0** | 5350 | 385 | 85 | 0.024 | 3200 | 230 | 50 | 0.024 | 2700 | 195 | 40 | 0.024 |
| **6.0** | 4750 | 425 | 90 | 0.030 | 2850 | 265 | 55 | 0.031 | 2400 | 215 | 45 | 0.030 |
| **8.0** | 3550 | 450 | 90 | 0.042 | 2150 | 245 | 55 | 0.038 | 1800 | 225 | 45 | 0.042 |
| **10.0** | 2750 | 390 | 85 | 0.047 | 1700 | 195 | 55 | 0.038 | 1450 | 195 | 45 | 0.045 |
| **12.0** | 2350 | 330 | 90 | 0.047 | 1450 | 160 | 55 | 0.037 | 1150 | 155 | 45 | 0.045 |
| **14.0** | 2100 | 465 | 90 | 0.074 | 1300 | 145 | 55 | 0.037 | 1050 | 140 | 45 | 0.044 |
| **16.0** | 1850 | 265 | 95 | 0.048 | 1150 | 130 | 60 | 0.038 | 900 | 130 | 45 | 0.048 |
| **20.0** | 1450 | 205 | 90 | 0.047 | 900 | 100 | 55 | 0.037 | 700 | 100 | 45 | 0.048 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **3.0** | 6050 | 475 | 55 | 0.026 | 15400 | 990 | 145 | 0.021 | 11000 | 760 | 105 | 0.023 |
| **4.0** | 4600 | 485 | 60 | 0.035 | 11000 | 1035 | 140 | 0.031 | 8800 | 770 | 110 | 0.029 |
| **5.0** | 3650 | 485 | 55 | 0.044 | 9150 | 1010 | 145 | 0.037 | 6800 | 760 | 105 | 0.037 |
| **6.0** | 2950 | 570 | 55 | 0.064 | 7600 | 1100 | 145 | 0.048 | 5700 | 825 | 105 | 0.048 |
| **8.0** | 2200 | 615 | 55 | 0.093 | 5700 | 1100 | 145 | 0.064 | 4400 | 825 | 110 | 0.063 |
| **10.0** | 1850 | 640 | 60 | 0.115 | 4600 | 1100 | 145 | 0.080 | 3400 | 825 | 105 | 0.081 |
| **12.0** | 1450 | 670 | 55 | 0.154 | 3750 | 1100 | 140 | 0.098 | 2850 | 825 | 105 | 0.096 |
| **14.0** | 1300 | 705 | 55 | 0.181 | 3300 | 1100 | 145 | 0.111 | 2400 | 825 | 105 | 0.115 |
| **16.0** | 1100 | 725 | 55 | 0.220 | 2850 | 1100 | 145 | 0.129 | 2200 | 825 | 110 | 0.125 |
| **20.0** | 900 | 770 | 55 | 0.285 | 2200 | 1100 | 140 | 0.167 | 1700 | 825 | 105 | 0.162 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.



# High performance solid carbide End Mills - Helix (Hyperlink)

*Short series, four flutes*

# Hochleistung-VHM-Schaftfräser - Helix (Hyperlink)

*Kurze Ausführung, Vier Schneiden*

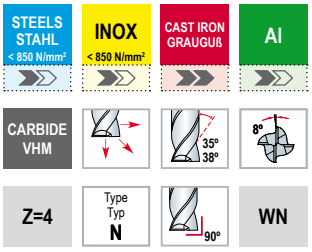
Characteristics:

4 Fluted cutting to centre high performance solid carbide end mills plus TiAlN coating. Spiral angle 35º/38º. Tool specially designed for slotting, contouring and finishing exotic materials.

Due to the double helix angle we avoid the vibrations and get extremely high performance. The special geometry together with this coating will help you to get a soft cutting with a very long tool life. Also for universal purpose. For materials up to 55 HRC.

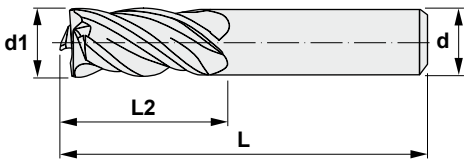
Eigenschaften:

4-Schneiden Hochleistung-Vollhartmetallfräser mit Zentrumschnitt und TiAlN-Beschichtung. Besonders geeignet zum Nuteneinstechen, Konturfräsen und Schlichten von exotischen Materialien. Aufgrund des doppelten Drallwinkels kann man Schwingungen vermeiden und eine höhere Leistung erreichen. Die besondere Geometrie zusammen mit der Beschichtung helfen Ihnen, einen weichen Schnitt mit einer sehr langen Standzeit zu erreichen. Auch für allgemeine Anwendungen geeignet. Für Materialien bis 55 HRC.







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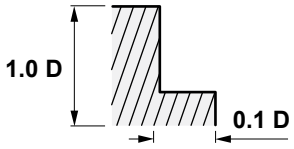
## 6240

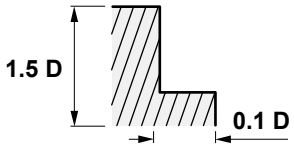
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 624003 | 4 | 3 | 6 | 8 | 50 |
| 624004 | 4 | 4 | 6 | 11 | 50 |
| 624005 | 4 | 5 | 6 | 13 | 50 |
| 624006 | 4 | 6 | 6 | 16 | 50 |
| 624008 | 4 | 8 | 8 | 19 | 60 |
| 624010 | 4 | 10 | 10 | 22 | 73 |
| 624012 | 4 | 12 | 12 | 26 | 75 |
| 624014 | 4 | 14 | 14 | 30 | 85 |
| 624016 | 4 | 16 | 16 | 32 | 92 |
| 624020 | 4 | 20 | 20 | 38 | 100 |

# 6240 *High performance solid carbide End Mills - Helix (Hyperlink). Hochleistung-VHM-Schaftfräser- Helix (Hyperlink).*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **3.0** | 7600 | 270 | 70 | 0.009 | 4750 | 170 | 45 | 0.009 | 3950 | 145 | 35 | 0.009 |
| **4.0** | 6450 | 485 | 80 | 0.019 | 3950 | 300 | 50 | 0.019 | 3300 | 240 | 40 | 0.018 |
| **5.0** | 5350 | 510 | 85 | 0.024 | 3200 | 305 | 50 | 0.024 | 2700 | 255 | 40 | 0.024 |
| **6.0** | 4750 | 560 | 90 | 0.029 | 2850 | 350 | 55 | 0.031 | 2400 | 280 | 45 | 0.029 |
| **8.0** | 3550 | 605 | 90 | 0.043 | 2150 | 325 | 55 | 0.038 | 1800 | 300 | 45 | 0.042 |
| **10.0** | 2750 | 520 | 85 | 0.047 | 1700 | 255 | 55 | 0.038 | 1450 | 255 | 45 | 0.044 |
| **12.0** | 2350 | 440 | 90 | 0.047 | 1450 | 215 | 55 | 0.037 | 1150 | 205 | 45 | 0.045 |
| **14.0** | 2100 | 395 | 90 | 0.047 | 1300 | 195 | 55 | 0.038 | 1050 | 190 | 45 | 0.045 |
| **16.0** | 1850 | 350 | 95 | 0.047 | 1150 | 170 | 60 | 0.037 | 950 | 170 | 50 | 0.045 |
| **20.0** | 1450 | 270 | 90 | 0.047 | 900 | 135 | 55 | 0.038 | 700 | 130 | 45 | 0.046 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **3.0** | 6050 | 640 | 55 | 0.026 | 15400 | 1320 | 145 | 0.021 | 11000 | 1035 | 105 | 0.024 |
| **4.0** | 4600 | 640 | 60 | 0.035 | 11000 | 1320 | 140 | 0.030 | 8800 | 1035 | 110 | 0.029 |
| **5.0** | 3650 | 640 | 55 | 0.044 | 9150 | 1320 | 145 | 0.036 | 6800 | 1035 | 105 | 0.038 |
| **6.0** | 2950 | 770 | 55 | 0.065 | 7600 | 1430 | 145 | 0.047 | 5700 | 1100 | 105 | 0.048 |
| **8.0** | 2200 | 815 | 55 | 0.093 | 5700 | 1430 | 145 | 0.063 | 4400 | 1100 | 110 | 0.063 |
| **10.0** | 1850 | 860 | 60 | 0.116 | 4600 | 1430 | 145 | 0.078 | 3400 | 1100 | 105 | 0.081 |
| **12.0** | 1450 | 900 | 55 | 0.155 | 3750 | 1430 | 140 | 0.095 | 2850 | 1100 | 105 | 0.096 |
| **14.0** | 1300 | 945 | 55 | 0.182 | 3300 | 1430 | 145 | 0.108 | 2400 | 1100 | 105 | 0.115 |
| **16.0** | 1100 | 970 | 55 | 0.220 | 2850 | 1430 | 145 | 0.125 | 2200 | 1100 | 110 | 0.125 |
| **20.0** | 900 | 1035 | 55 | 0.288 | 2200 | 1430 | 140 | 0.163 | 1700 | 1100 | 105 | 0.162 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

# Solid carbide End Mill - Inox.

*Four flutes*

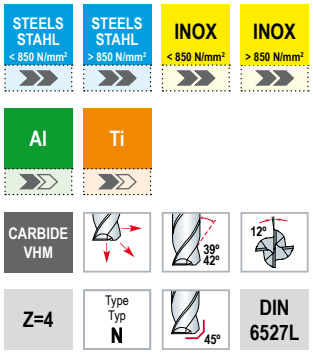


# VHM-Schaftfräser - Inox.

*Vier Schneiden*

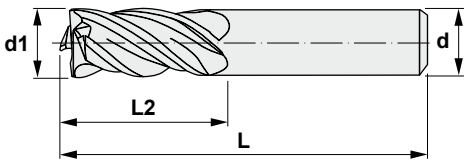
Characteristics:
High performance carbide end mill especially suitable for cutting in austenitic stainless steels: Finishing, semi-finishing and roughing with the same tool. Spiral angle 39º/42º. Different spiral angles effect smooth, vibrationless running and excellent surface. High cutting performance.

Eigenschaften:
Vollhartmetall-Hochleistungsfräser besonders geeignet zur Bearbeitung von austenitischen rostfreien Stählen: Schlichten, Vorschlichten und Schruppen mit einem einzigen Werkzeug. Drallwinkel 39º/42º. Die ungleiche Drallsteigung bewirkt einen ruhigen, vibrationsarmen Lauf und eine hervorragende Oberflächengüte. Hohe Zerspanungsleistung.







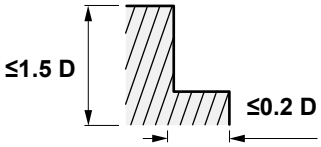


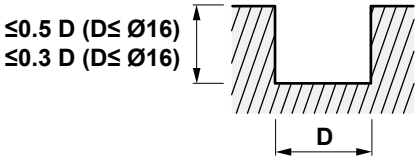

## 6440

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 644003 | 4 | 3 | 6 | 8 | 50 |
| 644004 | 4 | 4 | 6 | 11 | 50 |
| 644005 | 4 | 5 | 6 | 13 | 50 |
| 644006 | 4 | 6 | 6 | 16 | 50 |
| 644008 | 4 | 8 | 8 | 19 | 60 |
| 644010 | 4 | 10 | 10 | 22 | 73 |
| 644012 | 4 | 12 | 12 | 26 | 75 |
| 644016 | 4 | 16 | 16 | 32 | 92 |
| 644020 | 4 | 20 | 20 | 38 | 100 |

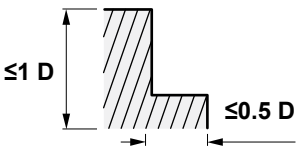
# 6440 *High performance solid carbide End Mills - Helix (Hyperlink). Hochleistung-VHM-Schaftfräser- Helix (Hyperlink).*

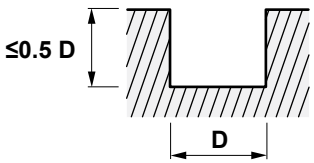
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Carbon steels / Kohlenstoffstahl Alloyed steels / Legierter Stahl < HRC45 | | Stainless steels / Rostfreier Stahl Ti alloys / Titan-Legierungen | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 5280 | 220 | 4400 | 100 |
| 4 | 4400 | 220 | 3630 | 155 |
| 5 | 3520 | 255 | 2970 | 185 |
| 6 | 3190 | 275 | 2640 | 200 |
| 8 | 2420 | 300 | 1980 | 210 |
| 10 | 1870 | 285 | 1540 | 210 |
| 12 | 1540 | 250 | 1320 | 165 |
| 16 | 1100 | 175 | 990 | 130 |
| 20 | 990 | 185 | 770 | 145 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Hardened steels / Gehärteter Stahl HRC45 - HRC55 | | Inconel | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 2420 | 50 | 1540 | 30 |
| 4 | 1980 | 45 | 1320 | 40 |
| 5 | 1650 | 100 | 1100 | 50 |
| 6 | 1540 | 100 | 990 | 50 |
| 8 | 1100 | 110 | 792 | 45 |
| 10 | 990 | 120 | 660 | 45 |
| 12 | 770 | 100 | 550 | 40 |
| 16 | 605 | 65 | 396 | 35 |
| 20 | 440 | 75 | 330 | 30 |




* In slotting operations use 80-100% of speed and 60-80% of feed rates.
* Beim Langlochfräsen verwenden Sie 80-100% der Geschwindigkeit und 60-80% des Vorschubs.

# Solid carbide End Mills - Helix with radius

*Short series, five flutes*

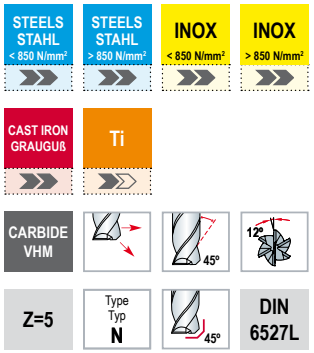
# VHM-Schaftfräser - Helix mit Radius

*Kurze Ausführung, fünf Schneiden*



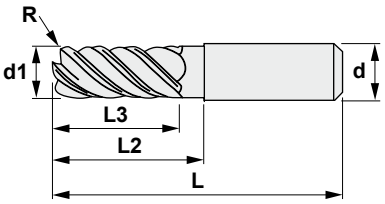
Characteristics:
High performance carbide finishing end mill for universal applications into structural steels, tool steels, treatable steels but also for stainless steels and titanium alloys up to 50 HRC.

Eigenschaften:
VHM-Hochleistungsschlichtfräser für universellen Einsatz in Baustähle, Werkzeugstähle, Vergütungsstähle, aber auch in rostfreien Stählen und Titanlegierungen bis 50 HRC.









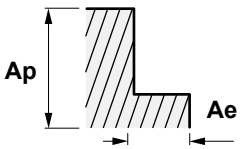

## 6054

| Reference Bezeichnung | | d1 | R | d | D | L3 | L2 | Ø Dmin | Ø Dmax | L |
|---|---|---|---|---|---|---|---|---|---|---|
| 6054106 | 5 | 6 | 0,5 | 6 | 1° | 14 | 32 | 5,4 | 5,8 | 65 |
| 6054206 | 5 | 6 | 0,5 | 6 | 1° | 14 | 42 | 5,0 | 5,8 | 65 |
| 6054306 | 5 | 6 | 0,5 | 6 | 1° | 14 | 51 | 4,7 | 5,8 | 81 |
| 6054108 | 5 | 8 | 0,5 | 8 | 1° | 18 | 42 | 7,2 | 7,8 | 65 |
| 6054208 | 5 | 8 | 0,5 | 8 | 1° | 18 | 58 | 6,6 | 7,8 | 81 |
| 6054308 | 5 | 8 | 0,5 | 8 | 1° | 18 | 71 | 6,1 | 7,8 | 109 |
| 6054110 | 5 | 10 | 0,5 | 10 | 1° | 22 | 51 | 9,0 | 9,8 | 81 |
| 6054210 | 5 | 10 | 0,5 | 10 | 1° | 22 | 71 | 8,3 | 9,8 | 109 |
| 6054310 | 5 | 10 | 0,5 | 10 | 1° | 22 | 82 | 7,9 | 9,8 | 109 |
| 6054112 | 5 | 12 | 1,0 | 12 | 1° | 26 | 51 | 11,1 | 11,8 | 81 |
| 6054212 | 5 | 12 | 1,0 | 12 | 1° | 26 | 71 | 10,4 | 11,8 | 109 |
| 6054312 | 5 | 12 | 1,0 | 12 | 1° | 26 | 86 | 9,9 | 11,8 | 109 |
| 6054116 | 5 | 16 | 2,0 | 16 | 1° | 38 | 61 | 15,2 | 15,8 | 109 |
| 6054216 | 5 | 16 | 2,0 | 16 | 1° | 38 | 76 | 14,7 | 15,8 | 109 |
| 6054316 | 5 | 16 | 2,0 | 16 | 1° | 38 | 101 | 13,8 | 15,8 | 150 |
| 6054120 | 5 | 20 | 2,0 | 20 | 1° | 45 | 71 | 19,1 | 19,8 | 109 |
| 6054220 | 5 | 20 | 2,0 | 20 | 1° | 45 | 86 | 18,6 | 19,8 | 130 |
| 6054320 | 5 | 20 | 2,0 | 20 | 1° | 45 | 101 | 18,0 | 19,8 | 150 |

# 6054 *Solid carbide End Mills - Helix with radius.*
# *VHM-Schaftfräser - Helix mit Radius.*

| Ø d1 mm | L2 mm | Material / Materialien | | | | | |
|---|---|---|---|---|---|---|---|
| | | Hardened steels Gehärteter Stahl > HRC45 | | Alloyed steels / Legierter Stahl Cast iron GG / Grauguß GG < HRC28 | | Alloyed steels / Legierter Stahl Cast iron GGG / Grauguß GGG HRC28 - HRC45 | |
| | | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 6 | 32 | 7960 | 895 | 14590 | 5105 | 9945 | 3480 |
| 6 | 42 | 6630 | 415 | 9285 | 1045 | 8620 | 970 |
| 6 | 51 | 5440 | 340 | 7960 | 500 | 6630 | 415 |
| 8 | 42 | 5970 | 1195 | 10940 | 4375 | 7460 | 2985 |
| 8 | 58 | 4975 | 620 | 6965 | 1395 | 6465 | 1295 |
| 8 | 71 | 4080 | 510 | 5970 | 745 | 4975 | 620 |
| 10 | 51 | 4775 | 1435 | 8755 | 4160 | 5970 | 2835 |
| 10 | 71 | 3980 | 695 | 5570 | 1670 | 5175 | 1555 |
| 10 | 82 | 3265 | 570 | 4775 | 835 | 3980 | 695 |
| 12 | 51 | 3980 | 1195 | 7295 | 4010 | 4975 | 2735 |
| 12 | 71 | 3315 | 580 | 4640 | 1390 | 4310 | 1295 |
| 12 | 86 | 2720 | 475 | 3980 | 695 | 3315 | 580 |
| 16 | 61 | 2985 | 1195 | 5470 | 3555 | 3730 | 2425 |
| 16 | 76 | 2485 | 560 | 3480 | 1390 | 3235 | 1295 |
| 16 | 101 | 2040 | 460 | 2985 | 670 | 2485 | 560 |
| 20 | 71 | 2385 | 1195 | 4375 | 3720 | 2985 | 2535 |
| 20 | 86 | 1990 | 595 | 2785 | 1395 | 2585 | 1295 |
| 20 | 101 | 1630 | 490 | 2385 | 715 | 1990 | 595 |

## *Depth of cut*
## *Schnitttiefe*



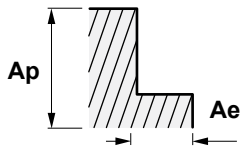

***Roughing***
***Schruppen***

| | Ap | Ae |
|---|---|---|
| short / kurz | 2xd | %5 to / bis %10 x d |
| medium / mittel | 2xd | %5 to / bis %7 x d |
| long / lang | 1,5xd | %4 to / bis %6 x d |
| extra long / extra lang | 1,5xd | %2 to / bis %4 x d |

# 6054 *Solid carbide End Mills - Helix with radius.*
# *VHM-Schaftfräser - Helix mit Radius.*

| Ø d1 mm | L2 mm | Material / Materialien | | | | | |
|---|---|---|---|---|---|---|---|
| | | Stainless steels / Rostfreier Stahl | | Inconel | | Ti alloys / Titan-Legierungen | |
| | | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 6 | 32 | 9945 | 1120 | 3980 | 250 | 9285 | 580 |
| 6 | 42 | 7960 | 500 | 3980 | 170 | 9285 | 580 |
| 6 | 51 | 6630 | 415 | 3980 | 170 | 9285 | 580 |
| 8 | 42 | 7460 | 1490 | 2985 | 375 | 6965 | 1395 |
| 8 | 58 | 5970 | 745 | 2985 | 240 | 6965 | 870 |
| 8 | 71 | 4975 | 620 | 2985 | 240 | 6965 | 870 |
| 10 | 51 | 5970 | 1790 | 2385 | 415 | 5570 | 1670 |
| 10 | 71 | 4775 | 835 | 2385 | 300 | 5570 | 975 |
| 10 | 82 | 3980 | 695 | 2385 | 300 | 5570 | 975 |
| 12 | 51 | 4975 | 1495 | 1990 | 400 | 4640 | 1390 |
| 12 | 71 | 3980 | 695 | 1990 | 350 | 4640 | 810 |
| 12 | 86 | 3315 | 580 | 1990 | 350 | 4640 | 810 |
| 16 | 61 | 3730 | 1490 | 1490 | 335 | 3480 | 1390 |
| 16 | 76 | 2985 | 670 | 1490 | 355 | 3480 | 785 |
| 16 | 101 | 2485 | 560 | 1490 | 355 | 3480 | 785 |
| 20 | 71 | 2985 | 1495 | 1195 | 360 | 2785 | 1395 |
| 20 | 86 | 2385 | 715 | 1195 | 300 | 2785 | 835 |
| 20 | 101 | 1990 | 595 | 1195 | 300 | 2785 | 835 |

## *Depth of cut*
## *Schnitttiefe*




***Finishing***
***Schlichten***

| | Ap | Ae |
|---|---|---|
| short / kurz | 2xd | %3 x d |
| medium / mittel | 2xd | %2 x d |
| long / lang | 2xd | %1 x d |
| extra long / extra lang | 2xd | %1 x d |

G



# Solid carbide End Mills. Hard cutting.

## *For high speed cutting (HSC) <56HRC*

*Short series, four-six flutes*

# VHM-Schaftfräser. Harter Schnitt

## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Kurze Ausführung, vier-sechs Schneiden*

Characteristics:

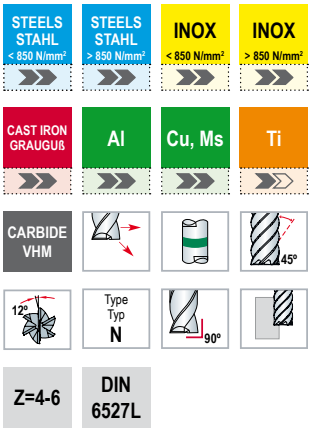
High performance carbide finishing end mill for universal applications into structural steels, tool steels, treatable steels but also for stainless steels and titanium alloys up to 50 HRC.

Due to a very strong core and an improved face grinding with a small cutting edge chamfer, very high cutting performances with excellent surface quality will be achieved.

Eigenschaften:

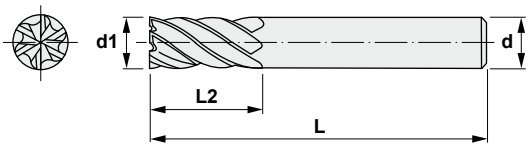
VHM-Hochleistungsschlichtfräser für universellen Einsatz in Baustähle, Werkzeugstähle, Vergütungsstähle, aber auch in rostfreie Stähle und Titanlegierungen bis 50 HRC.

Durch einen sehr starken Kern und einen modifizierten Stirnschliff mit einer kleinen Schnittkanten-Fase werden sehr hohe Zerspanungsleistungen mit einer hervorragenden Oberflächengüte erzielt.










# 6064

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 606403 | 4 | 3 | 3 | 8 | 38 |
| 606404 | 4 | 4 | 4 | 11 | 50 |
| 606405 | 4 | 5 | 5 | 13 | 50 |
| 606406 | 6 | 6 | 6 | 16 | 50 |
| 606408 | 6 | 8 | 8 | 19 | 60 |
| 606410 | 6 | 10 | 10 | 22 | 75 |
| 606412 | 6 | 12 | 12 | 26 | 75 |
| 606414 | 6 | 14 | 14 | 32 | 90 |
| 606416 | 6 | 16 | 16 | 32 | 100 |
| 606418 | 6 | 18 | 18 | 38 | 100 |
| 606420 | 6 | 20 | 20 | 38 | 100 |
| 606425 | 6 | 25 | 25 | 38 | 100 |

# 6064 *Solid carbide End Mills. Hard cutting. Roughing. VHM-Schaftfräser. Harter Schnitt. Schruppen.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Steels Stahl <1000 N/mm² | | Steels Stahl 1000 ~ 1600 N/mm² | | Cast iron GG Grauguß GG <200 HB | | Cast iron GGG Grauguß GGG 200 ~ 300 HB | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 16975 | 4075 | 10610 | 2100 | 16660 | 4000 | 11670 | 2240 |
| 4 | 12730 | 3055 | 7960 | 1575 | 12495 | 3000 | 8755 | 1680 |
| 5 | 10185 | 2445 | 6365 | 1260 | 9995 | 2400 | 7000 | 1345 |
| 6 | 8490 | 2035 | 5305 | 1050 | 8330 | 2000 | 5835 | 1120 |
| 8 | 6365 | 2290 | 3980 | 1240 | 6245 | 2250 | 4375 | 1260 |
| 10 | 5095 | 2445 | 3185 | 1300 | 4995 | 2400 | 3500 | 1345 |
| 12 | 4245 | 2545 | 2655 | 1355 | 4165 | 2500 | 2920 | 1400 |
| 14 | 3640 | 2185 | 2275 | 1160 | 3570 | 2140 | 2500 | 1200 |
| 16 | 3185 | 1910 | 1990 | 1015 | 3125 | 1875 | 2190 | 1050 |
| 18 | 2830 | 1865 | 1770 | 955 | 2775 | 1830 | 1945 | 1015 |
| 20 | 2545 | 1835 | 1590 | 955 | 2500 | 1800 | 1750 | 1010 |
| 25 | 2035 | 1590 | 1270 | 840 | 2000 | 1560 | 1400 | 840 |

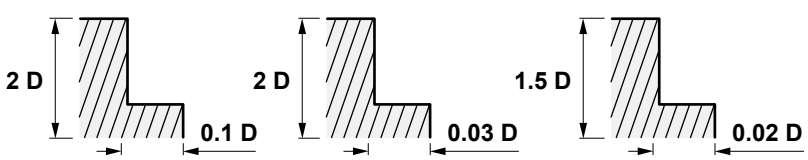
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Stainless steels / Rostfreier Stahl | | Titanium alloys / Titan-Legierungen | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 9975 | 1496 | 7850 | 1180 |
| 4 | 7480 | 1122 | 5890 | 880 |
| 5 | 5985 | 898 | 4710 | 705 |
| 6 | 4985 | 748 | 3925 | 590 |
| 8 | 3740 | 561 | 2945 | 440 |
| 10 | 2990 | 898 | 2355 | 705 |
| 12 | 2495 | 897 | 1965 | 705 |
| 14 | 2135 | 769 | 1680 | 605 |
| 16 | 1870 | 673 | 1470 | 530 |
| 18 | 1660 | 698 | 1310 | 550 |
| 20 | 1495 | 718 | 1180 | 565 |
| 25 | 1195 | 575 | 940 | 450 |

# 6064 *Solid carbide End Mills. Hard cutting. Finishing. VHM-Schaftfräser. Harter Schnitt. Schlichten.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Steels Stahl | | | | Cast iron GG Grauguß GG | | Cast iron GGG Grauguß GGG | |
| | <1000 N/mm² | | 1000 ~ 1600 N/mm² | | <200 HB | | 200 ~ 300 HB | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 19945 | 4785 | 13790 | 2730 | 19945 | 4785 | 14110 | 2710 |
| 4 | 14960 | 3590 | 10345 | 2050 | 14960 | 3590 | 10585 | 2030 |
| 5 | 11970 | 2870 | 8275 | 1640 | 11970 | 2870 | 8465 | 1625 |
| 6 | 9975 | 2395 | 6895 | 1365 | 9975 | 2395 | 7055 | 1355 |
| 8 | 7480 | 2695 | 5170 | 1615 | 7480 | 2695 | 5290 | 1525 |
| 10 | 5985 | 2870 | 4140 | 1690 | 5985 | 2870 | 4235 | 1625 |
| 12 | 4985 | 2990 | 3450 | 1760 | 4985 | 2990 | 3530 | 1695 |
| 14 | 4275 | 2565 | 2955 | 1510 | 4275 | 2565 | 3025 | 1450 |
| 16 | 3740 | 2245 | 2585 | 1320 | 3740 | 2245 | 2645 | 1270 |
| 18 | 3325 | 2195 | 2300 | 1240 | 3325 | 2195 | 2350 | 1230 |
| 20 | 2990 | 2155 | 2070 | 1240 | 2990 | 2155 | 2115 | 1220 |
| 25 | 2395 | 1865 | 1655 | 1090 | 2395 | 1865 | 1695 | 1015 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Stainless steels / Rostfreier Stahl | | Titanium alloys / Titan-Legierungen | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 11990 | 1800 | 9335 | 1400 |
| 4 | 8990 | 1350 | 7000 | 1050 |
| 5 | 7195 | 1080 | 5600 | 840 |
| 6 | 5995 | 900 | 4670 | 700 |
| 8 | 4495 | 675 | 3500 | 525 |
| 10 | 3595 | 1080 | 2800 | 840 |
| 12 | 2995 | 1080 | 2335 | 840 |
| 14 | 2570 | 925 | 2000 | 720 |
| 16 | 2250 | 810 | 1750 | 630 |
| 18 | 2000 | 840 | 1555 | 655 |
| 20 | 1800 | 860 | 1400 | 670 |
| 25 | 1440 | 690 | 1120 | 540 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Prehardened steels Vorgehärteter Stahl | | | | Hardened steels Gehärteter Stahl | | | | Hardened steels Gehärteter Stahl | |
| | <35 HRC | | 35 - 45 HRC | | 46 -55 HRC | | 56 - 65 HRC | | 66 - 70 HRC | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Vc (M/Min.) |
| 3 | 28115 | 6750 | 27585 | 6620 | 22810 | 5475 | 17505 | 4200 | 12730 | 3055 |
| 4 | 21090 | 5060 | 20690 | 4965 | 17110 | 4105 | 13130 | 3150 | 9550 | 2290 |
| 5 | 16870 | 4050 | 16550 | 3970 | 13685 | 3285 | 10505 | 2520 | 7640 | 1835 |
| 6 | 14060 | 3375 | 13790 | 3310 | 11405 | 2735 | 8755 | 2100 | 6365 | 1530 |
| 8 | 10545 | 3795 | 10345 | 3725 | 8555 | 3080 | 6565 | 2365 | 4775 | 1720 |
| 10 | 8435 | 4050 | 8275 | 3970 | 6845 | 3285 | 5250 | 2520 | 3820 | 1835 |
| 12 | 7030 | 4215 | 6895 | 4140 | 5700 | 3420 | 4375 | 2625 | 3185 | 1910 |
| 14 | 6025 | 3615 | 5910 | 3545 | 4890 | 2935 | 3750 | 2250 | 2730 | 1635 |
| 16 | 5270 | 3165 | 5170 | 3105 | 4275 | 2565 | 3285 | 1970 | 2385 | 1430 |
| 18 | 4685 | 3095 | 4600 | 3035 | 3800 | 2510 | 2920 | 1925 | 2120 | 1400 |
| 20 | 4220 | 3035 | 4140 | 2980 | 3420 | 2465 | 2625 | 1890 | 1910 | 1375 |
| 25 | 3375 | 2630 | 3310 | 2580 | 2735 | 2135 | 2100 | 1640 | 1530 | 1190 |





# Solid carbide End Mills. Hard cutting.

## *For high speed cutting (HSC) <56HRC*

*Long series, four-six flutes*

# VHM-Schaftfräser. Harter Schnitt

## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Lange Ausführung, vier-sechs Schneiden*

Characteristics:

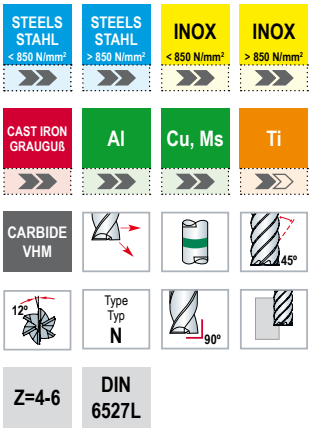
High performance carbide finishing end mill for universal applications into structural steels, tool steels, treatable steels but also for stainless steels and titanium alloys up to 50 HRC.

Due to a very strong core and an improved face grinding with a small cutting edge chamfer, very high cutting performances with an excellent surface quality will be achieved.

Eigenschaften:

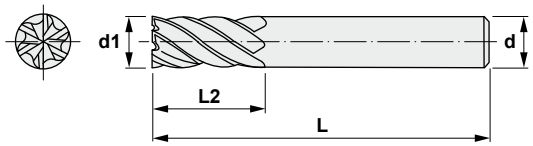
VHM-Hochleistungsschlichtfräser für universellen Einsatz in Baustähle, Werkzeugstähle, Vergütungsstähle, aber auch rostfreien Stählen und Titanlegierungen bis 50 HRC.

Durch einen sehr starken Kern und einen modifizierten Stirnschliff mit einer kleinen Schnittkanten-Fase werden sehr hohe Zerspanungsleistungen mit einer hervorragenden Oberflächengüte erzielt.










# 6164

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6164003 | 4 | 3 | 3 | 15 | 60 |
| 6164004 | 4 | 4 | 4 | 20 | 80 |
| 6164005 | 4 | 5 | 5 | 25 | 80 |
| 6164006 | 6 | 6 | 6 | 25 | 80 |
| 6164008 | 6 | 8 | 8 | 35 | 90 |
| 6164010 | 6 | 10 | 10 | 45 | 100 |
| 6164012 | 6 | 12 | 12 | 50 | 100 |
| 6164112 | 6 | 12 | 12 | 70 | 125 |
| 6164014 | 6 | 14 | 14 | 65 | 150 |
| 6164016 | 6 | 16 | 16 | 65 | 150 |
| 6164116 | 6 | 16 | 16 | 100 | 165 |
| 6164020 | 6 | 20 | 20 | 70 | 150 |
| 6164120 | 6 | 20 | 20 | 100 | 165 |
| 6164220 | 6 | 20 | 20 | 135 | 200 |
| 6164025 | 6 | 25 | 25 | 75 | 150 |
| 6164125 | 6 | 25 | 25 | 100 | 165 |
| 6164225 | 6 | 25 | 25 | 140 | 200 |

# 6164 *Solid carbide End Mills. Hard cutting. Roughing. VHM-Schaftfräser. Harter Schnitt. Schruppen.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Steels Stahl | | | | Cast iron GG Grauguß GG | | Cast iron GGG Grauguß GGG | |
| | <1000 N/mm² | | 1000 ~ 1600 N/mm² | | <200 HB | | 200 ~ 300 HB | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 16975 | 4075 | 10610 | 2100 | 16660 | 4000 | 11670 | 2240 |
| 4 | 12730 | 3055 | 7960 | 1575 | 12495 | 3000 | 8755 | 1680 |
| 5 | 10185 | 2445 | 6365 | 1260 | 9995 | 2400 | 7000 | 1345 |
| 6 | 8490 | 2035 | 5305 | 1050 | 8330 | 2000 | 5835 | 1120 |
| 8 | 6365 | 2290 | 3980 | 1240 | 6245 | 2250 | 4375 | 1260 |
| 10 | 5095 | 2445 | 3185 | 1300 | 4995 | 2400 | 3500 | 1345 |
| 12 | 4245 | 2545 | 2655 | 1355 | 4165 | 2500 | 2920 | 1400 |
| 14 | 3640 | 2185 | 2275 | 1160 | 3570 | 2140 | 2500 | 1200 |
| 16 | 3185 | 1910 | 1990 | 1015 | 3125 | 1875 | 2190 | 1050 |
| 20 | 2545 | 1835 | 1590 | 955 | 2500 | 1800 | 1750 | 1010 |
| 25 | 2035 | 1590 | 1270 | 840 | 2000 | 1560 | 1400 | 840 |

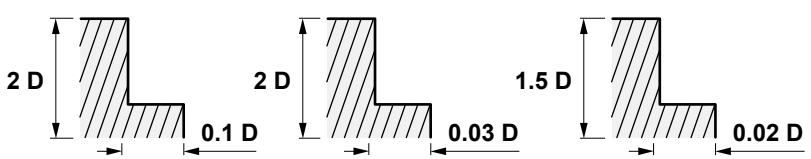
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Stainless steels / Rostfreier Stahl | | Titanium alloys / Titan-Legierungen | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 9975 | 1496 | 7850 | 1180 |
| 4 | 7480 | 1122 | 5890 | 880 |
| 5 | 5985 | 898 | 4710 | 705 |
| 6 | 4985 | 748 | 3925 | 590 |
| 8 | 3740 | 561 | 2945 | 440 |
| 10 | 2990 | 898 | 2355 | 705 |
| 12 | 2495 | 897 | 1965 | 705 |
| 14 | 2135 | 769 | 1680 | 605 |
| 16 | 1870 | 673 | 1470 | 530 |
| 20 | 1495 | 718 | 1180 | 565 |
| 25 | 1195 | 575 | 940 | 450 |

# 6164 *Solid carbide End Mills. Hard cutting. Finishing.*
## *VHM-Schaftfräser. Harter Schnitt. Schlichten.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Steels Stahl | | | | Cast iron GG Grauguß GG | | Cast iron GGG Grauguß GGG | |
| | <1000 N/mm² | | 1000 ~ 1600 N/mm² | | <200 HB | | 200 ~ 300 HB | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 19945 | 4785 | 13790 | 2730 | 19945 | 4785 | 14110 | 2710 |
| 4 | 14960 | 3590 | 10345 | 2050 | 14960 | 3590 | 10585 | 2030 |
| 5 | 11970 | 2870 | 8275 | 1640 | 11970 | 2870 | 8465 | 1625 |
| 6 | 9975 | 2395 | 6895 | 1365 | 9975 | 2395 | 7055 | 1355 |
| 8 | 7480 | 2695 | 5170 | 1615 | 7480 | 2695 | 5290 | 1525 |
| 10 | 5985 | 2870 | 4140 | 1690 | 5985 | 2870 | 4235 | 1625 |
| 12 | 4985 | 2990 | 3450 | 1760 | 4985 | 2990 | 3530 | 1695 |
| 14 | 4275 | 2565 | 2955 | 1510 | 4275 | 2565 | 3025 | 1450 |
| 16 | 3740 | 2245 | 2585 | 1320 | 3740 | 2245 | 2645 | 1270 |
| 20 | 2990 | 2155 | 2070 | 1240 | 2990 | 2155 | 2115 | 1220 |
| 25 | 2395 | 1865 | 1655 | 1090 | 2395 | 1865 | 1695 | 1015 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Stainless steels / Rostfreier Stahl | | Titanium alloys / Titan-Legierungen | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 11990 | 1800 | 9335 | 1400 |
| 4 | 8990 | 1350 | 7000 | 1050 |
| 5 | 7195 | 1080 | 5600 | 840 |
| 6 | 5995 | 900 | 4670 | 700 |
| 8 | 4495 | 675 | 3500 | 525 |
| 10 | 3595 | 1080 | 2800 | 840 |
| 12 | 2995 | 1080 | 2335 | 840 |
| 14 | 2570 | 925 | 2000 | 720 |
| 16 | 2250 | 810 | 1750 | 630 |
| 20 | 1800 | 860 | 1400 | 670 |
| 25 | 1440 | 690 | 1120 | 540 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Prehardened steels Vorgehärteter Stahl | | | | Hardened steels Gehärteter Stahl | | | | Hardened steels Gehärteter Stahl | |
| | <35 HRC | | 35 - 45 HRC | | 46 -55 HRC | | 56 - 65 HRC | | 66 - 70 HRC | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Vc (M/Min.) |
| 3 | 28115 | 6750 | 27585 | 6620 | 22810 | 5475 | 17505 | 4200 | 12730 | 3055 |
| 4 | 21090 | 5060 | 20690 | 4965 | 17110 | 4105 | 13130 | 3150 | 9550 | 2290 |
| 5 | 16870 | 4050 | 16550 | 3970 | 13685 | 3285 | 10505 | 2520 | 7640 | 1835 |
| 6 | 14060 | 3375 | 13790 | 3310 | 11405 | 2735 | 8755 | 2100 | 6365 | 1530 |
| 8 | 10545 | 3795 | 10345 | 3725 | 8555 | 3080 | 6565 | 2365 | 4775 | 1720 |
| 10 | 8435 | 4050 | 8275 | 3970 | 6845 | 3285 | 5250 | 2520 | 3820 | 1835 |
| 12 | 7030 | 4215 | 6895 | 4140 | 5700 | 3420 | 4375 | 2625 | 3185 | 1910 |
| 14 | 6025 | 3615 | 5910 | 3545 | 4890 | 2935 | 3750 | 2250 | 2730 | 1635 |
| 16 | 5270 | 3165 | 5170 | 3105 | 4275 | 2565 | 3285 | 1970 | 2385 | 1430 |
| 20 | 4220 | 3035 | 4140 | 2980 | 3420 | 2465 | 2625 | 1890 | 1910 | 1375 |
| 25 | 3375 | 2630 | 3310 | 2580 | 2735 | 2135 | 2100 | 1640 | 1530 | 1190 |




G



## Reinforced solid carbide End Mills. Shank D6

***For high speed cutting (HSC) <56HRC***

*Short series, two flutes*

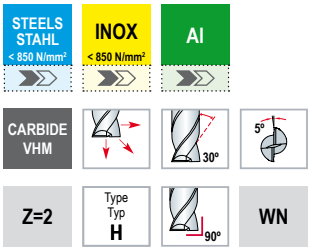
## Verstärkte VHM-Schaftfräser. Schaft D6

***Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC***

*Kurze Ausführung, zwei Schneiden*

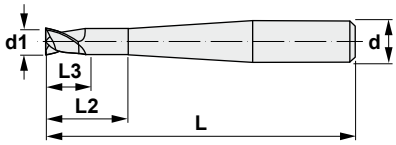
Characteristics:
Recommended for milling materials with medium and high tensile strength and for HSC milling.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittleren und hohen Zugfestigkeiten, sowie zum HSC-Fräsen.









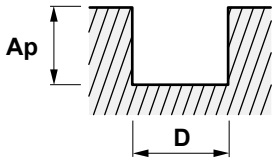

G

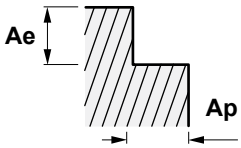
# 6022

| Reference Bezeichnung | | d1 | d | L3 | L2 | L |
|---|---|---|---|---|---|---|
| 6022010 | 2 | 1,0 | 6 | 1,5 | 5 | 55 |
| 6022110 | 2 | 1,0 | 6 | 1,5 | 12 | 65 |
| 6022015 | 2 | 1,5 | 6 | 1,8 | 5 | 55 |
| 6022115 | 2 | 1,5 | 6 | 1,8 | 12 | 65 |
| 6022020 | 2 | 2,0 | 6 | 2,0 | 10 | 55 |
| 6022120 | 2 | 2,0 | 6 | 2,0 | 16 | 65 |
| 6022030 | 2 | 3,0 | 6 | 2,0 | 9 | 65 |
| 6022130 | 2 | 3,0 | 6 | 2,0 | 15 | 65 |
| 6022040 | 2 | 4,0 | 6 | 2,0 | 12 | 65 |
| 6022140 | 2 | 4,0 | 6 | 2,0 | 20 | 65 |

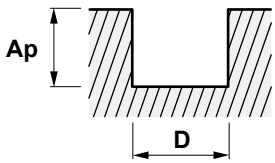
# 6022 *Reinforced solid carbide End Mills. Verstärkte VHM-Schaftfräser.*

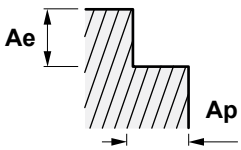
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Carbon steels / Copper Kohlenstoffstahl / Kupfer 180 - 250 HB | | | | Alloyed steels Legierter Stahl 25 - 35 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1.0 | 0.300 | 0.100 | 36000 | 3240 | 0.270 | 0.090 | 32400 | 2915 |
| 1.5 | 0.180 | 0.060 | 25200 | 2070 | 0.162 | 0.054 | 22680 | 1860 |
| 2.0 | 0.420 | 0.140 | 21000 | 3150 | 0.378 | 0.126 | 17010 | 2550 |
| 3.0 | 0.630 | 0.210 | 16000 | 2400 | 0.567 | 0.189 | 12960 | 1945 |
| 4.0 | 0.840 | 0.280 | 11500 | 2300 | 0.756 | 0.252 | 9315 | 1865 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Alloyed steels Legierter Stahl 35 - 45 HRC | | | | Hardened steels Gehärteter Stahl 45 - 55 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1.0 | 0.240 | 0.080 | 30600 | 2510 | 0.195 | 0.065 | 27000 | 1945 |
| 1.5 | 0.144 | 0.048 | 21420 | 1750 | 0.117 | 0.039 | 18900 | 1360 |
| 2.0 | 0.336 | 0.112 | 17850 | 2680 | 0.273 | 0.091 | 15750 | 1890 |
| 3.0 | 0.504 | 0.168 | 13600 | 2040 | 0.410 | 0.137 | 12000 | 1440 |
| 4.0 | 0.672 | 0.224 | 9775 | 1955 | 0.546 | 0.182 | 8625 | 1380 |



# Toric-corner radius End Mills.

## *For high speed cutting (HSC) <62HRC*

*Long series, two flutes*



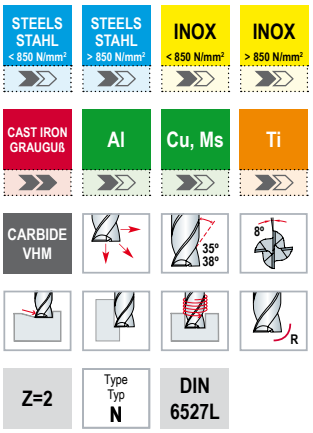
# VHM-Torus-Eckenradiusfräser

## *Zum Hochgeschwindigkeitsschneiden (HSC) <62HRC*

*Lange Ausführung, zwei Schneiden*

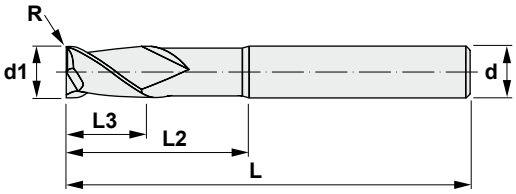
Characteristics:
High performance carbide end mill for universal applications. Finishing, semi-finishing and roughing with the same tool. Different spiral angles effect smooth, vibrationless running and excellent surface. High cutting performance.

Eigenschaften:
Vollhartmetall-Hochleistungsfräser für allgemeine Anwendungen. Schlichten, Vorschlichten und Schruppen mit einem einzigen Werkzeug. Die ungleiche Drallsteigung bewirkt einen ruhigen, vibrationsarmen Lauf und eine hervorragende Oberflächengüte. Hohe Zerspanungsleistung.









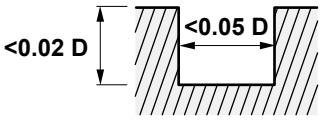

## 6023

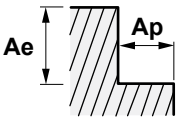
| Reference Bezeichnung | | d1 | d | L2 | L3 | R | L |
|---|---|---|---|---|---|---|---|
| 6023001 | 2 | 1 | 6 | 5 | 1,5 | 0,25 | 55 |
| 6023101 | 2 | 1 | 6 | 12 | 1,5 | 0,25 | 65 |
| 6023002 | 2 | 2 | 6 | 10 | 2,0 | 0,2 | 80 |
| 6023102 | 2 | 2 | 6 | 10 | 2,0 | 0,5 | 80 |
| 6023202 | 2 | 2 | 6 | 10 | 10,0 | 0,2 | 80 |
| 6023302 | 2 | 2 | 6 | 10 | 10,0 | 0,5 | 80 |
| 6023003 | 2 | 3 | 6 | 15 | 3,0 | 0,2 | 80 |
| 6023103 | 2 | 3 | 6 | 15 | 3,0 | 0,5 | 80 |
| 6023203 | 2 | 3 | 6 | 15 | 15,0 | 0,2 | 80 |
| 6023303 | 2 | 3 | 6 | 15 | 15,0 | 0,5 | 80 |
| 6023004 | 2 | 4 | 6 | 20 | 4,0 | 0,2 | 80 |
| 6023104 | 2 | 4 | 6 | 20 | 4,0 | 0,5 | 80 |
| 6023204 | 2 | 4 | 6 | 20 | 4,0 | 1,0 | 80 |
| 6023304 | 2 | 4 | 6 | 20 | 20,0 | 0,2 | 80 |
| 6023404 | 2 | 4 | 6 | 20 | 20,0 | 0,5 | 80 |
| 6023504 | 2 | 4 | 6 | 20 | 20,0 | 1,0 | 80 |
| 6023005 | 2 | 5 | 6 | 25 | 7,0 | 0,2 | 80 |
| 6023105 | 2 | 5 | 6 | 25 | 7,0 | 0,5 | 80 |
| 6023205 | 2 | 5 | 6 | 25 | 7,0 | 1,0 | 80 |
| 6023305 | 2 | 5 | 6 | 25 | 25,0 | 0,2 | 80 |
| 6023405 | 2 | 5 | 6 | 25 | 25,0 | 0,5 | 80 |
| 6023505 | 2 | 5 | 6 | 25 | 25,0 | 1,0 | 80 |
| 6023006 | 2 | 6 | 6 | 13 | 13,0 | 0,2 | 80 |

# 6023

| Reference Bezeichnung | | d1 | d | L2 | L3 | R | L |
|---|---|---|---|---|---|---|---|
| 6023106 | 2 | 6 | 6 | 13 | 13 | 0,5 | 80 |
| 6023206 | 2 | 6 | 6 | 13 | 13 | 1,0 | 80 |
| 6023306 | 2 | 6 | 6 | 13 | 13 | 1,5 | 80 |
| 6023406 | 2 | 6 | 6 | 13 | 13 | 2,0 | 80 |
| 6023506 | 2 | 6 | 6 | 25 | 25 | 0,2 | 80 |
| 6023606 | 2 | 6 | 6 | 25 | 25 | 0,5 | 80 |
| 6023706 | 2 | 6 | 6 | 25 | 25 | 1,0 | 80 |
| 6023806 | 2 | 6 | 6 | 25 | 25 | 2,0 | 80 |
| 6023008 | 2 | 8 | 8 | 19 | 19 | 0,5 | 90 |
| 6023108 | 2 | 8 | 8 | 19 | 19 | 1,0 | 90 |
| 6023208 | 2 | 8 | 8 | 19 | 19 | 1,5 | 90 |
| 6023308 | 2 | 8 | 8 | 19 | 19 | 2,0 | 90 |
| 6023408 | 2 | 8 | 8 | 35 | 35 | 0,5 | 90 |
| 6023508 | 2 | 8 | 8 | 35 | 35 | 1,0 | 90 |
| 6023608 | 2 | 8 | 8 | 35 | 35 | 2,0 | 90 |
| 6023010 | 2 | 10 | 10 | 22 | 22 | 0,5 | 100 |
| 6023110 | 2 | 10 | 10 | 22 | 22 | 1,0 | 100 |
| 6023210 | 2 | 10 | 10 | 22 | 22 | 1,5 | 100 |
| 6023310 | 2 | 10 | 10 | 22 | 22 | 2,0 | 100 |
| 6023410 | 2 | 10 | 10 | 22 | 22 | 3,0 | 100 |
| 6023510 | 2 | 10 | 10 | 45 | 45 | 0,5 | 100 |
| 6023610 | 2 | 10 | 10 | 45 | 45 | 1,0 | 100 |
| 6023710 | 2 | 10 | 10 | 45 | 45 | 2,0 | 100 |
| 6023810 | 2 | 10 | 10 | 45 | 45 | 3,0 | 100 |
| 6023012 | 2 | 12 | 12 | 26 | 26 | 0,5 | 100 |
| 6023112 | 2 | 12 | 12 | 26 | 26 | 1,0 | 100 |
| 6023212 | 2 | 12 | 12 | 26 | 26 | 1,5 | 100 |
| 6023312 | 2 | 12 | 12 | 26 | 26 | 2,0 | 100 |
| 6023412 | 2 | 12 | 12 | 26 | 26 | 3,0 | 100 |
| 6023512 | 2 | 12 | 12 | 50 | 50 | 0,5 | 100 |
| 6023612 | 2 | 12 | 12 | 50 | 50 | 1,0 | 100 |
| 6023712 | 2 | 12 | 12 | 50 | 50 | 2,0 | 100 |
| 6023812 | 2 | 12 | 12 | 50 | 50 | 3,0 | 100 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Steels Stahl | | | | Hardened steels Gehärteter Stahl | | | | Cr-Ni alloys Cr-Ni-Legierungen | | Ti alloys Titan-Legierungen | |
| | <1200 N/mm² | | 1200 - 1600 N/mm² | | 54 HRC | | <68 HRC | | <900 N/mm² | | <850 N/mm² | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 37500 | 3200 | 35000 | 3000 | 26500 | 2200 | 13600 | 1200 | 56000 | 4650 | 48000 | 3950 |
| 2 | 37500 | 3100 | 35000 | 2900 | 26500 | 2100 | 13500 | 1100 | 56000 | 4550 | 48000 | 3850 |
| 3 | 37500 | 3000 | 35000 | 2800 | 26500 | 2000 | 13400 | 1000 | 56000 | 4450 | 48000 | 3700 |
| 4 | 28000 | 2550 | 27000 | 2350 | 19500 | 1800 | 10000 | 900 | 42000 | 3750 | 36000 | 3250 |
| 5 | 22500 | 2250 | 21000 | 2100 | 16000 | 1600 | 7500 | 800 | 33500 | 3300 | 29000 | 2900 |
| 6 | 19000 | 1900 | 17500 | 1900 | 13000 | 1400 | 6500 | 700 | 28000 | 3050 | 24000 | 2600 |
| 8 | 14000 | 1400 | 11000 | 1750 | 10000 | 1300 | 5000 | 650 | 21000 | 2700 | 18000 | 2350 |
| 10 | 11000 | 1750 | 10500 | 1500 | 8000 | 1100 | 4000 | 550 | 17000 | 2350 | 14500 | 2000 |
| 12 | 9500 | 1500 | 8500 | 1400 | 6500 | 1050 | 3500 | 500 | 14000 | 2250 | 12000 | 1900 |




G



# Toric-corner radius End Mills.

## *For high speed cutting (HSC) <62HRC*

*Long series, four flutes*

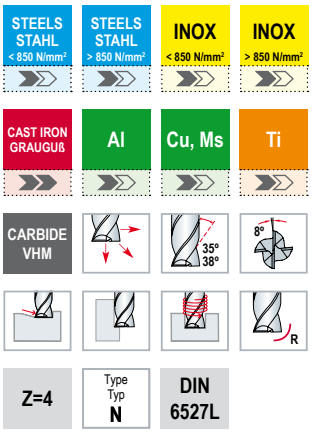
# VHM-Torus-Eckenradiusfräser

## *Zum Hochgeschwindigkeitsschneiden (HSC) <62HRC*

*Lange Ausführung, vier Schneiden*

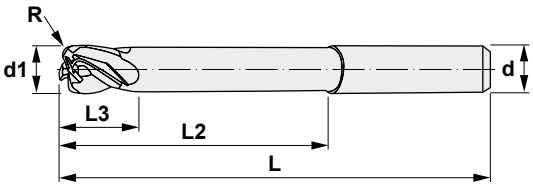
Characteristics:
High performance carbide end mill for universal applications. Finishing, semi-finishing and roughing with the same tool. Different spiral angles effect smooth, vibrationless running and excellent surface. High cutting performance.

Eigenschaften:
VHM-Hochleistungsfräser für allgemeine Anwendungen. Schlichten, Vorschlichten und Schruppen mit einem einzigen Werkzeug. Die ungleiche Drallsteigung bewirkt einen ruhigen, vibrationsarmen Lauf und eine hervorragende Oberflächengüte. Hohe Zerspanungsleistung.









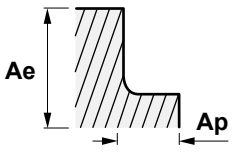

## 6043

| Reference Bezeichnung | | d1 | d | L3 | L2 | R | L |
|---|---|---|---|---|---|---|---|
| 6043002 | 4 | 2 | 6 | 2 | 10 | 0,2 | 80 |
| 6043102 | 4 | 2 | 6 | 2 | 10 | 0,5 | 80 |
| 6043202 | 4 | 2 | 6 | 10 | 10 | 0,2 | 80 |
| 6043302 | 4 | 2 | 6 | 10 | 10 | 0,5 | 80 |
| 6043003 | 4 | 3 | 6 | 3 | 15 | 0,2 | 80 |
| 6043103 | 4 | 3 | 6 | 3 | 15 | 0,5 | 80 |
| 6043203 | 4 | 3 | 6 | 15 | 15 | 0,2 | 80 |
| 6043303 | 4 | 3 | 6 | 15 | 15 | 0,5 | 80 |
| 6043004 | 4 | 4 | 6 | 4 | 20 | 0,2 | 80 |
| 6043104 | 4 | 4 | 6 | 4 | 20 | 0,5 | 80 |
| 6043204 | 4 | 4 | 6 | 4 | 20 | 1,0 | 80 |
| 6043304 | 4 | 4 | 6 | 20 | 20 | 0,2 | 80 |
| 6043404 | 4 | 4 | 6 | 20 | 20 | 0,5 | 80 |
| 6043504 | 4 | 4 | 6 | 20 | 20 | 1,0 | 80 |
| 6043006 | 4 | 6 | 6 | 13 | 13 | 0,2 | 80 |
| 6043106 | 4 | 6 | 6 | 13 | 13 | 0,5 | 80 |
| 6043206 | 4 | 6 | 6 | 13 | 13 | 1,0 | 80 |
| 6043306 | 4 | 6 | 6 | 13 | 13 | 1,5 | 80 |
| 6043406 | 4 | 6 | 6 | 13 | 13 | 2,0 | 80 |
| 6043506 | 4 | 6 | 6 | 25 | 25 | 0,2 | 80 |
| 6043606 | 4 | 6 | 6 | 25 | 25 | 0,5 | 80 |
| 6043706 | 4 | 6 | 6 | 25 | 25 | 1,0 | 80 |
| 6043806 | 4 | 6 | 6 | 25 | 25 | 2,0 | 80 |

# 6043

| Reference Bezeichnung | | d1 | d | L3 | L2 | R | L |
|---|---|---|---|---|---|---|---|
| 6043008 | 4 | 8 | 8 | 19 | 19 | 0,5 | 90 |
| 6043108 | 4 | 8 | 8 | 19 | 19 | 1,0 | 90 |
| 6043208 | 4 | 8 | 8 | 19 | 19 | 1,5 | 90 |
| 6043308 | 4 | 8 | 8 | 19 | 19 | 2,0 | 90 |
| 6043408 | 4 | 8 | 8 | 35 | 35 | 0,5 | 90 |
| 6043508 | 4 | 8 | 8 | 35 | 35 | 1,0 | 90 |
| 6043608 | 4 | 8 | 8 | 35 | 35 | 2,0 | 90 |
| 6043010 | 4 | 10 | 10 | 22 | 22 | 0,5 | 100 |
| 6043110 | 4 | 10 | 10 | 22 | 22 | 1,0 | 100 |
| 6043210 | 4 | 10 | 10 | 22 | 22 | 1,5 | 100 |
| 6043310 | 4 | 10 | 10 | 22 | 22 | 2,0 | 100 |
| 6043410 | 4 | 10 | 10 | 22 | 22 | 3,0 | 100 |
| 6043510 | 4 | 10 | 10 | 45 | 45 | 0,5 | 100 |
| 6043610 | 4 | 10 | 10 | 45 | 45 | 1,0 | 100 |
| 6043710 | 4 | 10 | 10 | 45 | 45 | 2,0 | 100 |
| 6043810 | 4 | 10 | 10 | 45 | 45 | 3,0 | 100 |
| 6043012 | 4 | 12 | 12 | 26 | 26 | 0,5 | 100 |
| 6043112 | 4 | 12 | 12 | 26 | 26 | 1,0 | 100 |
| 6043212 | 4 | 12 | 12 | 26 | 26 | 1,5 | 100 |
| 6043312 | 4 | 12 | 12 | 26 | 26 | 2,0 | 100 |
| 6043412 | 4 | 12 | 12 | 26 | 26 | 3,0 | 100 |
| 6043512 | 4 | 12 | 12 | 50 | 50 | 0,5 | 100 |
| 6043612 | 4 | 12 | 12 | 50 | 50 | 1,0 | 100 |
| 6043712 | 4 | 12 | 12 | 50 | 50 | 2,0 | 100 |
| 6043812 | 4 | 12 | 12 | 50 | 50 | 3,0 | 100 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prehardened and hardened steels Vorgehärteter und Gehärteter Stahl <45 HRC | | | | Hardened steels Gehärteter Stahl <55 HRC | | | | Copper / Aluminium Kupfer / Aluminium | | | |
| | Ae mm. | Ap mm. | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm. | Ap mm. | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm. | Ap mm. | R.P.M Min. | Feed / Vorschub mm/min. |
| **2** | 0.344 | 0.039 | 7800 | 880 | 0.344 | 0.037 | 7200 | 820 | 0.153 | 0.015 | 5900 | 360 |
| **3** | 0.493 | 0.049 | 7100 | 1300 | 0.493 | 0.031 | 6700 | 1300 | 0.271 | 0.019 | 5400 | 470 |
| **4** | 0.800 | 0.060 | 6200 | 1200 | 0.800 | 0.047 | 5200 | 1120 | 0.560 | 0.022 | 4500 | 630 |
| **6** | 1.148 | 0.085 | 2500 | 680 | 0.638 | 0.085 | 1400 | 400 | 0.468 | 0.034 | 1200 | 300 |
| **8** | 2.540 | 0.184 | 4000 | 1600 | 1.320 | 0.184 | 2400 | 680 | 1.320 | 0.087 | 2000 | 650 |
| **10** | 2.730 | 0.210 | 3200 | 1750 | 1.430 | 0.220 | 1900 | 540 | 1.450 | 0.094 | 1600 | 460 |
| **12** | 2.700 | 0.230 | 2500 | 1800 | 1.490 | 0.240 | 1500 | 430 | 1.500 | 0.110 | 1300 | 450 |





# Turbo Torus End Mills.

***For high speed cutting (HSC) <45HRC***

*Short series, four flutes*

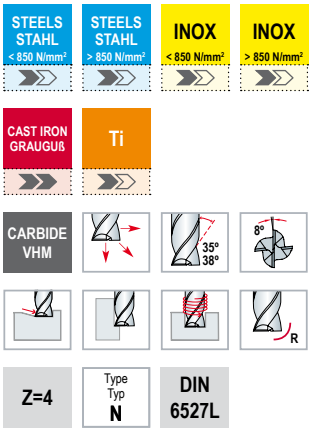
# Turbo-VHM-Torusfräser

***Zum Hochgeschwindigkeitsschneiden (HSC) <45HRC***

*Kurze Ausführung, vier Schneiden*

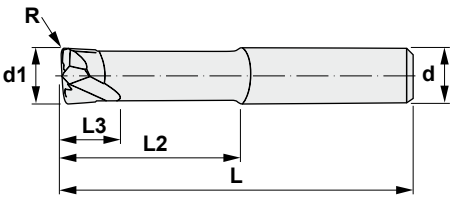
Characteristics:
High performance carbide end mill for universal applications. Finishing, semi-finishing and roughing with the same tool. Different spiral angles effect smooth, vibrationless running and excellent surface. High cutting performance.

Eigenschaften:
VHM-Hochleistungsfräser für allgemeine Anwendungen. Schlichten, Vorschlichten und Schruppen mit einem einzigen Werkzeug. Die ungleiche Drallsteigung bewirkt einen ruhigen, vibrationsarmen Lauf und eine hervorragende Oberflächengüte. Hohe Zerspanungsleistung.





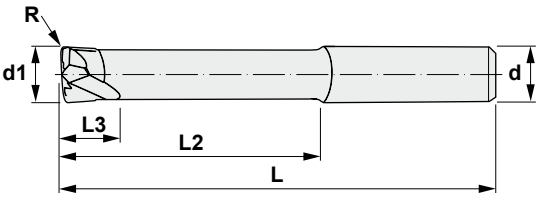





## 6143

| Reference Bezeichnung | | d1 | d | L3 | L2 | R | L |
|---|---|---|---|---|---|---|---|
| 614303 | 4 | 3 | 6 | 1,5 | 8 | 0,5 | 60 |
| 614304 | 4 | 4 | 6 | 2,0 | 8 | 0,5 | 60 |
| 614306 | 4 | 6 | 6 | 3,0 | 14 | 1,0 | 60 |
| 614308 | 4 | 8 | 8 | 4,0 | 18 | 2,0 | 63 |
| 614310 | 4 | 10 | 10 | 5,0 | 20 | 2,0 | 72 |
| 614312 | 4 | 12 | 12 | 6,0 | 22 | 2,0 | 83 |



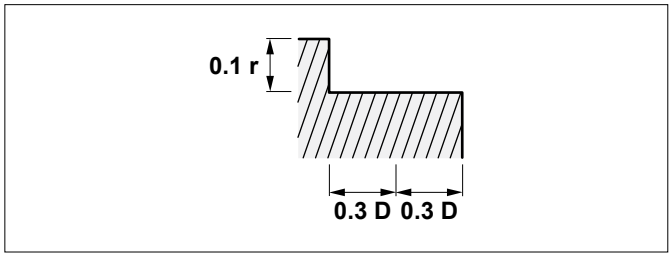

## 6243 *Long series, four flutes*
## *Lange Ausführung, vier Schneiden*

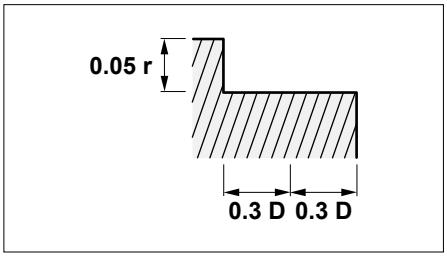
| Reference Bezeichnung | | d1 | d | L3 | L2 | R | L |
|---|---|---|---|---|---|---|---|
| 624303 | 4 | 3 | 6 | 1,5 | 20 | 0,5 | 80 |
| 624304 | 4 | 4 | 6 | 2,0 | 20 | 0,5 | 80 |
| 624306 | 4 | 6 | 6 | 3,0 | 30 | 1,0 | 80 |
| 624308 | 4 | 8 | 8 | 4,0 | 40 | 2,0 | 80 |
| 624310 | 4 | 10 | 10 | 5,0 | 50 | 2,0 | 100 |
| 624312 | 4 | 12 | 12 | 6,0 | 50 | 2,0 | 110 |

# 6143 / 6243 *Turbo Torus End Mills. Turbo-VHM-Torusfräser.*

## *Conventional milling*
## *Konventionelles Fräsen*

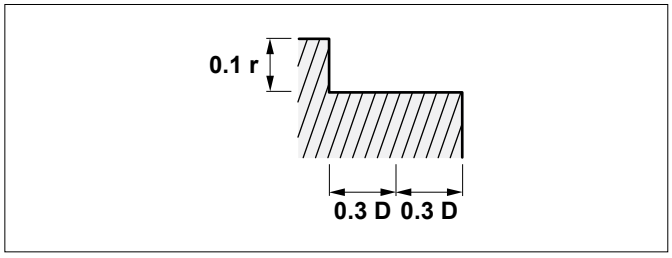
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Prehardened steels Vorgehärteter Stahl <40 HRC | | Hardened steels Gehärteter Stahl 40 - 50 HRC | | Hardened steels Gehärteter Stahl 50 - 55 HRC | | Hardened steels Gehärteter Stahl 55 - 60 HRC | | Hardened steels Gehärteter Stahl 60 - 65 HRC | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 9550 | 6500 | 6900 | 4150 | 4550 | 2750 | 2850 | 1150 | 1900 | 610 |
| 4 | 7950 | 7000 | 5750 | 4600 | 4000 | 3200 | 2550 | 1350 | 1750 | 700 |
| 6 | 5800 | 7650 | 4100 | 4900 | 2900 | 3500 | 1850 | 1850 | 1350 | 795 |
| 8 | 4350 | 7650 | 3050 | 4900 | 2200 | 3500 | 1400 | 1850 | 995 | 795 |
| 10 | 3500 | 7650 | 2450 | 4900 | 1750 | 3500 | 1100 | 1850 | 795 | 795 |
| 12 | 2900 | 7650 | 2050 | 4900 | 1450 | 3500 | 925 | 1850 | 665 | 795 |

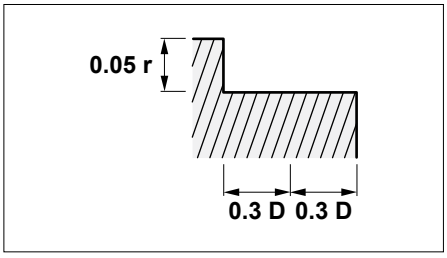



## *HSC milling*
## *HSC-Fräsen*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Prehardened steels Vorgehärteter Stahl <40 HRC | | Hardened steels Gehärteter Stahl 40 - 50 HRC | | Hardened steels Gehärteter Stahl 50 - 55 HRC | | Hardened steels Gehärteter Stahl 55 - 60 HRC | | Hardened steels Gehärteter Stahl 60 - 65 HRC | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 22000 | 16000 | 17000 | 10000 | 12500 | 8000 | 9500 | 4600 | 6900 | 2500 |
| 4 | 17000 | 17500 | 13000 | 12000 | 11000 | 9200 | 8000 | 5500 | 5600 | 2900 |
| 6 | 13500 | 18500 | 10500 | 13800 | 9000 | 11000 | 6400 | 6400 | 4500 | 3600 |
| 8 | 10000 | 18500 | 8000 | 14000 | 6800 | 11000 | 4800 | 6700 | 3400 | 4100 |
| 10 | 8000 | 18500 | 6400 | 14000 | 5400 | 11000 | 3800 | 6800 | 2700 | 2800 |
| 12 | 6600 | 18500 | 5300 | 14000 | 4500 | 11000 | 3200 | 7000 | 2250 | 3600 |





# Solid carbide End Mills. HyperBall form.

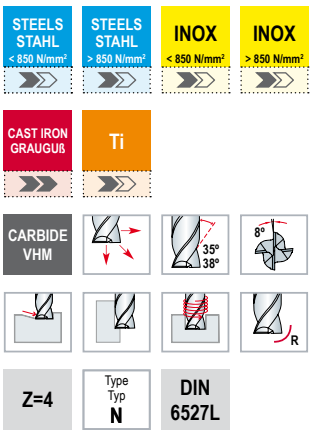
*Short series, four flutes*

# VHM-Vollradius-Schaftfräser. Form HyperBall.

*Kurze Ausführung, vier Schneiden*

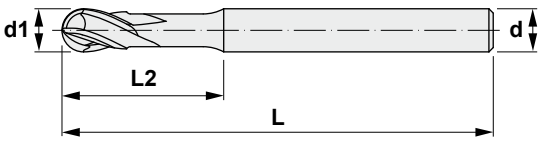
Characteristics:
High performance carbide end mill for universal applications. Finishing, semi-finishing and roughing with the same tool. Different spiral angles effect smooth, vibrationless running and excellent surface. High cutting performance.

Eigenschaften:
VHM-Hochleistungsfräser für allgemeine Anwendungen. Schlichten, Vorschlichten und Schruppen mit einem einzigen Werkzeug. Die ungleiche Drallsteigung bewirkt einen ruhigen, vibrationsarmen Lauf und eine hervorragende Oberflächengüte. Hohe Zerspanungsleistung.





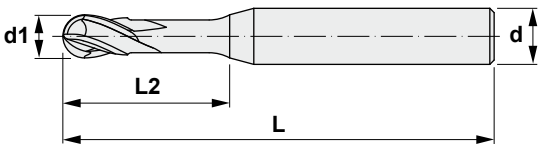





## 6342

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6342006 | 4 | 6 | 6 | 8 | 50 |
| 6342106 | 4 | 6 | 6 | 8 | 80 |
| 6342206 | 4 | 6 | 6 | 8 | 100 |
| 6342306 | 4 | 6 | 6 | 8 | 150 |
| 6342008 | 4 | 8 | 8 | 10 | 60 |
| 6342108 | 4 | 8 | 8 | 10 | 100 |
| 6342208 | 4 | 8 | 8 | 10 | 150 |
| 6342010 | 4 | 10 | 10 | 13 | 75 |
| 6342110 | 4 | 10 | 10 | 13 | 100 |
| 6342210 | 4 | 10 | 10 | 13 | 150 |
| 6342310 | 4 | 10 | 10 | 13 | 200 |
| 6342012 | 4 | 12 | 12 | 15 | 75 |
| 6342112 | 4 | 12 | 12 | 15 | 100 |
| 6342212 | 4 | 12 | 12 | 15 | 150 |
| 6342312 | 4 | 12 | 12 | 15 | 200 |



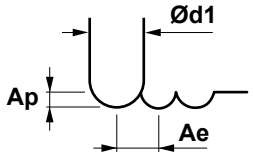
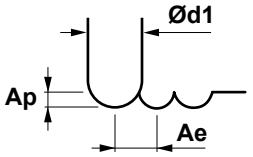
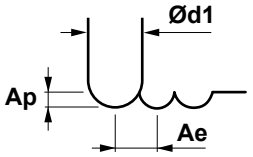
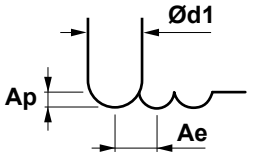




## 6343

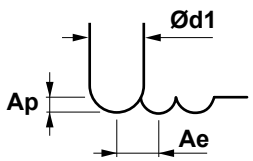
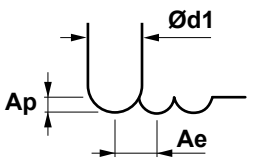
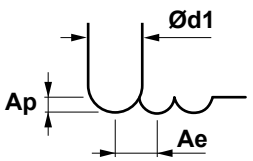
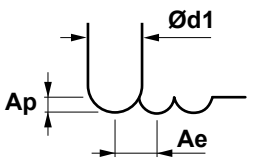
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6343006 | 4 | 6 | 8 | 32 | 80 |
| 6343106 | 4 | 6 | 8 | 45 | 108 |
| 6343008 | 4 | 8 | 10 | 32 | 80 |
| 6343108 | 4 | 8 | 10 | 48 | 108 |

# 6342 / 6343 *Solid carbide End Mills. HyperBall form. VHM-Vollradius-Schaftfräser. Form HyperBall.*

## *For finishing*
## *Zum Schlichten*

| Diameter / Durchmesser | | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Tool & die steel / Mold steel Werkzeugsstahl / Druckgußstahl < 45 HRC | | Hardened steels Gehärteter Stahl 45 ~ 55 HRC | | Hardened steels Gehärteter Stahl 55 ~ 62 HRC | | Hardened steels Gehärteter Stahl 62 ~ 72 HRC | |
| R mm | (Ø d1) mm | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 3 | 6 | 12700 | 4000 | 10600 | 3000 | 8500 | 2000 | 6400 | 1000 |
| 4 | 8 | 9500 | 4000 | 8000 | 3000 | 6400 | 2000 | 4800 | 1000 |
| 5 | 10 | 7600 | 4000 | 6400 | 3000 | 5100 | 2000 | 3800 | 1000 |
| 6 | 12 | 6400 | 4000 | 5300 | 3000 | 4200 | 2000 | 3200 | 1000 |
| | |  Ap ≤0.03 d1 Ae ≤0.03 d1 | |  Ap ≤0.03 d1 Ae ≤0.03 d1 | |  Ap ≤0.03 d1 Ae ≤0.03 d1 | |  Ap ≤0.03 d1 Ae ≤0.03 d1 | |

## *For roughing and semi-finishing*
## *Zum Schruppen und Vorschlichten*

| Diameter / Durchmesser | | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tool & die steel / Mold steel Werkzeugsstahl / Druckgußstahl < 45 HRC | | | Hardened steels Gehärteter Stahl 45 ~ 55 HRC | | | Hardened steels Gehärteter Stahl 55 ~ 62 HRC | | | Hardened steels Gehärteter Stahl 62 ~ 72 HRC | | |
| R mm | (Ø d1) mm | R.P.M Min. | Feed / Vorschub mm/min. | ap x Ae | R.P.M Min. | Feed / Vorschub mm/min. | ap x Ae | R.P.M Min. | Feed / Vorschub mm/min. | ap x Ae | R.P.M Min. | Feed / Vorschub mm/min. | ap x Ae |
| 3 | 6 | 9500 | 3000 | 0.86 | 8000 | 2250 | 0.86 | 6400 | 1500 | 0.72 | 4800 | 750 | 0.22 |
| 4 | 8 | 7200 | 3000 | 1.54 | 6000 | 2250 | 1.54 | 4800 | 1500 | 1.28 | 3600 | 750 | 0.38 |
| 5 | 10 | 5700 | 3000 | 2.40 | 4800 | 2250 | 2.40 | 3800 | 1500 | 2.00 | 2900 | 750 | 0.60 |
| 6 | 12 | 4800 | 3000 | 3.46 | 4000 | 2250 | 3.46 | 3200 | 1500 | 2.88 | 2400 | 750 | 0.86 |
| | |  Ap ≤1.2 d1 Ae ≤0.2 d1 Ap=2.2 / Ae=0.1 (Ap x Ae ≤0.22) | | |  Ap ≤1.2 d1 Ae ≤0.2 d1 Ap=2.2 / Ae=0.1 (Ap x Ae ≤0.22) | | |  Ap ≤1.2 d1 Ae ≤0.2 d1 Ap=2.2 / Ae=0.1 (Ap x Ae ≤0.22) | | |  Ap ≤1.2 d1 Ae ≤0.2 d1 Ap=2.2 / Ae=0.1 (Ap x Ae ≤0.22) | | |

# Solid carbide End Mills. Ball form. Reinforced

***For high speed cutting (HSC) <62HRC***

*Short series (Conical form), two flutes*

# VHM-Vollradius-Schaftfräser. Verstärkt

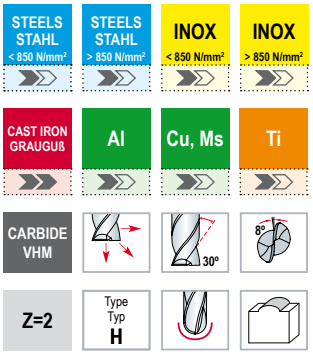
***Zum Hochgeschwindigkeitsschneiden (HSC) <62HRC***

*Kurze Ausführung (konische Form), zwei Schneiden*



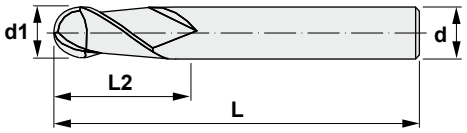
Characteristics:
HSC high-performance tools for mould and die making. For high-alloyed and hardened materials.

Eigenschaften:
HSC Hochleistungswerkzeuge für den Werkzeug- und Formenbau. Für hochlegierte und gehärtete Materialien.









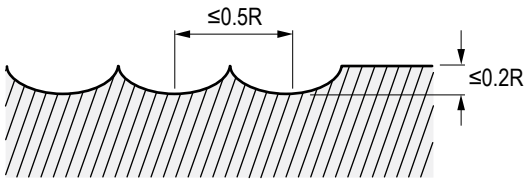

## 6322

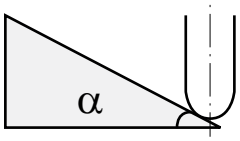
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 632202 | 2 | 2 | 6 | 20 | 60 |
| 632212 | 2 | 2 | 6 | 25 | 60 |
| 632203 | 2 | 3 | 6 | 20 | 60 |
| 632204 | 2 | 4 | 6 | 25 | 60 |
| 632205 | 2 | 5 | 6 | 25 | 60 |

# 6322 *Solid carbide End Mills. Ball form. Reinforced.*
# *VHM-Vollradius-Schaftfräser. Verstärkt.*

## *For roughing*
## *Zum Schruppen*

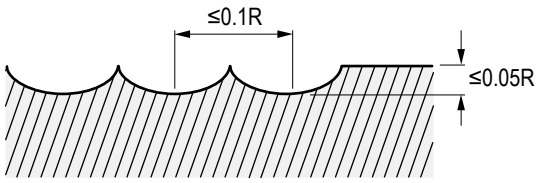
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Prehardened steels Vorgehärteter Stahl <45 HRC | | | | Hardened steels / Stainless steels Gehärteter Stahl / Rostfreier Stahl 45 - 55 HRC | | | |
| | α≤15° | | α>15° | | α≤15° | | α>15° | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 2 | 28800 | 2700 | 22500 | 1100 | 16200 | 1300 | 14400 | 580 |
| 3 | 22800 | 3000 | 18000 | 1200 | 13100 | 1500 | 11400 | 630 |
| 4 | 16700 | 3300 | 13000 | 1300 | 10000 | 1600 | 8300 | 670 |
| 5 | 14200 | 3500 | 11000 | 1300 | 8500 | 1700 | 7100 | 700 |

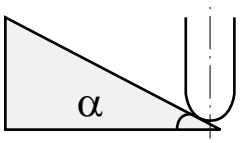



## *For finishing*
## *Zum Schlichten*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hardened steels Gehärteter Stahl <45 HRC | | | | Hardened steels / Stainless steels Gehärteter Stahl / Rostfreier Stahl 45 - 55 HRC | | | |
| | α≤15° | | α>15° | | α≤15° | | α>15° | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 2 | 28800 | 2900 | 28800 | 1400 | 22500 | 1800 | 18000 | 700 |
| 3 | 22900 | 3700 | 23400 | 1600 | 18900 | 2100 | 14900 | 800 |
| 4 | 23000 | 4500 | 18000 | 1800 | 15300 | 2400 | 11700 | 900 |
| 5 | 21000 | 5000 | 15800 | 1900 | 13500 | 2500 | 10400 | 1000 |





# Solid carbide End Mills. Ball form. Reinforced

***For high speed cutting (HSC) <62HRC***

*Long series (Conical form), two flutes*

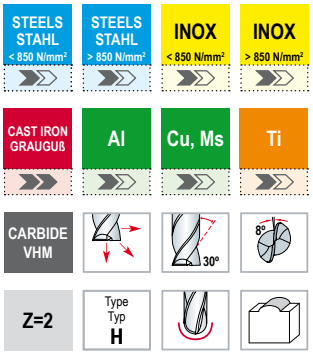
# VHM-Vollradius-Schaftfräser. Verstärkt

***Zum Hochgeschwindigkeitsschneiden (HSC) <62HRC***

*Lange Ausführung (konische Form), zwei Schneiden*

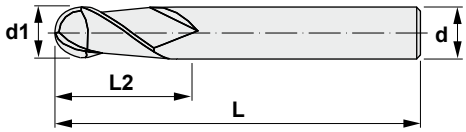
Characteristics:
HSC high-performance tools for mould and die making. For high-alloyed and hardened materials.

Eigenschaften:
HSC Hochleistungswerkzeuge für den Werkzeug- und Formenbau. Für hochlegierte und gehärtete Materialien.









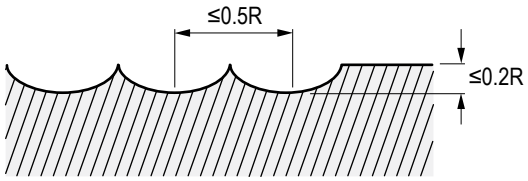

## 6323

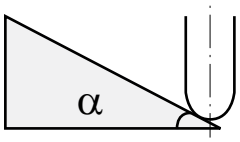
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6323002 | 2 | 2 | 6 | 40 | 80 |
| 6323003 | 2 | 3 | 6 | 50 | 100 |
| 6323004 | 2 | 4 | 6 | 50 | 100 |
| 6323104 | 2 | 4 | 8 | 50 | 100 |
| 6323005 | 2 | 5 | 8 | 41 | 90 |
| 6323105 | 2 | 5 | 6 | 50 | 100 |
| 6323006 | 2 | 6 | 8 | 33 | 90 |
| 6323106 | 2 | 6 | 8 | 50 | 100 |
| 6323206 | 2 | 6 | 10 | 50 | 100 |
| 6323008 | 2 | 8 | 10 | 40 | 100 |
| 6323108 | 2 | 8 | 12 | 50 | 100 |
| 6323208 | 2 | 8 | 10 | 70 | 150 |
| 6323010 | 2 | 10 | 12 | 50 | 100 |
| 6323110 | 2 | 10 | 16 | 60 | 150 |
| 6323210 | 2 | 10 | 12 | 65 | 130 |
| 6323012 | 2 | 12 | 16 | 60 | 150 |

# 6323 *Solid carbide End Mills. Ball form. Reinforced.*
# *VHM-Vollradius-Schaftfräser. Verstärkt.*

## *For roughing*
## *Zum Schruppen*

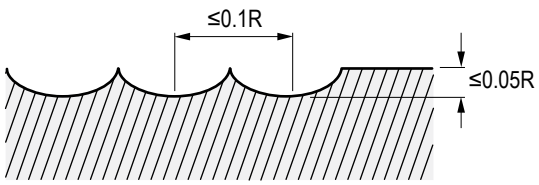
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Prehardened steels Vorgehärteter Stahl <45 HRC | | | | Hardened steels / Stainless steels Gehärteter Stahl / Rostfreier Stahl 45 - 55 HRC | | | |
| | α≤15° | | α>15° | | α≤15° | | α>15° | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 2 | 28800 | 2700 | 22500 | 1100 | 16200 | 1300 | 14400 | 580 |
| 3 | 22800 | 3000 | 18000 | 1200 | 13100 | 1500 | 11400 | 630 |
| 4 | 16700 | 3300 | 13000 | 1300 | 10000 | 1600 | 8300 | 670 |
| 5 | 14200 | 3500 | 11000 | 1300 | 8500 | 1700 | 7100 | 700 |
| 6 | 11700 | 3600 | 9000 | 1400 | 6900 | 1700 | 5800 | 720 |
| 8 | 9000 | 4500 | 7000 | 1800 | 5400 | 2100 | 4300 | 830 |
| 10 | 7200 | 4500 | 5900 | 1800 | 4300 | 2000 | 3400 | 780 |
| 12 | 5900 | 4100 | 4800 | 1600 | 3600 | 1900 | 2900 | 760 |

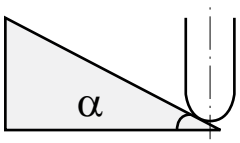



## *For finishing*
## *Zum Schlichten*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hardened steels Gehärteter Stahl <45 HRC | | | | Hardened steels / Stainless steels Gehärteter Stahl / Rostfreier Stahl 45 - 55 HRC | | | |
| | α≤15° | | α>15° | | α≤15° | | α>15° | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| 2 | 28800 | 2900 | 28800 | 1400 | 22500 | 1800 | 18000 | 700 |
| 3 | 22900 | 3700 | 23400 | 1600 | 18900 | 2100 | 14900 | 800 |
| 4 | 23000 | 4500 | 18000 | 1800 | 15300 | 2400 | 11700 | 900 |
| 5 | 21000 | 5000 | 15800 | 1900 | 13500 | 2500 | 10400 | 1000 |
| 6 | 18000 | 5500 | 13500 | 2000 | 11700 | 2900 | 9000 | 1100 |
| 8 | 13500 | 6800 | 10000 | 2400 | 9000 | 3400 | 6800 | 1300 |
| 10 | 10800 | 6800 | 8100 | 2400 | 7200 | 3400 | 5400 | 1300 |
| 12 | 9000 | 6300 | 6800 | 2300 | 6000 | 3200 | 4500 | 1200 |





# Ball form carbide End Mills. Shank D4.

***For high speed cutting (HSC) <62HRC***

*Two flutes*

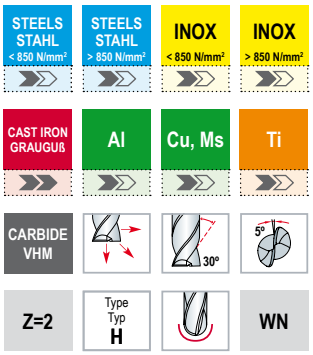
# VHM-Vollradius-Schaftfräser. Schaft D4.

***Zum Hochgeschwindigkeitsschneiden (HSC) <62HRC***

*Zwei Schneiden*

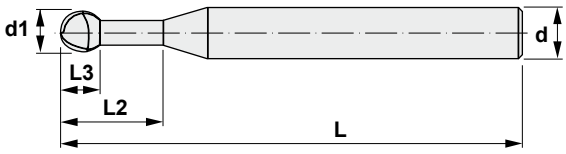
Characteristics:
For milling materials with medium/high tensile strength. Especially suited for HSC-copy milling.

Eigenschaften:
Für die Bearbeitung von Werkstoffen mit einer mittleren bis hohen Zugfestigkeit. Besonders geeignet zum HSC-Kopierfräsen.





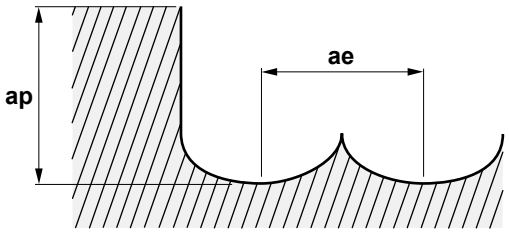





## 6324

| Reference Bezeichnung | | d1 | d | L3 | L2 | L |
|---|---|---|---|---|---|---|
| 632404 | 2 | 0,4 | 4 | 0,6 | 4 | 45 |
| 632405 | 2 | 0,5 | 4 | 0,7 | 4 | 45 |
| 632406 | 2 | 0,6 | 4 | 0,9 | 6 | 45 |
| 632408 | 2 | 0,8 | 4 | 1,2 | 8 | 45 |
| 632412 | 2 | 1,2 | 4 | 1,8 | 8 | 45 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prehardened and hardened steels Vorgehärteter und gehärteter Stahl <45 HRC | | | | Hardened steels Gehärteter Stahl <55 HRC | | | | Copper Kupfer | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| **0.4** | 0.100 | 0.035 | 50000 | 720 | 0.080 | 0.028 | 41300 | 540 | 0.014 | 0.010 | 50000 | 710 |
| **0.5** | 0.120 | 0.040 | 46000 | 855 | 0.080 | 0.030 | 38300 | 630 | 0.017 | 0.018 | 52000 | 945 |
| **0.6** | 0.145 | 0.050 | 45500 | 830 | 0.110 | 0.040 | 37500 | 650 | 0.020 | 0.020 | 54000 | 1090 |
| **0.8** | 0.150 | 0.060 | 42000 | 880 | 0.150 | 0.050 | 33500 | 720 | 0.025 | 0.030 | 48000 | 1415 |
| **1.2** | 0.141 | 0.077 | 25600 | 575 | 0.112 | 0.061 | 20160 | 470 | 0.032 | 0.014 | 21760 | 1010 |





## Solid carbide End Mills. Ball form with neck.

***For high speed cutting (HSC) <62HRC***

*Short series (long neck), two flutes*

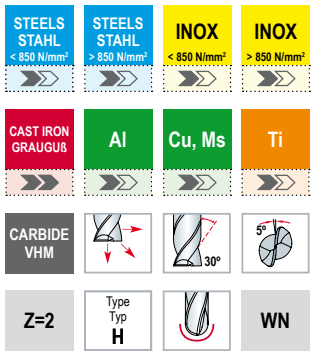
## VHM-Radius-Schaftfräser mit Hals.

***Zum Hochgeschwindigkeitsschneiden (HSC) <62HRC***

*Kurze Ausführung (langer Hals), zwei Schneiden*

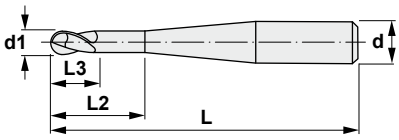
Characteristics:
For milling materials with medium/high tensile strength. Especially suited for HSC-copy milling.

Eigenschaften:
Für die Bearbeitung von Werkstoffen mit einer mittleren bis hohen Zugfestigkeit. Besonders geeignet zum HSC-Kopierfräsen.










G

# 6325

| Reference Bezeichnung | | d1 | d | L3 | L2 | L |
|---|---|---|---|---|---|---|
| 632501 | 2 | 1 | 6 | 1,5 | 5 | 55 |
| 632511 | 2 | 1 | 6 | 1,5 | 12 | 65 |
| 632502 | 2 | 2 | 6 | 2,0 | 10 | 55 |
| 632512 | 2 | 2 | 6 | 3,0 | 14 | 55 |
| 632522 | 2 | 2 | 6 | 2,0 | 16 | 60 |
| 632532 | 2 | 2 | 6 | 2,0 | 35 | 75 |
| 632503 | 2 | 3 | 6 | 2,0 | 9 | 65 |
| 632513 | 2 | 3 | 6 | 2,0 | 15 | 65 |
| 632523 | 2 | 3 | 6 | 4,0 | 20 | 60 |
| 632533 | 2 | 3 | 6 | 2,0 | 40 | 80 |
| 632504 | 2 | 4 | 6 | 2,0 | 12 | 65 |
| 632514 | 2 | 4 | 6 | 5,0 | 20 | 60 |
| 632505 | 2 | 5 | 6 | 6,0 | 20 | 60 |

# 6325 *Solid carbide End Mills. Ball form with neck. VHM-Radius-Schaftfräser mit Hals.*

## *Conventional roughing / Konventionelles Schruppen*

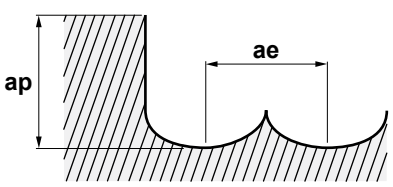
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Alloyed steels Legierter Stahl <1200 N/mm² | | | | Alloyed steels Legierter Stahl 1200 - 1450 N/mm² | | | | Hardened steels Gehärteter Stahl 45 - 55 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.300 | 0.070 | 38195 | 750 | 0.300 | 0.070 | 38195 | 750 | 0.250 | 0.055 | 33420 | 400 |
| 2 | 0.600 | 0.140 | 19100 | 1200 | 0.600 | 0.140 | 19100 | 1200 | 0.500 | 0.110 | 16710 | 600 |
| 3 | 0.900 | 0.210 | 12730 | 1600 | 0.900 | 0.210 | 12730 | 1600 | 0.750 | 0.165 | 11140 | 1000 |
| 4 | 1.200 | 0.280 | 9550 | 1700 | 1.200 | 0.280 | 9550 | 1400 | 1.000 | 0.220 | 8355 | 900 |
| 5 | 1.500 | 0.350 | 7640 | 1900 | 1.500 | 0.350 | 7640 | 1600 | 1.250 | 0.275 | 6685 | 1000 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hardened steels Gehärteter Stahl 55 - 65 HRC | | | | Hardened steels Gehärteter Stahl 65 - 70 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.250 | 0.035 | 28645 | 400 | 0.200 | 0.025 | 20690 | 330 |
| 2 | 0.500 | 0.070 | 14325 | 500 | 0.400 | 0.050 | 10345 | 330 |
| 3 | 0.750 | 0.105 | 9550 | 650 | 0.600 | 0.075 | 6895 | 340 |
| 4 | 1.000 | 0.140 | 7160 | 800 | 0.800 | 0.100 | 5170 | 400 |
| 5 | 1.250 | 0.175 | 5730 | 800 | 1.000 | 0.125 | 4140 | 500 |

## *HSC roughing / HSC-Schruppen*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Alloyed steels Legierter Stahl <1200 N/mm² | | | | Alloyed steels Legierter Stahl 1200 - 1450 N/mm² | | | | Hardened steels Gehärteter Stahl 45 - 55 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.300 | 0.070 | 79575 | 3200 | 0.300 | 0.070 | 95490 | 3200 | 0.250 | 0.055 | 68435 | 3000 |
| 2 | 0.600 | 0.140 | 39790 | 2800 | 0.600 | 0.140 | 47745 | 2800 | 0.500 | 0.110 | 34220 | 2300 |
| 3 | 0.900 | 0.210 | 26525 | 3200 | 0.900 | 0.210 | 31830 | 3200 | 0.750 | 0.165 | 22810 | 2200 |
| 4 | 1.200 | 0.280 | 19895 | 3400 | 1.200 | 0.280 | 23875 | 2900 | 1.000 | 0.220 | 17110 | 2500 |
| 5 | 1.500 | 0.350 | 15915 | 3600 | 1.500 | 0.350 | 19100 | 3000 | 1.250 | 0.275 | 13685 | 2600 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hardened steels Gehärteter Stahl 55 - 65 HRC | | | | Hardened steels Gehärteter Stahl 65 - 70 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.250 | 0.035 | 66845 | 1100 | 0.200 | 0.025 | 44565 | 800 |
| 2 | 0.500 | 0.070 | 33420 | 1000 | 0.400 | 0.050 | 22280 | 800 |
| 3 | 0.750 | 0.105 | 22280 | 1700 | 0.600 | 0.075 | 14855 | 1000 |
| 4 | 1.000 | 0.140 | 16710 | 1600 | 0.800 | 0.100 | 11140 | 900 |
| 5 | 1.250 | 0.175 | 13370 | 1800 | 1.000 | 0.125 | 8910 | 1200 |



# 6325 *Solid carbide End Mills. Ball form with neck. VHM-Radius-Schaftfräser mit Hals.*

## *Conventional finishing / Konventionelles Schlichten*

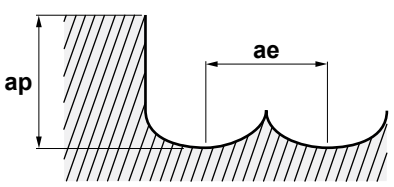
| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Alloyed steels Legierter Stahl <1200 N/mm² | | | | Alloyed steels Legierter Stahl 1200 - 1450 N/mm² | | | | Hardened steels Gehärteter Stahl 45 - 55 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.035 | 0.075 | 41380 | 1900 | 0.035 | 0.075 | 41380 | 1900 | 0.030 | 0.065 | 33420 | 1500 |
| 2 | 0.070 | 0.150 | 20690 | 2300 | 0.070 | 0.150 | 20690 | 2300 | 0.060 | 0.130 | 16710 | 1900 |
| 3 | 0.105 | 0.225 | 13790 | 2700 | 0.105 | 0.225 | 13790 | 2700 | 0.090 | 0.195 | 11140 | 1700 |
| 4 | 0.140 | 0.300 | 10345 | 2600 | 0.140 | 0.300 | 10345 | 2600 | 0.120 | 0.260 | 8355 | 1600 |
| 5 | 0.175 | 0.375 | 8275 | 2400 | 0.175 | 0.375 | 8275 | 2400 | 0.150 | 0.325 | 6685 | 1700 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hardened steels Gehärteter Stahl 55 - 65 HRC | | | | Hardened steels Gehärteter Stahl 65 - 70 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.030 | 0.050 | 33420 | 1100 | 0.025 | 0.030 | 28995 | 1200 |
| 2 | 0.060 | 0.100 | 16710 | 2000 | 0.050 | 0.060 | 14480 | 1400 |
| 3 | 0.090 | 0.150 | 11140 | 1500 | 0.075 | 0.090 | 9655 | 1200 |
| 4 | 0.120 | 0.200 | 8355 | 1500 | 0.100 | 0.120 | 7240 | 1100 |
| 5 | 0.150 | 0.250 | 6685 | 1600 | 0.125 | 0.150 | 5790 | 1200 |

## *HSC finishing / HSC-Schlichten*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Alloyed steels Legierter Stahl <1200 N/mm² | | | | Alloyed steels Legierter Stahl 1200 - 1450 N/mm² | | | | Hardened steels Gehärteter Stahl 45 - 55 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.035 | 0.075 | 95490 | 1900 | 0.035 | 0.075 | 95490 | 1900 | 0.030 | 0.065 | 84350 | 1500 |
| 2 | 0.070 | 0.150 | 47745 | 2300 | 0.070 | 0.150 | 47745 | 2300 | 0.060 | 0.130 | 42175 | 1900 |
| 3 | 0.105 | 0.225 | 31830 | 2700 | 0.105 | 0.225 | 31830 | 2700 | 0.090 | 0.195 | 28115 | 1700 |
| 4 | 0.140 | 0.300 | 23875 | 2600 | 0.140 | 0.300 | 23875 | 2600 | 0.120 | 0.260 | 21090 | 1600 |
| 5 | 0.175 | 0.375 | 19100 | 2400 | 0.175 | 0.375 | 19100 | 2400 | 0.150 | 0.325 | 16870 | 1700 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hardened steels Gehärteter Stahl 55 - 65 HRC | | | | Hardened steels Gehärteter Stahl 65 - 70 HRC | | | |
| | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. | Ae mm | Ap mm | R.P.M Min. | Feed / Vorschub mm/min. |
| 1 | 0.030 | 0.050 | 71620 | 1100 | 0.025 | 0.030 | 55705 | 1200 |
| 2 | 0.060 | 0.100 | 35810 | 2000 | 0.050 | 0.060 | 27850 | 1400 |
| 3 | 0.090 | 0.150 | 23875 | 1500 | 0.075 | 0.090 | 18570 | 1200 |
| 4 | 0.120 | 0.200 | 17905 | 1500 | 0.100 | 0.120 | 13925 | 1100 |
| 5 | 0.150 | 0.250 | 14325 | 1600 | 0.125 | 0.150 | 11140 | 1200 |





# Single flute End Mills.

## *For aluminium and plastic materials*

*Short series, one flute*

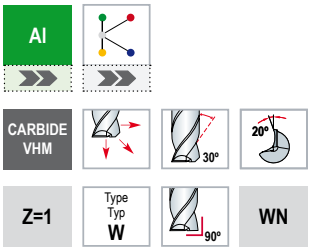
# Einschneidiger-Schaftfräser

## *Für Aluminium und Kunststoffe*

*Kurze Ausführung, eine Schneide*

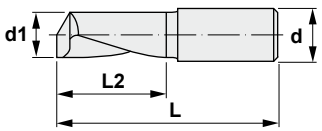
Characteristics:
Right-hand cutting with right-hand spiral.
Especially suited for cutting aluminium and aluminium-alloys.

Eigenschaften:
Rechtsschneidend mit Rechtsdrall.
Besonders geeignet für die Bearbeitung von Aluminium und Aluminium-Legierungen.





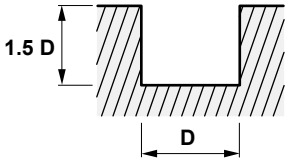





# 6510

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 651003 | 1 | 3 | 3 | 8 | 38 |
| 651004 | 1 | 4 | 4 | 11 | 50 |
| 651005 | 1 | 5 | 5 | 13 | 50 |
| 651006 | 1 | 6 | 6 | 16 | 50 |
| 651008 | 1 | 8 | 8 | 19 | 60 |
| 651010 | 1 | 10 | 10 | 22 | 75 |
| 651012 | 1 | 12 | 12 | 26 | 75 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Acrylic / Acryl | | | | Aluminium Aluminium alloys / Aluminium-Legierungen | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) |
| 3 | 25000 | 2400 | 235 | 0.096 | 18000 | 1700 | 170 | 0.094 |
| 4 | 20000 | 2400 | 250 | 0.120 | 15000 | 1800 | 190 | 0.120 |
| 5 | 15000 | 2200 | 235 | 0.147 | 12000 | 1800 | 190 | 0.150 |
| 6 | 13500 | 2300 | 255 | 0.170 | 10000 | 1800 | 190 | 0.180 |
| 8 | 10000 | 2400 | 250 | 0.240 | 7800 | 1900 | 195 | 0.244 |
| 10 | 8000 | 2400 | 250 | 0.300 | 6000 | 2000 | 190 | 0.333 |
| 12 | 6700 | 2300 | 255 | 0.343 | 5000 | 2200 | 190 | 0.440 |





# Single flute End Mills.

***For aluminium and plastic materials***

*Long series, one flute*

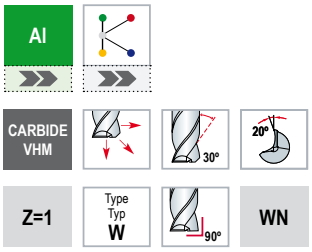
# Einschneidiger-Schaftfräser

***Für Aluminium und Kunststoffe***

*Lange Ausführung, eine Schneide*

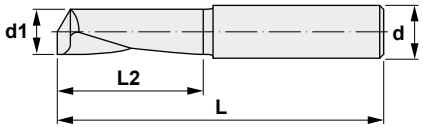
Characteristics:
Right-hand cutting with right-hand spiral.
Especially suited for cutting aluminium and aluminium-alloys.

Eigenschaften:
Rechtsschneidend mit Rechtsdrall.
Besonders geeignet für die Bearbeitung von Aluminium und Aluminium-Legierungen.





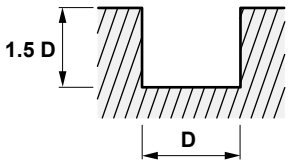





## 6610

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 661006 | 1 | 6 | 6 | 25 | 80 |
| 661008 | 1 | 8 | 8 | 35 | 90 |
| 661010 | 1 | 10 | 10 | 45 | 100 |
| 661012 | 1 | 12 | 12 | 50 | 100 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Acrylic / Acryl | | | | Aluminium Aluminium alloys / Aluminium-Legierungen | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) |
| **6** | 13500 | 2300 | 255 | 0.170 | 10000 | 1800 | 190 | 0.180 |
| **8** | 10000 | 2400 | 250 | 0.240 | 7800 | 1900 | 195 | 0.244 |
| **10** | 8000 | 2400 | 250 | 0.300 | 6000 | 2000 | 190 | 0.333 |
| **12** | 6700 | 2300 | 255 | 0.343 | 5000 | 2200 | 190 | 0.440 |





# Solid carbide End Mills.

## *For aluminium and plastic materials*

*Short series, two flutes*

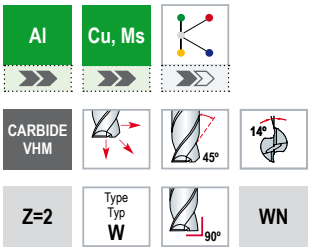
# VHM-Schaftfräser

## *Für Aluminium und Kunststoffe*

*Kurze Ausführung, zwei Schneiden*

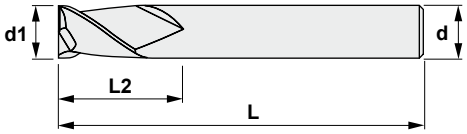
Characteristics:
Recommended for milling aluminium and aluminium-alloys, plastics, copper-alloys and non-ferrous metals.

Eigenschaften:
Empfohlen zum Fräsen von Aluminium und Aluminium-Legierungen, Kunststoffen, Kupfer-Legierungen und NE-Metallen.





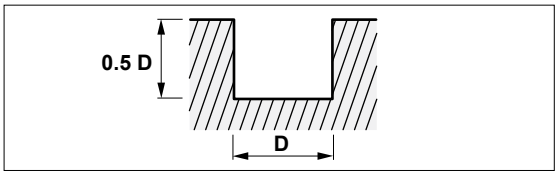




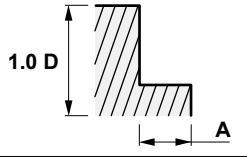

# 6520

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 652003 | 2 | 3 | 6 | 8 | 50 |
| 652004 | 2 | 4 | 6 | 11 | 50 |
| 652005 | 2 | 5 | 6 | 13 | 50 |
| 652006 | 2 | 6 | 6 | 16 | 50 |
| 652008 | 2 | 8 | 8 | 19 | 60 |
| 652010 | 2 | 10 | 10 | 25 | 72 |
| 652012 | 2 | 12 | 12 | 30 | 75 |
| 652014 | 2 | 14 | 14 | 35 | 84 |
| 652016 | 2 | 16 | 16 | 40 | 92 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien — Aluminium, Aluminium alloys / Aluminium-Legierungen | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) |
| **3** | 10000 | 700 | 95 | 0.035 | 10000 | 900 | 95 | 0.045 |
| **4** | 10000 | 900 | 125 | 0.045 | 10000 | 1100 | 125 | 0.055 |
| **5** | 10000 | 1000 | 155 | 0.050 | 10000 | 1300 | 155 | 0.065 |
| **6** | 10000 | 1200 | 190 | 0.060 | 10000 | 1500 | 190 | 0.075 |
| **8** | 8000 | 1400 | 200 | 0.088 | 8000 | 1800 | 200 | 0.113 |
| **10** | 8000 | 1700 | 250 | 0.106 | 8000 | 2100 | 250 | 0.131 |
| **12** | 8000 | 2100 | 300 | 0.131 | 8000 | 2600 | 300 | 0.163 |
| **14** | 6000 | 1800 | 265 | 0.150 | 6000 | 2200 | 265 | 0.183 |
| **16** | 6000 | 1900 | 300 | 0.158 | 6000 | 2400 | 300 | 0.200 |




A= Ø3 ~ Ø10 = 0.25 x D
Ø12 ~ Ø16 = 0.5 x D





# Solid carbide End Mills.

## *For aluminium and plastic materials*

*Short series, three flutes*

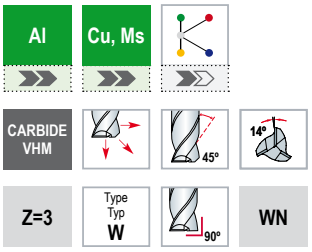
# VHM-Schaftfräser

## *Für Aluminium und Kunststoffe*

*Kurze Ausführung, drei Schneiden*

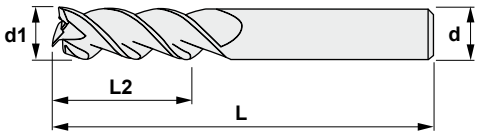
Characteristics:
Recommended for milling aluminium and aluminium-alloys, plastics, copper-alloys and non-ferrous metals.

Eigenschaften:
Empfohlen zum Fräsen von Aluminium und Aluminium-Legierungen, Kunststoffen, Kupfer-Legierungen und NE-Metallen.





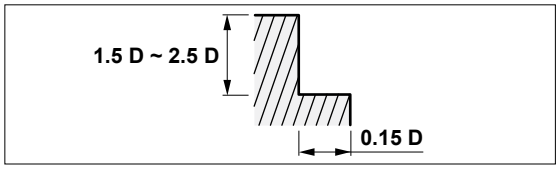


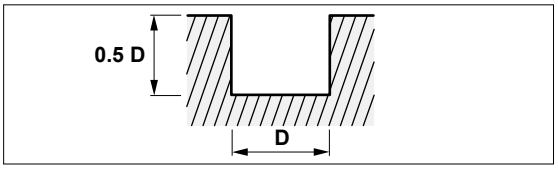



# 6530

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 653003 | 3 | 3 | 6 | 8 | 50 |
| 653004 | 3 | 4 | 6 | 11 | 50 |
| 653005 | 3 | 5 | 6 | 13 | 50 |
| 653006 | 3 | 6 | 6 | 16 | 50 |
| 653008 | 3 | 8 | 8 | 19 | 60 |
| 653010 | 3 | 10 | 10 | 25 | 72 |
| 653012 | 3 | 12 | 12 | 30 | 75 |
| 653016 | 3 | 16 | 16 | 40 | 92 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien — Aluminium — Low silicon aluminium / Siliziumarmer Aluminium | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) |
| **3** | 7000 | 940 | 65 | 0.045 | 7000 | 730 | 65 | 0.035 |
| **4** | 7000 | 1150 | 90 | 0.055 | 7000 | 940 | 90 | 0.045 |
| **5** | 7000 | 1360 | 110 | 0.065 | 7000 | 1050 | 110 | 0.050 |
| **6** | 7000 | 1580 | 130 | 0.075 | 7000 | 1250 | 130 | 0.060 |
| **8** | 5600 | 1900 | 140 | 0.113 | 5600 | 1470 | 140 | 0.088 |
| **10** | 5600 | 2200 | 175 | 0.131 | 5600 | 1780 | 175 | 0.106 |
| **12** | 5600 | 2740 | 210 | 0.163 | 5600 | 2200 | 210 | 0.131 |
| **16** | 4200 | 2520 | 210 | 0.200 | 4200 | 1990 | 210 | 0.158 |



# Solid carbide End Mills. For roughing.

## *For high speed cutting (HSC) <56HRC*

*Short series, four flutes*



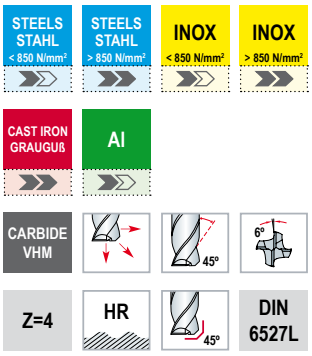
# VHM-Schruppfräser

## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Kurze Ausführung, vier Schneiden*

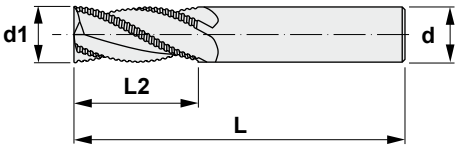
Characteristics:
Solid carbide high performance roughing cutter, especially suitable for all kind of steels up to 1.400 N/mm², higher tensile stainless steels, grey cast iron as well as short chipping aluminium and aluminium cast. High cutting performance.

Eigenschaften:
VHM-Hochleistungs-Schruppfräser, besonders geeignet für alle Stahlwerkstoffe bis 1.400 N/mm², höherfeste rostfreie Stähle, Grauguß sowie kurzspanendes Aluminium und Aluminiumguß. Hohe Zerspanungsleistung.







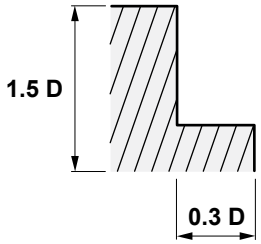



# 6640

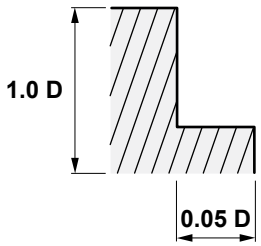
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 664006 | 4 | 6 | 6 | 16 | 50 |
| 664008 | 4 | 8 | 8 | 19 | 60 |
| 664010 | 4 | 10 | 10 | 22 | 75 |
| 664012 | 4 | 12 | 12 | 26 | 75 |
| 664014 | 4 | 14 | 14 | 30 | 90 |
| 664016 | 4 | 16 | 16 | 32 | 100 |
| 664020 | 4 | 20 | 20 | 38 | 100 |

# 6640 *Solid carbide End Mills. For roughing. VHM-Schruppfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC38 / 1000 ~ 1200 N/mm² | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) |
| **6** | 13250 | 1970 | 250 | 0.050 | 10550 | 710 | 200 | 0.022 |
| **8** | 9850 | 1970 | 250 | 0.067 | 7800 | 710 | 195 | 0.023 |
| **10** | 7800 | 1970 | 245 | 0.063 | 6450 | 710 | 205 | 0.028 |
| **12** | 6800 | 2040 | 255 | 0.075 | 5100 | 680 | 190 | 0.033 |
| **14** | 5800 | 2040 | 255 | 0.088 | 4400 | 710 | 195 | 0.040 |
| **16** | 5100 | 2040 | 255 | 0.100 | 4100 | 650 | 205 | 0.040 |
| **20** | 4100 | 1840 | 260 | 0.112 | 3050 | 480 | 190 | 0.039 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Stainless steels / Rostfreier Stahl<br>HRC38 ~ HRC45 / 1200 ~ 1400 N/mm² | | | | Inconel | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) fz (Mm/Zahn) |
| **6** | 7150 | 480 | 135 | 0.022 | 2050 | 160 | 40 | 0.026 |
| **8** | 5350 | 480 | 135 | 0.022 | 1550 | 150 | 40 | 0.024 |
| **10** | 4350 | 480 | 135 | 0.028 | 1100 | 160 | 35 | 0.036 |
| **12** | 3550 | 480 | 135 | 0.034 | 1000 | 160 | 40 | 0.040 |
| **14** | 3050 | 480 | 135 | 0.039 | 750 | 110 | 35 | 0.037 |
| **16** | 2800 | 430 | 140 | 0.038 | 700 | 90 | 35 | 0.032 |
| **20** | 2050 | 310 | 130 | 0.038 | 550 | 90 | 35 | 0.041 |





# Solid carbide square End Mills.

## *For high speed cutting (HSC) <56HRC*

*Short series, two flutes*

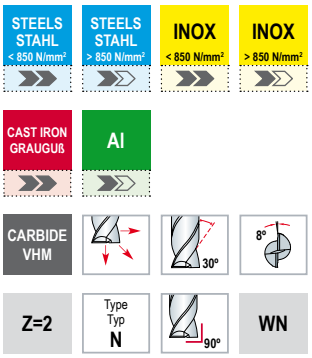
# VHM-viereckige Schaftfräser

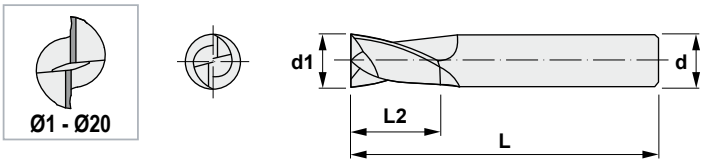
## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Kurze Ausführung, zwei Schneiden*

Characteristics:
Recommended for milling in materials with medium and high tensile strength up to 1.300 N/mm².
For drilling continued by horizontal milling with exact tolerances.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit bis ca. 1.300 N/mm². Zum Bohren und anschließenden Längsfräsen mit genauen Toleranzen.



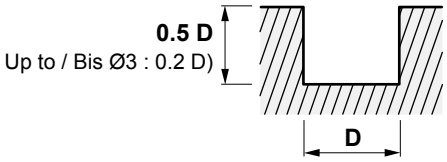




## 6020

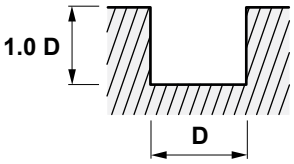
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6020010 | 2 | 1,0 | 3 | 3 | 38 |
| 6020015 | 2 | 1,5 | 3 | 4 | 38 |
| 6020020 | 2 | 2,0 | 3 | 6 | 38 |
| 6020030 | 2 | 3,0 | 3 | 8 | 38 |
| 6020040 | 2 | 4,0 | 4 | 11 | 50 |
| 6020050 | 2 | 5,0 | 5 | 13 | 50 |
| 6020060 | 2 | 6,0 | 6 | 16 | 50 |
| 6020080 | 2 | 8,0 | 8 | 19 | 60 |
| 6020100 | 2 | 10,0 | 10 | 22 | 72 |
| 6020120 | 2 | 12,0 | 12 | 26 | 75 |
| 6020140 | 2 | 14,0 | 14 | 30 | 84 |
| 6020160 | 2 | 16,0 | 16 | 32 | 92 |
| 6020200 | 2 | 20,0 | 20 | 38 | 100 |

# 6020 *Solid carbide square End Mills. VHM-viereckige Schaftfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl Alloyed steels / Legierter Stahl Tool steels / Werkzeugstahl ~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl Heat resistant steels / Hitzebeständiger Stahl ~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 14300 | 105 | 45 | 0.004 | 8500 | 65 | 25 | 0.004 | 7150 | 50 | 20 | 0.003 |
| **1.5** | 9350 | 150 | 45 | 0.008 | 5550 | 85 | 25 | 0.008 | 5600 | 80 | 25 | 0.007 |
| **2.0** | 7850 | 160 | 50 | 0.010 | 5150 | 100 | 30 | 0.010 | 4300 | 80 | 25 | 0.009 |
| **3.0** | 6100 | 180 | 55 | 0.015 | 3800 | 120 | 35 | 0.016 | 3150 | 100 | 30 | 0.016 |
| **4.0** | 5150 | 255 | 65 | 0.025 | 3150 | 155 | 40 | 0.025 | 2650 | 130 | 35 | 0.025 |
| **5.0** | 4300 | 270 | 70 | 0.031 | 2550 | 160 | 40 | 0.031 | 2150 | 135 | 35 | 0.031 |
| **6.0** | 3800 | 300 | 70 | 0.039 | 2300 | 190 | 45 | 0.041 | 1950 | 155 | 35 | 0.040 |
| **8.0** | 2850 | 325 | 70 | 0.057 | 1700 | 170 | 45 | 0.050 | 1450 | 155 | 35 | 0.053 |
| **10.0** | 2200 | 280 | 70 | 0.064 | 1350 | 135 | 40 | 0.050 | 1150 | 135 | 35 | 0.059 |
| **12.0** | 1850 | 240 | 70 | 0.065 | 1150 | 110 | 45 | 0.048 | 950 | 110 | 35 | 0.058 |
| **14.0** | 1700 | 215 | 75 | 0.063 | 1050 | 100 | 45 | 0.048 | 850 | 100 | 35 | 0.059 |
| **16.0** | 1500 | 185 | 75 | 0.062 | 950 | 95 | 50 | 0.050 | 700 | 95 | 35 | 0.068 |
| **20.0** | 1150 | 145 | 70 | 0.063 | 700 | 70 | 45 | 0.050 | 550 | 70 | 35 | 0.064 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 18700 | 205 | 60 | 0.005 | 44000 | 330 | 140 | 0.004 | 24700 | 200 | 80 | 0.004 |
| **1.5** | 12100 | 205 | 55 | 0.008 | 27500 | 385 | 130 | 0.007 | 20300 | 300 | 95 | 0.007 |
| **2.0** | 9350 | 220 | 60 | 0.012 | 22000 | 460 | 140 | 0.010 | 16500 | 340 | 105 | 0.010 |
| **3.0** | 6050 | 220 | 55 | 0.018 | 15400 | 460 | 145 | 0.015 | 11000 | 340 | 105 | 0.015 |
| **4.0** | 4600 | 220 | 60 | 0.024 | 11000 | 460 | 140 | 0.021 | 8800 | 340 | 110 | 0.019 |
| **5.0** | 3650 | 220 | 55 | 0.030 | 9150 | 460 | 145 | 0.025 | 6800 | 340 | 105 | 0.025 |
| **6.0** | 2950 | 255 | 55 | 0.043 | 7600 | 485 | 145 | 0.032 | 5700 | 375 | 105 | 0.033 |
| **8.0** | 2200 | 275 | 55 | 0.063 | 5700 | 485 | 145 | 0.043 | 4400 | 375 | 110 | 0.043 |
| **10.0** | 1850 | 285 | 60 | 0.077 | 4600 | 485 | 145 | 0.053 | 3400 | 375 | 105 | 0.055 |
| **12.0** | 1450 | 295 | 55 | 0.102 | 3750 | 485 | 140 | 0.065 | 2850 | 375 | 105 | 0.066 |
| **14.0** | 1300 | 310 | 55 | 0.119 | 3300 | 485 | 145 | 0.073 | 2400 | 375 | 105 | 0.078 |
| **16.0** | 1100 | 320 | 55 | 0.145 | 2850 | 485 | 145 | 0.085 | 2200 | 375 | 110 | 0.085 |
| **20.0** | 900 | 340 | 55 | 0.189 | 2200 | 485 | 140 | 0.110 | 1700 | 375 | 105 | 0.110 |





## Solid carbide square End Mills.

***For high speed cutting (HSC) <56HRC***

*Long series, two flutes*

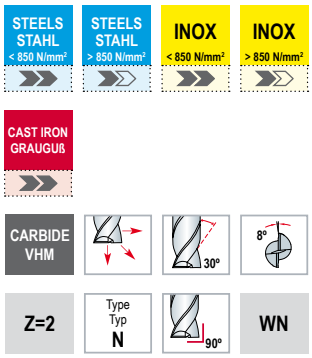
## VHM-viereckige Schaftfräser

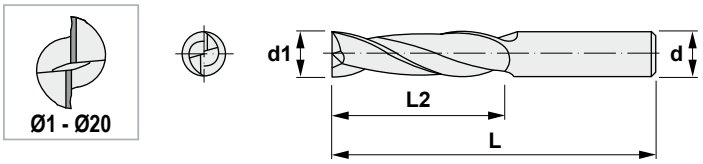
***Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC***

*Lange Ausführung, zwei Schneiden*

Characteristics:
Recommended for milling in materials with medium and high tensile strength up to 1.300 N/mm².
For drilling continued by horizontal milling with exact tolerances.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit bis ca. 1.300 N/mm². Zum Bohren und anschließenden Längsfräsen mit genauen Toleranzen.



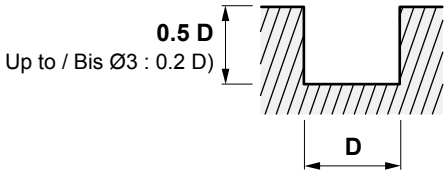




# 6021

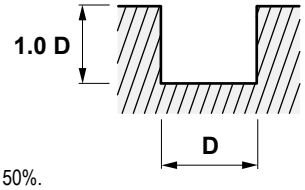
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 602101 | 2 | 1 | 3 | 5 | 60 |
| 602102 | 2 | 2 | 3 | 10 | 60 |
| 602103 | 2 | 3 | 3 | 15 | 60 |
| 602104 | 2 | 4 | 4 | 20 | 80 |
| 602105 | 2 | 5 | 5 | 25 | 80 |
| 602106 | 2 | 6 | 6 | 25 | 80 |
| 602108 | 2 | 8 | 8 | 35 | 90 |
| 602110 | 2 | 10 | 10 | 45 | 100 |
| 602112 | 2 | 12 | 12 | 50 | 100 |
| 602114 | 2 | 14 | 14 | 65 | 150 |
| 602116 | 2 | 16 | 16 | 65 | 150 |
| 602120 | 2 | 20 | 20 | 70 | 150 |

# 6021 *Solid carbide square End Mills. VHM-viereckige Schaftfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl Alloyed steels / Legierter Stahl Tool steels / Werkzeugstahl ~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl Heat resistant steels / Hitzebeständiger Stahl ~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| 1 | 14300 | 105 | 45 | 0.004 | 8500 | 65 | 25 | 0.004 | 7150 | 50 | 20 | 0.003 |
| 2 | 7850 | 160 | 50 | 0.010 | 5150 | 100 | 30 | 0.010 | 4300 | 80 | 25 | 0.009 |
| 3 | 6100 | 180 | 55 | 0.015 | 3800 | 120 | 35 | 0.016 | 3150 | 100 | 30 | 0.016 |
| 4 | 5150 | 255 | 65 | 0.025 | 3150 | 155 | 40 | 0.025 | 2650 | 130 | 35 | 0.025 |
| 5 | 4300 | 270 | 70 | 0.031 | 2550 | 160 | 40 | 0.031 | 2150 | 135 | 35 | 0.031 |
| 6 | 3800 | 300 | 70 | 0.039 | 2300 | 190 | 45 | 0.041 | 1950 | 155 | 35 | 0.040 |
| 8 | 2850 | 325 | 70 | 0.057 | 1700 | 170 | 45 | 0.050 | 1450 | 155 | 35 | 0.053 |
| 10 | 2200 | 280 | 70 | 0.064 | 1350 | 135 | 40 | 0.050 | 1150 | 135 | 35 | 0.059 |
| 12 | 1850 | 240 | 70 | 0.065 | 1150 | 110 | 45 | 0.048 | 950 | 110 | 35 | 0.058 |
| 14 | 1700 | 215 | 75 | 0.063 | 1050 | 100 | 45 | 0.048 | 850 | 100 | 35 | 0.059 |
| 16 | 1500 | 185 | 75 | 0.062 | 950 | 95 | 50 | 0.050 | 700 | 95 | 35 | 0.068 |
| 20 | 1150 | 145 | 70 | 0.063 | 700 | 70 | 45 | 0.050 | 550 | 70 | 35 | 0.064 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| 1 | 18700 | 205 | 60 | 0.005 | 44000 | 330 | 140 | 0.004 | 24700 | 200 | 80 | 0.004 |
| 2 | 9350 | 220 | 60 | 0.012 | 22000 | 460 | 140 | 0.010 | 16500 | 340 | 105 | 0.010 |
| 3 | 6050 | 220 | 55 | 0.018 | 15400 | 460 | 145 | 0.015 | 11000 | 340 | 105 | 0.015 |
| 4 | 4600 | 220 | 60 | 0.024 | 11000 | 460 | 140 | 0.021 | 8800 | 340 | 110 | 0.019 |
| 5 | 3650 | 220 | 55 | 0.030 | 9150 | 460 | 145 | 0.025 | 6800 | 340 | 105 | 0.025 |
| 6 | 2950 | 255 | 55 | 0.043 | 7600 | 485 | 145 | 0.032 | 5700 | 375 | 105 | 0.033 |
| 8 | 2200 | 275 | 55 | 0.063 | 5700 | 485 | 145 | 0.043 | 4400 | 375 | 110 | 0.043 |
| 10 | 1850 | 285 | 60 | 0.077 | 4600 | 485 | 145 | 0.053 | 3400 | 375 | 105 | 0.055 |
| 12 | 1450 | 295 | 55 | 0.102 | 3750 | 485 | 140 | 0.065 | 2850 | 375 | 105 | 0.066 |
| 14 | 1300 | 310 | 55 | 0.119 | 3300 | 485 | 145 | 0.073 | 2400 | 375 | 105 | 0.078 |
| 16 | 1100 | 320 | 55 | 0.145 | 2850 | 485 | 145 | 0.085 | 2200 | 375 | 110 | 0.085 |
| 20 | 900 | 340 | 55 | 0.189 | 2200 | 485 | 140 | 0.110 | 1700 | 375 | 105 | 0.110 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

G

# Solid carbide square End Mills.

## *For high speed cutting (HSC) <56HRC*

*Short series, three flutes*



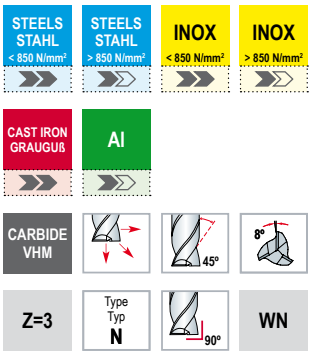
# VHM-viereckige Schaftfräser

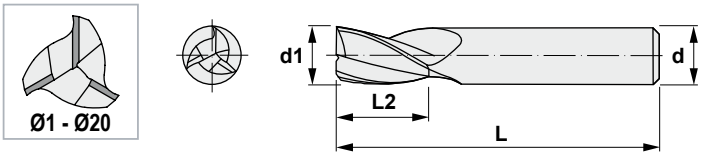
## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Kurze Ausführung, drei Schneiden*

Characteristics:
Recommended for milling in materials with medium and high tensile strength up to 1.300 N/mm².
For drilling continued by horizontal milling with exact tolerances.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit bis ca. 1.300 N/mm². Zum Bohren und anschließenden Längsfräsen mit genauen Toleranzen.

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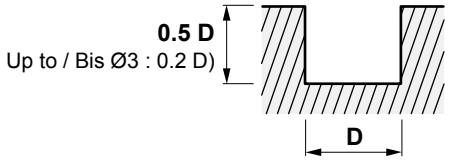
# 6030

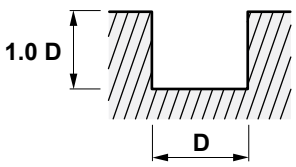
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6030010 | 3 | 1,0 | 3 | 3 | 38 |
| 6030015 | 3 | 1,5 | 3 | 4 | 38 |
| 6030020 | 3 | 2,0 | 3 | 6 | 38 |
| 6030030 | 3 | 3,0 | 3 | 8 | 38 |
| 6030040 | 3 | 4,0 | 4 | 11 | 50 |
| 6030050 | 3 | 5,0 | 5 | 13 | 50 |
| 6030060 | 3 | 6,0 | 6 | 16 | 50 |
| 6030080 | 3 | 8,0 | 8 | 19 | 60 |
| 6030100 | 3 | 10,0 | 10 | 22 | 72 |
| 6030120 | 3 | 12,0 | 12 | 26 | 75 |
| 6030140 | 3 | 14,0 | 14 | 30 | 84 |
| 6030160 | 3 | 16,0 | 16 | 32 | 92 |
| 6030200 | 3 | 20,0 | 20 | 38 | 100 |

# 6030 *Solid carbide square End Mills. Finish slotting.*
## *VHM-viereckige Schaftfräser. Nuten-Schlichten.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 14300 | 75 | 45 | 0.002 | 8500 | 45 | 25 | 0.002 | 7150 | 35 | 20 | 0.002 |
| **1.5** | 12750 | 105 | 60 | 0.003 | 5550 | 60 | 25 | 0.004 | 5600 | 55 | 25 | 0.003 |
| **2.0** | 7850 | 110 | 50 | 0.005 | 5150 | 70 | 30 | 0.005 | 4300 | 55 | 25 | 0.004 |
| **3.0** | 6100 | 125 | 55 | 0.007 | 3800 | 85 | 35 | 0.007 | 3150 | 70 | 30 | 0.007 |
| **4.0** | 5150 | 180 | 65 | 0.012 | 3150 | 110 | 40 | 0.012 | 2650 | 90 | 35 | 0.011 |
| **5.0** | 4300 | 190 | 70 | 0.015 | 2550 | 110 | 40 | 0.014 | 2150 | 95 | 35 | 0.015 |
| **6.0** | 3800 | 210 | 70 | 0.018 | 2300 | 135 | 45 | 0.020 | 1950 | 110 | 35 | 0.019 |
| **8.0** | 2850 | 230 | 70 | 0.027 | 1700 | 120 | 45 | 0.024 | 1450 | 110 | 35 | 0.025 |
| **10.0** | 2200 | 195 | 70 | 0.030 | 1350 | 95 | 40 | 0.023 | 1150 | 95 | 35 | 0.028 |
| **12.0** | 1850 | 170 | 70 | 0.031 | 1150 | 75 | 45 | 0.022 | 950 | 75 | 35 | 0.026 |
| **14.0** | 1700 | 150 | 75 | 0.029 | 1050 | 70 | 45 | 0.022 | 850 | 70 | 35 | 0.027 |
| **16.0** | 1500 | 130 | 75 | 0.029 | 950 | 65 | 50 | 0.023 | 700 | 65 | 35 | 0.031 |
| **20.0** | 1150 | 100 | 70 | 0.029 | 700 | 50 | 45 | 0.024 | 550 | 50 | 35 | 0.030 |



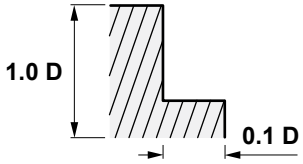

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 18700 | 185 | 60 | 0.003 | 44000 | 300 | 140 | 0.002 | 24700 | 180 | 80 | 0.002 |
| **1.5** | 12100 | 185 | 55 | 0.005 | 27500 | 345 | 130 | 0.004 | 20300 | 270 | 95 | 0.004 |
| **2.0** | 9350 | 200 | 60 | 0.007 | 22000 | 420 | 140 | 0.006 | 16500 | 310 | 105 | 0.006 |
| **3.0** | 6050 | 200 | 55 | 0.011 | 15400 | 430 | 145 | 0.009 | 11000 | 310 | 105 | 0.009 |
| **4.0** | 4600 | 185 | 60 | 0.013 | 11000 | 420 | 140 | 0.013 | 8800 | 310 | 110 | 0.012 |
| **5.0** | 3650 | 200 | 55 | 0.018 | 9150 | 420 | 145 | 0.015 | 6800 | 310 | 105 | 0.015 |
| **6.0** | 2950 | 230 | 55 | 0.026 | 7600 | 440 | 145 | 0.019 | 5700 | 340 | 105 | 0.020 |
| **8.0** | 2200 | 240 | 55 | 0.036 | 5700 | 440 | 145 | 0.026 | 4400 | 330 | 110 | 0.025 |
| **10.0** | 1850 | 255 | 60 | 0.046 | 4600 | 440 | 145 | 0.032 | 3400 | 330 | 105 | 0.032 |
| **12.0** | 1450 | 275 | 55 | 0.063 | 3750 | 430 | 140 | 0.038 | 2850 | 330 | 105 | 0.039 |
| **14.0** | 1300 | 285 | 55 | 0.073 | 3300 | 430 | 145 | 0.043 | 2400 | 330 | 105 | 0.046 |
| **16.0** | 1100 | 285 | 55 | 0.086 | 2850 | 430 | 145 | 0.050 | 2200 | 330 | 110 | 0.050 |
| **20.0** | 900 | 310 | 55 | 0.115 | 2200 | 430 | 140 | 0.065 | 1700 | 330 | 105 | 0.065 |



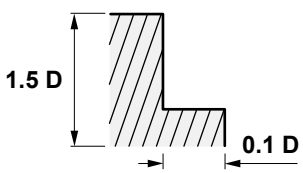

* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

# 6030 *Solid carbide square End Mills. Finish side cutting.*
## *VHM-viereckige Schaftfräser. Seitwärts Schlichten.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 17600 | 110 | 55 | 0.002 | 10250 | 65 | 30 | 0.002 | 8650 | 55 | 25 | 0.002 |
| **1.5** | 11800 | 160 | 55 | 0.005 | 7050 | 85 | 35 | 0.004 | 7050 | 90 | 35 | 0.004 |
| **2.0** | 9850 | 180 | 60 | 0.006 | 6450 | 120 | 40 | 0.006 | 5350 | 100 | 35 | 0.006 |
| **3.0** | 7600 | 205 | 70 | 0.009 | 4750 | 130 | 45 | 0.009 | 3950 | 105 | 35 | 0.009 |
| **4.0** | 6450 | 365 | 80 | 0.019 | 3950 | 220 | 50 | 0.019 | 3300 | 180 | 40 | 0.018 |
| **5.0** | 5350 | 385 | 85 | 0.024 | 3200 | 230 | 50 | 0.024 | 2700 | 195 | 40 | 0.024 |
| **6.0** | 4750 | 425 | 90 | 0.030 | 2850 | 265 | 55 | 0.031 | 2400 | 215 | 45 | 0.030 |
| **8.0** | 3550 | 450 | 90 | 0.042 | 2150 | 245 | 55 | 0.038 | 1800 | 225 | 45 | 0.042 |
| **10.0** | 2750 | 390 | 85 | 0.047 | 1700 | 195 | 55 | 0.038 | 1450 | 195 | 45 | 0.045 |
| **12.0** | 2350 | 330 | 90 | 0.047 | 1450 | 160 | 55 | 0.037 | 1150 | 155 | 45 | 0.045 |
| **14.0** | 2100 | 465 | 90 | 0.074 | 1300 | 145 | 55 | 0.037 | 1050 | 140 | 45 | 0.044 |
| **16.0** | 1850 | 265 | 95 | 0.048 | 1150 | 130 | 60 | 0.038 | 900 | 130 | 45 | 0.048 |
| **20.0** | 1450 | 205 | 90 | 0.047 | 900 | 100 | 55 | 0.037 | 700 | 100 | 45 | 0.048 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 18700 | 460 | 60 | 0.008 | 44000 | 750 | 140 | 0.006 | 24700 | 450 | 80 | 0.006 |
| **1.5** | 12100 | 460 | 55 | 0.013 | 27500 | 860 | 130 | 0.010 | 20300 | 675 | 95 | 0.011 |
| **2.0** | 9350 | 475 | 60 | 0.017 | 22000 | 1035 | 140 | 0.016 | 16500 | 770 | 105 | 0.016 |
| **3.0** | 6050 | 475 | 55 | 0.026 | 15400 | 990 | 145 | 0.021 | 11000 | 760 | 105 | 0.023 |
| **4.0** | 4600 | 485 | 60 | 0.035 | 11000 | 1035 | 140 | 0.031 | 8800 | 770 | 110 | 0.029 |
| **5.0** | 3650 | 485 | 55 | 0.044 | 9150 | 1010 | 145 | 0.037 | 6800 | 760 | 105 | 0.037 |
| **6.0** | 2950 | 570 | 55 | 0.064 | 7600 | 1100 | 145 | 0.048 | 5700 | 825 | 105 | 0.048 |
| **8.0** | 2200 | 615 | 55 | 0.093 | 5700 | 1100 | 145 | 0.064 | 4400 | 825 | 110 | 0.063 |
| **10.0** | 1850 | 640 | 60 | 0.115 | 4600 | 1100 | 145 | 0.080 | 3400 | 825 | 105 | 0.081 |
| **12.0** | 1450 | 670 | 55 | 0.154 | 3750 | 1100 | 140 | 0.098 | 2850 | 825 | 105 | 0.096 |
| **14.0** | 1300 | 705 | 55 | 0.181 | 3300 | 1100 | 145 | 0.111 | 2400 | 825 | 105 | 0.115 |
| **16.0** | 1100 | 725 | 55 | 0.220 | 2850 | 1100 | 145 | 0.129 | 2200 | 825 | 110 | 0.125 |
| **20.0** | 900 | 770 | 55 | 0.285 | 2200 | 1100 | 140 | 0.167 | 1700 | 825 | 105 | 0.162 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

# Solid carbide square End Mills.

## *For high speed cutting (HSC) <56HRC*

*Long series, three flutes*



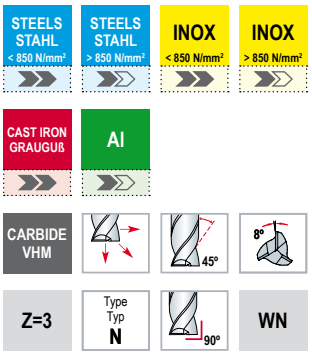
# VHM-viereckige Schaftfräser

## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Lange Ausführung, drei Schneiden*

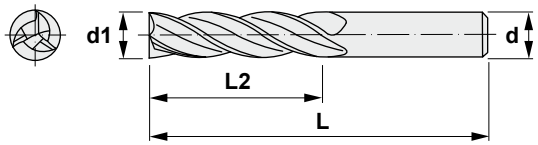
Characteristics:
Recommended for milling in materials with medium and high tensile strength up to 1.300 N/mm².
For drilling continued by horizontal milling with exact tolerances.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit bis ca. 1.300 N/mm². Zum Bohren und anschließenden Längsfräsen mit genauen Toleranzen.







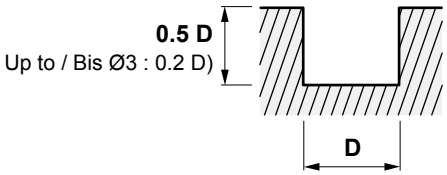



# 6031

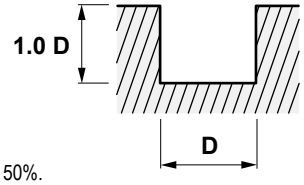
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 603101 | 3 | 1 | 3 | 5 | 60 |
| 603102 | 3 | 2 | 3 | 10 | 60 |
| 603103 | 3 | 3 | 3 | 15 | 60 |
| 603104 | 3 | 4 | 4 | 20 | 80 |
| 603105 | 3 | 5 | 5 | 25 | 80 |
| 603106 | 3 | 6 | 6 | 25 | 80 |
| 603108 | 3 | 8 | 8 | 35 | 90 |
| 603110 | 3 | 10 | 10 | 45 | 100 |
| 603112 | 3 | 12 | 12 | 50 | 100 |
| 603114 | 3 | 14 | 14 | 65 | 150 |
| 603116 | 3 | 16 | 16 | 65 | 150 |
| 603120 | 3 | 20 | 20 | 70 | 150 |

# 6031 *Solid carbide square End Mills. Finish slotting.*
## *VHM-viereckige Schaftfräser. Nuten-Schlichten.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1** | 14300 | 75 | 45 | 0.002 | 8500 | 45 | 25 | 0.002 | 7150 | 35 | 20 | 0.002 |
| **2** | 7850 | 110 | 50 | 0.005 | 5150 | 70 | 30 | 0.005 | 4300 | 55 | 25 | 0.004 |
| **3** | 6100 | 125 | 55 | 0.007 | 3800 | 85 | 35 | 0.007 | 3150 | 70 | 30 | 0.007 |
| **4** | 5150 | 180 | 65 | 0.012 | 3150 | 110 | 40 | 0.012 | 2650 | 90 | 35 | 0.011 |
| **5** | 4300 | 190 | 70 | 0.015 | 2550 | 110 | 40 | 0.014 | 2150 | 95 | 35 | 0.015 |
| **6** | 3800 | 210 | 70 | 0.018 | 2300 | 135 | 45 | 0.020 | 1950 | 110 | 35 | 0.019 |
| **8** | 2850 | 230 | 70 | 0.027 | 1700 | 120 | 45 | 0.024 | 1450 | 110 | 35 | 0.025 |
| **10** | 2200 | 195 | 70 | 0.030 | 1350 | 95 | 40 | 0.023 | 1150 | 95 | 35 | 0.028 |
| **12** | 1850 | 170 | 70 | 0.031 | 1150 | 75 | 45 | 0.022 | 950 | 75 | 35 | 0.026 |
| **14** | 1700 | 150 | 75 | 0.029 | 1050 | 70 | 45 | 0.022 | 850 | 70 | 35 | 0.027 |
| **16** | 1500 | 130 | 75 | 0.029 | 950 | 65 | 50 | 0.023 | 700 | 65 | 35 | 0.031 |
| **20** | 1150 | 100 | 70 | 0.029 | 700 | 50 | 45 | 0.024 | 550 | 50 | 35 | 0.030 |



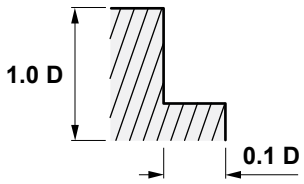

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1** | 18700 | 185 | 60 | 0.003 | 44000 | 300 | 140 | 0.002 | 24700 | 180 | 80 | 0.002 |
| **2** | 9350 | 200 | 60 | 0.007 | 22000 | 420 | 140 | 0.006 | 16500 | 310 | 105 | 0.006 |
| **3** | 6050 | 200 | 55 | 0.011 | 15400 | 430 | 145 | 0.009 | 11000 | 310 | 105 | 0.009 |
| **4** | 4600 | 185 | 60 | 0.013 | 11000 | 420 | 140 | 0.013 | 8800 | 310 | 110 | 0.012 |
| **5** | 3650 | 200 | 55 | 0.018 | 9150 | 420 | 145 | 0.015 | 6800 | 310 | 105 | 0.015 |
| **6** | 2950 | 230 | 55 | 0.026 | 7600 | 440 | 145 | 0.019 | 5700 | 340 | 105 | 0.020 |
| **8** | 2200 | 240 | 55 | 0.036 | 5700 | 440 | 145 | 0.026 | 4400 | 330 | 110 | 0.025 |
| **10** | 1850 | 255 | 60 | 0.046 | 4600 | 440 | 145 | 0.032 | 3400 | 330 | 105 | 0.032 |
| **12** | 1450 | 275 | 55 | 0.063 | 3750 | 430 | 140 | 0.038 | 2850 | 330 | 105 | 0.039 |
| **14** | 1300 | 285 | 55 | 0.073 | 3300 | 430 | 145 | 0.043 | 2400 | 330 | 105 | 0.046 |
| **16** | 1100 | 285 | 55 | 0.086 | 2850 | 430 | 145 | 0.050 | 2200 | 330 | 110 | 0.050 |
| **20** | 900 | 310 | 55 | 0.115 | 2200 | 430 | 140 | 0.065 | 1700 | 330 | 105 | 0.065 |



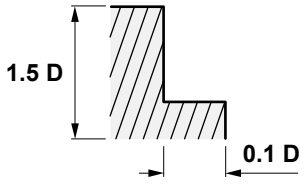

* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

# 6031 *Solid carbide square End Mills. Finish side cutting.*
# *VHM-viereckige Schaftfräser. Seitwärts Schlichten.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl<br>Alloyed steels / Legierter Stahl<br>Tool steels / Werkzeugstahl<br>~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl<br>Heat resistant steels / Hitzebeständiger Stahl<br>~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1** | 17600 | 110 | 55 | 0.002 | 10250 | 65 | 30 | 0.002 | 8650 | 55 | 25 | 0.002 |
| **2** | 9850 | 180 | 60 | 0.006 | 6450 | 120 | 40 | 0.006 | 5350 | 100 | 35 | 0.006 |
| **3** | 7600 | 205 | 70 | 0.009 | 4750 | 130 | 45 | 0.009 | 3950 | 105 | 35 | 0.009 |
| **4** | 6450 | 365 | 80 | 0.019 | 3950 | 220 | 50 | 0.019 | 3300 | 180 | 40 | 0.018 |
| **5** | 5350 | 385 | 85 | 0.024 | 3200 | 230 | 50 | 0.024 | 2700 | 195 | 40 | 0.024 |
| **6** | 4750 | 425 | 90 | 0.030 | 2850 | 265 | 55 | 0.031 | 2400 | 215 | 45 | 0.030 |
| **8** | 3550 | 450 | 90 | 0.042 | 2150 | 245 | 55 | 0.038 | 1800 | 225 | 45 | 0.042 |
| **10** | 2750 | 390 | 85 | 0.047 | 1700 | 195 | 55 | 0.038 | 1450 | 195 | 45 | 0.045 |
| **12** | 2350 | 330 | 90 | 0.047 | 1450 | 160 | 55 | 0.037 | 1150 | 155 | 45 | 0.045 |
| **14** | 2100 | 465 | 90 | 0.074 | 1300 | 145 | 55 | 0.037 | 1050 | 140 | 45 | 0.044 |
| **16** | 1850 | 265 | 95 | 0.048 | 1150 | 130 | 60 | 0.038 | 900 | 130 | 45 | 0.048 |
| **20** | 1450 | 205 | 90 | 0.047 | 900 | 100 | 55 | 0.037 | 700 | 100 | 45 | 0.048 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing<br>Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1** | 18700 | 460 | 60 | 0.008 | 44000 | 750 | 140 | 0.006 | 24700 | 450 | 80 | 0.006 |
| **2** | 9350 | 475 | 60 | 0.017 | 22000 | 1035 | 140 | 0.016 | 16500 | 770 | 105 | 0.016 |
| **3** | 6050 | 475 | 55 | 0.026 | 15400 | 990 | 145 | 0.021 | 11000 | 760 | 105 | 0.023 |
| **4** | 4600 | 485 | 60 | 0.035 | 11000 | 1035 | 140 | 0.031 | 8800 | 770 | 110 | 0.029 |
| **5** | 3650 | 485 | 55 | 0.044 | 9150 | 1010 | 145 | 0.037 | 6800 | 760 | 105 | 0.037 |
| **6** | 2950 | 570 | 55 | 0.064 | 7600 | 1100 | 145 | 0.048 | 5700 | 825 | 105 | 0.048 |
| **8** | 2200 | 615 | 55 | 0.093 | 5700 | 1100 | 145 | 0.064 | 4400 | 825 | 110 | 0.063 |
| **10** | 1850 | 640 | 60 | 0.115 | 4600 | 1100 | 145 | 0.080 | 3400 | 825 | 105 | 0.081 |
| **12** | 1450 | 670 | 55 | 0.154 | 3750 | 1100 | 140 | 0.098 | 2850 | 825 | 105 | 0.096 |
| **14** | 1300 | 705 | 55 | 0.181 | 3300 | 1100 | 145 | 0.111 | 2400 | 825 | 105 | 0.115 |
| **16** | 1100 | 725 | 55 | 0.220 | 2850 | 1100 | 145 | 0.129 | 2200 | 825 | 110 | 0.125 |
| **20** | 900 | 770 | 55 | 0.285 | 2200 | 1100 | 140 | 0.167 | 1700 | 825 | 105 | 0.162 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

G



# Solid carbide square End Mills.

## *For high speed cutting (HSC) <56HRC*

*Short series, four flutes*

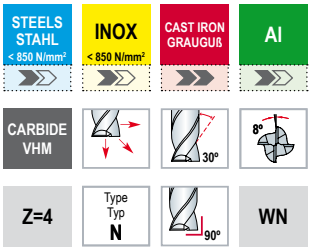
# VHM-viereckige Schaftfräser

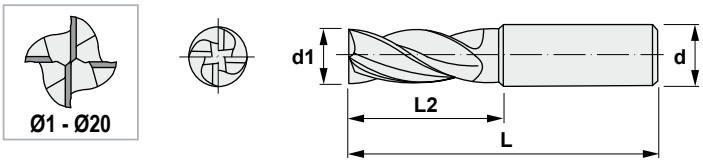
## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Kurze Ausführung, vier Schneiden*

Characteristics:
Recommended for milling in materials with medium and high tensile strength. For milling of slots with large depth and accurate fits, as well as face and surface milling. High cutting performance in chipping and a smooth run result an excellent surface.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit. Zum Fräsen von Nuten mit großer Bohrtiefe und exakten Passungen, ebenso zum Stirn- und Umfangfräsen geeignet. Hohe Zerspanungsleistung und große Laufruhe ergeben eine hervorragende Oberflächengüte.



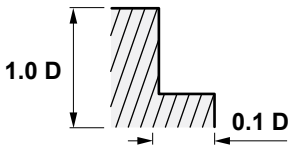




# 6040

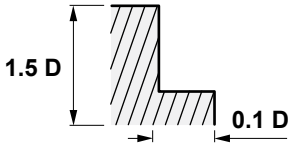
| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 6040010 | 4 | 1,0 | 3 | 3 | 38 |
| 6040015 | 4 | 1,5 | 3 | 4 | 38 |
| 6040020 | 4 | 2,0 | 3 | 6 | 38 |
| 6040030 | 4 | 3,0 | 3 | 8 | 38 |
| 6040040 | 4 | 4,0 | 4 | 11 | 50 |
| 6040050 | 4 | 5,0 | 5 | 13 | 50 |
| 6040060 | 4 | 6,0 | 6 | 16 | 50 |
| 6040080 | 4 | 8,0 | 8 | 19 | 60 |
| 6040100 | 4 | 10,0 | 10 | 22 | 72 |
| 6040120 | 4 | 12,0 | 12 | 26 | 75 |
| 6040140 | 4 | 14,0 | 14 | 30 | 84 |
| 6040160 | 4 | 16,0 | 16 | 32 | 92 |
| 6040200 | 4 | 20,0 | 20 | 38 | 100 |

# 6040 *Solid carbide square End Mills. VHM-viereckige Schaftfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl Alloyed steels / Legierter Stahl Tool steels / Werkzeugstahl ~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl Heat resistant steels / Hitzebeständiger Stahl ~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 17600 | 150 | 55 | 0.002 | 10250 | 85 | 30 | 0.002 | 8650 | 75 | 25 | 0.002 |
| **1.5** | 11800 | 215 | 55 | 0.005 | 7050 | 115 | 35 | 0.004 | 7050 | 120 | 35 | 0.004 |
| **2.0** | 9850 | 240 | 60 | 0.006 | 6450 | 145 | 40 | 0.006 | 5350 | 120 | 35 | 0.006 |
| **3.0** | 7600 | 270 | 70 | 0.009 | 4750 | 170 | 45 | 0.009 | 3950 | 145 | 35 | 0.009 |
| **4.0** | 6450 | 485 | 80 | 0.019 | 3950 | 300 | 50 | 0.019 | 3300 | 240 | 40 | 0.018 |
| **5.0** | 5350 | 510 | 85 | 0.024 | 3200 | 305 | 50 | 0.024 | 2700 | 255 | 40 | 0.024 |
| **6.0** | 4750 | 560 | 90 | 0.029 | 2850 | 350 | 55 | 0.031 | 2400 | 280 | 45 | 0.029 |
| **8.0** | 3550 | 605 | 90 | 0.043 | 2150 | 325 | 55 | 0.038 | 1800 | 300 | 45 | 0.042 |
| **10.0** | 2750 | 520 | 85 | 0.047 | 1700 | 255 | 55 | 0.038 | 1450 | 255 | 45 | 0.044 |
| **12.0** | 2350 | 440 | 90 | 0.047 | 1450 | 215 | 55 | 0.037 | 1150 | 205 | 45 | 0.045 |
| **14.0** | 2100 | 395 | 90 | 0.047 | 1300 | 195 | 55 | 0.038 | 1050 | 190 | 45 | 0.045 |
| **16.0** | 1850 | 350 | 95 | 0.047 | 1150 | 170 | 60 | 0.037 | 950 | 170 | 50 | 0.045 |
| **20.0** | 1450 | 270 | 90 | 0.047 | 900 | 135 | 55 | 0.038 | 700 | 130 | 45 | 0.046 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **1.0** | 18700 | 620 | 60 | 0.008 | 44000 | 1050 | 140 | 0.006 | 24700 | 605 | 80 | 0.006 |
| **1.5** | 12100 | 620 | 55 | 0.013 | 27500 | 1160 | 130 | 0.011 | 20300 | 910 | 95 | 0.011 |
| **2.0** | 9350 | 640 | 60 | 0.017 | 22000 | 1320 | 140 | 0.015 | 16500 | 1035 | 105 | 0.016 |
| **3.0** | 6050 | 640 | 55 | 0.026 | 15400 | 1320 | 145 | 0.021 | 11000 | 1035 | 105 | 0.024 |
| **4.0** | 4600 | 640 | 60 | 0.035 | 11000 | 1320 | 140 | 0.030 | 8800 | 1035 | 110 | 0.029 |
| **5.0** | 3650 | 640 | 55 | 0.044 | 9150 | 1320 | 145 | 0.036 | 6800 | 1035 | 105 | 0.038 |
| **6.0** | 2950 | 770 | 55 | 0.065 | 7600 | 1430 | 145 | 0.047 | 5700 | 1100 | 105 | 0.048 |
| **8.0** | 2200 | 815 | 55 | 0.093 | 5700 | 1430 | 145 | 0.063 | 4400 | 1100 | 110 | 0.063 |
| **10.0** | 1850 | 860 | 60 | 0.116 | 4600 | 1430 | 145 | 0.078 | 3400 | 1100 | 105 | 0.081 |
| **12.0** | 1450 | 900 | 55 | 0.155 | 3750 | 1430 | 140 | 0.095 | 2850 | 1100 | 105 | 0.096 |
| **14.0** | 1300 | 945 | 55 | 0.182 | 3300 | 1430 | 145 | 0.108 | 2400 | 1100 | 105 | 0.115 |
| **16.0** | 1100 | 970 | 55 | 0.220 | 2850 | 1430 | 145 | 0.125 | 2200 | 1100 | 110 | 0.125 |
| **20.0** | 900 | 1035 | 55 | 0.288 | 2200 | 1430 | 140 | 0.163 | 1700 | 1100 | 105 | 0.162 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

G



# Solid carbide square End Mills.

## *For high speed cutting (HSC) <56HRC*

*Long series, four flutes*

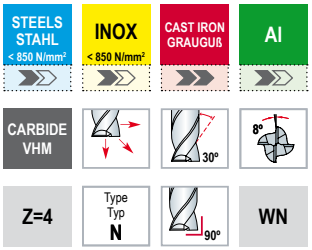
# VHM-viereckige Schaftfräser

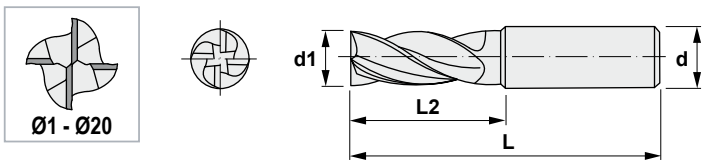
## *Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC*

*Lange Ausführung, vier Schneiden*

Characteristics:
Recommended for milling in materials with medium and high tensile strength. For milling of slots with large depth and accurate fits, as well as face and surface milling. High cutting performance in chipping and a smooth run result an excellent surface.

Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit. Zum Fräsen von Nuten mit größerer Bohrtiefe und exakten Passungen, ebenso zum Stirn- und Umfangfräsen geeignet. Hohe Zerspanungsleistung und große Laufruhe ergeben eine hervorragende Oberflächengüte.



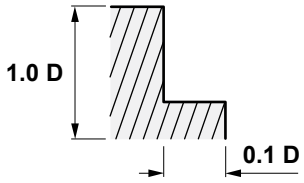




# 6041

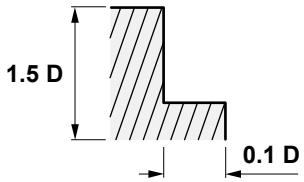
| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 604101 | 4 | 1 | 3 | 5 | 60 |
| 604102 | 4 | 2 | 3 | 10 | 60 |
| 604103 | 4 | 3 | 3 | 15 | 60 |
| 604104 | 4 | 4 | 4 | 20 | 80 |
| 604105 | 4 | 5 | 5 | 25 | 80 |
| 604106 | 4 | 6 | 6 | 25 | 80 |
| 604108 | 4 | 8 | 8 | 35 | 90 |
| 604110 | 4 | 10 | 10 | 45 | 100 |
| 604112 | 4 | 12 | 12 | 50 | 100 |
| 604114 | 4 | 14 | 14 | 65 | 150 |
| 604116 | 4 | 16 | 16 | 65 | 150 |
| 604120 | 4 | 20 | 20 | 70 | 150 |

# 6041 *Solid carbide square End Mills. VHM-viereckige Schaftfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl Alloyed steels / Legierter Stahl Tool steels / Werkzeugstahl ~ HRC30 / 1000 N/mm² | | | | Alloyed steels / Legierter Stahl Heat resistant steels / Hitzebeständiger Stahl ~ HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Stainless steels / Rostfreier Stahl | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| 1 | 17600 | 150 | 55 | 0.002 | 10250 | 85 | 30 | 0.002 | 8650 | 75 | 25 | 0.002 |
| 2 | 9850 | 240 | 60 | 0.006 | 6450 | 145 | 40 | 0.006 | 5350 | 120 | 35 | 0.006 |
| 3 | 7600 | 270 | 70 | 0.009 | 4750 | 170 | 45 | 0.009 | 3950 | 145 | 35 | 0.009 |
| 4 | 6450 | 485 | 80 | 0.019 | 3950 | 300 | 50 | 0.019 | 3300 | 240 | 40 | 0.018 |
| 5 | 5350 | 510 | 85 | 0.024 | 3200 | 305 | 50 | 0.024 | 2700 | 255 | 40 | 0.024 |
| 6 | 4750 | 560 | 90 | 0.029 | 2850 | 350 | 55 | 0.031 | 2400 | 280 | 45 | 0.029 |
| 8 | 3550 | 605 | 90 | 0.043 | 2150 | 325 | 55 | 0.038 | 1800 | 300 | 45 | 0.042 |
| 10 | 2750 | 520 | 85 | 0.047 | 1700 | 255 | 55 | 0.038 | 1450 | 255 | 45 | 0.044 |
| 12 | 2350 | 440 | 90 | 0.047 | 1450 | 215 | 55 | 0.037 | 1150 | 205 | 45 | 0.045 |
| 14 | 2100 | 395 | 90 | 0.047 | 1300 | 195 | 55 | 0.038 | 1050 | 190 | 45 | 0.045 |
| 16 | 1850 | 350 | 95 | 0.047 | 1150 | 170 | 60 | 0.037 | 950 | 170 | 50 | 0.045 |
| 20 | 1450 | 270 | 90 | 0.047 | 900 | 135 | 55 | 0.038 | 700 | 130 | 45 | 0.046 |




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | | Copper, brass / Kupfer, Messing Non-ferrous metals / Nicht-Eisen-Metalle | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| 1 | 18700 | 620 | 60 | 0.008 | 44000 | 1050 | 140 | 0.006 | 24700 | 605 | 80 | 0.006 |
| 2 | 9350 | 640 | 60 | 0.017 | 22000 | 1320 | 140 | 0.015 | 16500 | 1035 | 105 | 0.016 |
| 3 | 6050 | 640 | 55 | 0.026 | 15400 | 1320 | 145 | 0.021 | 11000 | 1035 | 105 | 0.024 |
| 4 | 4600 | 640 | 60 | 0.035 | 11000 | 1320 | 140 | 0.030 | 8800 | 1035 | 110 | 0.029 |
| 5 | 3650 | 640 | 55 | 0.044 | 9150 | 1320 | 145 | 0.036 | 6800 | 1035 | 105 | 0.038 |
| 6 | 2950 | 770 | 55 | 0.065 | 7600 | 1430 | 145 | 0.047 | 5700 | 1100 | 105 | 0.048 |
| 8 | 2200 | 815 | 55 | 0.093 | 5700 | 1430 | 145 | 0.063 | 4400 | 1100 | 110 | 0.063 |
| 10 | 1850 | 860 | 60 | 0.116 | 4600 | 1430 | 145 | 0.078 | 3400 | 1100 | 105 | 0.081 |
| 12 | 1450 | 900 | 55 | 0.155 | 3750 | 1430 | 140 | 0.095 | 2850 | 1100 | 105 | 0.096 |
| 14 | 1300 | 945 | 55 | 0.182 | 3300 | 1430 | 145 | 0.108 | 2400 | 1100 | 105 | 0.115 |
| 16 | 1100 | 970 | 55 | 0.220 | 2850 | 1430 | 145 | 0.125 | 2200 | 1100 | 110 | 0.125 |
| 20 | 900 | 1035 | 55 | 0.288 | 2200 | 1430 | 140 | 0.163 | 1700 | 1100 | 105 | 0.162 |




* FEED, in long and extra long types, should be reduced by around 50%.
* Bei langen und extra-langen Typen soll der Vorschub um ca.50% reduziert werden.

G

# Solid carbide End Mills. Ball form.

***For high speed cutting (HSC) <56HRC***

*Short series, two flutes*



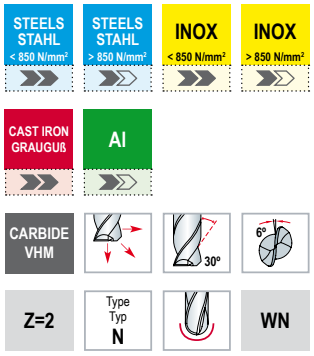
# VHM-Radius-Schaftfräser

***Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC***

*Kurze Ausführung, zwei Schneiden*

Characteristics:
Recommended for milling materials with medium/ high tensile strength. Especially suited for copy milling.

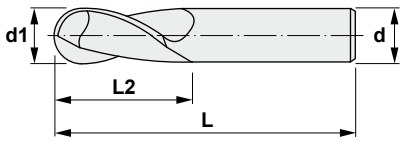
Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Zugfestigkeit. Besonders geeignet zum Kopierfräsen.













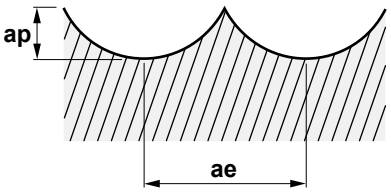

## 6320

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 632002 | 2 | 2 | 3 | 4 | 38 |
| 632003 | 2 | 3 | 3 | 6 | 38 |
| 632004 | 2 | 4 | 4 | 8 | 50 |
| 632005 | 2 | 5 | 5 | 10 | 50 |
| 632006 | 2 | 6 | 6 | 12 | 50 |
| 632008 | 2 | 8 | 8 | 15 | 60 |
| 632010 | 2 | 10 | 10 | 20 | 75 |
| 632012 | 2 | 12 | 12 | 20 | 75 |
| 632014 | 2 | 14 | 14 | 25 | 90 |
| 632016 | 2 | 16 | 16 | 25 | 100 |
| 632018 | 2 | 18 | 18 | 30 | 100 |
| 632020 | 2 | 20 | 20 | 30 | 100 |

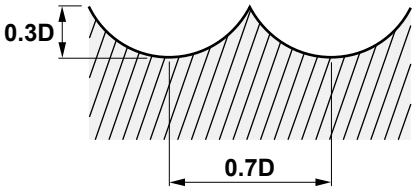
# 6320 *Solid carbide End Mills. Ball form. VHM-Radius-Schaftfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl Alloyed steels / Legierter Stahl Tool steels / Werkzeugstahl ~ HRC30 / ~ 1000 N/mm² | | | | Alloyed steels / Legierter Stahl Heat resistant steels / Hitzebeständiger Stahl HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Hardened steels / Gehärteter Stahl HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **R1 x 2D** | 12350 | 640 | 80 | 0.026 | 9150 | 415 | 55 | 0.023 | 4000 | 125 | 25 | 0.016 |
| **R1.5 x 3D** | 11400 | 575 | 105 | 0.025 | 8550 | 390 | 80 | 0.023 | 3800 | 125 | 35 | 0.016 |
| **R2 x 4D** | 8950 | 630 | 110 | 0.035 | 7150 | 450 | 90 | 0.031 | 3600 | 150 | 45 | 0.021 |
| **R2.5 x 5D** | 7800 | 700 | 125 | 0.045 | 6200 | 490 | 95 | 0.040 | 3100 | 150 | 50 | 0.024 |
| **R3 x 6D** | 7250 | 870 | 135 | 0.060 | 5900 | 705 | 110 | 0.060 | 2700 | 160 | 50 | 0.030 |
| **R4 x 8D** | 6100 | 1090 | 155 | 0.089 | 4900 | 785 | 125 | 0.080 | 2050 | 190 | 50 | 0.046 |
| **R5 x 10D** | 5450 | 1330 | 170 | 0.122 | 4350 | 870 | 135 | 0.100 | 1750 | 190 | 55 | 0.054 |
| **R6 x 12D** | 4990 | 1500 | 190 | 0.150 | 3950 | 950 | 150 | 0.120 | 1500 | 210 | 55 | 0.070 |
| **R7 x 14D** | 4530 | 1495 | 200 | 0.165 | 3600 | 925 | 160 | 0.128 | 1300 | 210 | 55 | 0.081 |
| **R8 x 16D** | 4085 | 1470 | 205 | 0.180 | 3200 | 905 | 160 | 0.141 | 1150 | 210 | 60 | 0.091 |
| **R9 x 18D** | 3800 | 1425 | 215 | 0.188 | 3000 | 890 | 170 | 0.148 | 1050 | 210 | 60 | 0.100 |
| **R10 x 20D** | 3550 | 1425 | 225 | 0.201 | 2800 | 885 | 175 | 0.158 | 950 | 210 | 60 | 0.111 |

ap : D1~D6=0.2 mm
D8~D20=0.3 mm
ae : 0.2D




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **R1 x 2D** | 10500 | 220 | 65 | 0.010 | 30800 | 395 | 195 | 0.006 |
| **R1.5 x 3D** | 7050 | 230 | 65 | 0.016 | 20500 | 395 | 195 | 0.010 |
| **R2 x 4D** | 5150 | 285 | 65 | 0.028 | 15400 | 395 | 195 | 0.013 |
| **R2.5 x 5D** | 4150 | 330 | 65 | 0.040 | 12100 | 470 | 190 | 0.019 |
| **R3 x 6D** | 3400 | 360 | 65 | 0.053 | 10300 | 470 | 195 | 0.023 |
| **R4 x 8D** | 2500 | 460 | 65 | 0.092 | 7900 | 540 | 200 | 0.034 |
| **R5 x 10D** | 2050 | 460 | 65 | 0.112 | 6150 | 540 | 195 | 0.044 |
| **R6 x 12D** | 1750 | 460 | 65 | 0.131 | 5150 | 630 | 195 | 0.061 |
| **R7 x 14D** | 1400 | 460 | 60 | 0.164 | 4300 | 630 | 190 | 0.073 |
| **R8 x 16D** | 1300 | 460 | 65 | 0.177 | 3850 | 540 | 195 | 0.070 |
| **R9 x 18D** | 1100 | 460 | 60 | 0.209 | 3400 | 540 | 190 | 0.079 |
| **R10 x 20D** | 1050 | 420 | 65 | 0.200 | 2950 | 540 | 185 | 0.092 |




G



# Solid carbide End Mills. Ball form.

***For high speed cutting (HSC) <56HRC***

*Long series, two flutes*

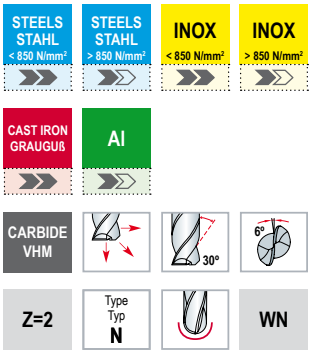
# VHM-Radius-Schaftfräser

***Zum Hochgeschwindigkeitsschneiden (HSC) <56HRC***

*Lange Ausführung, zwei Schneiden*

Characteristics:
Recommended for milling materials with medium/ high tensile strength. Especially suited for copy milling.

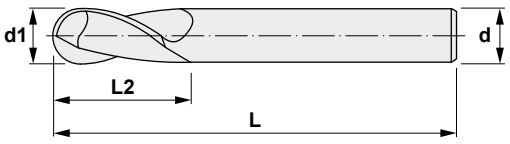
Eigenschaften:
Empfohlen zum Fräsen von Werkstoffen mit mittlerer bis hoher Festigkeit. Besonders geeignet zum Kopierfräsen.













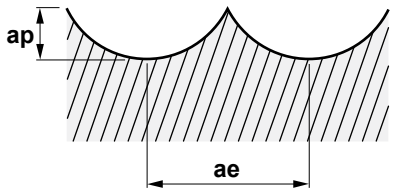

## 6321

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 632102 | 2 | 2 | 3 | 3 | 60 |
| 632103 | 2 | 3 | 3 | 4 | 60 |
| 632104 | 2 | 4 | 4 | 5 | 80 |
| 632105 | 2 | 5 | 5 | 6 | 80 |
| 632106 | 2 | 6 | 6 | 8 | 80 |
| 632108 | 2 | 8 | 8 | 12 | 100 |
| 632110 | 2 | 10 | 10 | 15 | 100 |
| 632112 | 2 | 12 | 12 | 15 | 100 |
| 632116 | 2 | 16 | 16 | 20 | 150 |
| 632120 | 2 | 20 | 20 | 25 | 150 |

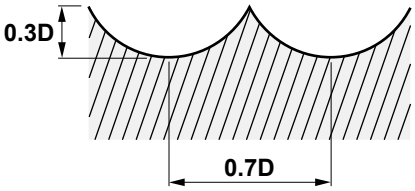
# 6321 *Solid carbide End Mills. Ball form. VHM-Radius-Schaftfräser.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels / Unlegierter Stahl Alloyed steels / Legierter Stahl Tool steels / Werkzeugstahl ~ HRC30 / ~ 1000 N/mm² | | | | Alloyed steels / Legierter Stahl Heat resistant steels / Hitzebeständiger Stahl HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | | Hardened steels / Gehärteter Stahl HRC30 ~ HRC45 / 1000 ~ 1500 N/mm² | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **R1 x 2D** | 12350 | 640 | 80 | 0.026 | 9150 | 415 | 55 | 0.023 | 4000 | 125 | 25 | 0.016 |
| **R1.5 x 3D** | 11400 | 575 | 105 | 0.025 | 8550 | 390 | 80 | 0.023 | 3800 | 125 | 35 | 0.016 |
| **R2 x 4D** | 8950 | 630 | 110 | 0.035 | 7150 | 450 | 90 | 0.031 | 3600 | 150 | 45 | 0.021 |
| **R2.5 x 5D** | 7800 | 700 | 125 | 0.045 | 6200 | 490 | 95 | 0.040 | 3100 | 150 | 50 | 0.024 |
| **R3 x 6D** | 7250 | 870 | 135 | 0.060 | 5900 | 705 | 110 | 0.060 | 2700 | 160 | 50 | 0.030 |
| **R4 x 8D** | 6100 | 1090 | 155 | 0.089 | 4900 | 785 | 125 | 0.080 | 2050 | 190 | 50 | 0.046 |
| **R5 x 10D** | 5450 | 1330 | 170 | 0.122 | 4350 | 870 | 135 | 0.100 | 1750 | 190 | 55 | 0.054 |
| **R6 x 12D** | 4990 | 1500 | 190 | 0.150 | 3950 | 950 | 150 | 0.120 | 1500 | 210 | 55 | 0.070 |
| **R8 x 16D** | 4085 | 1470 | 205 | 0.180 | 3200 | 905 | 160 | 0.141 | 1150 | 210 | 60 | 0.091 |
| **R10 x 20D** | 3550 | 1425 | 225 | 0.201 | 2800 | 885 | 175 | 0.158 | 950 | 210 | 60 | 0.111 |

ap : D1~D6=0.2 mm
D8~D20=0.3 mm
ae : 0.2D




| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Cast iron / Grauguß | | | | Aluminium alloys / Aluminium-Legierungen | | | |
| | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) | R.P.M Min. | Feed / Vorschub mm/min. | Vc (M/Min.) | fz (mm/tooth) (Mm/Zahn) |
| **R1 x 2D** | 10500 | 220 | 65 | 0.010 | 30800 | 395 | 195 | 0.006 |
| **R1.5 x 3D** | 7050 | 230 | 65 | 0.016 | 20500 | 395 | 195 | 0.010 |
| **R2 x 4D** | 5150 | 285 | 65 | 0.028 | 15400 | 395 | 195 | 0.013 |
| **R2.5 x 5D** | 4150 | 330 | 65 | 0.040 | 12100 | 470 | 190 | 0.019 |
| **R3 x 6D** | 3400 | 360 | 65 | 0.053 | 10300 | 470 | 195 | 0.023 |
| **R4 x 8D** | 2500 | 460 | 65 | 0.092 | 7900 | 540 | 200 | 0.034 |
| **R5 x 10D** | 2050 | 460 | 65 | 0.112 | 6150 | 540 | 195 | 0.044 |
| **R6 x 12D** | 1750 | 460 | 65 | 0.131 | 5150 | 630 | 195 | 0.061 |
| **R8 x 16D** | 1300 | 460 | 65 | 0.177 | 3850 | 540 | 195 | 0.070 |
| **R10 x 20D** | 1050 | 420 | 65 | 0.200 | 2950 | 540 | 185 | 0.092 |



# Solid carbide quarter circle cutters

## *DIN 6535-HA*

*Four flutes*

# VHM-Viertelkreis-Profilfräser

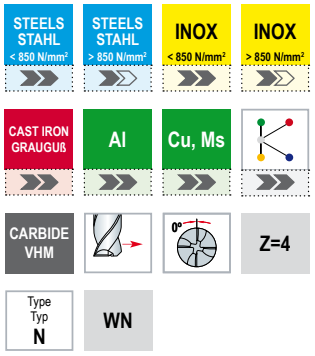
## *DIN 6535-HA*

*Vier Schneiden*



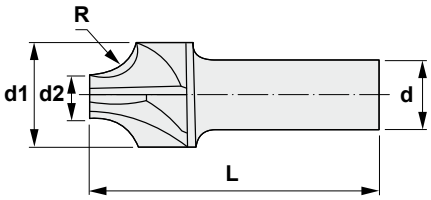
Characteristics:
Recommended for milling in construction steels, tempered steels and cementation steels with standard tensile strength up to 1.100 N/mm² and short-chipping of non-ferrous metals.

Eigenschaften:
Empfohlen zum Fräsen von Bau-, Einsatz- und Vergütungsstählen mit normaler Zugfestigkeit bis 1.100 N/mm², sowie für kurzspanende NE-Metalle.







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## 84

| Reference Bezeichnung | | d1 | d2 | d | R | L |
|---|---|---|---|---|---|---|
| 8441.0 | 4 | 8,0 | 6,0 | 8 | 1,0 | 64 |
| 8441.5 | 4 | 8,0 | 5,0 | 8 | 1,5 | 64 |
| 8442.0 | 4 | 8,0 | 4,0 | 8 | 2,0 | 64 |
| 8442.5 | 4 | 10,0 | 5,0 | 10 | 2,5 | 67 |
| 8443.0 | 4 | 10,0 | 4,0 | 10 | 3,0 | 67 |
| 8443.5 | 4 | 12,0 | 5,0 | 12 | 3,5 | 74 |
| 8444.0 | 4 | 12,0 | 4,0 | 12 | 4,0 | 74 |
| 8445.0 | 4 | 16,0 | 6,0 | 16 | 5,0 | 83 |
| 8446.0 | 4 | 16,0 | 4,0 | 16 | 6,0 | 83 |

# Solid carbide deburring mills 60º

## *DIN 6535-HB*

*Four-six flutes*



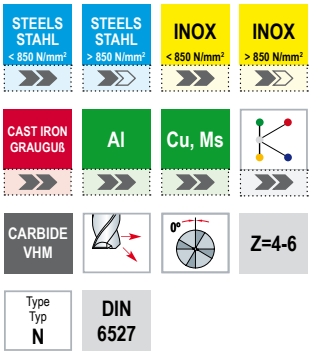
# VHM-Entgrater 60º

## *DIN 6535-HB*

*Vier-sechs Schneiden*

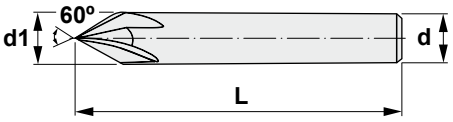
Characteristics:
Universal range of application, especially suited for chamfering and deburring as well as contouring.

Eigenschaften:
Universeller Anwendungsbereich, besonders geeignet zum Anfasen und Entgraten sowie für Konturarbeiten.










## 86

| Reference Bezeichnung | | d1 | d | L |
|---|---|---|---|---|
| 86404 | 4 | 4 | 4 | 54 |
| 86406 | 4 | 6 | 6 | 57 |
| 86408 | 4 | 8 | 8 | 63 |
| 86410 | 4 | 10 | 10 | 72 |
| 86412 | 4 | 12 | 12 | 83 |
| 86416 | 6 | 16 | 16 | 92 |

G

# Solid carbide deburring mills 90º

***DIN 6535-HB***

*Four-six flutes*

# VHM-Entgrater 90º

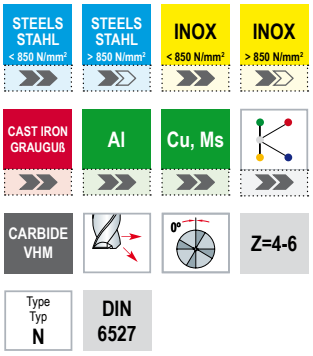
***DIN 6535-HB***

*Vier-sechs Schneiden*



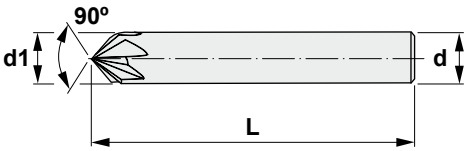
Characteristics:
Universal range of application, especially suited for chamfering and deburring as well as contouring.

Eigenschaften:
Universeller Anwendungsbereich, besonders geeignet zum Anfasen und Entgraten sowie für Konturarbeiten.







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## 87

| Reference Bezeichnung | | d1 | d | L |
|---|---|---|---|---|
| 87404 | 4 | 4 | 4 | 54 |
| 87406 | 4 | 6 | 6 | 57 |
| 87408 | 4 | 8 | 8 | 63 |
| 87410 | 4 | 10 | 10 | 72 |
| 87412 | 4 | 12 | 12 | 83 |
| 87416 | 6 | 16 | 16 | 92 |



# Solid carbide forward and reverse deburring mills.

## *2 x 90º DIN 6535-HA*

*Four flutes*

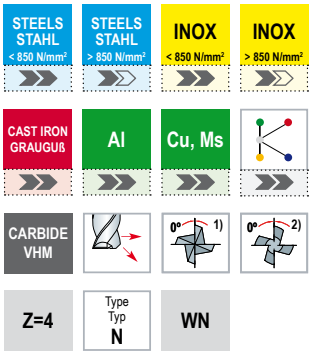
# VHM Vor- und Rückwärtsentgrater.

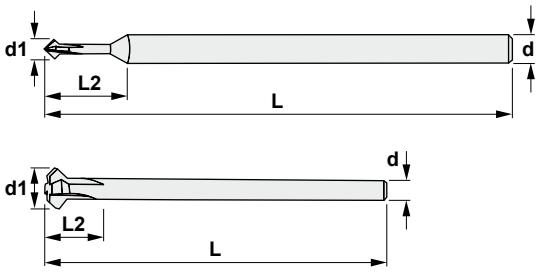
## *2 x 90º DIN 6535-HA*

*Vier Schneiden*

Characteristics:
Universal range of application, especially suited for chamfering, forward and reverse deburring as well as contouring.

Eigenschaften:
Universeller Anwendungsbereich, besonders geeignet zum Anfasen, Vor- und Rückwärtsentgraten sowie für Konturarbeiten.







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## 88

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 88404 | 4 | 4 | 6 | 14 | 100 |
| 88406 | 4 | 6 | 6 | 21 | 100 |
| 88408 | 4 | 8 | 6 | 37 | 100 |
| 88410 | 4 | 10 | 6 | 38 | 100 |
| 88412 | 4 | 12 | 6 | 40 | 100 |

## *Cutting data for solid carbide (References 84, 86, 87 and 88)*
## *Schnittdaten für Vollhartmetall (Bezeichnungen 84, 86, 87 und 88)*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels Unlegierter Stahl <500 N/mm² | | Unalloyed steels Unlegierter Stahl 500-700 N/mm² | | Unalloyed steels Unlegierter Stahl >700 N/mm² | | Alloyed steels Legierter Stahl <1400 N/mm² | | Alloyed steels Legierter Stahl >1400 N/mm² | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| **4** | 11935 | 955 | 9550 | 570 | 5970 | 360 | 4775 | 190 | 3185 | 125 |
| **6** | 7955 | 795 | 6365 | 510 | 3980 | 240 | 3185 | 125 | 2120 | 85 |
| **8** | 5965 | 595 | 4775 | 380 | 2985 | 180 | 2385 | 95 | 1590 | 65 |
| **10** | 4775 | 670 | 3820 | 460 | 2385 | 240 | 1910 | 115 | 1270 | 75 |
| **12** | 3980 | 555 | 3185 | 380 | 1990 | 200 | 1590 | 95 | 1060 | 65 |
| **16** | 2985 | 420 | 2385 | 285 | 1490 | 150 | 1195 | 95 | 795 | 65 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Stainless steels Rostfreier Stahl | | Cast iron Grauguß <500 N/mm² | | Cast iron Grauguß >500 N/mm² | | Cast iron Grauguß <200 N/mm² | | Cast iron Grauguß >200 N/mm² | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| **4** | 4060 | 160 | 8755 | 700 | 7160 | 430 | 5970 | 595 | 5170 | 415 |
| **6** | 2705 | 110 | 5835 | 585 | 4775 | 285 | 3980 | 475 | 3450 | 275 |
| **8** | 2030 | 80 | 4375 | 440 | 3580 | 215 | 2985 | 360 | 2585 | 205 |
| **10** | 1625 | 95 | 3500 | 420 | 2865 | 230 | 2385 | 380 | 2070 | 250 |
| **12** | 1355 | 80 | 2920 | 350 | 2385 | 190 | 1990 | 320 | 1725 | 205 |
| **16** | 1015 | 80 | 2190 | 305 | 1790 | 180 | 1490 | 270 | 1295 | 205 |

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | |
|---|---|---|---|---|
| | Copper Kupfer | | Aluminium alloys Aluminium-Legierungen | |
| | R.P.M Min. | Feed / Vorschub mm/min. | R.P.M Min. | Feed / Vorschub mm/min. |
| **4** | 13925 | 1115 | 35810 | 3580 |
| **6** | 9285 | 740 | 23875 | 2865 |
| **8** | 6960 | 555 | 17905 | 2150 |
| **10** | 5570 | 670 | 14325 | 2865 |
| **12** | 4640 | 555 | 11935 | 2385 |
| **16** | 3480 | 555 | 8950 | 2505 |



# Solid carbide reinforced drills.

## *DIN 6537K (TIALN COATING) 3xD*

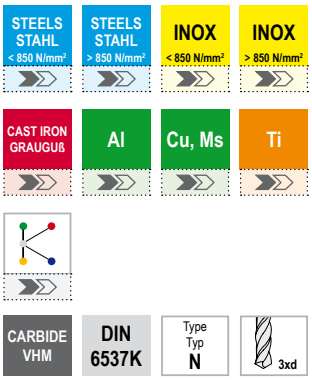
*Diameters from 3 to 20 mm*

# Verstärkte VHM-Spiralbohrer

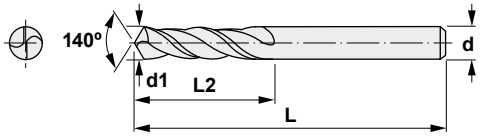
## *DIN 6537K (TIALN-Beschichtung) 3xD*

*Durchmesser von 3 bis 20 mm*

Characteristics:
Especially suitable for drilling heat resistant steels, Cr-Ni steels, high carbon steel castings, grey cast iron, cast steels, manganese steels, bronze, aluminium with high percentage of silicium and other difficult-to-machine materials.




Eigenschaften:
Besonders geeignet zum Bohren von hitzebeständigen Stählen, Cr-Ni-Stählen, kohlenstoffreichen Stahlguß, Grauguß, Gußstählen, Manganstählen, Bronze, Aluminium mit einem hohen Siliziumanteil und anderen schwerzerspanbaren Werkstoffen.




# 7320

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 732003.0 | 2 | 3,0 | 6 | 20 | 62 |
| 732003.1 | 2 | 3,1 | 6 | 20 | 62 |
| 732003.2 | 2 | 3,2 | 6 | 20 | 62 |
| 732003.3 | 2 | 3,3 | 6 | 20 | 62 |
| 732003.4 | 2 | 3,4 | 6 | 20 | 62 |
| 732003.5 | 2 | 3,5 | 6 | 20 | 62 |
| 732003.6 | 2 | 3,6 | 6 | 20 | 62 |
| 732003.7 | 2 | 3,7 | 6 | 20 | 62 |
| 732003.8 | 2 | 3,8 | 6 | 24 | 66 |
| 732003.9 | 2 | 3,9 | 6 | 24 | 66 |
| 732004.0 | 2 | 4,0 | 6 | 24 | 66 |
| 732004.1 | 2 | 4,1 | 6 | 24 | 66 |
| 732004.2 | 2 | 4,2 | 6 | 24 | 66 |
| 732004.3 | 2 | 4,3 | 6 | 24 | 66 |
| 732004.4 | 2 | 4,4 | 6 | 24 | 66 |
| 732004.5 | 2 | 4,5 | 6 | 24 | 66 |
| 732004.6 | 2 | 4,6 | 6 | 24 | 66 |
| 732004.7 | 2 | 4,7 | 6 | 24 | 66 |
| 732004.8 | 2 | 4,8 | 6 | 28 | 66 |
| 732004.9 | 2 | 4,9 | 6 | 28 | 66 |
| 732005.0 | 2 | 5,0 | 6 | 28 | 66 |
| 732005.1 | 2 | 5,1 | 6 | 28 | 66 |
| 732005.2 | 2 | 5,2 | 6 | 28 | 66 |
| 732005.3 | 2 | 5,3 | 6 | 28 | 66 |

# 7320

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 732005.4 | 2 | 5,4 | 6 | 28 | 66 |
| 732005.5 | 2 | 5,5 | 6 | 28 | 66 |
| 732005.6 | 2 | 5,6 | 6 | 28 | 66 |
| 732005.7 | 2 | 5,7 | 6 | 28 | 66 |
| 732005.8 | 2 | 5,8 | 6 | 28 | 66 |
| 732005.9 | 2 | 5,9 | 6 | 28 | 66 |
| 732006.0 | 2 | 6,0 | 6 | 28 | 66 |
| 732006.1 | 2 | 6,1 | 8 | 34 | 79 |
| 732006.2 | 2 | 6,2 | 8 | 34 | 79 |
| 732006.3 | 2 | 6,3 | 8 | 34 | 79 |
| 732006.4 | 2 | 6,4 | 8 | 34 | 79 |
| 732006.5 | 2 | 6,5 | 8 | 34 | 79 |
| 732006.6 | 2 | 6,6 | 8 | 34 | 79 |
| 732006.7 | 2 | 6,7 | 8 | 34 | 79 |
| 732006.8 | 2 | 6,8 | 8 | 34 | 79 |
| 732006.9 | 2 | 6,9 | 8 | 34 | 79 |
| 732007.0 | 2 | 7,0 | 8 | 34 | 79 |
| 732007.1 | 2 | 7,1 | 8 | 41 | 79 |
| 732007.2 | 2 | 7,2 | 8 | 41 | 79 |
| 732007.3 | 2 | 7,3 | 8 | 41 | 79 |
| 732007.4 | 2 | 7,4 | 8 | 41 | 79 |
| 732007.5 | 2 | 7,5 | 8 | 41 | 79 |
| 732007.6 | 2 | 7,6 | 8 | 41 | 79 |
| 732007.7 | 2 | 7,7 | 8 | 41 | 79 |
| 732007.8 | 2 | 7,8 | 8 | 41 | 79 |
| 732007.9 | 2 | 7,9 | 8 | 41 | 79 |
| 732008.0 | 2 | 8,0 | 8 | 41 | 79 |
| 732008.1 | 2 | 8,1 | 10 | 47 | 89 |
| 732008.2 | 2 | 8,2 | 10 | 47 | 89 |
| 732008.3 | 2 | 8,3 | 10 | 47 | 89 |
| 732008.4 | 2 | 8,4 | 10 | 47 | 89 |
| 732008.5 | 2 | 8,5 | 10 | 47 | 89 |
| 732008.6 | 2 | 8,6 | 10 | 47 | 89 |
| 732008.7 | 2 | 8,7 | 10 | 47 | 89 |
| 732008.8 | 2 | 8,8 | 10 | 47 | 89 |
| 732008.9 | 2 | 8,9 | 10 | 47 | 89 |
| 732009.0 | 2 | 9,0 | 10 | 47 | 89 |
| 732009.1 | 2 | 9,1 | 10 | 47 | 89 |
| 732009.2 | 2 | 9,2 | 10 | 47 | 89 |
| 732009.3 | 2 | 9,3 | 10 | 47 | 89 |
| 732009.4 | 2 | 9,4 | 10 | 47 | 89 |
| 732009.5 | 2 | 9,5 | 10 | 47 | 89 |
| 732009.6 | 2 | 9,6 | 10 | 47 | 89 |
| 732009.7 | 2 | 9,7 | 10 | 47 | 89 |
| 732009.8 | 2 | 9,8 | 10 | 47 | 89 |
| 732009.9 | 2 | 9,9 | 10 | 47 | 89 |
| 732010.0 | 2 | 10,0 | 10 | 47 | 89 |
| 732010.1 | 2 | 10,1 | 12 | 55 | 102 |
| 732010.2 | 2 | 10,2 | 12 | 55 | 102 |
| 732010.3 | 2 | 10,3 | 12 | 55 | 102 |
| 732010.4 | 2 | 10,4 | 12 | 55 | 102 |
| 732010.5 | 2 | 10,5 | 12 | 55 | 102 |
| 732010.6 | 2 | 10,6 | 12 | 55 | 102 |

# 7320

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 732010.7 | 2 | 10,7 | 12 | 55 | 102 |
| 732010.8 | 2 | 10,8 | 12 | 55 | 102 |
| 732010.9 | 2 | 10,9 | 12 | 55 | 102 |
| 732011.0 | 2 | 11,0 | 12 | 55 | 102 |
| 732011.1 | 2 | 11,1 | 12 | 55 | 102 |
| 732011.2 | 2 | 11,2 | 12 | 55 | 102 |
| 732011.3 | 2 | 11,3 | 12 | 55 | 102 |
| 732011.4 | 2 | 11,4 | 12 | 55 | 102 |
| 732011.5 | 2 | 11,5 | 12 | 55 | 102 |
| 732011.6 | 2 | 11,6 | 12 | 55 | 102 |
| 732011.7 | 2 | 11,7 | 12 | 55 | 102 |
| 732011.8 | 2 | 11,8 | 12 | 55 | 102 |
| 732011.9 | 2 | 11,9 | 12 | 55 | 102 |
| 732012.0 | 2 | 12,0 | 12 | 55 | 102 |
| 732012.2 | 2 | 12,2 | 14 | 60 | 107 |
| 732012.5 | 2 | 12,5 | 14 | 60 | 107 |
| 732012.7 | 2 | 12,7 | 14 | 60 | 107 |
| 732012.8 | 2 | 12,8 | 14 | 60 | 107 |
| 732013.0 | 2 | 13,0 | 14 | 60 | 107 |
| 732013.1 | 2 | 13,1 | 14 | 60 | 107 |
| 732013.5 | 2 | 13,5 | 14 | 60 | 107 |
| 732013.8 | 2 | 13,8 | 14 | 60 | 107 |
| 732014.0 | 2 | 14,0 | 14 | 60 | 107 |
| 732014.5 | 2 | 14,5 | 16 | 65 | 115 |
| 732014.8 | 2 | 14,8 | 16 | 65 | 115 |
| 732016.0 | 2 | 16,0 | 16 | 65 | 115 |
| 732016.5 | 2 | 16,5 | 18 | 73 | 123 |
| 732018.0 | 2 | 18,0 | 18 | 73 | 123 |
| 732018.5 | 2 | 18,5 | 20 | 79 | 131 |
| 732020.0 | 2 | 20,0 | 20 | 79 | 131 |

# 7320 *Solid carbide reinforced drills. Verstärkte VHM-Spiralbohrer.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels Unlegierter Stahl < 700 N/mm² Ø1.0 ~ Ø2.9 : 40 ~ 80 m/min Ø3.0 ~ : 100 m/min | | | Alloyed steels Legierter Stahl < 1000 N/mm² Ø1.0 ~ Ø2.9 : 35 ~ 70 m/min Ø3.0 ~ : 75 m/min | | | Soft grey cast iron Weicher Grauguß < HB240, GG25 Ø1.0 ~ Ø2.9 : 60 ~ 130 m/min Ø3.0 ~ : 100 m/min | | | Hard grey cast iron Harter Grauguß < HB300, GG40 Ø1.0 ~ Ø2.9 : 40 ~ 90 m/min Ø3.0 ~ : 80 m/min | | |
| | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | |
| | | Min. | Max. | | Min. | Max. | | Min. | Max. | | Min. | Max. |
| **3** | 10500 | 0.06 | 0.12 | 7890 | 0.06 | 0.12 | 10500 | 0.06 | 0.12 | 8410 | 0.06 | 0.12 |
| **4** | 7920 | 0.08 | 0.16 | 5920 | 0.08 | 0.16 | 7920 | 0.08 | 0.16 | 6310 | 0.08 | 0.16 |
| **5** | 6310 | 0.10 | 0.20 | 4740 | 0.10 | 0.20 | 6310 | 0.10 | 0.20 | 5050 | 0.10 | 0.20 |
| **6** | 5270 | 0.12 | 0.24 | 3950 | 0.12 | 0.24 | 5270 | 0.12 | 0.24 | 4220 | 0.12 | 0.24 |
| **7** | 4510 | 0.14 | 0.26 | 3400 | 0.14 | 0.26 | 4510 | 0.14 | 0.26 | 3610 | 0.14 | 0.26 |
| **8** | 3950 | 0.16 | 0.28 | 2970 | 0.16 | 0.28 | 3950 | 0.16 | 0.28 | 3160 | 0.16 | 0.28 |
| **9** | 3510 | 0.18 | 0.30 | 2640 | 0.18 | 0.30 | 3510 | 0.18 | 0.30 | 2820 | 0.18 | 0.30 |
| **10** | 3160 | 0.20 | 0.30 | 2370 | 0.20 | 0.30 | 3160 | 0.20 | 0.30 | 2530 | 0.20 | 0.30 |
| **11** | 2880 | 0.20 | 0.30 | 2160 | 0.20 | 0.30 | 2880 | 0.20 | 0.30 | 2310 | 0.20 | 0.30 |
| **12** | 2640 | 0.21 | 0.30 | 1980 | 0.21 | 0.30 | 2640 | 0.21 | 0.30 | 2120 | 0.21 | 0.30 |
| **13** | 2430 | 0.21 | 0.33 | 1830 | 0.21 | 0.33 | 2430 | 0.21 | 0.33 | 1950 | 0.21 | 0.33 |
| **14** | 2260 | 0.22 | 0.35 | 1710 | 0.22 | 0.35 | 2260 | 0.22 | 0.35 | 1810 | 0.22 | 0.35 |
| **16** | 1980 | 0.25 | 0.36 | 1490 | 0.25 | 0.36 | 1980 | 0.25 | 0.36 | 1590 | 0.25 | 0.36 |
| **18** | 1760 | 0.28 | 0.38 | 1330 | 0.28 | 0.38 | 1760 | 0.28 | 0.38 | 1420 | 0.28 | 0.38 |
| **20** | 1590 | 0.30 | 0.40 | 1180 | 0.30 | 0.40 | 1590 | 0.30 | 0.40 | 1270 | 0.30 | 0.40 |



# Solid carbide reinforced drills.

## *DIN 6537L (TIALN COATING) 5xD*

*Diameters from 3 to 20 mm*

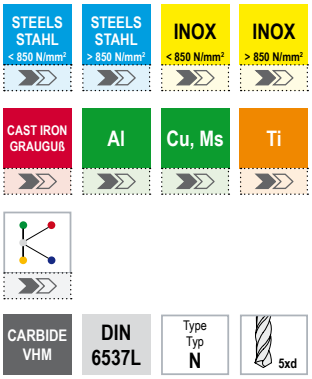
# Verstärkte VHM-Spiralbohrer

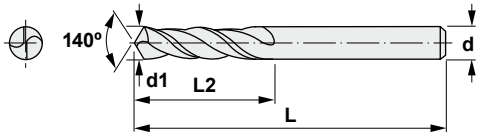
## *DIN 6537L (TIALN-BESCHICHTUNG) 5XD*

*Durchmesser von 3 bis 20 mm*

Characteristics:
Especially suitable for drilling heat resistant steels, Cr-Ni steels, high carbon steel castings, grey cast iron, cast steels, manganese steels, bronze, aluminium with high percentage of silicium and other difficult-to-machine materials.

Eigenschaften:
Besonders geeignet zum Bohren von hitzebeständigen Stählen, Cr-Ni-Stählen, kohlenstoffreichen stahlguß, Grauguß, Gußstählen, Manganstählen, Bronze, Aluminium mit einem hohen Siliziumanteil und anderen schwer zerspanbaren Werkstoffen.




# 7520

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 752003.0 | 2 | 3,0 | 6 | 28 | 66 |
| 752003.1 | 2 | 3,1 | 6 | 28 | 66 |
| 752003.2 | 2 | 3,2 | 6 | 28 | 66 |
| 752003.3 | 2 | 3,3 | 6 | 28 | 66 |
| 752003.4 | 2 | 3,4 | 6 | 28 | 66 |
| 752003.5 | 2 | 3,5 | 6 | 28 | 66 |
| 752003.6 | 2 | 3,6 | 6 | 28 | 66 |
| 752003.7 | 2 | 3,7 | 6 | 28 | 66 |
| 752003.8 | 2 | 3,8 | 6 | 36 | 74 |
| 752003.9 | 2 | 3,9 | 6 | 36 | 74 |
| 752004.0 | 2 | 4,0 | 6 | 36 | 74 |
| 752004.1 | 2 | 4,1 | 6 | 36 | 74 |
| 752004.2 | 2 | 4,2 | 6 | 36 | 74 |
| 752004.3 | 2 | 4,3 | 6 | 36 | 74 |
| 752004.4 | 2 | 4,4 | 6 | 36 | 74 |
| 752004.5 | 2 | 4,5 | 6 | 36 | 74 |
| 752004.6 | 2 | 4,6 | 6 | 36 | 74 |
| 752004.7 | 2 | 4,7 | 6 | 44 | 74 |
| 752004.8 | 2 | 4,8 | 6 | 44 | 82 |
| 752004.9 | 2 | 4,9 | 6 | 44 | 82 |
| 752005.0 | 2 | 5,0 | 6 | 44 | 82 |
| 752005.1 | 2 | 5,1 | 6 | 44 | 82 |
| 752005.2 | 2 | 5,2 | 6 | 44 | 82 |
| 752005.3 | 2 | 5,3 | 6 | 44 | 82 |

# 7520

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 752005.4 | 2 | 5,4 | 6 | 44 | 82 |
| 752005.5 | 2 | 5,5 | 6 | 44 | 82 |
| 752005.6 | 2 | 5,6 | 6 | 44 | 82 |
| 752005.7 | 2 | 5,7 | 6 | 44 | 82 |
| 752005.8 | 2 | 5,8 | 6 | 44 | 82 |
| 752005.9 | 2 | 5,9 | 6 | 44 | 82 |
| 752006.0 | 2 | 6,0 | 6 | 44 | 82 |
| 752006.1 | 2 | 6,1 | 8 | 53 | 91 |
| 752006.2 | 2 | 6,2 | 8 | 53 | 91 |
| 752006.3 | 2 | 6,3 | 8 | 53 | 91 |
| 752006.4 | 2 | 6,4 | 8 | 53 | 91 |
| 752006.5 | 2 | 6,5 | 8 | 53 | 91 |
| 752006.6 | 2 | 6,6 | 8 | 53 | 91 |
| 752006.7 | 2 | 6,7 | 8 | 53 | 91 |
| 752006.8 | 2 | 6,8 | 8 | 53 | 91 |
| 752006.9 | 2 | 6,9 | 8 | 53 | 91 |
| 752007.0 | 2 | 7,0 | 8 | 53 | 91 |
| 752007.1 | 2 | 7,1 | 8 | 53 | 91 |
| 752007.2 | 2 | 7,2 | 8 | 53 | 91 |
| 752007.3 | 2 | 7,3 | 8 | 53 | 91 |
| 752007.4 | 2 | 7,4 | 8 | 53 | 91 |
| 752007.5 | 2 | 7,5 | 8 | 53 | 91 |
| 752007.6 | 2 | 7,6 | 8 | 53 | 91 |
| 752007.7 | 2 | 7,7 | 8 | 53 | 91 |
| 752007.8 | 2 | 7,8 | 8 | 53 | 91 |
| 752007.9 | 2 | 7,9 | 8 | 53 | 91 |
| 752008.0 | 2 | 8,0 | 8 | 53 | 91 |
| 752008.1 | 2 | 8,1 | 10 | 61 | 103 |
| 752008.2 | 2 | 8,2 | 10 | 61 | 103 |
| 752008.3 | 2 | 8,3 | 10 | 61 | 103 |
| 752008.4 | 2 | 8,4 | 10 | 61 | 103 |
| 752008.5 | 2 | 8,5 | 10 | 61 | 103 |
| 752008.6 | 2 | 8,6 | 10 | 61 | 103 |
| 752008.7 | 2 | 8,7 | 10 | 61 | 103 |
| 752008.8 | 2 | 8,8 | 10 | 61 | 103 |
| 752008.9 | 2 | 8,9 | 10 | 61 | 103 |
| 752009.0 | 2 | 9,0 | 10 | 61 | 103 |
| 752009.1 | 2 | 9,1 | 10 | 61 | 103 |
| 752009.2 | 2 | 9,2 | 10 | 61 | 103 |
| 752009.3 | 2 | 9,3 | 10 | 61 | 103 |
| 752009.4 | 2 | 9,4 | 10 | 61 | 103 |
| 752009.5 | 2 | 9,5 | 10 | 61 | 103 |
| 752009.6 | 2 | 9,6 | 10 | 61 | 103 |
| 752009.7 | 2 | 9,7 | 10 | 61 | 103 |
| 752009.8 | 2 | 9,8 | 10 | 61 | 103 |
| 752009.9 | 2 | 9,9 | 10 | 61 | 103 |
| 752010.0 | 2 | 10,0 | 10 | 61 | 103 |
| 752010.1 | 2 | 10,1 | 10 | 61 | 103 |
| 752010.2 | 2 | 10,2 | 12 | 71 | 118 |
| 752010.3 | 2 | 10,3 | 12 | 71 | 118 |
| 752010.4 | 2 | 10,4 | 12 | 71 | 118 |
| 752010.5 | 2 | 10,5 | 12 | 71 | 118 |

# 7520

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 752010.6 | 2 | 10,6 | 12 | 71 | 118 |
| 752010.7 | 2 | 10,7 | 12 | 71 | 118 |
| 752010.8 | 2 | 10,8 | 12 | 71 | 118 |
| 752010.9 | 2 | 10,9 | 12 | 71 | 118 |
| 752011.0 | 2 | 11,0 | 12 | 71 | 118 |
| 752011.1 | 2 | 11,1 | 12 | 71 | 118 |
| 752011.2 | 2 | 11,2 | 12 | 71 | 118 |
| 752011.3 | 2 | 11,3 | 12 | 71 | 118 |
| 752011.4 | 2 | 11,4 | 12 | 71 | 118 |
| 752011.5 | 2 | 11,5 | 12 | 71 | 118 |
| 752011.6 | 2 | 11,6 | 12 | 71 | 118 |
| 752011.7 | 2 | 11,7 | 12 | 71 | 118 |
| 752011.8 | 2 | 11,8 | 12 | 71 | 118 |
| 752011.9 | 2 | 11,9 | 12 | 71 | 118 |
| 752012.0 | 2 | 12,0 | 12 | 71 | 118 |
| 752012.2 | 2 | 12,2 | 14 | 77 | 124 |
| 752012.5 | 2 | 12,5 | 14 | 77 | 124 |
| 752012.7 | 2 | 12,7 | 14 | 77 | 124 |
| 752012.8 | 2 | 12,8 | 14 | 77 | 124 |
| 752013.0 | 2 | 13,0 | 14 | 77 | 124 |
| 752013.1 | 2 | 13,1 | 14 | 77 | 124 |
| 752013.5 | 2 | 13,5 | 14 | 77 | 124 |
| 752013.8 | 2 | 13,8 | 14 | 77 | 124 |
| 752014.0 | 2 | 14,0 | 14 | 77 | 124 |
| 752014.5 | 2 | 14,5 | 16 | 83 | 133 |
| 752014.8 | 2 | 14,8 | 16 | 83 | 133 |
| 752016.0 | 2 | 16,0 | 16 | 83 | 133 |
| 752016.5 | 2 | 16,5 | 18 | 93 | 143 |
| 752018.0 | 2 | 18,0 | 18 | 93 | 143 |
| 752018.5 | 2 | 18,5 | 20 | 101 | 153 |
| 752020.0 | 2 | 20,0 | 20 | 101 | 153 |

# 7520 *Solid carbide reinforced drills. Verstärkte VHM-Spiralbohrer.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels Unlegierter Stahl < 700 N/mm² Ø1.0 ~ Ø2.9 : 40 ~ 80 m/min Ø3.0 ~ : 100 m/min | | | Alloyed steels Legierter Stahl < 1000 N/mm² Ø1.0 ~ Ø2.9 : 35 ~ 70 m/min Ø3.0 ~ : 75 m/min | | | Soft grey cast iron Weicher Grauguß < HB240, GG25 Ø1.0 ~ Ø2.9 : 60 ~ 130 m/min Ø3.0 ~ : 100 m/min | | | Hard grey cast iron Harter Grauguß < HB300, GG40 Ø1.0 ~ Ø2.9 : 40 ~ 90 m/min Ø3.0 ~ : 80 m/min | | |
| | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | |
| | | Min. | Max. | | Min. | Max. | | Min. | Max. | | Min. | Max. |
| **3** | 10500 | 0.06 | 0.12 | 7890 | 0.06 | 0.12 | 10500 | 0.06 | 0.12 | 8410 | 0.06 | 0.12 |
| **4** | 7920 | 0.08 | 0.16 | 5920 | 0.08 | 0.16 | 7920 | 0.08 | 0.16 | 6310 | 0.08 | 0.16 |
| **5** | 6310 | 0.10 | 0.20 | 4740 | 0.10 | 0.20 | 6310 | 0.10 | 0.20 | 5050 | 0.10 | 0.20 |
| **6** | 5270 | 0.12 | 0.24 | 3950 | 0.12 | 0.24 | 5270 | 0.12 | 0.24 | 4220 | 0.12 | 0.24 |
| **7** | 4510 | 0.14 | 0.26 | 3400 | 0.14 | 0.26 | 4510 | 0.14 | 0.26 | 3610 | 0.14 | 0.26 |
| **8** | 3950 | 0.16 | 0.28 | 2970 | 0.16 | 0.28 | 3950 | 0.16 | 0.28 | 3160 | 0.16 | 0.28 |
| **9** | 3510 | 0.18 | 0.30 | 2640 | 0.18 | 0.30 | 3510 | 0.18 | 0.30 | 2820 | 0.18 | 0.30 |
| **10** | 3160 | 0.20 | 0.30 | 2370 | 0.20 | 0.30 | 3160 | 0.20 | 0.30 | 2530 | 0.20 | 0.30 |
| **11** | 2880 | 0.20 | 0.30 | 2160 | 0.20 | 0.30 | 2880 | 0.20 | 0.30 | 2310 | 0.20 | 0.30 |
| **12** | 2640 | 0.21 | 0.30 | 1980 | 0.21 | 0.30 | 2640 | 0.21 | 0.30 | 2120 | 0.21 | 0.30 |
| **13** | 2430 | 0.21 | 0.33 | 1830 | 0.21 | 0.33 | 2430 | 0.21 | 0.33 | 1950 | 0.21 | 0.33 |
| **14** | 2260 | 0.22 | 0.35 | 1710 | 0.22 | 0.35 | 2260 | 0.22 | 0.35 | 1810 | 0.22 | 0.35 |
| **16** | 1980 | 0.25 | 0.36 | 1490 | 0.25 | 0.36 | 1980 | 0.25 | 0.36 | 1590 | 0.25 | 0.36 |
| **18** | 1760 | 0.28 | 0.38 | 1330 | 0.28 | 0.38 | 1760 | 0.28 | 0.38 | 1420 | 0.28 | 0.38 |
| **20** | 1590 | 0.30 | 0.40 | 1180 | 0.30 | 0.40 | 1590 | 0.30 | 0.40 | 1270 | 0.30 | 0.40 |



# Solid carbide reinforced drills.

## *DIN 6537L (TIALN COATING) 3xD*
## *WITH COOLANT SYSTEM*

*Diameters from 3 to 20 mm*

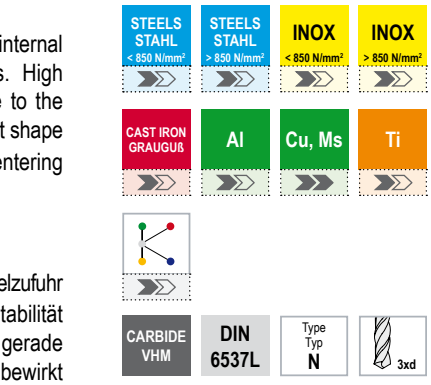
# Verstärkte VHM-Spiralbohrer

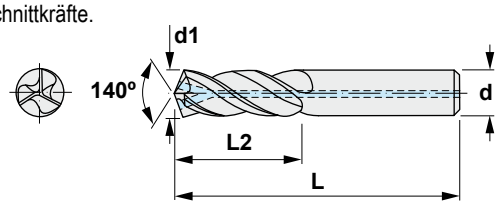
## *DIN 6537L (TIALN BESCHICHTUNG) 3xD*
## *MIT KÜHLMITTELZUFUHR*

*Durchmesser von 3 bis 20 mm*

Characteristics:
Solid carbide high performance drill with internal coolant supply for universal applications. High stability as well as universal usability due to the straight main cutting edge. The special point shape effects optimum chip breakage, high centering accuracy and less cutting forces.

Eigenschaften:
VHM-Hochleistungsbohrer mit Innen-Kühlmittelzufuhr für universelle Anwendungen. Hohe Stabilität und universelle Einsetzbarkeit durch die gerade Hauptschneidkante. Der Spezialanschliff bewirkt einen optimalen Spanbruch, eine hohe Zentriergenauigkeit und geringe Schnittkräfte.




## 7323

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 732303.0 | 2 | 3,0 | 6 | 28 | 66 |
| 732303.1 | 2 | 3,1 | 6 | 28 | 66 |
| 732303.2 | 2 | 3,2 | 6 | 28 | 66 |
| 732303.3 | 2 | 3,3 | 6 | 28 | 66 |
| 732303.4 | 2 | 3,4 | 6 | 28 | 66 |
| 732303.5 | 2 | 3,5 | 6 | 28 | 66 |
| 732303.6 | 2 | 3,6 | 6 | 28 | 66 |
| 732303.7 | 2 | 3,7 | 6 | 28 | 66 |
| 732303.8 | 2 | 3,8 | 6 | 36 | 74 |
| 732303.9 | 2 | 3,9 | 6 | 36 | 74 |
| 732304.0 | 2 | 4,0 | 6 | 36 | 74 |
| 732304.1 | 2 | 4,1 | 6 | 36 | 74 |
| 732304.2 | 2 | 4,2 | 6 | 36 | 74 |
| 732304.3 | 2 | 4,3 | 6 | 36 | 74 |
| 732304.4 | 2 | 4,4 | 6 | 36 | 74 |
| 732304.5 | 2 | 4,5 | 6 | 36 | 74 |
| 732304.6 | 2 | 4,6 | 6 | 36 | 74 |
| 732304.7 | 2 | 4,7 | 6 | 44 | 74 |
| 732304.8 | 2 | 4,8 | 6 | 44 | 82 |
| 732304.9 | 2 | 4,9 | 6 | 44 | 82 |
| 732305.0 | 2 | 5,0 | 6 | 44 | 82 |

# 7323

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 732305.1 | 2 | 5,1 | 6 | 44 | 82 |
| 732305.2 | 2 | 5,2 | 6 | 44 | 82 |
| 732305.3 | 2 | 5,3 | 6 | 44 | 82 |
| 732305.4 | 2 | 5,4 | 6 | 44 | 82 |
| 732305.5 | 2 | 5,5 | 6 | 44 | 82 |
| 732305.6 | 2 | 5,6 | 6 | 44 | 82 |
| 732305.7 | 2 | 5,7 | 6 | 44 | 82 |
| 732305.8 | 2 | 5,8 | 6 | 44 | 82 |
| 732305.9 | 2 | 5,9 | 6 | 44 | 82 |
| 732306.0 | 2 | 6,0 | 6 | 44 | 82 |
| 732306.1 | 2 | 6,1 | 8 | 53 | 91 |
| 732306.2 | 2 | 6,2 | 8 | 53 | 91 |
| 732306.3 | 2 | 6,3 | 8 | 53 | 91 |
| 732306.4 | 2 | 6,4 | 8 | 53 | 91 |
| 732306.5 | 2 | 6,5 | 8 | 53 | 91 |
| 732306.6 | 2 | 6,6 | 8 | 53 | 91 |
| 732306.7 | 2 | 6,7 | 8 | 53 | 91 |
| 732306.8 | 2 | 6,8 | 8 | 53 | 91 |
| 732306.9 | 2 | 6,9 | 8 | 53 | 91 |
| 732307.0 | 2 | 7,0 | 8 | 53 | 91 |
| 732307.1 | 2 | 7,1 | 8 | 53 | 91 |
| 732307.2 | 2 | 7,2 | 8 | 53 | 91 |
| 732307.3 | 2 | 7,3 | 8 | 53 | 91 |
| 732307.4 | 2 | 7,4 | 8 | 53 | 91 |
| 732307.5 | 2 | 7,5 | 8 | 53 | 91 |
| 732307.6 | 2 | 7,6 | 8 | 53 | 91 |
| 732307.7 | 2 | 7,7 | 8 | 53 | 91 |
| 732307.8 | 2 | 7,8 | 8 | 53 | 91 |
| 732307.9 | 2 | 7,9 | 8 | 53 | 91 |
| 732308.0 | 2 | 8,0 | 8 | 53 | 91 |
| 732308.1 | 2 | 8,1 | 10 | 61 | 103 |
| 732308.2 | 2 | 8,2 | 10 | 61 | 103 |
| 732308.3 | 2 | 8,3 | 10 | 61 | 103 |
| 732308.4 | 2 | 8,4 | 10 | 61 | 103 |
| 732308.5 | 2 | 8,5 | 10 | 61 | 103 |
| 732308.6 | 2 | 8,6 | 10 | 61 | 103 |
| 732308.7 | 2 | 8,7 | 10 | 61 | 103 |
| 732308.8 | 2 | 8,8 | 10 | 61 | 103 |
| 732308.9 | 2 | 8,9 | 10 | 61 | 103 |
| 732309.0 | 2 | 9,0 | 10 | 61 | 103 |
| 732309.1 | 2 | 9,1 | 10 | 61 | 103 |
| 732309.2 | 2 | 9,2 | 10 | 61 | 103 |
| 732309.3 | 2 | 9,3 | 10 | 61 | 103 |
| 732309.4 | 2 | 9,4 | 10 | 61 | 103 |
| 732309.5 | 2 | 9,5 | 10 | 61 | 103 |
| 732309.6 | 2 | 9,6 | 10 | 61 | 103 |
| 732309.7 | 2 | 9,7 | 10 | 61 | 103 |
| 732309.8 | 2 | 9,8 | 10 | 61 | 103 |
| 732309.9 | 2 | 9,9 | 10 | 61 | 103 |
| 732310.0 | 2 | 10,0 | 10 | 61 | 103 |
| 732310.1 | 2 | 10,1 | 10 | 61 | 103 |
| 732310.2 | 2 | 10,2 | 12 | 71 | 118 |

# 7323

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 732310.3 | 2 | 10,30 | 12 | 71 | 118 |
| 732310.4 | 2 | 10,40 | 12 | 71 | 118 |
| 732310.5 | 2 | 10,50 | 12 | 71 | 118 |
| 732310.6 | 2 | 10,60 | 12 | 71 | 118 |
| 732310.7 | 2 | 10,70 | 12 | 71 | 118 |
| 732310.8 | 2 | 10,80 | 12 | 71 | 118 |
| 732310.9 | 2 | 10,90 | 12 | 71 | 118 |
| 732311.0 | 2 | 11,00 | 12 | 71 | 118 |
| 732311.1 | 2 | 11,10 | 12 | 71 | 118 |
| 732311.2 | 2 | 11,20 | 12 | 71 | 118 |
| 732311.3 | 2 | 11,30 | 12 | 71 | 118 |
| 732311.4 | 2 | 11,40 | 12 | 71 | 118 |
| 732311.5 | 2 | 11,50 | 12 | 71 | 118 |
| 732311.6 | 2 | 11,60 | 12 | 71 | 118 |
| 732311.7 | 2 | 11,70 | 12 | 71 | 118 |
| 732311.8 | 2 | 11,80 | 12 | 71 | 118 |
| 732311.9 | 2 | 11,90 | 12 | 71 | 118 |
| 732312.0 | 2 | 12,00 | 12 | 71 | 118 |
| 732312.25 | 2 | 12,25 | 14 | 77 | 124 |
| 732312.5 | 2 | 12,50 | 14 | 77 | 124 |
| 732313.8 | 2 | 13,80 | 14 | 77 | 124 |
| 732314.0 | 2 | 14,00 | 14 | 77 | 124 |
| 732314.5 | 2 | 14,50 | 16 | 83 | 133 |
| 732314.8 | 2 | 14,80 | 16 | 83 | 133 |
| 732316.0 | 2 | 16,00 | 16 | 83 | 133 |
| 732316.5 | 2 | 16,50 | 18 | 93 | 143 |
| 732318.0 | 2 | 18,00 | 18 | 93 | 143 |
| 732318.5 | 2 | 18,50 | 20 | 101 | 153 |
| 732320.0 | 2 | 20,00 | 20 | 101 | 153 |

# 7323 *Solid carbide reinforced drills. Verstärkte VHM-Spiralbohrer.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels Unlegierter Stahl < 700 N/mm² Ø1.0 ~ Ø2.9 : 50 ~ 100 m/min Ø3.0 ~ : 110 m/min | | | Alloyed steels Legierter Stahl < 1000 N/mm² Ø1.0 ~ Ø2.9 : 40 ~ 90 m/min Ø3.0 ~ : 83 m/min | | | Soft grey cast iron Weicher Grauguß < HB240, GG25 Ø1.0 ~ Ø2.9 : 80 ~ 160 m/min Ø3.0 ~ : 110 m/min | | | Hard grey cast iron Harter Grauguß < HB300, GG40 Ø1.0 ~ Ø2.9 : 50 ~ 100 m/min Ø3.0 ~ : 88 m/min | | |
| | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | |
| | | Min. | Max. | | Min. | Max. | | Min. | Max. | | Min. | Max. |
| **3** | 11660 | 0.06 | 0.12 | 8760 | 0.06 | 0.12 | 11660 | 0.06 | 0.12 | 9340 | 0.06 | 0.12 |
| **4** | 8800 | 0.08 | 0.16 | 6570 | 0.08 | 0.16 | 8800 | 0.08 | 0.16 | 7010 | 0.08 | 0.16 |
| **5** | 7010 | 0.10 | 0.20 | 5260 | 0.10 | 0.20 | 7010 | 0.10 | 0.20 | 5610 | 0.10 | 0.20 |
| **6** | 5850 | 0.12 | 0.24 | 4380 | 0.12 | 0.24 | 5850 | 0.12 | 0.24 | 4680 | 0.12 | 0.24 |
| **7** | 5010 | 0.14 | 0.26 | 3770 | 0.14 | 0.26 | 5010 | 0.14 | 0.26 | 4010 | 0.14 | 0.26 |
| **8** | 4380 | 0.16 | 0.28 | 2390 | 0.16 | 0.28 | 4380 | 0.16 | 0.28 | 3510 | 0.16 | 0.28 |
| **9** | 3900 | 0.18 | 0.30 | 2930 | 0.18 | 0.30 | 3900 | 0.18 | 0.30 | 3130 | 0.18 | 0.30 |
| **10** | 3510 | 0.20 | 0.30 | 2630 | 0.20 | 0.30 | 3510 | 0.20 | 0.30 | 2810 | 0.20 | 0.30 |
| **11** | 3190 | 0.20 | 0.30 | 2400 | 0.20 | 0.30 | 3190 | 0.20 | 0.30 | 2560 | 0.20 | 0.30 |
| **12** | 2930 | 0.21 | 0.30 | 2200 | 0.21 | 0.30 | 2930 | 0.21 | 0.30 | 2350 | 0.21 | 0.30 |
| **13** | 2700 | 0.21 | 0.33 | 2030 | 0.21 | 0.33 | 2700 | 0.21 | 0.33 | 2160 | 0.21 | 0.33 |
| **14** | 2510 | 0.22 | 0.35 | 1890 | 0.22 | 0.35 | 2510 | 0.22 | 0.35 | 2010 | 0.22 | 0.35 |
| **16** | 2190 | 0.25 | 0.36 | 1650 | 0.25 | 0.36 | 2190 | 0.25 | 0.36 | 1760 | 0.25 | 0.36 |
| **18** | 1950 | 0.28 | 0.38 | 1470 | 0.28 | 0.38 | 1950 | 0.28 | 0.38 | 1570 | 0.28 | 0.38 |
| **20** | 1760 | 0.30 | 0.40 | 1310 | 0.30 | 0.40 | 1760 | 0.30 | 0.40 | 1410 | 0.30 | 0.40 |



# Solid carbide reinforced drills.

## *DIN 6537L (TIALN COATING) 5xD*
## *WITH COOLANT SYSTEM*

*Diameters from 3 to 20 mm*

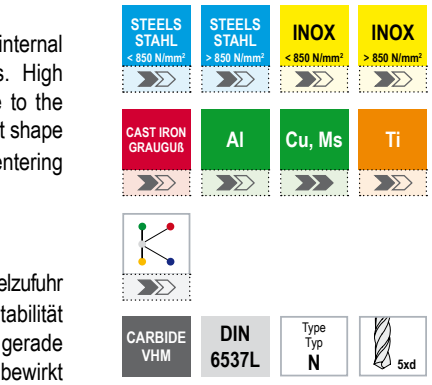
# Verstärkte VHM-Spiralbohrer

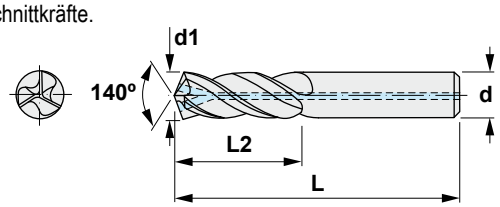
## *DIN 6537L (TIALN BESCHICHTUNG) 5xD*
## *MIT KÜHLMITTELZUFUHR*

*Durchmesser von 3 bis 20 mm*

Characteristics:
Solid carbide high performance drill with internal coolant supply for universal applications. High stability as well as universal usability due to the straight main cutting edge. The special point shape effects optimum chip breakage, high centering accuracy and less cutting forces.

Eigenschaften:
VHM-Hochleistungsbohrer mit Innen-Kühlmittelzufuhr für universelle Anwendungen. Hohe Stabilität und universelle Einsetzbarkeit durch die gerade Hauptschneidkante. Der Spezialanschliff bewirkt einen optimalen Spanbruch, eine hohe Zentriergenauigkeit und geringe Schnittkräfte.




## 7523

| Reference Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 752303.0 | 2 | 3,0 | 6 | 28 | 66 |
| 752303.1 | 2 | 3,1 | 6 | 28 | 66 |
| 752303.2 | 2 | 3,2 | 6 | 28 | 66 |
| 752303.3 | 2 | 3,3 | 6 | 28 | 66 |
| 752303.4 | 2 | 3,4 | 6 | 28 | 66 |
| 752303.5 | 2 | 3,5 | 6 | 28 | 66 |
| 752303.6 | 2 | 3,6 | 6 | 28 | 66 |
| 752303.7 | 2 | 3,7 | 6 | 28 | 66 |
| 752303.8 | 2 | 3,8 | 6 | 36 | 74 |
| 752303.9 | 2 | 3,9 | 6 | 36 | 74 |
| 752304.0 | 2 | 4,0 | 6 | 36 | 74 |
| 752304.1 | 2 | 4,1 | 6 | 36 | 74 |
| 752304.2 | 2 | 4,2 | 6 | 36 | 74 |
| 752304.3 | 2 | 4,3 | 6 | 36 | 74 |
| 752304.4 | 2 | 4,4 | 6 | 36 | 74 |
| 752304.5 | 2 | 4,5 | 6 | 36 | 74 |
| 752304.6 | 2 | 4,6 | 6 | 36 | 74 |
| 752304.7 | 2 | 4,7 | 6 | 44 | 74 |
| 752304.8 | 2 | 4,8 | 6 | 44 | 82 |
| 752304.9 | 2 | 4,9 | 6 | 44 | 82 |
| 752305.0 | 2 | 5,0 | 6 | 44 | 82 |

# 7523

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 752305.1 | 2 | 5,1 | 6 | 44 | 82 |
| 752305.2 | 2 | 5,2 | 6 | 44 | 82 |
| 752305.3 | 2 | 5,3 | 6 | 44 | 82 |
| 752305.4 | 2 | 5,4 | 6 | 44 | 82 |
| 752305.5 | 2 | 5,5 | 6 | 44 | 82 |
| 752305.6 | 2 | 5,6 | 6 | 44 | 82 |
| 752305.7 | 2 | 5,7 | 6 | 44 | 82 |
| 752305.8 | 2 | 5,8 | 6 | 44 | 82 |
| 752305.9 | 2 | 5,9 | 6 | 44 | 82 |
| 752306.0 | 2 | 6,0 | 6 | 44 | 82 |
| 752306.1 | 2 | 6,1 | 8 | 53 | 91 |
| 752306.2 | 2 | 6,2 | 8 | 53 | 91 |
| 752306.3 | 2 | 6,3 | 8 | 53 | 91 |
| 752306.4 | 2 | 6,4 | 8 | 53 | 91 |
| 752306.5 | 2 | 6,5 | 8 | 53 | 91 |
| 752306.6 | 2 | 6,6 | 8 | 53 | 91 |
| 752306.7 | 2 | 6,7 | 8 | 53 | 91 |
| 752306.8 | 2 | 6,8 | 8 | 53 | 91 |
| 752306.9 | 2 | 6,9 | 8 | 53 | 91 |
| 752307.0 | 2 | 7,0 | 8 | 53 | 91 |
| 752307.1 | 2 | 7,1 | 8 | 53 | 91 |
| 752307.2 | 2 | 7,2 | 8 | 53 | 91 |
| 752307.3 | 2 | 7,3 | 8 | 53 | 91 |
| 752307.4 | 2 | 7,4 | 8 | 53 | 91 |
| 752307.5 | 2 | 7,5 | 8 | 53 | 91 |
| 752307.6 | 2 | 7,6 | 8 | 53 | 91 |
| 752307.7 | 2 | 7,7 | 8 | 53 | 91 |
| 752307.8 | 2 | 7,8 | 8 | 53 | 91 |
| 752307.9 | 2 | 7,9 | 8 | 53 | 91 |
| 752308.0 | 2 | 8,0 | 8 | 53 | 91 |
| 752308.1 | 2 | 8,1 | 10 | 61 | 103 |
| 752308.2 | 2 | 8,2 | 10 | 61 | 103 |
| 752308.3 | 2 | 8,3 | 10 | 61 | 103 |
| 752308.4 | 2 | 8,4 | 10 | 61 | 103 |
| 752308.5 | 2 | 8,5 | 10 | 61 | 103 |
| 752308.6 | 2 | 8,6 | 10 | 61 | 103 |
| 752308.7 | 2 | 8,7 | 10 | 61 | 103 |
| 752308.8 | 2 | 8,8 | 10 | 61 | 103 |
| 752308.9 | 2 | 8,9 | 10 | 61 | 103 |
| 752309.0 | 2 | 9,0 | 10 | 61 | 103 |
| 752309.1 | 2 | 9,1 | 10 | 61 | 103 |
| 752309.2 | 2 | 9,2 | 10 | 61 | 103 |
| 752309.3 | 2 | 9,3 | 10 | 61 | 103 |
| 752309.4 | 2 | 9,4 | 10 | 61 | 103 |
| 752309.5 | 2 | 9,5 | 10 | 61 | 103 |
| 752309.6 | 2 | 9,6 | 10 | 61 | 103 |
| 752309.7 | 2 | 9,7 | 10 | 61 | 103 |
| 752309.8 | 2 | 9,8 | 10 | 61 | 103 |
| 752309.9 | 2 | 9,9 | 10 | 61 | 103 |
| 752310.0 | 2 | 10,0 | 10 | 61 | 103 |
| 752310.1 | 2 | 10,1 | 10 | 61 | 103 |
| 752310.2 | 2 | 10,2 | 12 | 71 | 118 |

# 7523

| Reference<br>Bezeichnung | | d1 | d | L2 | L |
|---|---|---|---|---|---|
| 752310.3 | 2 | 10,30 | 12 | 71 | 118 |
| 752310.4 | 2 | 10,40 | 12 | 71 | 118 |
| 752310.5 | 2 | 10,50 | 12 | 71 | 118 |
| 752310.6 | 2 | 10,60 | 12 | 71 | 118 |
| 752310.7 | 2 | 10,70 | 12 | 71 | 118 |
| 752310.8 | 2 | 10,80 | 12 | 71 | 118 |
| 752310.9 | 2 | 10,90 | 12 | 71 | 118 |
| 752311.0 | 2 | 11,00 | 12 | 71 | 118 |
| 752311.1 | 2 | 11,10 | 12 | 71 | 118 |
| 752311.2 | 2 | 11,20 | 12 | 71 | 118 |
| 752311.3 | 2 | 11,30 | 12 | 71 | 118 |
| 752311.4 | 2 | 11,40 | 12 | 71 | 118 |
| 752311.5 | 2 | 11,50 | 12 | 71 | 118 |
| 752311.6 | 2 | 11,60 | 12 | 71 | 118 |
| 752311.7 | 2 | 11,70 | 12 | 71 | 118 |
| 752311.8 | 2 | 11,80 | 12 | 71 | 118 |
| 752311.9 | 2 | 11,90 | 12 | 71 | 118 |
| 752312.0 | 2 | 12,00 | 12 | 71 | 118 |
| 752312.25 | 2 | 12,25 | 14 | 77 | 124 |
| 752312.5 | 2 | 12,50 | 14 | 77 | 124 |
| 752313.8 | 2 | 13,80 | 14 | 77 | 124 |
| 752314.0 | 2 | 14,00 | 14 | 77 | 124 |
| 752314.5 | 2 | 14,50 | 16 | 83 | 133 |
| 752314.8 | 2 | 14,80 | 16 | 83 | 133 |
| 752316.0 | 2 | 16,00 | 16 | 83 | 133 |
| 752316.5 | 2 | 16,50 | 18 | 93 | 143 |
| 752318.0 | 2 | 18,00 | 18 | 93 | 143 |
| 752318.5 | 2 | 18,50 | 20 | 101 | 153 |
| 752320.0 | 2 | 20,00 | 20 | 101 | 153 |

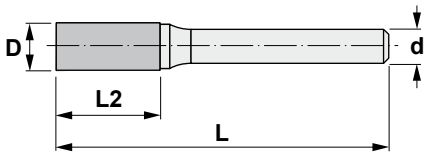
# 7523 *Solid carbide reinforced drills. Verstärkte VHM-Spiralbohrer.*

| Diameter / Durchmesser (Ø d1) mm | Material / Materialien | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unalloyed steels Unlegierter Stahl < 700 N/mm² Ø1.0 ~ Ø2.9 : 50 ~ 100 m/min Ø3.0 ~ : 110 m/min | | | Alloyed steels Legierter Stahl < 1000 N/mm² Ø1.0 ~ Ø2.9 : 40 ~ 90 m/min Ø3.0 ~ : 83 m/min | | | Soft grey cast iron Weicher Grauguß < HB240, GG25 Ø1.0 ~ Ø2.9 : 80 ~ 160 m/min Ø3.0 ~ : 110 m/min | | | Hard grey cast iron Harter Grauguß < HB300, GG40 Ø1.0 ~ Ø2.9 : 50 ~ 100 m/min Ø3.0 ~ : 88 m/min | | |
| | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | | R.P.M Min. | Feed / Vorschub | |
| | | Min. | Max. | | Min. | Max. | | Min. | Max. | | Min. | Max. |
| **3** | 11660 | 0.06 | 0.12 | 8760 | 0.06 | 0.12 | 11660 | 0.06 | 0.12 | 9340 | 0.06 | 0.12 |
| **4** | 8800 | 0.08 | 0.16 | 6570 | 0.08 | 0.16 | 8800 | 0.08 | 0.16 | 7010 | 0.08 | 0.16 |
| **5** | 7010 | 0.10 | 0.20 | 5260 | 0.10 | 0.20 | 7010 | 0.10 | 0.20 | 5610 | 0.10 | 0.20 |
| **6** | 5850 | 0.12 | 0.24 | 4380 | 0.12 | 0.24 | 5850 | 0.12 | 0.24 | 4680 | 0.12 | 0.24 |
| **7** | 5010 | 0.14 | 0.26 | 3770 | 0.14 | 0.26 | 5010 | 0.14 | 0.26 | 4010 | 0.14 | 0.26 |
| **8** | 4380 | 0.16 | 0.28 | 2390 | 0.16 | 0.28 | 4380 | 0.16 | 0.28 | 3510 | 0.16 | 0.28 |
| **9** | 3900 | 0.18 | 0.30 | 2930 | 0.18 | 0.30 | 3900 | 0.18 | 0.30 | 3130 | 0.18 | 0.30 |
| **10** | 3510 | 0.20 | 0.30 | 2630 | 0.20 | 0.30 | 3510 | 0.20 | 0.30 | 2810 | 0.20 | 0.30 |
| **11** | 3190 | 0.20 | 0.30 | 2400 | 0.20 | 0.30 | 3190 | 0.20 | 0.30 | 2560 | 0.20 | 0.30 |
| **12** | 2930 | 0.21 | 0.30 | 2200 | 0.21 | 0.30 | 2930 | 0.21 | 0.30 | 2350 | 0.21 | 0.30 |
| **13** | 2700 | 0.21 | 0.33 | 2030 | 0.21 | 0.33 | 2700 | 0.21 | 0.33 | 2160 | 0.21 | 0.33 |
| **14** | 2510 | 0.22 | 0.35 | 1890 | 0.22 | 0.35 | 2510 | 0.22 | 0.35 | 2010 | 0.22 | 0.35 |
| **16** | 2190 | 0.25 | 0.36 | 1650 | 0.25 | 0.36 | 2190 | 0.25 | 0.36 | 1760 | 0.25 | 0.36 |
| **18** | 1950 | 0.28 | 0.38 | 1470 | 0.28 | 0.38 | 1950 | 0.28 | 0.38 | 1570 | 0.28 | 0.38 |
| **20** | 1760 | 0.30 | 0.40 | 1310 | 0.30 | 0.40 | 1760 | 0.30 | 0.40 | 1410 | 0.30 | 0.40 |



Characteristics:
900: Cylindrical - Straight.
901: Cylindrical - Crossed.

Eigenschaften:
900: Zylinder-Form - Gerade Zahnung.
901: Zylinder-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

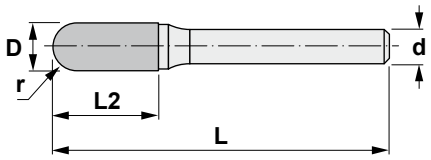
# 900 - 901

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 90003 | 3 | 3 | 38 | 14 | ● |
| 90006 | 6 | 3 | 43 | 13 | ● |
| 90008 | 8 | 6 | 65 | 20 | ● |
| 90010 | 10 | 6 | 65 | 20 | ● |
| 90012 | 12 | 6 | 70 | 25 | ● |
| 90016 | 16 | 6 | 70 | 25 | ● |
| | | | | | |
| 90106 | 6 | 3 | 43 | 13 | ● |
| 90108 | 8 | 6 | 65 | 20 | ● |
| 90110 | 10 | 6 | 65 | 20 | ● |
| 90112 | 12 | 6 | 70 | 25 | ● |
| 90116 | 16 | 6 | 70 | 25 | ● |



Characteristics:
910: Cylindrical round top - Straight.
911: Cylindrical round top - Crossed.

Eigenschaften:
910: Kugelschaft-Zylinderform - Gerade Zahnung.
911: Kugelschaft-Zylinderform - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

# 910 - 911

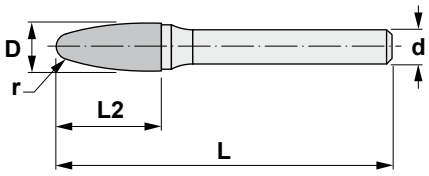
| Reference Bezeichnung | D | d | L | L2 | r | K10 |
|---|---|---|---|---|---|---|
| 91003 | 3 | 3 | 38 | 14 | 1,5 | ● |
| 91006 | 6 | 3 | 43 | 14 | 3,0 | ● |
| 91008 | 8 | 6 | 65 | 20 | 4,0 | ● |
| 91010 | 10 | 6 | 65 | 20 | 5,0 | ● |
| 91012 | 12 | 6 | 70 | 25 | 6,0 | ● |
| 91016 | 16 | 6 | 70 | 25 | 8,0 | ● |
| | | | | | | |
| 91106 | 6 | 3 | 43 | 14 | 3,0 | ● |
| 91108 | 8 | 6 | 65 | 20 | 4,0 | ● |
| 91110 | 10 | 6 | 65 | 20 | 5,0 | ● |
| 91112 | 12 | 6 | 70 | 25 | 6,0 | ● |
| 91116 | 16 | 6 | 70 | 25 | 8,0 | ● |

G



Characteristics:
920: Tree radius nose - Straight.
921: Tree radius nose - Crossed.

Eigenschaften:
920: Rundkegel-Form - Gerade Zahnung.
921: Rundkegel-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

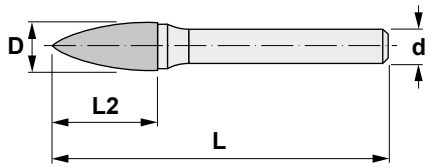
# 920 - 921

| Reference Bezeichnung | D | d | L | L2 | r | K10 |
|---|---|---|---|---|---|---|
| 92003 | 3 | 3 | 38 | 12 | 0,8 | ● |
| 92006 | 6 | 3 | 43 | 13 | 1,5 | ● |
| 92008 | 8 | 6 | 63 | 18 | 2,0 | ● |
| 92010 | 10 | 6 | 65 | 20 | 2,5 | ● |
| 92012 | 12 | 6 | 70 | 25 | 3,0 | ● |
| 92016 | 16 | 6 | 75 | 30 | 5,0 | ● |
| | | | | | | |
| 92106 | 6 | 3 | 43 | 13 | 1,5 | ● |
| 92108 | 8 | 6 | 63 | 18 | 2,0 | ● |
| 92110 | 10 | 6 | 65 | 20 | 2,5 | ● |
| 92112 | 12 | 6 | 70 | 25 | 3,0 | ● |
| 92116 | 16 | 6 | 75 | 30 | 5,0 | ● |



Characteristics:
930: Cylindrical round top - Straight.
931: Cylindrical round top - Crossed.

Eigenschaften:
930: Spitzbogen-Form - Gerade Zahnung.
931: Spitzbogen-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

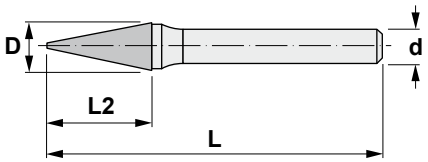
# 930 - 931

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 93003 | 3 | 3 | 38 | 12 | ● |
| 93006 | 6 | 3 | 43 | 13 | ● |
| 93008 | 8 | 6 | 65 | 20 | ● |
| 93010 | 10 | 6 | 65 | 20 | ● |
| 93012 | 12 | 6 | 70 | 25 | ● |
| 93016 | 16 | 6 | 75 | 30 | ● |
| | | | | | |
| 93106 | 6 | 3 | 43 | 13 | ● |
| 93108 | 8 | 6 | 65 | 20 | ● |
| 93110 | 10 | 6 | 65 | 20 | ● |
| 93112 | 12 | 6 | 70 | 25 | ● |
| 93116 | 16 | 8 | 75 | 30 | ● |



Characteristics:
940: Cone - Straight.
941: Cone - Crossed.

Eigenschaften:
940: Spitzkegel-Form - Gerade Zahnung.
941: Spitzkegel-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

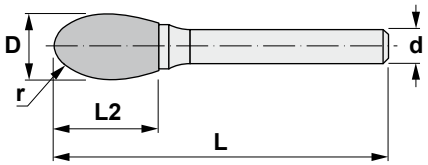
# 940 - 941

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 94003 | 3 | 3 | 50 | 12 | ● |
| 94006 | 6 | 3 | 43 | 13 | ● |
| 94008 | 8 | 6 | 63 | 18 | ● |
| 94010 | 10 | 6 | 66 | 20 | ● |
| 94012 | 12 | 6 | 70 | 25 | ● |
| 94016 | 16 | 6 | 70 | 25 | ● |
| | | | | | |
| 94106 | 6 | 3 | 43 | 13 | ● |
| 94108 | 8 | 6 | 63 | 18 | ● |
| 94110 | 10 | 6 | 66 | 20 | ● |
| 94112 | 12 | 6 | 70 | 25 | ● |
| 94116 | 16 | 6 | 70 | 25 | ● |



Characteristics:
950: Olive (Egg) - Straight.
951: Olive (Egg) - Crossed.

Eigenschaften:
950: Tropfen-Form - Gerade Zahnung.
951: Tropfen-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

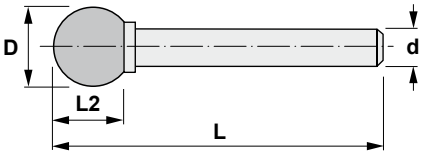
# 950 - 951

| Reference Bezeichnung | D | d | L | L2 | r | K10 |
|---|---|---|---|---|---|---|
| 95003 | 3 | 3 | 38 | 6 | 1,2 | ● |
| 95006 | 6 | 3 | 40 | 10 | 2,5 | ● |
| 95008 | 8 | 6 | 58 | 13 | 3,7 | ● |
| 95010 | 10 | 6 | 61 | 16 | 4,0 | ● |
| 95012 | 12 | 6 | 65 | 20 | 5,0 | ● |
| 95016 | 16 | 6 | 70 | 25 | 6,5 | ● |
| | | | | | | |
| 95106 | 6 | 3 | 40 | 10 | 2,5 | ● |
| 95108 | 8 | 6 | 58 | 13 | 3,7 | ● |
| 95110 | 10 | 6 | 61 | 16 | 4,0 | ● |
| 95112 | 12 | 6 | 65 | 20 | 5,0 | ● |
| 95116 | 16 | 6 | 70 | 25 | 6,5 | ● |



Characteristics:
960: Ball - Straight.
961: Ball - Crossed.

Eigenschaften:
960: Kugel-Form - Gerade Zahnung.
961: Kugel-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

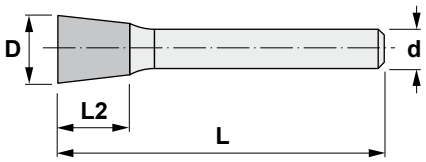
# 960 - 961

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 96003 | 3 | 3 | 38 | 2,5 | ● |
| 96006 | 6 | 3 | 35 | 5,0 | ● |
| 96008 | 8 | 6 | 52 | 7,0 | ● |
| 96010 | 10 | 6 | 54 | 9,0 | ● |
| 96012 | 12 | 6 | 55 | 10,0 | ● |
| 96016 | 16 | 8 | 59 | 14,0 | ● |
| | | | | | |
| 96106 | 6 | 3 | 35 | 5,0 | ● |
| 96108 | 8 | 6 | 52 | 7,0 | ● |
| 96110 | 10 | 6 | 54 | 9,0 | ● |
| 96112 | 12 | 6 | 55 | 10,0 | ● |
| 96116 | 16 | 6 | 59 | 14,0 | ● |



Characteristics:
970: Inverted cone - Straight.
971: Inverted cone - Crossed.

Eigenschaften:
970: Winkel-Form - Gerade Zahnung.
971: Winkel-Form - Wechselzahnung.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

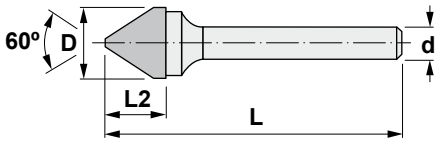
# 970 - 971

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 97003 | 3 | 3 | 38 | 3 | ● |
| 97006 | 6 | 3 | 36 | 6 | ● |
| 97008 | 8 | 6 | 53 | 8 | ● |
| 97012 | 12 | 6 | 57 | 12 | ● |
| | | | | | |
| 97106 | 6 | 3 | 36 | 6 | ● |
| 97108 | 8 | 6 | 53 | 8 | ● |
| 97110 | 10 | 6 | 55 | 10 | ● |
| 97112 | 12 | 6 | 57 | 12 | ● |



Characteristics:
Deburring 60°.

Eigenschaften:
Spitzkegel-Form 60°.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

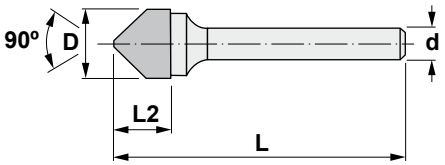
## 98

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 98006 | 6 | 6 | 50 | 6 | ● |
| 98010 | 10 | 6 | 55 | 10 | ● |
| 98012 | 12 | 6 | 57 | 12 | ● |
| 98016 | 16 | 6 | 61 | 16 | ● |



Characteristics:
Deburring 90°.

Eigenschaften:
Spitzkegel-Form 90°.




**Availability / Verfügbarkeit**
● Standard item / Standard-Artikel
○ Check availability / Verfügbarkeit prüfen

## 99

| Reference Bezeichnung | D | d | L | L2 | K10 |
|---|---|---|---|---|---|
| 99006 | 6 | 6 | 50 | 6 | ● |
| 99008 | 8 | 6 | 53 | 8 | ● |
| 99010 | 10 | 6 | 55 | 10 | ● |
| 99012 | 12 | 6 | 57 | 12 | ● |
| 99016 | 16 | 6 | 61 | 16 | ● |

G

## *Cutting data for tungsten carbide burrs*

| Material | Condition | HB | Kind of teeth | | Cutting speed m/min |
|---|---|---|---|---|---|
| | | | Straight cut | Crossed cut | |
| Unalloyed steel | C<0,25%<br>C<1<0,80%<br>C,40% | 110-310 | ●<br>●<br>● | ●<br>●<br>● | 800-1200<br>800-1200<br>800-1200 |
| Low alloyed steel | Annealed<br>Hardened | 125-225<br>220-450 | ● | ●<br>● | 700-1000<br>600-800 |
| High alloyed steel | Annealed<br>Hardened | 150-250<br>250-500 | ● | ●<br>● | 600-800<br>600-800 |
| High alloyed steel | Annealed high speed steel (HSS)<br>Hardened tool steel | 150-250<br>250-350 | ● | ●<br>● | 600-800<br>600-800 |
| Stainless steel | Ferritic-martensitic | 150-270 | ● | ● | 600-800 |
| Steel casting | Unalloyed<br>Low alloyed<br>High alloyed | 150-250 | ●<br>●<br>● | ●<br>●<br>● | 600-800<br>600-800<br>600-800 |
| Stainless steel | Austenitic | 150-270 | ● | ● | 600-800 |
| Stainless steel castings | Ferritic-martensitic<br>Austenitic<br>Manganese steel | 200<br>200<br>250 | ●<br>●<br>● | ●<br>●<br>● | 400<br>300<br>160 |
| Malleable cast iron | Ferritic - short chip<br>Pearlitic - long chip | 110-145<br>200-230 | ●<br>● | ●<br>● | 750<br>650 |
| Grey cast iron | High traction resistant<br>Low traction resistant | 180<br>260 | ●<br>● | ●<br>● | 950<br>700 |
| Nodular cast iron | Ferritic<br>Pearlitic | 160<br>250 | ●<br>● | ●<br>● | 650<br>550 |
| Shell cast iron | | 400 | ● | ● | 160 |

**Practical advice**

- The indicated data are recommended for manual applications with a strength of 5-25N.
- Increase the cutting speed for light deburring.
- For heavy operations, for instance by a robot, the cutting speed must be reduced.



**Straight cutting flutes burrs**

- Best surface finishing.
- Maximum chip removal in soft materials.
- Excellent tool life.
- Produce needle chips.

**Crossed cutting flutes burrs**

- Allow a lower spindle speed.
- Smoother operation, even at low speeds.
- High chip removal in hard and soft materials.
- Produce short and rounded chips.



**Type 90**

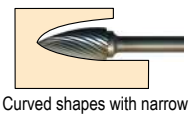
Surfaces and smooth edges

**Type 91**

Radius and surfaces

**Type 92**

General shapes

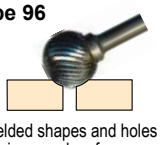
**Type 93**

Curved shapes with narrow spaces

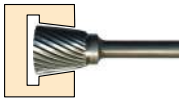
**Type 94**

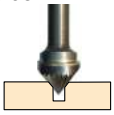
Narrow spaces

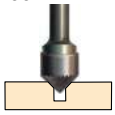
**Type 95**

Complicated shapes

**Type 96**

Welded shapes and holes in curved surfaces

**Type 97**

Inverted cone shape

**Type 98**

30° Degrees chamfering

**Type 99**

45° Degrees chamfering

## *Schnittbedingungen für Rotierfräser*

| Materialien | Beschaffenheit | HB | Zahnungsart | | Schnittgeschwindigkeit m/min |
|---|---|---|---|---|---|
| | | | Gerade Zahnung | Wechselzahnung | |
| Unlegierter Stahl | C<0,25%<br>C<1<0,80%<br>C,40% | 110-310 | ●<br>●<br>● | ●<br>●<br>● | 800-1200<br>800-1200<br>800-1200 |
| Niedrig legierter Stahl | Geglüht<br>Abgeschreckt | 125-225<br>220-450 | ● | ●<br>● | 700-1000<br>600-800 |
| Hochlegierter Stahl | Geglüht<br>Abgeschreckt | 150-250<br>250-500 | ● | ●<br>● | 600-800<br>600-800 |
| Hochlegierter Stahl | Geglühter HSS<br>Abgeschreckter Werkzeugstahl | 150-250<br>250-350 | ● | ●<br>● | 600-800<br>600-800 |
| Rostfreier Stahl | Ferritisch/Martensitisch | 150-270 | ● | ● | 600-800 |
| Stahlguß | Unlegiert<br>Niedrig legiert<br>Hochlegiert | 150-250 | ●<br>●<br>● | ●<br>●<br>● | 600-800<br>600-800<br>600-800 |
| Rostfreier Stahl | Austenitisch | 150-270 | ● | ● | 600-800 |
| Rostfreier Stahlguß | Ferritisch-Martensitisch<br>Austenitisch<br>Mangan-Stahl | 200<br>200<br>250 | ●<br>●<br>● | ●<br>●<br>● | 400<br>300<br>160 |
| Temperguß | Ferritisch – kurzspanend<br>Perlitisch – langspanend | 110-145<br>200-230 | ●<br>● | ●<br>● | 750<br>650 |
| Grauguß | Hohe Zugfestigkeit<br>Niedrige Zugfestigkeit | 180<br>260 | ●<br>● | ●<br>● | 950<br>700 |
| Kugelgraphitguß | Ferritisch<br>Perlitisch | 160<br>250 | ●<br>● | ●<br>● | 650<br>550 |
| Kokillenguß | | 400 | ● | ● | 160 |

### Praktische Empfehlungen

- Die angegebene Bedingungen sind für manuelle Anwendungen mit einer Kraft von 5-25 N empfohlen.
- Für leichtes Entgraten, die Schnittgeschwindigkeit erhöhen.
- Für schwere Operationen, z.B. mit einem Roboter, muss die Schnittgeschwindigkeit reduziert werden.



### Rotierfräser mit gerader Zahnung

- Optimale Oberflächengüte.
- Maximale Spanabfuhr in weiche Materialien.
- Ausgezeichnete Standzeit.
- Sie produzieren nagelförmige Späne.

### Rotierfräser mit Wechselzahnung

- Sie erlauben eine niedrigere Drehzahl.
- Weichere Operationen auch bei langsamer Drehzahl.
- Hohe Spanabfuhr in harte und weiche Materialien.
- Sie produzieren kurze und runde Späne.



**Typ 90**

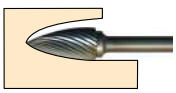
Für Oberflächen und glatte Kanten

**Typ 91**

Für Radius und Oberflächen

**Typ 92**

Für allgemeine Formen

**Typ 93**

Für gebogene Formen in schmalen Konturen

**Typ 94**

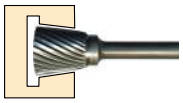
Für schmale Konturen

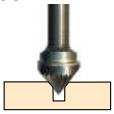
**Typ 95**

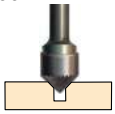
Für komplizierte Formen

**Typ 96**

Für geschweißte Formen und für Bohrungen in gebogenen Oberflächen

**Typ 97**

Winkelform

**Typ 98**

30° Grad Anfasen

**Typ 99**

45° Grad Anfasen

G



# DRILLS
# BOHRER

Inserts for drills
Wendeschneidplatten für Bohrer **H02**

Code system
Kodifizierung **H03**

Applications index
Anwendungen **H04**

Drills
Bohrer **H05-07**

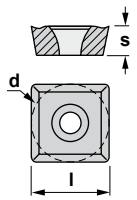
Trepanning drills
Kernbohrer **H08**

Spot facing and countersink milling cutters
Senkfräser und Rückwärtssenker **H09-11**

Technical information
Technische Auskünfte **H12-13**

Cutting data
Schnittdaten **H14-17**

## Square inserts / Positive
## Vierkant-Wendeschneidplatten / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◔ | ✣ | ◔ | ✣ | ✣ | ● | ◔ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | ◔ | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |

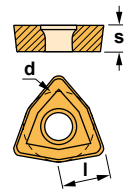


### SPMT

11°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TL10 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPMT 060304 | 6,35 | 3,18 | 6,35 | 0,4 | | | | | | | | | ● | |
| SPMT 070308 | 7,94 | 3,18 | 7,94 | 0,8 | | | | | | | | | ● | |
| SPMT 090308 | 9,52 | 3,18 | 9,52 | 0,8 | | | | | | | | | ● | |
| SPMT 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | | | | | | ● | |

## 80º Trigon inserts / Positive
## Trigon-Wendeschneidplatten 80º / Positiv




**Use classification / Einsatzbereich**
- Continuous / Ununterbrochen
- Slight interruption / Leicht unterbrochen
- Interruption / Unterbrochen

**Availability / Verfügbarkeit**
- Standard item / Standard-Artikel
- Check availability / Verfügbarkeit prüfen

| | | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TN30 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steel / Stahl | | ◔ | ✣ | ◔ | ✣ | ✣ | ✣ | ◔ | ✣ | |
| M | Stainless / Rostfreier Stahl | | ◔ | | | ◔ | ✣ | | | | |
| K | Cast iron / Guß | ◔ | ✣ | | ✣ | | | | | | |
| N | Non ferrous materials / Nicht-Eisen-Metalle | ✣ | | | | | | | | | ✣ |
| S | Heat-resistant alloys / Hitzebeständige Legierungen | | | | | | | | | | |
| H | Hard materials / Harte Materialien | | | | | | | | | | |



### WCMX

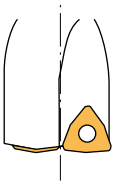
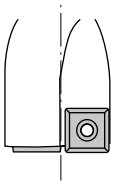
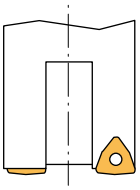
7°

| Reference / Bezeichnung | l | s | d | r | KM15 | PM25 | PM40 | TIN21 | TIN25 | TIN28 | TN30 | TL20 | TL40 | ZR10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WCMX 030208 | 3,46 | 2,38 | 5,56 | 0,8 | | | | | | | ● | | ● | |
| WCMX 040208 | 3,99 | 2,38 | 6,35 | 0,8 | | | | | | | ● | | ● | |
| WCMX 050308 | 5,07 | 3,18 | 7,94 | 0,8 | | | | | | | ● | | ● | |
| WCMX 06T308 | 6,14 | 3,97 | 9,52 | 0,8 | | | | | | | ● | | ● | |
| WCMX 080412 | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | | ● | | ● | |

# Code system / Kodifizierung

| 4 2 | 3 | 4 | 63 | 027 |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

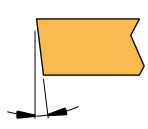
## 1 *Drill type / Bohrertyp*

| | | |
|---|---|---|
|  |  |  |
| 42 | 45 | 47 |

## 2 *Insert size / Wendeschneidplatte*

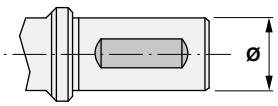
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
|  |  |  |  |  |
| WCMX 0302 | WCMX 0402 | WCMX 0503 | WCMX 06T3 | WCMX 0804 |
|  |  |  |  | |
| SPMT 0603 | SPMT 0703 | SPMT 0903 | SPMT 1204 | |

## 3 *Clearance angle of insert / Wendeschneidplatten-Freiwinkel*



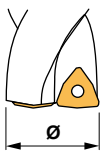

4

## 4 *Shank size / Schaftgröße*




| Ø20 | Ø25 | Ø32 | Ø40 | Ø20 | Ø24 | Ø28 | Ø36 |
|---|---|---|---|---|---|---|---|
| 61 | 62 | 63 | 64 | 72 | 73 | 74 | 75 |

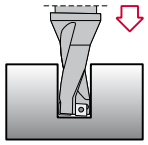
## 5 *Diameter, mm. / Durchmesser, mm.*




H

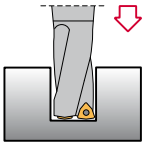
## *Drills*
## *Bohrer*

**45..**



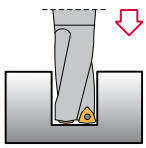
SPMT 0603..
*P. / S. H05* SPMT 1204..

**42..**



WCMX 0302..
*P. / S. H06* WCMX 0804..

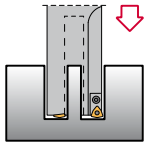
**42$^{1}_{4}$4.$^{72}_{75}$**



WCMX 0302..
*P. / S. H07* WCMX 06T3..

## *Trepanning drills*
## *Kernbohrer*

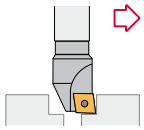
**4744.64**



*P. / S. H08* WCMX 08T3..

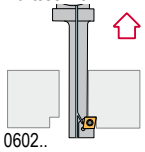
## *Spot facing and countersink milling cutters*
## *Senkfräser und Rückwärtssenker*

**02$^{1}_{3}$4.00**
Spot facing milling cutters
Senkfräser



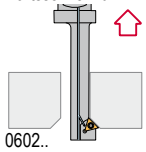
CC.. 0602..
*P. / S. H09* CC.. 09T3..

**9614.61**
Back draft spot facing
Rückwärtssenker



CC.. 0602..
CC.. 09T3.. *P. / S. H10*

**9624.61**
Back draft spot countersink
Rückwärtssenker zum Anfasen



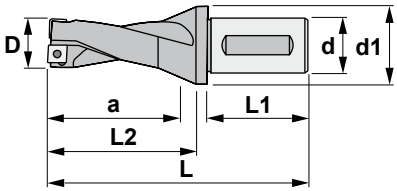
CC.. 0602..
TC.. 1102.. *P. / S. H11*

H

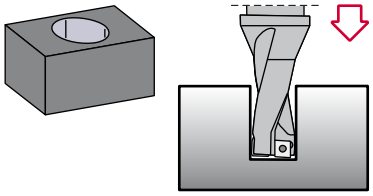
DRILLS
BOHRER



Characteristics:
Helical flute indexable insert drill that provides faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.
It works well on steels, alloyed steels, stainless steels and refractories.
Max. hole depth = 3 x Diameter (D)




Eigenschaften:
Spiralformige Wendeschneidplatten-Bohrer um eine höhere Schnittgeschwindigkeit und einen guten Spanabfluß zu erreichen. Sie werden in konventionellen CNC-Drehmaschinen eingesetzt.
Empfohlen für Stahl und auch für legierten, rostfreien und hitzebeständigen Stahl
Max. Bohrtiefe = 3 x Durchmesser (D)



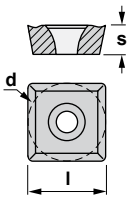
# 45..

| Reference Bezeichnung | D | L | L1 | L2 | a | d | d1 | | | Nm | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4514.62.015 | 15 | 120 | 55 | 56 | 45 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0603.. | 0,240 |
| 4514.62.016 | 16 | 121 | 55 | 56 | 48 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0603.. | 0,250 |
| 4514.62.017 | 17 | 127 | 55 | 54 | 51 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0603.. | 0,250 |
| 4514.62.017,5 | 17,5 | 127 | 55 | 56 | 53 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0603.. | 0,250 |
| 4514.62.018 | 18 | 128 | 55 | 57 | 54 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0603.. | 0,230 |
| 4514.62.018,5 | 18,5 | 130 | 55 | 59 | 56 | 25 | 40 | 1230 | 5507 | 0.9 | SPMT 0603.. | 0,240 |
| 4514.62.019 | 19 | 131 | 55 | 60 | 57 | 25 | 40 | 1250 | 5507 | 0.9 | SPMT 0603.. | 0,240 |
| 4514.62.020 | 20 | 136 | 55 | 64 | 60 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0603.. | 0,250 |
| 4524.62.022 | 22 | 142 | 55 | 69 | 66 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0703.. | 0,400 |
| 4524.62.024 | 24 | 150 | 55 | 76 | 72 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0703.. | 0,450 |
| 4524.62.025 | 25 | 154 | 55 | 79 | 75 | 25 | 40 | 1225 | 5507 | 0.9 | SPMT 0703.. | 0,475 |
| 4534.63.026 | 26 | 162 | 55 | 81 | 78 | 32 | 50 | 1225 | 5510 | 2.0 | SPMT 0903.. | 0,475 |
| 4534.63.027 | 27 | 165 | 55 | 84 | 81 | 32 | 50 | 1225 | 5520 | 4.0 | SPMT 0903.. | 0,500 |
| 4534.63.028 | 28 | 169 | 55 | 87 | 84 | 32 | 50 | 1230 | 5510 | 2.0 | SPMT 0903.. | 0,550 |
| 4534.63.029 | 29 | 172 | 55 | 90 | 87 | 32 | 50 | 1230 | 5510 | 2.0 | SPMT 0903.. | 0,570 |
| 4534.63.030 | 30 | 177 | 55 | 94 | 90 | 32 | 50 | 1230 | 5510 | 2.0 | SPMT 0903.. | 0,600 |
| 4534.64.031 | 31 | 186 | 60 | 97 | 93 | 40 | 60 | 1230 | 5510 | 2.0 | SPMT 0903.. | 0,850 |
| 4534.64.032 | 32 | 189 | 60 | 100 | 96 | 40 | 60 | 1230 | 5510 | 2.0 | SPMT 0903.. | 0,900 |
| 4534.64.034 | 34 | 196 | 60 | 106 | 102 | 40 | 60 | 1230 | 5510 | 2.0 | SPMT 0903.. | 0,975 |
| 4544.64.035 | 35 | 200 | 60 | 109 | 105 | 40 | 60 | 1230 | 5510 | 2.0 | SPMT 1204.. | 1,000 |
| 4544.64.038 | 38 | 211 | 60 | 118 | 114 | 40 | 60 | 1250 | 5520 | 4.0 | SPMT 1204.. | 1,170 |
| 4544.64.039 | 39 | 214 | 60 | 121 | 117 | 40 | 60 | 1250 | 5520 | 4.0 | SPMT 1204.. | 1,200 |
| 4544.64.040 | 40 | 218 | 60 | 124 | 120 | 40 | 60 | 1250 | 5520 | 4.0 | SPMT 1204.. | 1,300 |
| 4544.64.042 | 42 | 225 | 65 | 130 | 126 | 40 | 60 | 1250 | 5520 | 4.0 | SPMT 1204.. | 1,600 |
| 4544.64.043 | 43 | 229 | 65 | 133 | 129 | 40 | 60 | 1250 | 5520 | 4.0 | SPMT 1204.. | 1,750 |
| 4544.64.045 | 45 | 237 | 65 | 140 | 135 | 40 | 60 | 1250 | 5520 | 4.0 | SPMT 1204.. | 1,900 |

## SPMT

Square positive insert with 11° clearance.
Vierkantige positive Wendeschneidplatte mit 11° Freiwinkel. H02

| Reference / Bez. | l | s | d |
|---|---|---|---|
| SPMT 060304 | 6,35 | 3,18 | 6,35 |
| SPMT 070308 | 7,94 | 3,18 | 7,94 |
| SPMT 090308 | 9,52 | 3,18 | 9,52 |
| SPMT 120408 | 12,70 | 4,76 | 12,70 |



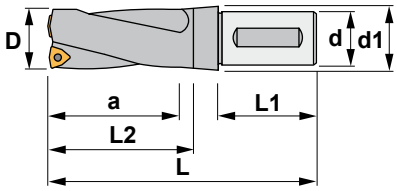

SPMT



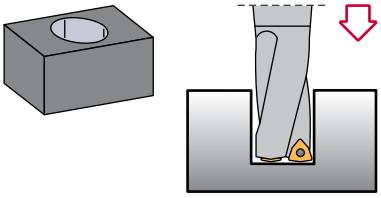
H



Characteristics:
Helical flute indexable insert drill that provides faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.
It works well on steels, alloyed steels, stainless steels and refractories.
Max. hole depth = 3 x Diameter (D)




Eigenschaften:
Spiralförmige Wendeschneidplatten-Bohrer um eine höhere Schnittgeschwindigkeit und einen guten Spanabfluß zu erreichen. Sie werden in konventionellen CNC-Drehmaschinen eingesetzt. Empfohlen für Stahl und auch für legierten, rostfreien und hitzebeständigen Stahl.
Max. Bohrtiefe = 3 x Durchmesser (D)



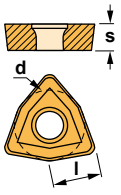
# 42..

| Reference Bezeichnung | D | L | L1 | L2 | a | d | d1 | Radial Adj. Dmax Radiale Anp. Dmax | | | Nm | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4214.62.017,5 | 17,5 | 127 | 55 | 56 | 53 | 25 | 40 | +1,00➲19,5 | 1622 | 5507 | 0.9 | WCMX 0302.. | 0,220 |
| 4214.62.018 | 18 | 128 | 55 | 57 | 54 | 25 | 40 | +0,90➲19,8 | 1622 | 5507 | 0.9 | WCMX 0302.. | 0,230 |
| 4214.62.018,5 | 18,5 | 130 | 55 | 59 | 56 | 25 | 40 | +0,85➲20,2 | 1622 | 5507 | 0.9 | WCMX 0302.. | 0,240 |
| 4214.62.019 | 19 | 131 | 55 | 60 | 57 | 25 | 40 | +0,80➲20,6 | 1622 | 5507 | 0.9 | WCMX 0302.. | 0,240 |
| 4214.62.020 | 20 | 136 | 55 | 64 | 60 | 25 | 40 | +0,75➲21,5 | 1622 | 5507 | 0.9 | WCMX 0302.. | 0,250 |
| 4224.62.022 | 22 | 142 | 55 | 69 | 66 | 25 | 40 | +1,25➲24,5 | 1225 | 5507 | 0.9 | WCMX 0402.. | 0,400 |
| 4224.62.024 | 24 | 150 | 55 | 76 | 72 | 25 | 40 | +0,75➲25,5 | 1225 | 5507 | 0.9 | WCMX 0402.. | 0,450 |
| 4224.62.025 | 25 | 154 | 55 | 79 | 75 | 25 | 40 | +0,50➲26,0 | 1225 | 5507 | 0.9 | WCMX 0402.. | 0,475 |
| 4234.63.026 | 26 | 162 | 60 | 81 | 78 | 32 | 50 | +2,50➲31,0 | 1630 | 5509 | 1.4 | WCMX 0503.. | 0,475 |
| 4234.63.027 | 27 | 165 | 60 | 84 | 81 | 32 | 50 | +2,20➲31,4 | 1630 | 5509 | 1.4 | WCMX 0503.. | 0,500 |
| 4234.63.028 | 28 | 169 | 60 | 87 | 84 | 32 | 50 | +2,10➲32,2 | 1630 | 5509 | 1.4 | WCMX 0503.. | 0,550 |
| 4234.63.029 | 29 | 172 | 60 | 90 | 87 | 32 | 50 | +1,80➲32,6 | 1630 | 5509 | 1.4 | WCMX 0503.. | 0,570 |
| 4234.63.030 | 30 | 177 | 60 | 94 | 90 | 32 | 50 | +1,80➲33,0 | 1630 | 5509 | 1.4 | WCMX 0503.. | 0,600 |
| 4244.64.031 | 31 | 186 | 65 | 97 | 93 | 40 | 60 | +3,50➲38,0 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 0,850 |
| 4244.64.032 | 32 | 189 | 65 | 100 | 96 | 40 | 60 | +3,20➲38,4 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 0,900 |
| 4244.64.034 | 34 | 196 | 65 | 106 | 102 | 40 | 60 | +2,80➲39,6 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 0,975 |
| 4244.64.035 | 35 | 200 | 65 | 109 | 105 | 40 | 60 | +2,50➲40,0 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 1,000 |
| 4244.64.038 | 38 | 211 | 65 | 118 | 114 | 40 | 60 | +1,80➲41,0 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 1,170 |
| 4244.64.039 | 39 | 214 | 65 | 121 | 117 | 40 | 60 | +1,50➲41,6 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 1,200 |
| 4244.64.040 | 40 | 218 | 65 | 124 | 120 | 40 | 60 | +1,20➲42,0 | 1635 | 5510 | 2.0 | WCMX 06T3.. | 1,300 |
| 4254.64.042 | 42 | 225 | 65 | 130 | 126 | 40 | 60 | +4,20➲51,0 | 1640 | 5515 | 3.0 | WCMX 0804.. | 1,600 |
| 4254.64.043 | 43 | 229 | 65 | 133 | 129 | 40 | 60 | +4,00➲51,4 | 1640 | 5515 | 3.0 | WCMX 0804.. | 1,750 |
| 4254.64.045 | 45 | 237 | 65 | 140 | 135 | 40 | 60 | +3,60➲52,2 | 1640 | 5515 | 3.0 | WCMX 0804.. | 1,900 |
| 4254.64.048 | 48 | 248 | 65 | 149 | 144 | 40 | 60 | +2,70➲53,4 | 1640 | 5515 | 3.0 | WCMX 0804.. | 2,250 |
| 4254.64.049 | 49 | 251 | 65 | 152 | 147 | 40 | 60 | +2,50➲54,0 | 1640 | 5515 | 3.0 | WCMX 0804.. | 2,200 |
| 4254.64.050 | 50 | 255 | 65 | 155 | 150 | 40 | 60 | +2,20➲54,4 | 1640 | 5515 | 3.0 | WCMX 0804.. | 2,400 |
| 4254.64.052 | 52 | 262 | 65 | 161 | 156 | 40 | 60 | +1,80➲55,6 | 1640 | 5515 | 3.0 | WCMX 0804.. | 2,500 |
| 4254.64.054 | 54 | 269 | 65 | 167 | 162 | 40 | 60 | +1,20➲56,4 | 1640 | 5515 | 3.0 | WCMX 0804.. | 2,700 |
| 4254.64.055 | 55 | 274 | 65 | 171 | 165 | 40 | 60 | +0,80➲56,6 | 1640 | 5515 | 3.0 | WCMX 0804.. | 2,850 |

## WCMX

80° trigon positive insert with 7° clearance. H02
80° trigon positive Wendeschneidplatte mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WCMX 0302.. | 3,46 | 2,38 | 5,56 |
| WCMX 0402.. | 3,99 | 2,38 | 6,35 |
| WCMX 0503.. | 5,07 | 3,18 | 7,94 |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |
| WCMX 0804.. | 8,14 | 4,76 | 12,70 |




WCMX

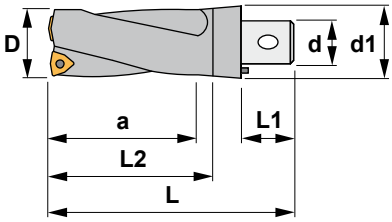


H

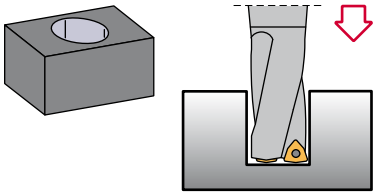
DRILLS
BOHRER



Characteristics:
Helical flute indexable insert drill that provides faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.
It works well on steels, alloyed steels, stainless steels and refractories.
Max. hole depth = 3 x Diameter (D)




Eigenschaften:
Spiralformige Wendeschneidplatten-Bohrer um eine höhere Schnittgeschwindigkeit und einen guten Spanabfluß zu erreichen. Sie werden in konventionellen CNC-Drehmaschinen eingesetzt.
Empfohlen für Stahl,und auch für legierten, rostfreien und hitzebeständigen Stahl.
Max. Bohrtiefe = 3 x Durchmesser (D)



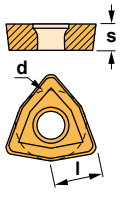
## 4214.72/75

| Reference Bezeichnung | D | L | L1 | L2 | a | d | d1 | Radial Adj. Dmax Radiale Anp. Dmax | | Nm | Insert size Wendeschneidplatte | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4214.72.017,5 | 17,5 | 92 | 20 | 56 | 53 | 20 | 32 | +1,00➲19,5 | 1622 5507 | 0.9 | WCMX 0302.. | 0,070 |
| 4214.72.018 | 18 | 93 | 20 | 57 | 54 | 20 | 32 | +0,90➲19,8 | 1622 5507 | 0.9 | WCMX 0302.. | 0,080 |
| 4214.72.018,5 | 18,5 | 95 | 20 | 59 | 56 | 20 | 32 | +0,85➲20,2 | 1622 5507 | 0.9 | WCMX 0302.. | 0,080 |
| 4214.72.019 | 19 | 96 | 20 | 60 | 57 | 20 | 32 | +0,80➲20,6 | 1622 5507 | 0.9 | WCMX 0302.. | 0,090 |
| 4214.72.020 | 20 | 101 | 20 | 64 | 60 | 20 | 32 | +0,75➲21,5 | 1622 5507 | 0.9 | WCMX 0302.. | 0,110 |
| 4224.73.022 | 22 | 112 | 25 | 69 | 66 | 24 | 40 | +1,25➲24,5 | 1225 5507 | 0.9 | WCMX 0402.. | 0,320 |
| 4224.73.024 | 24 | 120 | 25 | 76 | 72 | 24 | 40 | +0,75➲26,5 | 1225 5507 | 0.9 | WCMX 0402.. | 0,370 |
| 4224.73.025 | 25 | 124 | 25 | 79 | 75 | 24 | 40 | +0,50➲26,0 | 1225 5507 | 0.9 | WCMX 0402.. | 0,400 |
| 4234.74.026 | 26 | 132 | 30 | 81 | 78 | 28 | 40 | +2,50➲31,0 | 1630 5509 | 1.4 | WCMX 0503.. | 0,375 |
| 4234.74.027 | 27 | 135 | 30 | 84 | 81 | 28 | 40 | +2,20➲31,4 | 1630 5509 | 1.4 | WCMX 0503.. | 0,400 |
| 4234.74.028 | 28 | 139 | 30 | 87 | 84 | 28 | 40 | +2,10➲32,2 | 1630 5509 | 1.4 | WCMX 0503.. | 0,450 |
| 4234.74.029 | 29 | 142 | 30 | 90 | 87 | 28 | 40 | +1,80➲32,6 | 1630 5509 | 1.4 | WCMX 0503.. | 0,470 |
| 4234.74.030 | 30 | 147 | 30 | 94 | 90 | 28 | 40 | +1,80➲33,0 | 1630 5509 | 1.4 | WCMX 0503.. | 0,500 |
| 4244.75.031 | 31 | 161 | 40 | 97 | 93 | 36 | 50 | +3,50➲38,0 | 1635 5510 | 2.0 | WCMX 06T3.. | 0,600 |
| 4244.75.032 | 32 | 164 | 40 | 100 | 96 | 36 | 50 | +3,20➲38,4 | 1635 5510 | 2.0 | WCMX 06T3.. | 0,750 |
| 4244.75.034 | 34 | 171 | 40 | 106 | 102 | 36 | 50 | +2,80➲39,6 | 1635 5510 | 2.0 | WCMX 06T3.. | 0,800 |
| 4244.75.035 | 35 | 175 | 40 | 109 | 105 | 36 | 50 | +2,50➲40,0 | 1635 5510 | 2.0 | WCMX 06T3.. | 0,850 |
| 4244.75.038 | 38 | 186 | 40 | 118 | 114 | 36 | 50 | +1,80➲41,0 | 1635 5510 | 2.0 | WCMX 06T3.. | 1,000 |
| 4244.75.039 | 39 | 189 | 40 | 121 | 117 | 36 | 50 | +1,50➲41,6 | 1635 5510 | 2.0 | WCMX 06T3.. | 1,050 |
| 4244.75.040 | 40 | 193 | 40 | 124 | 120 | 36 | 50 | +1,20➲42,0 | 1635 5510 | 2.0 | WCMX 06T3.. | 1,150 |

## WCMX

80° trigon positive insert with 7° clearance. H02
80° trigon positive Wendeschneidplatte mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WCMX 0302.. | 3,46 | 2,38 | 5,56 |
| WCMX 0402.. | 3,99 | 2,38 | 6,35 |
| WCMX 0503.. | 5,07 | 3,18 | 7,94 |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |



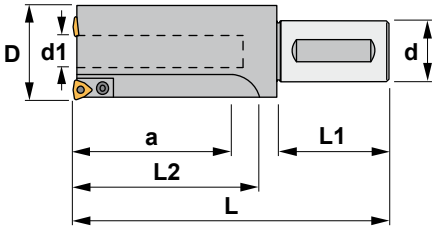

WCMX



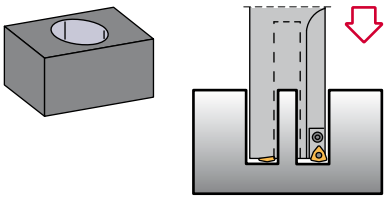
H



Characteristics:
Straight flute indexable insert trepanning drill that provides faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.
It works well on steels, alloyed steels, stainless steels and refractories.
Max. hole depth = 2.5 x Diameter (D)




Eigenschaften:
Gerader Wendeschneidplatten-Kernbohrer um eine höhere Schnittgeschwindigkeit und einen guten Spanabfluß zu erreichen. Sie werden in konventionellen CNC-Drehmaschinen eingesetzt.
Empfohlen für Stahl,und auch für legierten, rostfreien und hitzebeständigen Stahl.
Max. Bohrtiefe = 2.5 x Durchmesser (D)



# 4744.64

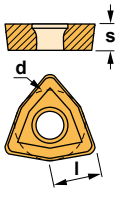
| Reference<br>Bezeichnung | D | L | L1 | L2 | a | d | d1 | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 4744.64.060 | 60 | 260 | 65 | 160 | 150 | 40 | 24 | WCMX 06T3.. | 3,100 |
| 4744.64.065 | 65 | 275 | 65 | 175 | 165 | 40 | 29 | WCMX 06T3.. | 3,700 |
| 4744.64.070 | 70 | 285 | 65 | 185 | 175 | 40 | 34 | WCMX 06T3.. | 4,250 |
| 4744.64.075 | 75 | 300 | 65 | 200 | 190 | 40 | 39 | WCMX 06T3.. | 5,100 |
| 4744.64.080 | 80 | 310 | 65 | 210 | 200 | 40 | 44 | WCMX 06T3.. | 5,800 |
| 4744.64.085 | 85 | 325 | 65 | 225 | 215 | 40 | 49 | WCMX 06T3.. | 6,500 |
| 4744.64.090 | 90 | 335 | 65 | 235 | 225 | 40 | 54 | WCMX 06T3.. | 7,250 |
| 4744.64.095 | 95 | 350 | 65 | 250 | 240 | 40 | 59 | WCMX 06T3.. | 8,200 |
| 4744.64.100 | 100 | 360 | 65 | 260 | 250 | 40 | 64 | WCMX 06T3.. | 9,050 |

| Reference<br>Bezeichnung | | | | | | | | | | Nm |
|---|---|---|---|---|---|---|---|---|---|---|
| 4744.64.060 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.065 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.070 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.075 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.080 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.085 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.090 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.095 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |
| 4744.64.100 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 | 2.0 |

## WCMX

80° trigon positive insert with 7° clearance.
80° trigon positive Wendeschneidplatte mit 7° Freiwinkel. H02

| Reference / Bez. | l | s | d |
|---|---|---|---|
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |



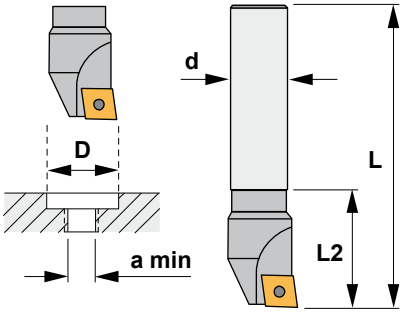

WCMX

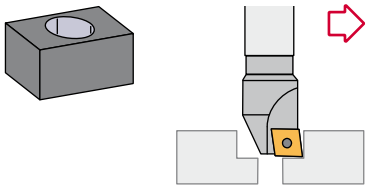




Characteristics:
Spot facing milling cutter for flat screw heads.
For counterboring operations.

Eigenschaften:
Fräser zum Plansenken für flache Schraubenköpfe.
Zum Plansenken.



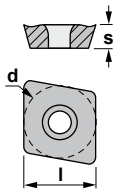
# 02 1/3 4.00

| Reference Bezeichnung | | D | d | a min | L | L2 | | Nm | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 0214.00.010 | 1 | 10 | 12 | 4 | 85 | 15 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0214.00.011 | 1 | 11 | 12 | 4 | 85 | 15 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0214.00.012 | 1 | 12 | 12 | 4 | 85 | 15 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0214.00.013 | 1 | 13 | 12 | 5 | 85 | 15 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0214.00.014 | 1 | 14 | 12 | 5 | 85 | 19 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0214.00.015 | 1 | 15 | 12 | 5 | 85 | 19 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0214.00.016 | 1 | 16 | 12 | 5 | 85 | 19 | 1425 5507 | 0.9 | CC.. 0602.. | 0,100 |
| 0234.00.017 | 1 | 17 | 16 | 5 | 95 | 30 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,125 |
| 0234.00.018 | 1 | 18 | 16 | 5 | 95 | 30 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,125 |
| 0234.00.019 | 1 | 19 | 16 | 5 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,125 |
| 0234.00.020 | 1 | 20 | 16 | 5 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,125 |
| 0234.00.022 | 1 | 22 | 16 | 6 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |
| 0234.00.025 | 1 | 25 | 16 | 8 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |
| 0234.00.026 | 1 | 26 | 16 | 8 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |
| 0234.00.028 | 1 | 28 | 16 | 10 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |
| 0234.00.030 | 1 | 30 | 16 | 10 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |
| 0234.00.032 | 1 | 32 | 16 | 12 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |
| 0234.00.033 | 1 | 33 | 16 | 12 | 95 | 32 | 1440 5515 | 3.0 | CC.. 09T3.. | 0,150 |

## CC..

80° rhombic positive inserts with 7° clearance. F12
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel.

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |




CCGT-AL



CCKT



CCMW

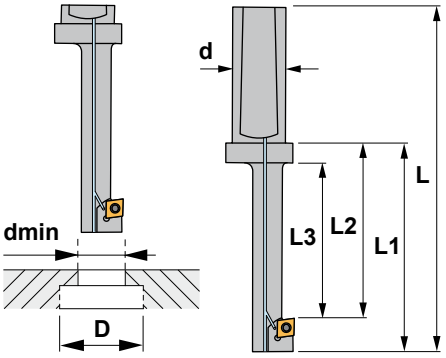


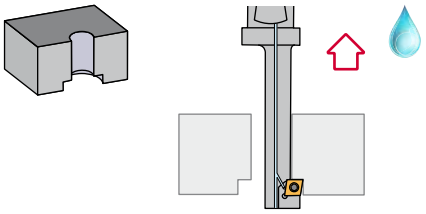
H



Characteristics:
Back draft spot facing milling cutter with internal coolant for flat screw heads.
For counterboring operations.

Eigenschaften:
Rückwärts-Plansenker mit Innenkühlung für flache Schraubenköpfe.
Zum Plansenken.



# 9614.61

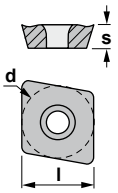
| Reference Bezeichnung | | D | dmin | d | L | L1 | L2 | L3 | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9614.61.018 | 1 | 18 | 10,5 | 20 | 112 | 62 | 47 | 40 | 25 | CC.. 0602.. | 0,280 |
| 9614.61.020 | 1 | 20 | 13,0 | 20 | 113 | 63 | 52 | 45 | 25 | CC.. 0602.. | 0,300 |
| 9614.61.024 | 1 | 24 | 15,0 | 20 | 118 | 68 | 57 | 50 | 25 | CC.. 0602.. | 0,320 |
| 9614.61.026 | 1 | 26 | 17,0 | 20 | 128 | 78 | 67 | 60 | 25 | CC.. 0602.. | 0,380 |
| 9614.61.030 | 1 | 30 | 19,0 | 20 | 138 | 88 | 77 | 70 | 25 | CC.. 0602.. | 0,400 |
| 9614.61.033 | 1 | 33 | 21,0 | 20 | 152 | 102 | 82 | 75 | 25 | CC.. 09T3.. | 0,430 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 9614.61.018 | 1425 | 5507 | 0.9 |
| 9614.61.020 | 1425 | 5507 | 0.9 |
| 9614.61.024 | 1425 | 5507 | 0.9 |
| 9614.61.026 | 1225 | 5507 | 0.9 |
| 9614.61.030 | 1225 | 5507 | 0.9 |
| 9614.61.033 | 1440 | 5515 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |




CCGT-AL



CCKT



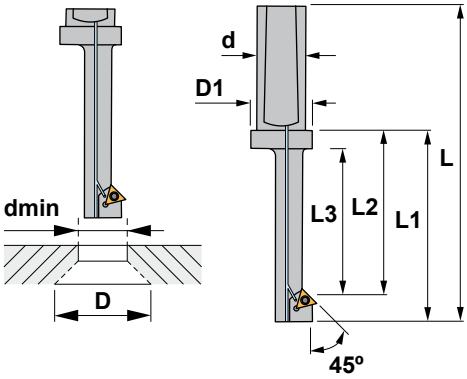
CCMW

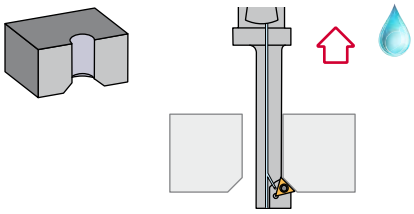




Characteristics:
Back draft countersink milling cutter with internal coolant.
Recommended for small conventional milling machines and machining centers.

Eigenschaften:
Rückwärts-Senker mit Innenkühlung für flache Schraubenköpfe.
Für konventionelle Fräsmaschinen und Bearbeitungszentren geeignet.



# 9624.61

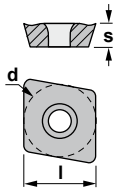
| Reference Bezeichnung | | D | dmin | d | L | L1 | L2 | L3 | D1 | Insert size Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9624.61.015 | 1 | 15 | 10 | 20 | 105 | 55 | 42 | 35 | 25 | CC.. 0602.. | 0,280 |
| 9624.61.020 | 1 | 20 | 14 | 20 | 110 | 60 | 47 | 40 | 25 | CC.. 0602.. | 0,300 |
| 9624.61.023 | 1 | 23 | 17 | 20 | 120 | 70 | 57 | 50 | 25 | TC.. 1102.. | 0,320 |
| 9624.61.027 | 1 | 27 | 21 | 20 | 140 | 90 | 77 | 70 | 25 | TC.. 1102.. | 0,380 |
| 9624.61.031 | 1 | 31 | 24 | 20 | 150 | 100 | 87 | 80 | 25 | TC.. 1102.. | 0,400 |

| Reference Bezeichnung | | | Nm |
|---|---|---|---|
| 9624.61.015 | 1425 | 5507 | 0.9 |
| 9624.61.020 | 1425 | 5507 | 0.9 |
| 9624.61.023 | 1225 | 5507 | 0.9 |
| 9624.61.027 | 1225 | 5507 | 0.9 |
| 9624.61.031 | 1225 | 5507 | 0.9 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |




CCGT-AL



CCKT



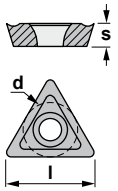
CCMW



## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 1102.. | 6,45 | 2,38 | 6,35 |



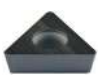

TCGT-AL



TCMT-39

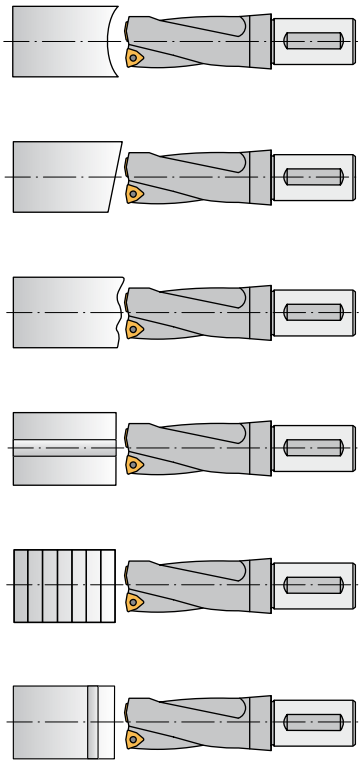


TCMW



H

# Drills - Recommendations for the assembly



**Drills for indexable inserts**

A concave surface is not normally recommended because there is the possibility that the tool turns away from the center. Feed should be reduced to 1/3 of the recommended.

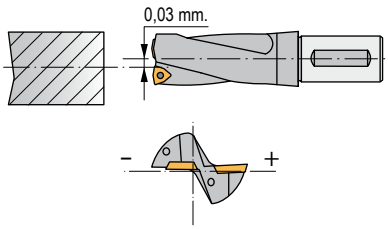
The surface of the tool to be drilled on should be preferably even. If the angles exceed 2º, feed should be reduced to 1/3 of the recommended.

If the starting surface is an uneven surface of the component, feed should be reduced so that the chip of the cutting edges can be avoided. The same can also happen at the way out from the tool.

When working with a hole made beforehand, this should not be bigger than 1/4 of the final size, because the tool could turn away.

There is the possibility to drill sets of more than one piece.

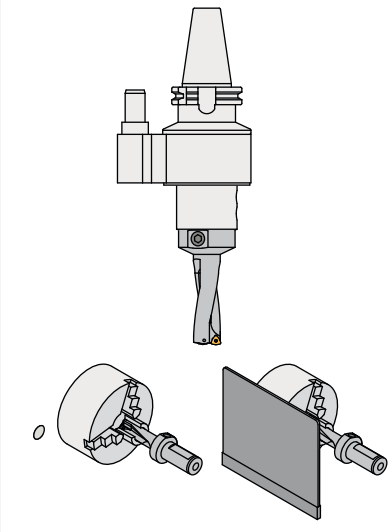
When the tool has a crossed hole, which is 1/4 bigger than the diameter of the drill, feed should be reduced when going through it.




**Fixed drills**

The axis of the tool should not be deviated from the center of the piece more than 0,03 mm. so that the pointed tolerances are acquired.

The tool should be assembled in a way that the face of the central insert goes parallel to the cross movement axis of the machine.



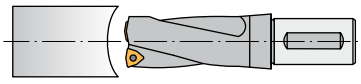
**Drilling with drill-holders with housing for cutting fluid supply**

When a drillholder with a housing supplier of cutting fluid is used, it has to have a fixed top so as to avoid that the housing turns around.
If the cutting fluid has some dirty rests, this could lock the rotary housing and, consequently, the supplier tube would roll up around it, which could cause a serious accident.
If the drillholder has not been used for a long time, check if it turns round in the housing before the spindle starts working.

**Drilling of through-holes**

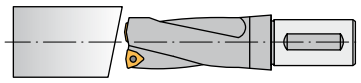
When through-holes are drilled, a disk is produced after the drill has finished the hole. This disk is often thrown away at high speed and can cause injuries and accidents.
In order to avoid this accident, a suitable safety system has to be placed around the dish.

# *Bohrer – Einsatzempfehlungen*

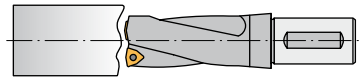


**Bohrer für Wendeschneidplatten**

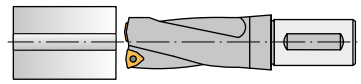
Eine konkave Oberfläche ist normalerweise nicht empfohlen, weil die Möglichkeit besteht, daß der Bohrer von der Mitte abgelenkt wird. Der Vorschub sollte auf 1/3 des empfohlenen Wertes vermindert werden.



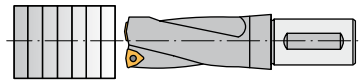
Die Anbohrfläche sollte wenn möglich eben sein. Wenn die Winkel mehr als 2° betragen, sollte man den Vorschub beim Anbohren auf 1/3 des empfohlenen Wertes vermindern.



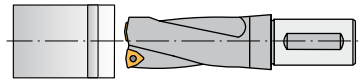
Wenn man ab einer ungleichmäßigen Oberfläche beginnt, muss der Vorschub beim Anbohren reduziert werden, so daß ein Ausbröckeln der Schneidkante verhindert werden kann. Das gleiche kann auch beim Durchbohren passieren.



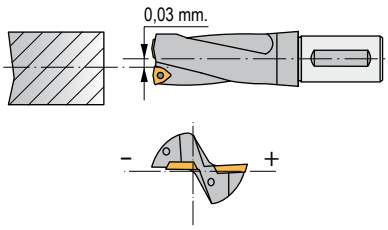
Wenn man in einem Werkstück bohrt, das schon angebohrt ist, darf diese vorgebohrte Bohrung nicht größer als 1/4 des gewünschten Enddurchmessers haben, da der Bohrer sonst von der Mitte abgelenkt wird.



Es ist möglich, mehrere übereinander liegende Werkstücke zu bohren.



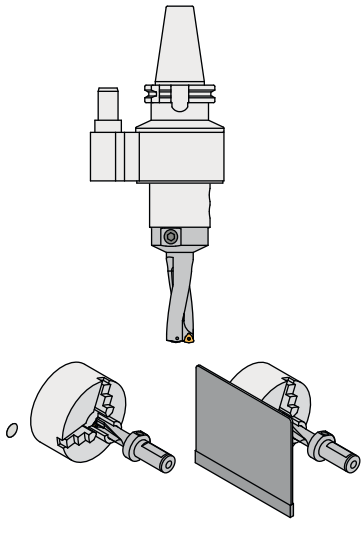
Wenn das Werkstück eine Querbohrung von mehr als 1/4 des Bohrerdurchmessers hat, muß der Vorschub vermindert werden, wenn man durch diese Bohrung bohrt.




**Nichtrotierende Bohrer**

Die Werkzeugachse darf nicht mehr als 0,03 mm von der Mitte des Werkstücks abgelenkt sein, damit man die angegebenen Toleranzen erreichen kann.

Der Bohrer muß so positioniert werden, daß die Schneidkante der Mittelplatte parallel zur X-Achse der Maschine ist.



**Bohren mit Halter mit Kühlmittelgehäuse**

Wenn man einen Halter mit Kühlmittelgehäuse verwendet, muß eine Arretierung vorhanden sein, die das Rotieren des Gehäuses verhindert.
Falls das Kühlmittel durch Spanpartikel verschmutzt ist, könnte das Gehäuse blockieren und in diesem Fall würde das Gehäuse die Zuleitung mit sich ziehen, und ein ernsthafter Unfall könnte die Folge sein.
Wenn ein Halter mit Kühlmittelgehäuse längere Zeit nicht verwendet worden ist, muß vor Inbetriebnahme der Maschine geprüft werden, ob sich der Halter im Gehäuse leicht drehen läßt.

**Bohren von Durchgangsbohrungen**

Wenn man Durchgangsbohrungen bohrt, entsteht beim Austritt des Bohrers aus dem Werkstück eine Scheibe, die oft mit hoher Geschwindigkeit aus dem Spannfutter geschleudert wird und Schaden und Verletzungen verursachen kann.
Um dies zu verhindern, muß eine Schutzabdeckung um das Spannfutter vorhanden sein.

H

| Material | HB | Condition | D mm. | Feed mm./Rev. | Cutting speed mm./min. |
|---|---|---|---|---|---|
| Unalloyed steel **P** | 90-200 | Non-hardened 0,05-0,25%C | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,08<br>0,06-0,10<br>0,08-0,12<br>0,08-0,12 | 100-250 |
| Unalloyed steel | 125-225<br>150-225<br>180-225 | Non-hardened 0,25-0,55%C<br>Non-hardened 0,55-0,80%C<br>High carbon & carbon tool steel | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,09-0,19<br>0,11-0,20<br>0,14-0,25 | 100-250 |
| Low alloyed steel | 150-260 | Non-hardened | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,16<br>0,11-0,20<br>0,14-0,22 | 90-250 |
| Low alloyed steel | 220-400 | Hardened | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,06-0,10<br>0,08-0,15<br>0,08-0,15<br>0,11-0,20 | 80-220 |
| High alloyed steel | 150-250<br>150-250 | Annealed<br>Annealed HSS | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,18<br>0,11-0,22<br>0,14-0,25 | 100-220 |
| High alloyed steel | 250-350<br>250-400 | Hardened tool steel<br>Hardened steel | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,15<br>0,11-0,17<br>0,12-0,20 | 90-200 |
| Stainless steel | 150-270 | Ferritic,<br>Martensitic 13-25%Cr | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,10-0,16<br>0,11-0,18<br>0,11-0,18 | 90-190 |
| Steel castings | 150-270 | Unalloyed | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,05-0,08<br>0,06-0,10<br>0,09-0,15<br>0,11-0,18 | 100-230 |
| Steel castings | 90-225 | Low alloyed<br>(alloying elements < 5%) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,15<br>0,12-0,20<br>0,14-0,22 | 90-200 |
| Stainless steel **M** | 150-250 | Austenitic<br>Ni > 8%, 18-25% Cr | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,10-0,16<br>0,11-0,18<br>0,11-0,18 | 70-150 |
| Malleable cast iron **K** | 110-145 | Ferritic (short chipping) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,11-0,18<br>0,14-0,22<br>0,17-0,27<br>0,18-0,30 | 90-200 |
| Malleable cast iron | 150-270 | Pearlitic (long chipping) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,11-0,19<br>0,12-0,20<br>0,14-0,22 | 80-180 |
| Grey cast iron | 150-220 | Low tensile strength | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,14-0,22<br>0,15-0,25<br>0,18-0,30 | 80-180 |
| Grey cast iron | 200-330 | High tensile strength | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,12-0,20<br>0,14-0,22<br>0,15-0,25 | 70-150 |
| Nodular cast iron | 125-230 | Ferritic | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,14-0,22<br>0,15-0,25<br>0,17-0,28 | 80-180 |
| Nodular cast iron | 200-300 | Pearlitic | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,12-0,20<br>0,14-0,22<br>0,15-0,30 | 70-150 |
| Aluminium alloys | 75-150<br>40-100<br>70-125 | Wrought,<br>solution treated & aged<br>Cast<br>Cast, solution treated & aged | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,11-0,17<br>0,17-0,27<br>0,17-0,27 | 150-375 |
| Copper and copper alloys | 50-160 | Free cutting alloys (pb>1%)<br>Brass and leaded bronzes (pb<1%) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,09-0,15<br>0,15-0,25<br>0,15-0,25 | 80-160 |



H

| Materialien | HB | Beschaffenheit | D mm. | Vorschub mm./Rev. | Schnittgeschwindigkeit mm./min. |
|---|---|---|---|---|---|
| Unlegierter Stahl **P** | 90-200 | Nicht vergütet 0,05-0,25%C | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,08<br>0,06-0,10<br>0,08-0,12<br>0,08-0,12 | 100-250 |
| Unlegierter Stahl | 125-225<br>150-225<br>180-225 | Nicht vergütet 0,25-0,55%C<br>Nicht vergütet 0,55-0,80%C<br>Stahl mit hohem Kohlenstoff-Inhalt und Kohlenstoff-Werkzeugstahl | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,09-0,19<br>0,11-0,20<br>0,14-0,25 | 100-250 |
| Niedrig legierter Stahl | 150-260 | Nicht vergütet | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,16<br>0,11-0,20<br>0,14-0,22 | 90-250 |
| Niedriglegierter Stahl | 220-400 | Vergütet | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,06-0,10<br>0,08-0,15<br>0,08-0,15<br>0,11-0,20 | 80-220 |
| Hochlegierter Stahl | 150-250<br>150-250 | Geglüht<br>Geglühteter HSS | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,18<br>0,11-0,22<br>0,14-0,25 | 100-220 |
| Hochlegierter Stahl | 250-350<br>250-400 | Vergüteter Werkzeugstahl<br>Vergüteter Stahl | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,15<br>0,11-0,17<br>0,12-0,20 | 90-200 |
| Rostfreier Stahl | 150-270 | Ferritisch,<br>Martensitisch 13-25%Cr | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,10-0,16<br>0,11-0,18<br>0,11-0,18 | 90-190 |
| Stahlguß | 150-270 | Unlegiert | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,05-0,08<br>0,06-0,10<br>0,09-0,15<br>0,11-0,18 | 100-230 |
| Stahlguß | 90-225 | Niedrig legiert<br>(Legierungsanteile < 5%) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,09-0,15<br>0,12-0,20<br>0,14-0,22 | 90-200 |
| Rostfreier Stahl **M** | 150-250 | Austenitisch<br>Ni > 8%, 18-25% Cr | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,10-0,16<br>0,11-0,18<br>0,11-0,18 | 70-150 |
| Temperguß **K** | 110-145 | Ferritisch (kurzspanend) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,11-0,18<br>0,14-0,22<br>0,17-0,27<br>0,18-0,30 | 90-200 |
| Temperguß | 150-270 | Perlitisch (langspanend) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,11-0,19<br>0,12-0,20<br>0,14-0,22 | 80-180 |
| Grauguß | 150-220 | Niedrige Zugfestigkeit | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,14-0,22<br>0,15-0,25<br>0,18-0,30 | 80-180 |
| Grauguß | 200-330 | Hohe Zugfestigkeit | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,12-0,20<br>0,14-0,22<br>0,15-0,25 | 70-150 |
| Kugelgraphiteguß | 125-230 | Ferritisch | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,14-0,22<br>0,15-0,25<br>0,17-0,28 | 80-180 |
| Kugelgraphiteguß | 200-300 | Perlitisch | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,12-0,20<br>0,14-0,22<br>0,15-0,30 | 70-150 |
| Aluminium-Legierungen | 75-150<br>40-100<br>70-125 | Geschmiedet, lösungsbehandelt und gealtert<br>Gegossen<br>Geschmiedet, lösungsbehandelt und gealtert | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,11-0,17<br>0,17-0,27<br>0,17-0,27 | 150-375 |
| Kupfer und Kupferlegierungen | 50-160 | Automatenstähle (pb>1%)<br>Messing und bleilegierte Bronzen (pb<1%) | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,09-0,15<br>0,15-0,25<br>0,15-0,25 | 80-160 |



H

| Material P | HB | Condition | D mm. | Feed mm./Rev. | Cutting speed m/min |
|---|---|---|---|---|---|
| Unalloyed steel | 90-200<br>125-225<br>150-225<br>180-225 | Non-hardened 0,05-0,25%C<br>Non-hardened 0,25-0,55%C<br>Non-hardened 0,55-0,80%C<br>High carbon & carbon tool steel | 60-100 | 0,08-0,12<br>0,11-0,18<br>0,11-0,18<br>0,11-0,18 | 150-250<br>100-250<br>100-250<br>100-250 |
| Low alloyed steel | 150-260<br>220-400 | Non-hardened<br>Hardened | 60-100 | 0,11-0,18<br>0,08-0,12 | 100-250<br>100-220 |
| High alloyed steel | 150-250<br>150-250<br>250-350<br>250-400 | Annealed<br>Annealed HSS<br>Hardened tool steel<br>Hardened steel | 60-100 | 0,11-0,19<br>0,11-0,19<br>0,11-0,18<br>0,11-0,17 | 100-220<br>100-220<br>100-200<br>100-200 |
| Stainless steel | 150-270 | Ferritic, martensitic 13-25%Cr | 60-100 | 0,11-0,17 | 100-200 |
| Steel castings | 90-225<br>150-250 | Unalloyed<br>Low alloyed (< 5%) | 60-100 | 0,12-0,20<br>0,11-0,17 | 100-200<br>100-150 |

| Material M | HB | Condition | D mm. | Feed mm./Rev. | Cutting speed m/min |
|---|---|---|---|---|---|
| Stainless steel | 150-270 | Austenitic<br>Ni > 8%, 18-25% Cr | 60-100 | 0,09-0,15 | 100-230 |

| Material K | HB | Condition | D mm. | Feed mm./Rev. | Cutting speed m/min |
|---|---|---|---|---|---|
| Malleable cast iron | 110-145<br>150-270 | Ferritic (short chipping)<br>Pearlitic (long chipping) | 60-100<br>60-100 | 0,17-0,27<br>0,12-0,20 | 100-200<br>90-180 |
| Grey cast iron | 150-220<br>200-300 | Low tensile strength<br>High tensile strength | 60-100<br>60-100 | 0,15-0,25<br>0,14-0,22 | 90-180<br>90-150 |
| Nodular cast iron | 125-230<br>200-300 | Ferritic<br>Pearlitic | 60-100<br>60-100 | 0,15-0,25<br>0,14-0,22 | 100-180<br>90-150 |
| Aluminium alloys | 75-150<br>40-100<br>70-125 | Wrought,<br>solution treated & aged<br>Cast<br>Cast, solution treated & aged | 60-100<br>60-100<br>60-100 | 0,17-0,27<br>0,17-0,27<br>0,17-0,27 | 150-375<br>150-375<br>150-375 |
| Copper and copper alloys | 50-160 | Free cutting alloys (pb>1%)<br>Brass and leaded bronzes (pb<1%) | 60-100 | 0,15-0,25 | 100-160 |

| Materialien P | HB | Beschaffenheit | D mm. | Vorschub mm./Rev. | Schnittgeschwindigkeit m/min |
|---|---|---|---|---|---|
| Unlegierter Stahl | 90-200<br>125-225<br>150-225<br>180-225 | Nicht vergütet 0,05-0,25%C<br>Nicht vergütet 0,25-0,55%C<br>Nicht vergütet 0,55-0,80%C<br>Stahl mit hohem Kohlenstoff-Inhalt und Kohlenstoff-Werkzeugstahl | 60-100 | 0,08-0,12<br>0,11-0,18<br>0,11-0,18<br>0,11-0,18 | 150-250<br>100-250<br>100-250<br>100-250 |
| Niedrig legierter Stahl | 150-260<br>220-400 | Nicht vergütet<br>Vergütet | 60-100 | 0,11-0,18<br>0,08-0,12 | 100-250<br>100-220 |
| Hochlegierter Stahl | 150-250<br>150-250<br>250-350<br>250-400 | Geglüht<br>Geglühteter HSS<br>Vergüteter Werkzeugstahl<br>Vergüteter Stahl | 60-100 | 0,11-0,19<br>0,11-0,19<br>0,11-0,18<br>0,11-0,17 | 100-220<br>100-220<br>100-200<br>100-200 |
| Rostfreier Stahl | 150-270 | Ferritisch, Martensitisch 13-25%Cr | 60-100 | 0,11-0,17 | 100-200 |
| Stahlguß | 90-225<br>150-250 | Unlegiert<br>Niedrig legiert (< 5%) | 60-100 | 0,12-0,20<br>0,11-0,17 | 100-200<br>100-150 |

| Materialien M | HB | Beschaffenheit | D mm. | Vorschub mm./Rev. | Schnittgeschwindigkeit m/min |
|---|---|---|---|---|---|
| Rostfreier Stahl | 150-270 | Austenitisch<br>Ni > 8%, 18-25% Cr | 60-100 | 0,09-0,15 | 100-230 |

| Materialien K | HB | Beschaffenheit | D mm. | Vorschub mm./Rev. | Schnittgeschwindigkeit m/min |
|---|---|---|---|---|---|
| Temperguß | 110-145<br>150-270 | Ferritisch (kurzspanend)<br>Perlitisch (langspanend) | 60-100<br>60-100 | 0,17-0,27<br>0,12-0,20 | 100-200<br>90-180 |
| Grauguß | 150-220<br>200-300 | Niedrige Zugfestigkeit<br>Hohe Zugfestigkeit | 60-100<br>60-100 | 0,15-0,25<br>0,14-0,22 | 90-180<br>90-150 |
| Kugelgraphiteguß | 125-230<br>200-300 | Ferritisch<br>Perlitisch | 60-100<br>60-100 | 0,15-0,25<br>0,14-0,22 | 100-180<br>90-150 |
| Aluminium-Legierungen | 75-150<br>40-100<br>70-125 | Geschmiedet, lösungsbehandelt und gealtert<br>Gegossen<br>Geschmiedet, lösungsbehandelt und gealtert | 60-100<br>60-100<br>60-100 | 0,17-0,27<br>0,17-0,27<br>0,17-0,27 | 150-375<br>150-375<br>150-375 |
| Kupfer und Kupferlegierungen | 50-160 | Automatenstähle (pb>1%)<br>Messing und bleilegierte Bronzen (pb<1%) | 60-100 | 0,15-0,25 | 100-160 |

# *ISO Tolerances for Shafts (ISO 286-2)*
# *ISO Toleranzen für Aufnahmen (ISO 286-2)*

| Nominal Shaft Sizes (mm) / Nenn-Abmessungen der Aufnahmen (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bigger than<br>größer als | 3 | 6 | 10 | 18 | 30 | 40 | 50 | 65 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 225 | 250 | 280 | 315 | 355 |
| until<br>bis | 6 | 10 | 18 | 30 | 40 | 50 | 65 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 225 | 250 | 280 | 315 | 355 | 400 |
| **Micrometres / Mikrometer** | | | | | | | | | | | | | | | | | | | | |
| **a12** | -270<br>-390 | -280<br>-430 | -290<br>-470 | -300<br>-510 | -310<br>-560 | -320<br>-570 | -340<br>-640 | -360<br>-660 | -380<br>-730 | -410<br>-760 | -460<br>-860 | -520<br>-920 | -580<br>-980 | -660<br>-1120 | -740<br>-1200 | -820<br>-1280 | -920<br>-1440 | -1050<br>-1570 | -1200<br>-1770 | -1350<br>-1920 |
| **d6** | -30<br>-38 | -40<br>-49 | -50<br>-61 | -65<br>-78 | -80<br>-96 | | -100<br>-119 | | -120<br>-142 | | | -145<br>-170 | | | -170<br>-199 | | -190<br>-222 | | -210<br>-246 | |
| **e6** | -20<br>-28 | -25<br>-34 | -32<br>-43 | -40<br>-53 | -50<br>-66 | | -60<br>-79 | | -72<br>-94 | | | -85<br>-110 | | | -100<br>-129 | | -110<br>-142 | | -125<br>-161 | |
| **e13** | -20 -200 | -25<br>-245 | -32<br>-302 | -40<br>-370 | -50<br>-440 | | -60<br>-520 | | -72<br>-612 | | | -85<br>-715 | | | -100<br>-820 | | -110<br>-920 | | -125<br>-1015 | |
| **f5** | -10 -15 | -13<br>-19 | -16<br>-24 | -20 -29 | -25<br>-36 | | -30<br>-43 | | -36<br>-51 | | | -43<br>-61 | | | -50<br>-70 | | -56<br>-79 | | -62<br>-87 | |
| **f6** | -10<br>-18 | -13<br>-22 | -16<br>-27 | -20<br>-33 | -25<br>-41 | | -30<br>-49 | | -36<br>-58 | | | -43<br>-68 | | | -50<br>-79 | | -56<br>-88 | | -62<br>-98 | |
| **f7** | -10<br>-22 | -13<br>-28 | -16<br>-34 | -20<br>-41 | -25<br>-50 | | -30<br>-60 | | -36<br>-71 | | | -43<br>-83 | | | -50<br>-96 | | -56<br>-108 | | -62<br>-119 | |
| **g5** | -4<br>-9 | -5<br>-11 | -6<br>-14 | -7<br>-16 | -9<br>-20 | | -10<br>-23 | | -12<br>-27 | | | -14<br>-32 | | | -15<br>-35 | | -17<br>-40 | | -18<br>-43 | |
| **g6** | -4<br>-12 | -5<br>-14 | -6<br>-17 | -7<br>-20 | -9<br>-25 | | -10<br>-29 | | -12<br>-34 | | | -14<br>-39 | | | -15<br>-44 | | -17<br>-49 | | -18<br>-54 | |
| **g7** | -4<br>-16 | -5<br>-20 | -6<br>-24 | -7<br>-28 | -9<br>-34 | | -10<br>-40 | | -12<br>-47 | | | -14<br>-54 | | | -15<br>-61 | | -17<br>-69 | | -18<br>-75 | |
| **h4** | -0<br>-4 | -0<br>-4 | -0<br>-5 | -0<br>-6 | -0<br>-7 | | -0<br>-8 | | -0<br>-10 | | | -0<br>-12 | | | -0<br>-14 | | -0<br>-16 | | -0<br>-18 | |
| **h5** | -0<br>-5 | -0<br>-6 | -0<br>-8 | -0<br>-9 | -0<br>-11 | | -0<br>-13 | | -0<br>-15 | | | -0<br>-18 | | | -0<br>-20 | | -0<br>-23 | | -0<br>-25 | |
| **h6** | -0<br>-8 | -0<br>-9 | -0<br>-11 | -0<br>-13 | -0<br>-16 | | -0<br>-19 | | -0<br>-22 | | | -0<br>-25 | | | -0<br>-29 | | -0<br>-32 | | -0<br>-36 | |
| **h7** | -0<br>-12 | -0<br>-15 | -0<br>-18 | -0<br>-21 | -0<br>-25 | | -0<br>-30 | | -0<br>-35 | | | -0<br>-40 | | | -0<br>-46 | | -0<br>-52 | | -0<br>-57 | |
| **h8** | -0<br>-18 | -0<br>-22 | -0<br>-27 | -0<br>-33 | -0<br>-39 | | -0<br>-46 | | -0<br>-54 | | | -0<br>-63 | | | -0<br>-72 | | -0<br>-81 | | -0<br>-89 | |
| **h9** | -0<br>-30 | -0<br>-36 | -0<br>-43 | -0<br>-52 | -0<br>-62 | | -0<br>-74 | | -0<br>-87 | | | -0<br>-100 | | | -0<br>-115 | | -0<br>-130 | | -0<br>-140 | |
| **h10** | -0<br>-48 | -0<br>-58 | -0<br>-70 | -0<br>-84 | -0<br>-100 | | -0<br>-120 | | -0<br>-140 | | | -0<br>-160 | | | -0<br>-185 | | -0<br>-210 | | -0<br>-230 | |
| **h11** | -0<br>-75 | -0<br>-90 | -0<br>-110 | -0<br>-130 | -0<br>-160 | | -0<br>-190 | | -0<br>-220 | | | -0<br>-250 | | | -0<br>-290 | | -0<br>-320 | | -0<br>-360 | |
| **h12** | -0<br>-120 | -0<br>-150 | -0<br>-180 | -0<br>-210 | -0<br>-250 | | -0<br>-300 | | -0<br>-350 | | | -0<br>-400 | | | -0<br>-460 | | -0<br>-520 | | -0<br>-570 | |
| **j5** | +3<br>-2 | +4<br>-2 | +5<br>-3 | +5<br>-4 | +6<br>-5 | | +6<br>-7 | | +6<br>-9 | | | +7<br>-11 | | | +7<br>-13 | | +7<br>-16 | | +7<br>-18 | |
| **j6** | +6<br>-2 | +7<br>-2 | +8<br>-3 | +9<br>-4 | +11<br>-5 | | +12<br>-7 | | +13<br>-9 | | | +14<br>-11 | | | +16<br>-13 | | +16<br>-16 | | +18<br>-18 | |
| **j7** | +8<br>-4 | +10<br>-5 | +12<br>-6 | +13<br>-8 | +15<br>-10 | | +18<br>-12 | | +20<br>-15 | | | +22<br>-18 | | | +25<br>-21 | | +26<br>-26 | | +29<br>-28 | |
| **js5** | +2.5<br>-2.5 | +3<br>-3 | +4<br>-4 | +4.5<br>-4.5 | +5.5<br>-5.5 | | +6.5<br>-6.5 | | +7.5<br>-7.5 | | | +9<br>-9 | | | +10<br>-10 | | +11.5<br>-11.5 | | +12.5<br>-12.5 | |
| **js6** | +4<br>-4 | +4.5<br>-4.5 | +5.5<br>-5.5 | +6.5<br>-6.5 | +8<br>-8 | | +9.5<br>-9.5 | | +11<br>-11 | | | +12.5<br>-12.5 | | | +14.5<br>-14.5 | | +16<br>-16 | | +18<br>-18 | |
| **js7** | +6<br>-6 | +7.5<br>-7.5 | +9<br>-9 | +10.5<br>-10.5 | +12.5<br>-12.5 | | +15<br>-15 | | +17.5<br>-17.5 | | | +20<br>-20 | | | +23<br>-23 | | +26<br>-26 | | +28.5<br>-28.5 | |
| **k5** | +6<br>+1 | +7<br>+1 | +9<br>+1 | +11<br>+2 | +13<br>+2 | | +15<br>+2 | | +18<br>+3 | | | +21<br>+3 | | | +24<br>+4 | | +27<br>+4 | | +29<br>+4 | |
| **k6** | +9<br>+1 | +10<br>+1 | +12<br>+1 | +15<br>+2 | +18<br>+2 | | +21<br>+2 | | +25<br>+3 | | | +28<br>+3 | | | +33<br>+4 | | +36<br>+4 | | +40<br>+4 | |
| **k7** | +13<br>+1 | +16<br>+1 | +19<br>+1 | +23<br>+2 | +27<br>+2 | | +32<br>+2 | | +38<br>+3 | | | +43<br>+3 | | | +50<br>+4 | | +56<br>+4 | | +61<br>+4 | |
| **m5** | +9<br>+4 | +12<br>+6 | +15<br>+7 | +17<br>+8 | +20<br>+9 | | +24<br>+11 | | +28<br>+13 | | | +33<br>+15 | | | +37<br>+17 | | +43<br>+20 | | +46<br>+21 | |
| **m6** | +12<br>+4 | +15<br>+6 | +18<br>+7 | +21<br>+8 | +25<br>+9 | | +30<br>+11 | | +35<br>+13 | | | +40<br>+15 | | | +46<br>+17 | | +52<br>+20 | | +57<br>+21 | |
| **m7** | +16<br>+4 | +21<br>+6 | +25<br>+7 | +29<br>+8 | +34<br>+9 | | +41<br>+11 | | +48<br>+13 | | | +55<br>+15 | | | +63<br>+17 | | +72<br>+20 | | +78<br>+21 | |
| **n5** | +13<br>+8 | +16<br>+10 | +20<br>+12 | +24<br>+15 | +28<br>+17 | | +33<br>+20 | | +38<br>+23 | | | +45<br>+27 | | | +51<br>+31 | | +57<br>+34 | | +62<br>+37 | |
| **n6** | +16<br>+8 | +19<br>+10 | +23<br>+12 | +28<br>+15 | +33<br>+17 | | +39<br>+20 | | +45<br>+23 | | | +52<br>+27 | | | +60<br>+31 | | +66<br>+34 | | +73<br>+37 | |
| **n7** | +20<br>+8 | +25<br>+10 | +30<br>+12 | +36<br>+15 | +42<br>+17 | | +50<br>+20 | | +58<br>+23 | | | +67<br>+27 | | | +77<br>+31 | | +86<br>+34 | | +94<br>+37 | |
| **p5** | +17<br>+12 | +21<br>+15 | +26<br>+18 | +31<br>+22 | +37<br>+26 | | +45<br>+32 | | +52<br>+37 | | | +61<br>+43 | | | +70<br>+50 | | +79<br>+56 | | +87<br>+62 | |
| **p6** | +20<br>+12 | +24<br>+15 | +29<br>+18 | +35<br>+22 | +42<br>+26 | | +51<br>+32 | | +59<br>+37 | | | +68<br>+43 | | | +79<br>+50 | | +88<br>+56 | | +98<br>+62 | |
| **r6** | +23<br>+15 | +28<br>+19 | +34<br>+23 | +41<br>+28 | +50<br>+34 | | +60<br>+41 | +62<br>+43 | +73<br>+51 | +76<br>+54 | +88<br>+63 | +90<br>+65 | +93<br>+68 | +106<br>+77 | +109<br>+80 | +113<br>+84 | +126<br>+94 | +130<br>+98 | +144<br>+108 | +150<br>+114 |



# DIN 2080

Code system
Kodifizierung I02

Technical information
Technische Auskünfte I03

Applications index
Anwendungen I04

Arbors and adaptors DIN 2080
Aufnahmen DIN 2080 I05-24

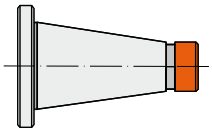
Special tool request
Sonderwerkzeug-Anfrage I25

# Code system / Kodifizierung

| 10 | 160 | 30 | 16 |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

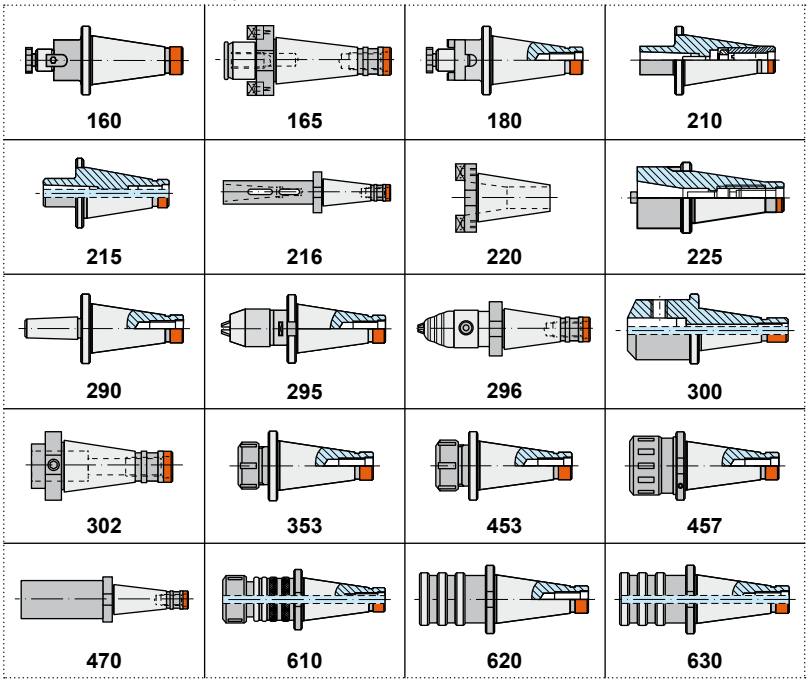
## 1 Model / Modell

DIN 2080



10

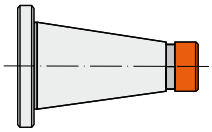
## 2 Arbor type / Aufnahmen-Typ



| 160 | 165 | 180 | 210 |
|---|---|---|---|
| 215 | 216 | 220 | 225 |
| 290 | 295 | 296 | 300 |
| 302 | 353 | 453 | 457 |
| 470 | 610 | 620 | 630 |

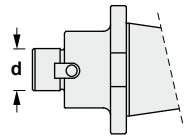
## 3 Arbor size / Aufnahmengröße

ISO DIN 2080



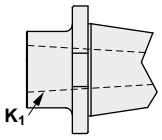
| ISO 30 | ISO 40 | ISO 50 |
|---|---|---|
| 30 | 40 | 50 |

## 4 Adaptor size / Adaptergröße



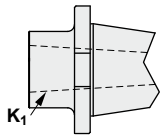
| Ø 16 | Ø 22 | Ø 27 | Ø 32 | Ø 40 | Ø 60 |
|---|---|---|---|---|---|
| 16 | 22 | 27 | 32 | 40 | 60 |

$K_1$ - MORSE

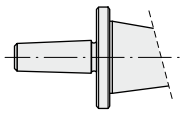


| MK1 | MK2 | MK3 | MK4 |
|---|---|---|---|
| 01 | 02 | 03 | 04 |

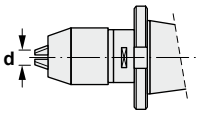
$K_1$ - ISO



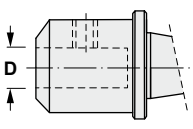
| ISO 30 | ISO 40 |
|---|---|
| 30 | 40 |



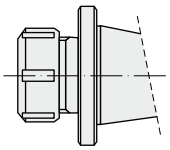
| B12 | B16 | B18 |
|---|---|---|
| 12 | 16 | 18 |



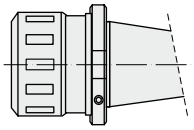
| Ø 8 | Ø 13 | Ø 16 |
|---|---|---|
| 8 | 13 | 16 |



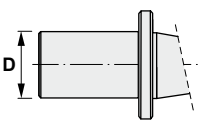
| Ø 6 ... Ø 50 |
|---|
| 6 ... 50 |



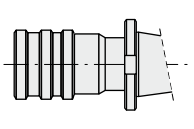
| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| 16 | 20 | 25 | 32 | 40 |



| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| 16 | 20 | 25 | 32 | 40 |



| Ø 50 | Ø 63 | Ø 80 | Ø 85 | Ø 90 |
|---|---|---|---|---|
| 50 | 63 | 80 | 85 | 90 |



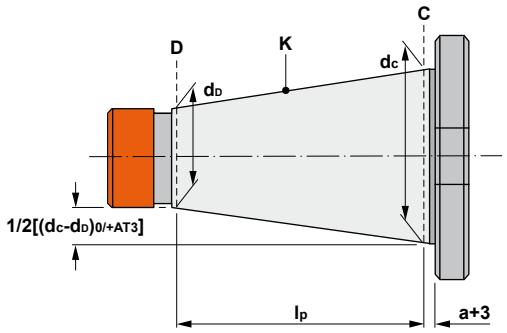
| M3-M12 | M4-M20 | M8-M33 |
|---|---|---|
| 12 | 20 | 33 |

# AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS
# AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN

**MATERIAL:**
- Chromium-manganese carburised steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburised, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburised layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.




**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

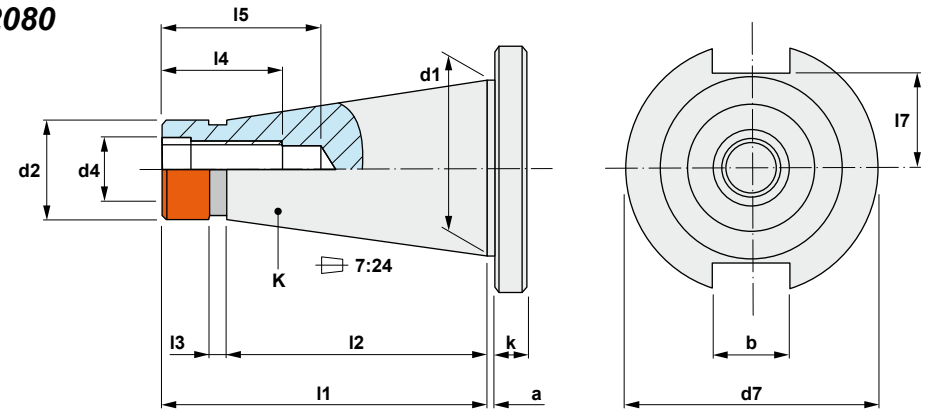
**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

| K | AT3 mm |
|---|---|
| ISO 30 | 0,002 |
| ISO 40 | 0,003 |
| ISO 45 | 0,003 |
| ISO 50 | 0,004 |
| ISO 60 | 0,005 |

**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

## 10 DIN 2080




| K | a ±0,2 | b H12 | d1 | d2 | d4 | d7 | k | l1 | l2 | l3 | l4 | l5 min | l7 max |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 1,6 | 16,1 | 31,75 | 17,4 | M12 | 50,0 | 8 | 68,4 | 48,4 | 3 | 24 | 33,5 | 16,2 |
| 40 | 1,6 | 16,1 | 44,45 | 25,3 | M16 | 63,0 | 10 | 93,4 | 65,4 | 5 | 32 | 42,5 | 22,5 |
| 45 | 3,2 | 19,3 | 57,15 | 32,4 | M20 | 80,0 | 12 | 106,8 | 82,8 | 6 | 40 | 52,5 | 29,0 |
| 50 | 3,2 | 25,7 | 69,85 | 39,6 | M24 | 97,5 | 12 | 126,8 | 101,8 | 8 | 47 | 61,5 | 35,3 |
| 60 | 3,2 | 25,7 | 107,95 | 60,2 | M30 | 156,0 | 16 | 206,8 | 161,8 | 10 | 59 | 76,0 | 60,0 |

## *Arbors and adaptors DIN 2080*
## *Aufnahmen DIN 2080*

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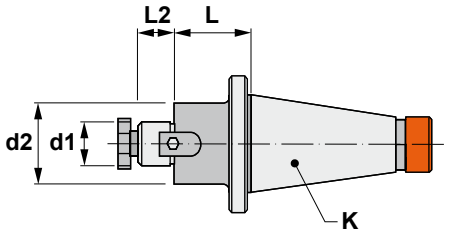
Characteristics:
Shell mill adaptor.
DIN 2080 / ISO 3937
For cutters with driving slot DIN 138.

Eigenschaften:
Aufsteckfräsdorne.
DIN 2080 / ISO 3937
Für Fräser mit Quernut DIN 138.



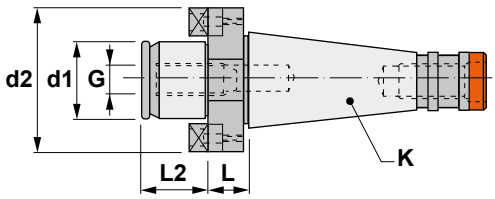

# 10.160

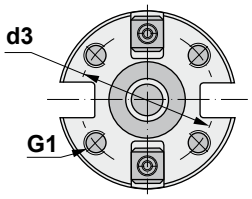
| Reference Bezeichnung | K ISO | d1 h6 | L | L2 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 10.160.30.16 | 30 | 16 | 30 | 17 | 38 | 10008 | 86016 | 11103 | 0,480 |
| 10.160.30.22 | 30 | 22 | 30 | 19 | 48 | 10010 | 86022 | 11004 | 0,570 |
| 10.160.30.27 | 30 | 27 | 30 | 21 | 58 | 10012 | 86027 | 11005 | 0,700 |
| 10.160.30.32 | 30 | 32 | 35 | 24 | 78 | 10016 | 86032 | 11105 | 0,840 |
| 10.160.40.16 | 40 | 16 | 30 | 17 | 38 | 10008 | 86016 | 11103 | 0,950 |
| 10.160.40.16/100 | 40 | 16 | 100 | 17 | 38 | 10008 | 86016 | 11103 | 1,370 |
| 10.160.40.22 | 40 | 22 | 30 | 19 | 48 | 10010 | 86022 | 11004 | 1,040 |
| 10.160.40.22/100 | 40 | 22 | 100 | 19 | 48 | 10010 | 86022 | 11004 | 1,830 |
| 10.160.40.27 | 40 | 27 | 30 | 21 | 58 | 10012 | 86027 | 11005 | 1,160 |
| 10.160.40.27/100 | 40 | 27 | 100 | 21 | 58 | 10012 | 86027 | 11005 | 2,310 |
| 10.160.40.32 | 40 | 32 | 35 | 24 | 63 | 10016 | 86032 | 11105 | 1,320 |
| 10.160.40.32/125 | 40 | 32 | 125 | 24 | 63 | 10016 | 86032 | 11105 | 3,134 |
| 10.160.40.40 | 40 | 40 | 40 | 27 | 73 | 10020 | 86040 | 11006 | 1,620 |
| 10.160.50.16 | 50 | 16 | 35 | 17 | 38 | 10008 | 86016 | 11103 | 2,840 |
| 10.160.50.16/150 | 50 | 16 | 150 | 17 | 38 | 10008 | 86016 | 11103 | 3,600 |
| 10.160.50.22 | 50 | 22 | 35 | 19 | 48 | 10010 | 86022 | 11004 | 2,950 |
| 10.160.50.22/150 | 50 | 22 | 150 | 19 | 48 | 10010 | 86022 | 11004 | 4,270 |
| 10.160.50.27 | 50 | 27 | 35 | 21 | 58 | 10012 | 86027 | 11005 | 3,070 |
| 10.160.50.27/150 | 50 | 27 | 150 | 21 | 58 | 10012 | 86027 | 11005 | 5,070 |
| 10.160.50.32 | 50 | 32 | 40 | 24 | 63 | 10016 | 86032 | 11105 | 3,230 |
| 10.160.50.32/150 | 50 | 32 | 150 | 24 | 63 | 10016 | 86032 | 11105 | 6,370 |
| 10.160.50.40 | 50 | 40 | 40 | 27 | 73 | 10020 | 86040 | 11006 | 3,990 |
| 10.160.50.40/150 | 50 | 40 | 150 | 27 | 73 | 10020 | 86040 | 11006 | 7,190 |
| 10.160.50.50 | 50 | 50 | 40 | 30 | 90 | 10024 | 86050 | 11008 | 3,990 |



Characteristics:
Adaptor for indexable milling cutters.
DIN 2080 / DIN 6357 - Form A

Eigenschaften:
Zwischenhülsen für Fräser.
DIN 2080 / DIN 6357 - Form A




# 10.165

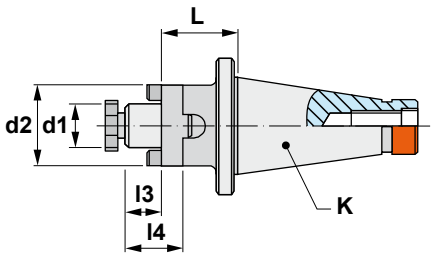
| Reference<br>Bezeichnung | K ISO | d1 g5 | L | d2 | d3 | G | G1 | L2 | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 10.165.40.40 | 40 | 40 | 20 | 89 | 66,7 | M-20 | M-12 | 30 | 1,410 |
| 10.165.50.40 | 50 | 40 | 30 | 89 | 66,7 | M-20 | M-12 | 30 | 3,430 |
| 10.165.50.60 | 50 | 60 | 30 | 129 | 101,6 | M-30 | M-16 | 40 | 4,210 |

| Reference<br>Bezeichnung | 2x  | 2x  |
|---|---|---|
| 10.165.40.40 | 80040 | 11006 |
| 10.165.50.40 | 80040 | 11006 |
| 10.165.50.60 | 80060 | 11012 |



Characteristics:
Combi-Shell mill adaptor.
DIN 2080 / DIN 6358 - Form A
For cutters with keyway or driving slot DIN 138.

Eigenschaften:
Kombi-Aufsteckfräsdorne
DIN 2080 / DIN 6358 - Form A
Für Fräser mit Längsnut
oder Stirnmitnehmer DIN 138.



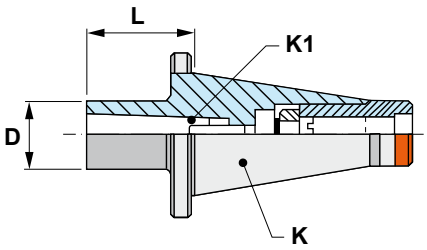

# 10.180

| Reference Bezeichnung | K ISO | d1 h6 | L | l3 | l4 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.180.30.16 | 30 | 16 | 35 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 0,560 |
| 10.180.30.22 | 30 | 22 | 35 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 0,690 |
| 10.180.30.27 | 30 | 27 | 35 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 0,830 |
| 10.180.30.32 | 30 | 32 | 50 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 1,360 |
| 10.180.40.16 | 40 | 16 | 52 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 1,130 |
| 10.180.40.16/125 | 40 | 16 | 125 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 1,670 |
| 10.180.40.22 | 40 | 22 | 52 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 1,310 |
| 10.180.40.22/125 | 40 | 22 | 125 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 2,250 |
| 10.180.40.27 | 40 | 27 | 52 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 1,530 |
| 10.180.40.27/125 | 40 | 27 | 125 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 2,930 |
| 10.180.40.32 | 40 | 32 | 52 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 1,840 |
| 10.180.40.32/125 | 40 | 32 | 125 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 3,390 |
| 10.180.40.40 | 40 | 40 | 52 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 2,430 |
| 10.180.50.16 | 50 | 16 | 55 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 3,120 |
| 10.180.50.16/125 | 50 | 16 | 125 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 3,650 |
| 10.180.50.22 | 50 | 22 | 55 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 3,340 |
| 10.180.50.22/125 | 50 | 22 | 125 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 3,650 |
| 10.180.50.22/200 | 50 | 22 | 200 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 5,130 |
| 10.180.50.27 | 50 | 27 | 55 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 3,520 |
| 10.180.50.27/125 | 50 | 27 | 125 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 4,860 |
| 10.180.50.27/200 | 50 | 27 | 200 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 6,220 |
| 10.180.50.32 | 50 | 32 | 55 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 3,830 |
| 10.180.50.32/125 | 50 | 32 | 125 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 5,980 |
| 10.180.50.32/200 | 50 | 32 | 200 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 8,280 |
| 10.180.50.40 | 50 | 40 | 55 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 4,420 |
| 10.180.50.40/125 | 50 | 40 | 125 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 6,770 |
| 10.180.50.50 | 50 | 50 | 55 | 30 | 46 | 90 | 10024 | 60150 | 88050 | 4,400 |



Characteristics:
Reducing adaptors.
DIN 2080 / DIN 6364 - Form A ISO 5415
For tools with Morse taper shank and drawbar thread DIN 228-A.

Eigenschaften:
Reduzierhülsen.
DIN 2080 / DIN 6364 - Form A ISO 5415
Für Werkzeuge mit Morsekegel und Anzugsgewinde DIN 228-A.




# 10.210

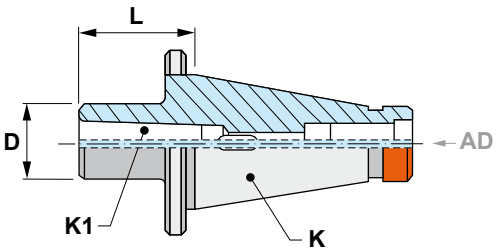
| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 10.210.30.01 | 30 | 1 | 50 | 25 | 0,480 |
| 10.210.30.02 | 30 | 2 | 50 | 32 | 0,570 |
| 10.210.30.03 | 30 | 3 | 76 | 40 | 0,750 |
| 10.210.40.01 | 40 | 1 | 50 | 25 | 0,940 |
| 10.210.40.02 | 40 | 2 | 50 | 32 | 0,940 |
| 10.210.40.03 | 40 | 3 | 65 | 40 | 1,110 |
| 10.210.40.04 | 40 | 4 | 95 | 48 | 1,520 |
| 10.210.50.01 | 50 | 1 | 60 | 25 | 2,940 |
| 10.210.50.02 | 50 | 2 | 60 | 32 | 2,960 |
| 10.210.50.03 | 50 | 3 | 65 | 40 | 3,020 |
| 10.210.50.04 | 50 | 4 | 65 | 48 | 3,070 |
| 10.210.50.05 | 50 | 5 | 100 | 63 | 3,540 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 10.210.30.01 | 16004 | 19312 | 11406 |
| 10.210.30.02 | 16005 | 19315 | 12110 |
| 10.210.30.03 | 16005 | 19318 | 12012 |
| 10.210.40.01 | 16105 | 19516 | 11506 |
| 10.210.40.02 | 16205 | 19416 | 12110 |
| 10.210.40.03 | 16205 | 19420 | 11312 |
| 10.210.40.04 | 16205 | 19322 | 12016 |
| 10.210.50.01 | 16205 | 19624 | 11206 |
| 10.210.50.02 | 16205 | 19324 | 11210 |
| 10.210.50.03 | 16205 | 19524 | 11512 |
| 10.210.50.04 | 16205 | 19424 | 12016 |
| 10.210.50.05 | 16205 | 19338 | 11020 |



Characteristics:
Reducing adaptors.
DIN 2080 / DIN 6383 - ISO 4202
For tools with Morse taper shank and tang according to DIN 228-B.

Eigenschaften:
Reduzierhülsen.
DIN 2080 / DIN 6383 - ISO 4202
Für Werkzeuge mit Morsekegel und Austreiblappen nach DIN 228-B.



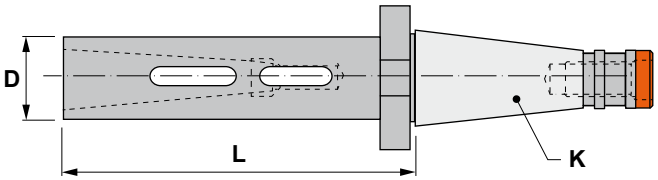

# 10.215

| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 10.215.30.01 | 30 | 1 | 50 | 25 | 0,470 |
| 10.215.30.02 | 30 | 2 | 50 | 32 | 0,490 |
| 10.215.30.03 | 30 | 3 | 76 | 40 | 0,720 |
| 10.215.40.01 | 40 | 1 | 50 | 25 | 0,870 |
| 10.215.40.02 | 40 | 2 | 50 | 32 | 0,900 |
| 10.215.40.03 | 40 | 3 | 65 | 40 | 1,050 |
| 10.215.40.04 | 40 | 4 | 95 | 48 | 1,380 |
| 10.215.50.01 | 50 | 1 | 45 | 25 | 2,790 |
| 10.215.50.02 | 50 | 2 | 60 | 32 | 2,890 |
| 10.215.50.03 | 50 | 3 | 65 | 40 | 2,920 |
| 10.215.50.04 | 50 | 4 | 70 | 48 | 2,940 |
| 10.215.50.05 | 50 | 5 | 105 | 63 | 3,370 |



Characteristics:
Long reducing adaptors. DIN 2080 For tools with Morse taper shank and tang according to DIN 228-B.

Eigenschaften:
Lange Reduzierhülsen. DIN 2080 Für Werkzeuge mit Morsekegel und Austreiblappen nach DIN 228-B.



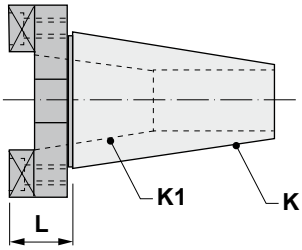

# 10.216

| Reference<br>Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 10.216.40.02 | 40 | 2 | 110 | 32 | 1,320 |
| 10.216.40.03 | 40 | 3 | 135 | 40 | 1,720 |
| 10.216.40.04 | 40 | 4 | 160 | 48 | 2,240 |
| 10.216.50.02 | 50 | 2 | 115 | 32 | 3,290 |
| 10.216.50.03 | 50 | 3 | 140 | 40 | 3,740 |
| 10.216.50.04 | 50 | 4 | 165 | 48 | 4,270 |
| 10.216.50.05 | 50 | 5 | 215 | 63 | 6,000 |



Characteristics:
Reducing adaptors.
DIN 2080
For tools with DIN 2080 ISO taper shank.

Eigenschaften:
Reduzierhülsen.
DIN 2080
Für Werkzeuge mit DIN 2080 ISO Kegel.




# 10.220

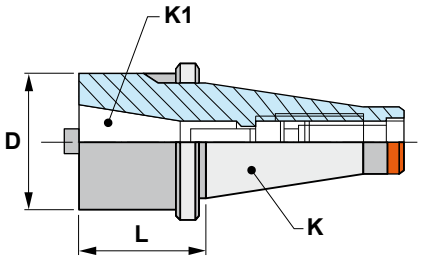
| Reference<br>Bezeichnung | K ISO | K1 ISO | L | Kg |
|---|---|---|---|---|
| 10.220.40.30 | 40 | 30 | 19 | 0,740 |
| 10.220.50.30 | 50 | 30 | 23 | 2,580 |
| 10.220.50.40 | 50 | 40 | 23 | 2,470 |

| Reference<br>Bezeichnung | 2x | 2x |
|---|---|---|
| 10.220.40.30 | 80440 | 11006 |
| 10.220.50.30 | 80440 | 11006 |
| 10.220.50.40 | 80440 | 11006 |



Characteristics:
Reducing adaptors.
DIN 2080
For tools with DIN 2080 ISO taper shank.

Eigenschaften:
Reduzierhülsen.
DIN 2080
Für Werkzeuge mit DIN 2080 ISO Kegel.




# 10.225

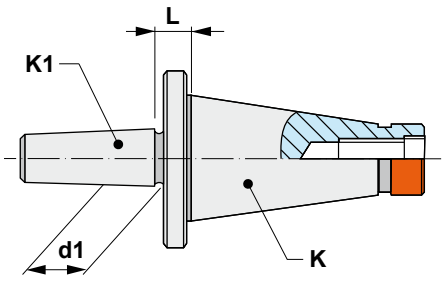
| Reference Bezeichnung | K ISO | K1 ISO | L | D | Kg |
|---|---|---|---|---|---|
| 10.225.40.30 | 40 | 30 | 50 | 50 | 1,190 |
| 10.225.50.30 | 50 | 30 | 50 | 50 | 3,050 |
| 10.225.50.40 | 50 | 40 | 50 | 63 | 3,140 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 10.225.40.30 | 16205 | 19420 | 11312 |
| 10.225.50.30 | 16205 | 19524 | 11512 |
| 10.225.50.40 | 16205 | 19424 | 12016 |



Characteristics:
Drill chuck adaptors.
DIN 2080
For drill chucks with DIN 238 taper.

Eigenschaften:
Bohrfutteraufnahmen.
DIN 2080
Für Bohrfutter mit DIN 238 Kegel.




# 10.290

| Reference Bezeichnung | K ISO | K1 DIN 238 | L | d1 | Kg |
|---|---|---|---|---|---|
| 10.290.30.12 | 30 | B-12 | 15 | 12,065 | 0,390 |
| 10.290.30.16 | 30 | B-16 | 15 | 15,733 | 0,380 |
| 10.290.30.18 | 30 | B-18 | 15 | 17,437 | 0,360 |
| 10.290.40.12 | 40 | B-12 | 17 | 12,065 | 0,860 |
| 10.290.40.16 | 40 | B-16 | 17 | 15,733 | 0,880 |
| 10.290.40.18 | 40 | B-18 | 17 | 17,437 | 0,890 |
| 10.290.50.16 | 50 | B-16 | 20 | 15,733 | 2,880 |
| 10.290.50.18 | 50 | B-18 | 20 | 17,437 | 2,920 |

## MU

I199

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MU | Standard keyless drill chucks DIN 238 |
| | Standard Schnellspann-Bohrfutter DIN 238 |



## MP

I200

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MP | Super precision keyless drill chucks DIN 238 |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 |



## MK

I201

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MK | Super precision keyless drill chucks DIN 238 with gripping tongue |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 mit Schlüsselflächen |



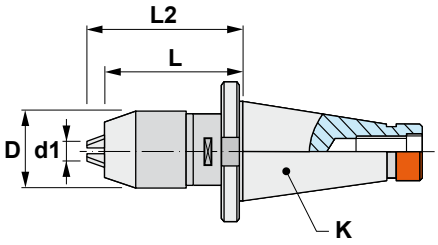


Characteristics:
Self clamping short precision drill chucks.
DIN 2080
For right turn only.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
Selbtspann-Kurzbohrfutter, Genauigkeitsausführung.
DIN 2080
Nur für rechtslaufende Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**




# 10.295

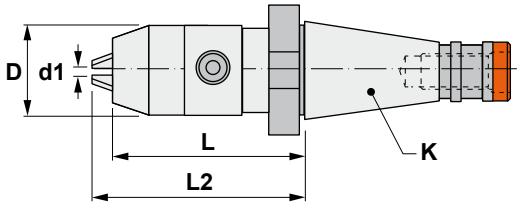
| Reference Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 10.295.30.08 | 30 | 0,3-8 | 38 | 70 | 76 | 1,000 |
| 10.295.40.08 | 40 | 0,3-8 | 38 | 63 | 69 | 1,400 |
| 10.295.40.13 | 40 | 1-13 | 48 | 78 | 89 | 1,700 |
| 10.295.40.16 | 40 | 3-16 | 55 | 90 | 101 | 2,100 |
| 10.295.50.13 | 50 | 1-13 | 48 | 71 | 101 | 3,600 |
| 10.295.50.16 | 50 | 3-16 | 55 | 72 | 83 | 3,750 |

| Reference Bezeichnung |  |  |
|---|---|---|
| 10.295.30.08 | 50008 | 11206 |
| 10.295.40.08 | 50008 | 11206 |
| 10.295.40.13 | 50013 | 11108 |
| 10.295.40.16 | 50016 | 11108 |
| 10.295.50.13 | 50013 | 11108 |
| 10.295.50.16 | 50016 | 11108 |



Characteristics:
CNC-Universal precision drill chucks.
DIN 2080
For left and right hand turn.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
CNC-Universal Bohrfutter, Genauigkeitausführung.
DIN 2080
Für links- und rechtslaufende Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**

# 10.296

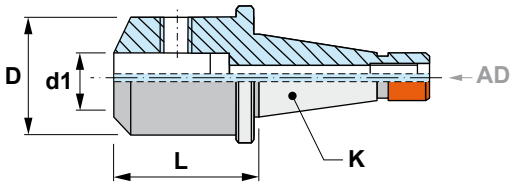
| Reference Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 10.296.40.13 | 40 | 1-13 | 54 | 82 | 91 | 1,840 |
| 10.296.40.16 | 40 | 3-16 | 57 | 85 | 92 | 2,000 |
| 10.296.50.13 | 50 | 1-13 | 54 | 85 | 94 | 3,320 |
| 10.296.50.16 | 50 | 3-16 | 57 | 88 | 95 | 3,420 |

| Reference Bezeichnung | | 3x |
|---|---|---|
| 10.296.40.13 | 5006 | 60313 |
| 10.296.40.16 | 5006 | 60313 |
| 10.296.50.13 | 5006 | 60313 |
| 10.296.50.16 | 5006 | 60313 |



Characteristics:
Weldon end mill adaptor.
DIN 2080 / DIN 6359
Form A ISO 5414
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Zylinderschaft-Aufnahme Weldon.
DIN 2080 / DIN 6359
Form A ISO 5414
Für Fräser mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 10.300

| Reference Bezeichnung | K ISO | d1 h4 | L | D | | Kg |
|---|---|---|---|---|---|---|
| 10.300.30.06 | 30 | 6 | 40 | 25 | 15106 | 0,410 |
| 10.300.30.08 | 30 | 8 | 40 | 28 | 15108 | 0,430 |
| 10.300.30.10 | 30 | 10 | 40 | 35 | 15110 | 0,500 |
| 10.300.30.12 | 30 | 12 | 40 | 42 | 15212 | 0,560 |
| 10.300.30.14 | 30 | 14 | 40 | 44 | 15212 | 0,580 |
| 10.300.30.16 | 30 | 16 | 50 | 48 | 15314 | 0,750 |
| 10.300.30.18 | 30 | 18 | 50 | 50 | 15314 | 0,760 |
| 10.300.40.06 | 40 | 6 | 50 | 25 | 15106 | 0,880 |
| 10.300.40.08 | 40 | 8 | 50 | 28 | 15108 | 0,950 |
| 10.300.40.10 | 40 | 10 | 50 | 35 | 15110 | 1,010 |
| 10.300.40.12 | 40 | 12 | 50 | 42 | 15212 | 1,110 |
| 10.300.40.14 | 40 | 14 | 63 | 44 | 15212 | 1,290 |
| 10.300.40.16 | 40 | 16 | 63 | 48 | 15314 | 1,370 |
| 10.300.40.18 | 40 | 18 | 63 | 50 | 15314 | 1,400 |
| 10.300.40.20 | 40 | 20 | 63 | 52 | 15216 | 1,410 |
| 10.300.40.25 | 40 | 25 | 80 | 65 | 2 x 15218 | 2,180 |
| 10.300.40.32 | 40 | 32 | 80 | 72 | 2 x 15220 | 2,550 |
| 10.300.40.40 | 40 | 40 | 102 | 90 | 2 x 15220 | 4,120 |
| 10.300.50.06 | 50 | 6 | 63 | 25 | 15106 | 2,850 |
| 10.300.50.08 | 50 | 8 | 63 | 28 | 15108 | 2,890 |
| 10.300.50.10 | 50 | 10 | 63 | 35 | 15110 | 2,940 |
| 10.300.50.12 | 50 | 12 | 63 | 42 | 15212 | 3,140 |
| 10.300.50.14 | 50 | 14 | 63 | 44 | 15212 | 3,130 |
| 10.300.50.16 | 50 | 16 | 63 | 48 | 15314 | 3,180 |
| 10.300.50.18 | 50 | 18 | 63 | 50 | 15314 | 3,220 |
| 10.300.50.20 | 50 | 20 | 63 | 52 | 15216 | 3,270 |
| 10.300.50.25 | 50 | 25 | 80 | 65 | 2 x 15218 | 3,980 |
| 10.300.50.32 | 50 | 32 | 80 | 72 | 2 x 15220 | 4,210 |
| 10.300.50.40 | 50 | 40 | 90 | 90 | 2 x 15220 | 5,310 |
| 10.300.50.50 | 50 | 50 | 100 | 98 | 2 x 15024 | 6,060 |

## 42.300

I182

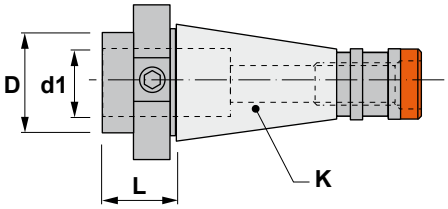
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.300 | Short and long reducing bushings DIN 1835-B Form A and B |
| | Kurze und lange Reduzierhülsen DIN 1835-B Form A und B |





Characteristics:
Short end mill adaptor.
DIN 2080
For cutters and tooling with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Kurze Aufsteckfräsdorne.
DIN 2080
Für Fräser und Werkzeuge mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 10.302

| Reference Bezeichnung | K ISO | d1 h4 | L | D | | Kg |
|---|---|---|---|---|---|---|
| 10.302.30.16 | 30 | 16 | 20 | 32 | 15114 | 0,400 |
| 10.302.30.20 | 30 | 20 | 34 | 36 | 15014 | 0,390 |
| 10.302.40.16 | 40 | 16 | 22 | 44 | 15214 | 0,850 |
| 10.302.40.20 | 40 | 20 | 22 | 44 | 15116 | 0,800 |
| 10.302.40.25 | 40 | 25 | 22 | 44 | 15016 | 0,710 |
| 10.302.50.16 | 50 | 16 | 16 | - | 15314 | 2,710 |
| 10.302.50.20 | 50 | 20 | 16 | - | 15216 | 2,640 |
| 10.302.50.25 | 50 | 25 | 16 | - | 15118 + 15218 | 2,540 |
| 10.302.50.32 | 50 | 32 | 16 | - | 15020 + 15120 | 2,330 |

## 42.610

I183

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.610 | Tapping head with axial compensation DIN 1835-B |
| | Gewindeschneidfutter mit Längenausgleich DIN 1835-B |



## 42.620

I184

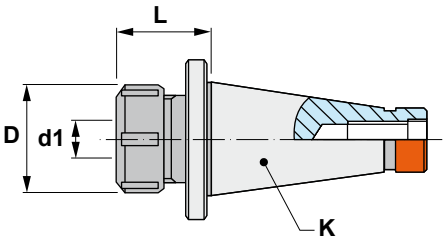
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.620 | Quick change tapping head with axial compensation DIN 1835-B+E |
| | Gewindeschneid-Schnellwechselfutter mit Längenausgleich DIN 1835-B + E |





Characteristics:
Collet chucks for DIN 6388 collets.
DIN 2080
For tools with cylindrical shank
DIN 1835-B.
* Ball bearing nut, see page: I220

*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Spannzangenfutter für Spannzangen DIN 6388.
DIN 2080
Für Werkzeuge mit zylindrischem Schaft DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I220

*** LIEFERUNG OHNE SCHLÜSSEL**

# 10.353

| Reference Bezeichnung | K ISO | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|
| 10.353.30.16 | 30 | 43 | 2-16 | 43 | 43316 | 50116 | 19216 | 0,490 |
| 10.353.30.25 | 30 | 70 | 3-25 | 60 | 43325 | 50125 | 19216 | 0,880 |
| 10.353.40.16 | 40 | 50 | 2-16 | 43 | 43316 | 50116 | 19216 | 0,970 |
| 10.353.40.25 | 40 | 63 | 3-25 | 60 | 43325 | 50125 | 19224 | 1,200 |
| 10.353.40.32 | 40 | 90 | 4-32 | 72 | 43332 | 50132 | 19224 | 1,840 |
| 10.353.50.25 | 50 | 63 | 3-25 | 60 | 43325 | 50125 | 19224 | 2,660 |
| 10.353.50.32 | 50 | 70 | 4-32 | 72 | 43332 | 50132 | 19230 | 3,330 |

## BXX

I206-208

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| BXX | Collets with double slot DIN 6388 - Form B |
| | Spannzangen mit Doppelnut DIN 6388 - Form B |

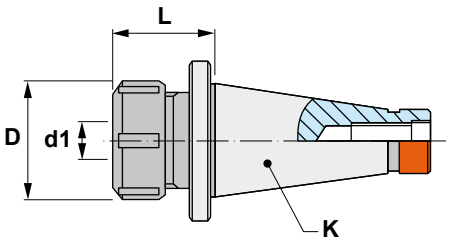




Characteristics:
Collet chucks for DIN 6499 (ER) collets.
DIN 2080
For tools with cylindrical shank.

* Ball bearing nut, see page: I221

*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Spannzangenfutter für Spannzangen
DIN 6499 (ER).
DIN 2080
Für Werkzeuge mit zylindrischem Schaft.

* Für Kugellager-Mutter, siehe Seite: I221

*** LIEFERUNG OHNE SCHLÜSSEL**

# 10.453

| Reference<br>Bezeichnung | K ISO | | L | d1 | D | D1 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.453.30.16 | 30 | ER16 | 35 | 0,5-10 | 32 | - | 45316 | 50216 | 19210 | 0,329 |
| 10.453.30.20 | 30 | ER20 | 38 | 1-13 | 35 | - | 45320 | 50220 | 19212 | 0,324 |
| 10.453.30.25 | 30 | ER25 | 42 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 0,480 |
| 10.453.30.32 | 30 | ER32 | 50 | 2-20 | 50 | - | 45332 | 50232 | 19218 | 0,520 |
| 10.453.40.25 | 40 | ER25 | 44 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 0,920 |
| 10.453.40.32 | 40 | ER32 | 48 | 2-20 | 50 | - | 45332 | 50232 | 19218 | 0,950 |
| 10.453.40.32/070 | 40 | ER32 | 70 | 2-20 | 50 | - | 45332 | 50232 | 19218 | 1,140 |
| 10.453.40.32/100 | 40 | ER32 | 100 | 2-20 | 50 | 50 | 45332 | 50232 | 19218 | 1,506 |
| 10.453.40.32/150 | 40 | ER32 | 150 | 2-20 | 50 | 50 | 45332 | 50232 | 19218 | 2,050 |
| 10.453.40.40 | 40 | ER40 | 51 | 3-30 | 63 | - | 45340 | 50240 | 19224 | 1,070 |
| 10.453.40.40/100 | 40 | ER40 | 100 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 1,400 |
| 10.453.50.25 | 50 | ER25 | 46 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 2,870 |
| 10.453.50.25/150 | 50 | ER25 | 150 | 1-16 | 42 | 42 | 45325 | 50225 | 19216 | 3,600 |
| 10.453.50.32 | 50 | ER32 | 60 | 2-20 | 50 | - | 45332 | 50232 | 19218 | 2,960 |
| 10.453.50.32/100 | 50 | ER32 | 100 | 2-20 | 50 | 50 | 45332 | 50232 | 19218 | 3,080 |
| 10.453.50.32/150 | 50 | ER32 | 150 | 2-20 | 50 | 50 | 45332 | 50232 | 19218 | 3,920 |
| 10.453.50.40 | 50 | ER40 | 60 | 3-30 | 63 | - | 45340 | 50240 | 19224 | 3,120 |
| 10.453.50.40/150 | 50 | ER40 | 150 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 4,530 |
| 10.453.50.50 | 50 | ER50 | 65 | 6-34 | 78 | - | 45350 | 50250 | 19230 | 3,270 |

**ERXX** I210-212

**Reference / Bezeichnung**

ERXX



**40.453..** I180

**Reference / Bezeichnung**

40.453..



**ERCXX** I215-216

**Reference / Bezeichnung**

ERCXX



**40.455..** I181

**Reference / Bezeichnung**

40.455..



**ERTXX** I217-218

**Reference / Bezeichnung**

ERTXX

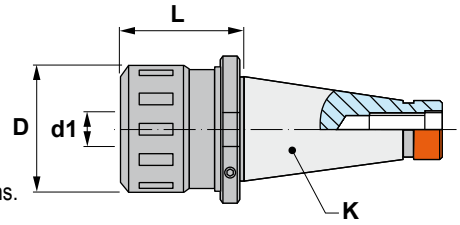




Characteristics:
Mechanical collet chucks with high tightening torque and precision.
DIN 2080
For DIN 6499 (ER) collets.

The alternative to hydraulic or other systems.
With central coolant supply.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
Mechanisches Spannzangenfutter mit hohem Anzugsmoment.
DIN 2080.
Für Spannzangen DIN 6499 (ER).

Die Alternative zu hydraulischen und anderen Systemen.
Mit Innenkühlung.

*** LIEFERUNG MIT SCHLÜSSEL**

# 10.457

| Reference Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 10.457.40.32 | 40 | ER32 | 80 | 2-20 | 54 | 45732 | 50704 | 19006 | 1,620 |
| 10.457.50.32 | 50 | ER32 | 85 | 2-20 | 54 | 45732 | 50704 | 19006 | 3,630 |
| 10.457.50.40 | 50 | ER40 | 97 | 3-30 | 65 | 45740 | 50706 | 19010 | 4,570 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

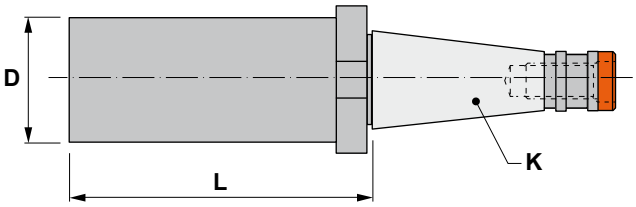
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |





Characteristics:
Blank adaptors.

Eigenschaften:
Rohlinge mit
weichem Schaft.



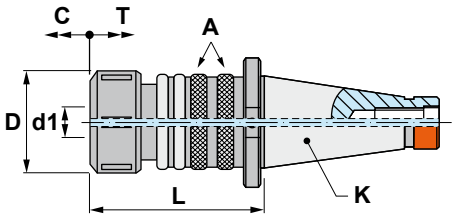

# 10.470

| Reference<br>Bezeichnung | K ISO | D | L | Kg |
|---|---|---|---|---|
| 10.470.30.40 | 30 | 40,5 | 160 | 1,920 |
| 10.470.40.63/250 | 40 | 63,5 | 250 | 6,760 |
| 10.470.50.95/315 | 50 | 95,5 | 315 | 18,470 |



Characteristics:
Tapping head with axial compensation.
DIN 2080
With DIN 6499 (ER) collets and central coolant supply.
Compensation in compression (C) and tension (T).
Compression can be blocked by turning the rear ring (A).
Control of threading depth.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
Gewindeschneidfutter mit Längenausgleich DIN 2080.
Befestigung mit Spannzangen 6499 (ER) und mit Innenkühlung.
Ausgleich der Kompression (C) und der Traktion (T).
Die Kompression kann mit dem Ring (A) blockiert werden.
Kontrolle der Gewindetiefe.

*** LIEFERUNG MIT SCHLÜSSEL**

# 10.610

| Reference Bezeichnung | K ISO | | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.610.30.16 | 30 | ER16 | M3-M12 | 100,5 | 28 | 5,5 | 6,0 | 45316 | 50216 | 0,900 |
| 10.610.40.16 | 40 | ER16 | M3-M12 | 88,5 | 28 | 5,5 | 6,0 | 45316 | 50216 | 1,300 |
| 10.610.40.25 | 40 | ER25 | M4-M20 | 112,0 | 42 | 10,5 | 7,5 | 45325 | 50225 | 1,850 |
| 10.610.40.40 | 40 | ER40 | M8-M33 | 128,0 | 63 | 10,0 | 10,0 | 45340 | 50240 | 3,050 |
| 10.610.50.16 | 50 | ER16 | M3-M12 | 82,5 | 28 | 5,5 | 6,0 | 45316 | 50216 | 3,100 |
| 10.610.50.25 | 50 | ER25 | M4-M20 | 106,0 | 42 | 10,5 | 7,5 | 45325 | 50225 | 3,650 |
| 10.610.50.40 | 50 | ER40 | M8-M33 | 122,0 | 63 | 10,0 | 10,0 | 45340 | 50240 | 4,850 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |



## 40.453..

I180

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.453.. | Collet chucks for DIN 6499 (ER) collets<br>Spannzangenfutter für DIN 6499 (ER) Spannzangen |



## 40.455..

I181

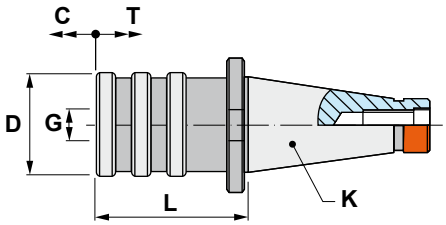
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.455.. | Long collet chucks for DIN 6499 (ER) collets<br>Lange Spannzangenfutter für DIN 6499 (ER) Spannzangen |





Characteristics:
Quick change tapping head with axial compensation. DIN 2080
With Bilz system tap chucks bushings.

Compensation in compression (C) and tension (T).




Eigenschaften:
Gewindeschneid-Schnellwechselfutter mit Längenausgleich. DIN 2080
Mit Schnellwechseleinsätzen Bilz-System.

Ausgleich der Kompression (C) und der Traktion (T).

# 10.620

| Reference Bezeichnung | K ISO | G N°. | G Ø | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.620.30.12 | 30 | 1 | 19 | M3-M12 | 41 | 38 | 9 | 9 | 710XX | 750XX | 0,580 |
| 10.620.40.12 | 40 | 1 | 19 | M3-M12 | 52 | 38 | 9 | 9 | 710XX | 750XX | 1,070 |
| 10.620.40.20 | 40 | 2 | 31 | M8-M20 | 77 | 55 | 15 | 15 | 720XX | 760XX | 1,460 |
| 10.620.40.33 | 40 | 3 | 48 | M14-M33 | 97 | 79 | 24 | 24 | 730XX | 770XX | 3,500 |
| 10.620.50.12 | 50 | 1 | 19 | M3-M12 | 41 | 38 | 9 | 9 | 710XX | 750XX | 4,600 |
| 10.620.50.20 | 50 | 2 | 31 | M8-M20 | 79 | 55 | 15 | 15 | 720XX | 760XX | 4,600 |
| 10.620.50.33 | 50 | 3 | 48 | M14-M33 | 125 | 79 | 24 | 24 | 730XX | 770XX | 5,090 |

## 710XX..730XX

I202

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch |
| | Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch |
| | Schnellwechseleinsätze mit Sicherheitskupplung |



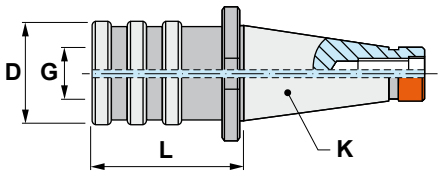


Characteristics:
Quick change tapping head for rigid tapping.
With Bilz system tap chucks bushings.

With inner coolant.

Eigenschaften:
Gewindeschneid-Schnellwechselfutter ohne Längenausgleich.
Mit Schnellwechseleinsätzen Bilz-System.

Mit Innenkühlung.




# 10.630

| Reference Bezeichnung | K ISO | G N°. | G Ø | | L | D | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 10.630.30.12 | 30 | 1 | 19 | M3-M12 | 50 | 33 | 710XX | 750XX | 1,000 |
| 10.630.40.12 | 40 | 1 | 19 | M3-M12 | 52 | 33 | 710XX | 750XX | 1,000 |
| 10.630.40.20 | 40 | 2 | 31 | M8-M20 | 74 | 50 | 720XX | 760XX | 1,500 |
| 10.630.40.33 | 40 | 3 | 48 | M14-M33 | 115 | 72 | 730XX | 770XX | 3,500 |
| 10.630.50.12 | 50 | 1 | 19 | M3-M12 | 55 | 33 | 710XX | 750XX | 4,600 |
| 10.630.50.20 | 50 | 2 | 31 | M8-M20 | 78 | 50 | 720XX | 760XX | 4,600 |
| 10.630.50.33 | 50 | 3 | 48 | M14-M33 | 83 | 72 | 730XX | 770XX | 5,500 |

## 710XX..730XX

I202

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch |
| | Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch |
| | Schnellwechseleinsätze mit Sicherheitskupplung |



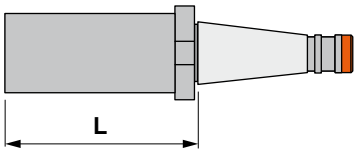
## 1 TYPE / TYP

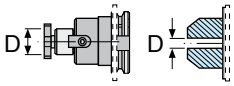
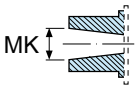
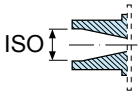
| | | | | |
|---|---|---|---|---|
| 10.160  | 10.165  | 10.180  | 10.210  | 10.215  |
| 10.216  | 10.220  | 10.225  | 10.290  | 10.295  |
| 10.296  | 10.300  | 10.302  | 10.353  | 10.453  |
| 10.457  | 10.470  | 10.610  | 10.620  | 10.630  |

## 2 DIMENSION / ABMESSUNGEN

| | | | |
|---|---|---|---|
| **30** | **40** | **50** | **60** |

## 3 LENGTH / LÄNGE (L)




| Ø DIAMETER / DURCHMESSER | MK | ISO | COLLET SPANNZANGEN |
|---|---|---|---|
|   |   |   | |
| | | | |

**NOTES / BEMERKUNGEN:**





# DIN 69871-A

Code system
Kodifizierung — I28

Technical information
Technische Auskünfte — I29

Applications index
Anwendungen — I30-31

Arbors and adaptors DIN 69871-A
Aufnahmen DIN 69871-A — I32-75

Antivibratory adaptors DIN 69871-A
Schwingungsgedämpfte Aufnahmen DIN 69871-A — I35-37,60

Sets
Sätze — I63

Special tool request
Sonderwerkzeug-Anfrage — I76

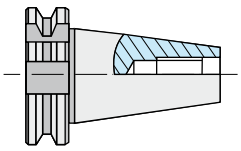
# Code system / Kodifizierung

| A | 11 | 160 | 30 | 16 |
|---|---|---|---|---|
| * | 1 | 2 | 3 | 4 |

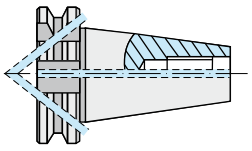
***** *Antivibratory adaptors*
*Schwingungsgedämpfte Aufnahmen*

## 1 *Model* *Modell*

ISO 7388 — DIN 69871/A



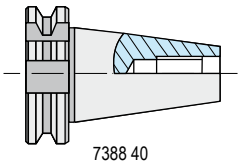
**11**



**13**

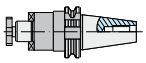
## 3 *Arbor size* *Aufnahmengröße*

ISO 7388 — DIN 69871/A

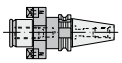


| 7388 30 | 7388 40 | 7388 50 |
|---|---|---|
| **30** | **40** | **50** |

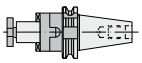
## 2 *Arbor type* *Aufnahmen-Typ*



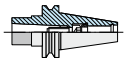
**160**



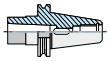
**165**



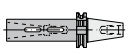
**180**



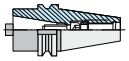
**210**



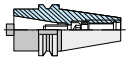
**215**



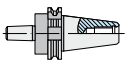
**216**



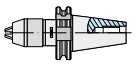
**225**



**226**



**290**



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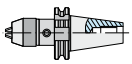
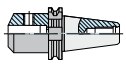


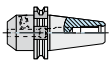
**296**



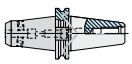
**300**



**302**



**305**



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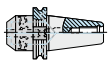
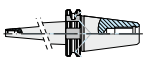
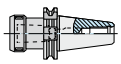


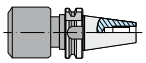
**307**



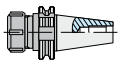
**315**



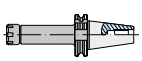
**353**



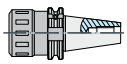
**400**



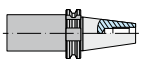
**453**



**455**



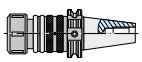
**457**



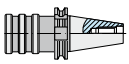
**470**



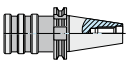
**512**



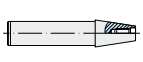
**610**



**620**

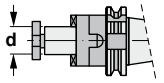


**630**



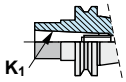
**999**

## 4 *Adaptor size* *Adaptergröße*



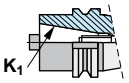
| Ø 16 | Ø 22 | Ø 27 | Ø 32 | Ø 40 | Ø 60 |
|---|---|---|---|---|---|
| **16** | **22** | **27** | **32** | **40** | **60** |

K$_1$ - MORSE

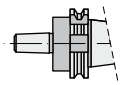


| | |
|---|---|
| **01** | MK1 |
| **02** | MK2 |
| **03** | MK3 |
| **04** | MK4 |

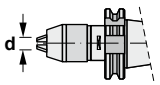
K$_1$ - ISO



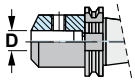
| ISO 30 | ISO 40 |
|---|---|
| **30** | **40** |



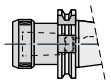
| B12 | B16 | B18 |
|---|---|---|
| **12** | **16** | **18** |



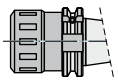
| Ø 8 | Ø 13 | Ø 16 |
|---|---|---|
| **8** | **13** | **16** |



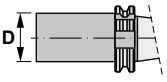
| Ø 6 ... Ø 50 |
|---|
| **6 ... 50** |



| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| **16** | **20** | **25** | **32** | **40** |



| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| **16** | **20** | **25** | **32** | **40** |



| Ø 50 | Ø 63 | Ø 80 | Ø 85 | Ø 90 |
|---|---|---|---|---|
| **50** | **63** | **80** | **85** | **90** |



| Ø 25 | Ø 32 | Ø 40 |
|---|---|---|
| **25** | **32** | **40** |



| Ø 16 | Ø 20 | Ø 25 | Ø 32 |
|---|---|---|---|
| **16** | **20** | **25** | **32** |



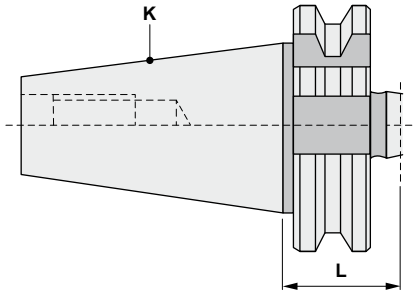
| M3-M12 | M4-M20 | M8-M33 |
|---|---|---|
| **12** | **20** | **33** |

# AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS
# AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN

**MATERIAL:**
- Chromium-manganese carburised steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburised, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburised layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.




**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

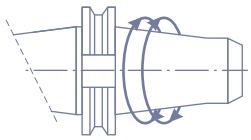
**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

| K | AT3 mm |
|---|---|
| ISO 30 | 0,002 |
| ISO 40 | 0,003 |
| ISO 45 | 0,003 |
| ISO 50 | 0,004 |
| ISO 60 | 0,005 |

**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

## PREBALANCED TOOLHOLDERS
## VORGEWUCHTETE AUFNAHMEN

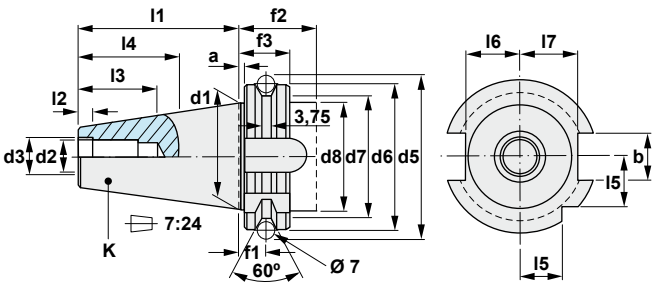


**ISO 40 ▶ 8000 rpm** **ISO 50 ▶ 8000 rpm**

## 11 DIN 69871/A-AD

***FORM A: SIMILAR DIN 69871 AD***
***ÄHNLICH WIE DIN 69871 AD***

*Without through hole / Ohne Durchgangsbohrung*



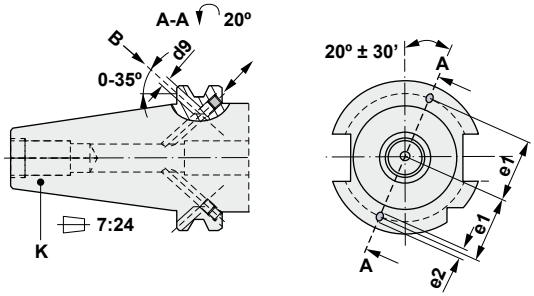

| K | a1±0,1 | b H12 | d1 | d2 | d3 H7 | d5±0,5 | d6 0/-0,1 | d7 0/-0,5 | d8 max |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 3,2 | 16,1 | 31,75 | M 12 | 13 | 59,30 | 50,00 | 44,30 | 45 |
| 40 | 3,2 | 16,1 | 44,45 | M 16 | 17 | 72,30 | 63,55 | 56,25 | 50 |
| 50 | 3,2 | 25,7 | 69,85 | M 24 | 25 | 107,25 | 97,50 | 91,25 | 80 |
| 50 | 3,2 | 25,7 | 107,95 | M 30 | 32 | 164,75 | 155,00 | 147,70 | 130 |

| K | f1±0,1 | f2 min | f3 0/-0,1 | l1 | l2 | l3 min | l4 min | l5 0/-0,3 | l6 0/-0,4 | l7 0/-0,4 | d9 | e1±0,1 | e2 max |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 11,1 | 35 | 19,1 | 47,80 | 5,5 | 24 | 33,5 | 15,0 | 16,4 | 19,0 | 4 | 21 | 5,0 |
| 40 | 11,1 | 35 | 19,1 | 68,40 | 8,2 | 32 | 42,5 | 18,5 | 22,8 | 25,0 | 4 | 27 | 5,0 |
| 50 | 11,1 | 35 | 19,1 | 101,75 | 11,5 | 47 | 61,5 | 30,0 | 35,5 | 37,7 | 6 | 42 | 7,0 |
| 50 | 11,1 | 35 | 19,1 | 161,80 | 14,0 | 59 | 76,0 | 49,0 | 54,2 | 59,3 | 8 | 66 | 9,2 |

## 13 DIN 69871/B

***FORM B: SIMILAR DIN 69871 AD+B***
***ÄHNLICH WIE DIN 69871 AD+B***

*With central coolant feed and through the collar*
*Mit zentraler Kühlmittelzufuhr und durch den Bund*



## *Arbors and adaptors DIN 69871-A*
## *Aufnahmen DIN 69871-A*

**11.160**



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**13.160**



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**11.165**



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**11.180**



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**11.210**



*Page / Seite I40*

**13.210**



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**11.215**



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**13.215**



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**11.216**



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**11.225**



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**11.226**



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**11.290**



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**11.295**



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**11.296**



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**13.296**



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**11.300**



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**13.300**



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**11.302**



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**13.302**



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**11.305**



*Page / Seite I55*

**13.306**



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**13.307**



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**13.315**



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**11.353**



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**11.400**



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**11.453**



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**13.453**



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**11.455**



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**11.457**



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**13.457**



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## *Arbors and adaptors DIN 69871-A*
## *Aufnahmen DIN 69871-A*

**11.470**



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**11.512**



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**11.610**



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**13.610**



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**11.620**



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**11.630**



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**11.999**



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## *Antivibratory adaptors DIN 69871-A*
## *Schwingungsgedämpfte Aufnahmen DIN 69871-A*

**A11.160IK** Cylindrical / Zylindrische Form



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**A11.160** Cylindrical / Zylindrische Form



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**A11.160** Conical / Konische Form



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**A11.315IK**



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**A11.315**



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## *Sets DIN 69871-A*
## *Sätze DIN 69871-A*

**SET-C20/32**

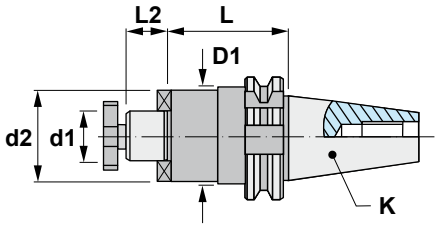


*Page / Seite I63*



Characteristics:
Shell mill adaptors.
DIN 69871-A
For cutters with driving slot DIN 138.

Eigenschaften:
Aufsteckfräsdorne.
DIN 69871-A
Für Fräser mit Quernut DIN 138.



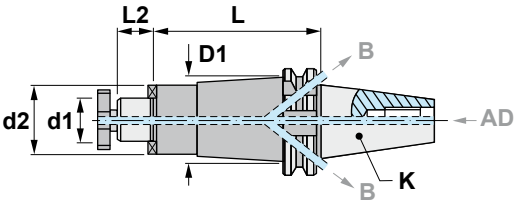

# 11.160

| Reference Bezeichnung | K ISO | d1 h6 | L | L2 | d2 | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 11.160.30.16 | 30 | 16 | 40 | 17 | 38 | - | 10008 | 86016 | 11103 | 0,620 |
| 11.160.30.22 | 30 | 22 | 40 | 19 | 48 | - | 10010 | 86022 | 11004 | 0,800 |
| 11.160.30.27 | 30 | 27 | 40 | 21 | 58 | - | 10012 | 86027 | 11005 | 0,740 |
| 11.160.40.16 | 40 | 16 | 35 | 17 | 38 | - | 10008 | 86016 | 11103 | 1,080 |
| 11.160.40.16/100 | 40 | 16 | 100 | 17 | 38 | 38 | 10008 | 86016 | 11103 | 1,470 |
| 11.160.40.22 | 40 | 22 | 35 | 19 | 48 | - | 10010 | 86022 | 11004 | 1,160 |
| 11.160.40.22/100 | 40 | 22 | 100 | 19 | 48 | 48 | 10010 | 86022 | 11004 | 2,130 |
| 11.160.40.27 | 40 | 27 | 60 | 21 | 58 | - | 10012 | 86027 | 11005 | 1,360 |
| 11.160.40.27/100 | 40 | 27 | 100 | 21 | 58 | 58 | 10012 | 86027 | 11005 | 2,710 |
| 11.160.40.32 | 40 | 32 | 60 | 24 | 63 | - | 10016 | 86032 | 11105 | 1,820 |
| 11.160.40.32/125 | 40 | 32 | 125 | 24 | 78 | 63 | 10016 | 86032 | 11105 | 3,000 |
| 11.160.40.40 | 40 | 40 | 60 | 27 | 73 | - | 10020 | 86040 | 11006 | 2,200 |
| 11.160.50.16 | 50 | 16 | 35 | 17 | 38 | - | 10008 | 86016 | 11103 | 2,990 |
| 11.160.50.16/100 | 50 | 16 | 100 | 17 | 38 | - | 10008 | 86016 | 11103 | 3,220 |
| 11.160.50.16/150 | 50 | 16 | 150 | 17 | 38 | - | 10008 | 86016 | 11103 | 4,040 |
| 11.160.50.22 | 50 | 22 | 35 | 19 | 48 | - | 10010 | 86022 | 11004 | 3,130 |
| 11.160.50.22/100 | 50 | 22 | 100 | 19 | 48 | - | 10010 | 86022 | 11004 | 3,620 |
| 11.160.50.22/150 | 50 | 22 | 150 | 19 | 48 | - | 10010 | 86022 | 11004 | 4,660 |
| 11.160.50.27 | 50 | 27 | 40 | 21 | 58 | - | 10012 | 86027 | 11005 | 3,440 |
| 11.160.50.27/100 | 50 | 27 | 100 | 21 | 58 | - | 10012 | 86027 | 11005 | 4,080 |
| 11.160.50.27/150 | 50 | 27 | 150 | 21 | 58 | - | 10012 | 86027 | 11005 | 5,240 |
| 11.160.50.32 | 50 | 32 | 50 | 24 | 78 | - | 10016 | 86032 | 11105 | 4,150 |
| 11.160.50.32/100 | 50 | 32 | 100 | 24 | 78 | - | 10016 | 86032 | 11105 | 3,250 |
| 11.160.50.32/150 | 50 | 32 | 150 | 24 | 78 | - | 10016 | 86032 | 11105 | 7,910 |
| 11.160.50.40 | 50 | 40 | 50 | 27 | 88 | 80 | 10020 | 86040 | 11006 | 4,120 |
| 11.160.50.40/150 | 50 | 40 | 150 | 27 | 88 | 80 | 10020 | 86040 | 11006 | 7,460 |
| 11.160.50.50 | 50 | 50 | 65 | 30 | 90 | - | 10024 | 86050 | 11008 | 5,300 |



Characteristics:
Shell mill adaptors.
DIN 69871-A
For cutters with driving slot DIN 138.
With inner coolant AD+B.

Eigenschaften:
Aufsteckfräsdorne.
DIN 69871-A
Für Fräser mit Quernut DIN 138.
Mit Innenkühlung AD+B




# 13.160

| Reference<br>Bezeichnung | K ISO | d1 h6 | L | L2 | d2 | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 13.160.40.16 | 40 | 16 | 35 | 17 | 38 | - | 10008 | 86016 | 11103 | 1,070 |
| 13.160.40.16/100 | 40 | 16 | 100 | 17 | 38 | 38 | 10008 | 86016 | 11003 | 1,540 |
| 13.160.40.22 | 40 | 22 | 35 | 19 | 48 | - | 10010 | 86022 | 11004 | 1,120 |
| 13.160.40.22/100 | 40 | 22 | 100 | 19 | 48 | 48 | 10010 | 86022 | 11004 | 2,020 |
| 13.160.40.27 | 40 | 27 | 60 | 21 | 58 | - | 10012 | 86027 | 11005 | 1,360 |
| 13.160.40.27/100 | 40 | 27 | 100 | 21 | 58 | 58 | 10012 | 86027 | 11005 | 2,030 |
| 13.160.40.32 | 40 | 32 | 60 | 24 | 63 | - | 10016 | 86032 | 11105 | 1,850 |
| 13.160.40.32/125 | 40 | 32 | 125 | 24 | 78 | 63 | 10016 | 86032 | 11105 | 2,730 |
| 13.160.40.40 | 40 | 40 | 60 | 27 | 73 | - | 10020 | 86040 | 11006 | 2,060 |
| 13.160.50.16 | 50 | 16 | 35 | 17 | 38 | - | 10008 | 86016 | 11103 | 2,850 |
| 13.160.50.16/100 | 50 | 16 | 100 | 17 | 38 | - | 10008 | 86016 | 11103 | 3,220 |
| 13.160.50.16/150 | 50 | 16 | 150 | 17 | 38 | - | 10008 | 86016 | 11103 | 3,780 |
| 13.160.50.22 | 50 | 22 | 35 | 19 | 48 | - | 10010 | 86022 | 11004 | 2,990 |
| 13.160.50.22/100 | 50 | 22 | 100 | 19 | 48 | - | 10010 | 86022 | 11004 | 3,400 |
| 13.160.50.22/150 | 50 | 22 | 150 | 19 | 48 | - | 10010 | 86022 | 11004 | 4,170 |
| 13.160.50.27 | 50 | 27 | 40 | 21 | 58 | - | 10012 | 86027 | 11005 | 3,250 |
| 13.160.50.27/100 | 50 | 27 | 100 | 21 | 58 | - | 10012 | 86027 | 11005 | 4,450 |
| 13.160.50.27/150 | 50 | 27 | 150 | 21 | 58 | - | 10012 | 86027 | 11005 | 5,290 |
| 13.160.50.32 | 50 | 32 | 50 | 24 | 78 | - | 10016 | 86032 | 11105 | 3,990 |
| 13.160.50.32/100 | 50 | 32 | 100 | 24 | 78 | - | 10016 | 86032 | 11105 | 4,580 |
| 13.160.50.32/150 | 50 | 32 | 150 | 24 | 78 | - | 10016 | 86032 | 11105 | 7,560 |
| 13.160.50.40 | 50 | 40 | 50 | 27 | 88 | 80 | 10020 | 86040 | 11006 | 3,920 |
| 13.160.50.40/150 | 50 | 40 | 150 | 27 | 88 | 80 | 10020 | 86040 | 11006 | 8,190 |
| 13.160.50.50 | 50 | 50 | 65 | 30 | 90 | - | 10024 | 86050 | 11008 | 4,990 |

# Antivibratory adaptors
# Schwingungsgedämpfte Aufsteckfräsdorne

## SPECIAL FOR MOULD AND DIE MAKERS

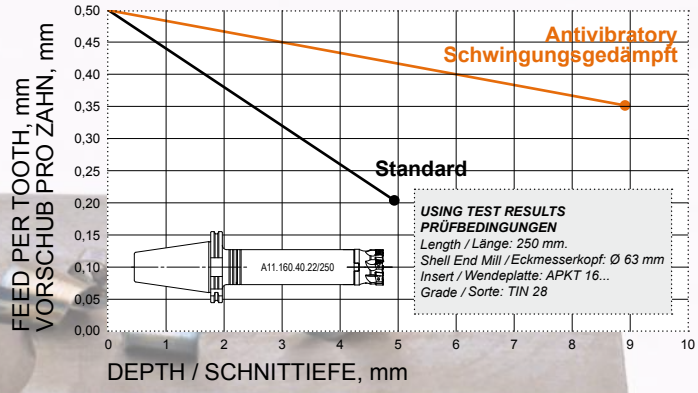
Vibration reduced up to 60% compared to any other conventional shell mill adaptor, as they are manufactured with materials and mechanisms having antivibration properties.

## BESONDERS EMPFOHLEN FÜR WERKZEUG- UND FORMENBAU

60% weniger Schwingungen im Vergleich mit anderen konventionellen Aufsteckfräsdornen, da diese Ausführung mit schwingungsdämpfenden Materialien und Mechanismen hergestellt wird.

**COMPARISON WHEN USING AN ANTIVIBRATORY TOOLHOLDER**

**VERGLEICH ZWISCHEN EINER KONVENZIONELLEN UND EINER SCHWINGUNGSGEDÄMPFTEN AUFNAHME**

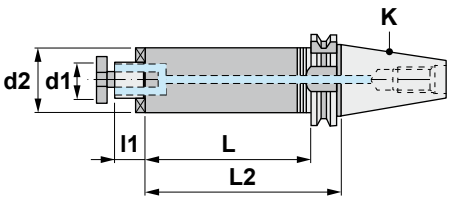



I



Characteristics:
Cylindrical antivibratory shell mill adaptors. DIN 69871-A
For cutters with driving slot DIN 138.
With internal coolant.

Eigenschaften:
Zylindrische schwingungsgedämpfte Aufsteckfräsdorne.
DIN 69871-A
Für Fräser mit Quernut DIN 138.
Mit Innenkühlung.



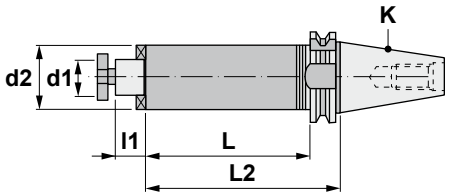

# A11.160IK

| Reference Bezeichnung | K ISO | d1 h6 | L2 | L | l1 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| A11.160.40.16/200-38IK | 40 | 16 | 200 | 181 | 17 | 38 | 10008 | 86016 | 11103 | 2,510 |
| A11.160.40.16/300-38IK | 40 | 16 | 300 | 281 | 17 | 38 | 10008 | 86016 | 11103 | 3,370 |
| A11.160.40.22/200-48IK | 40 | 22 | 200 | 181 | 19 | 48 | 10010 | 86022 | 11004 | 3,070 |
| A11.160.40.22/300-48IK | 40 | 22 | 300 | 281 | 19 | 48 | 10010 | 86022 | 11004 | 4,890 |
| A11.160.40.27/200-58IK | 40 | 27 | 200 | 181 | 21 | 58 | 10012 | 86027 | 11005 | 3,630 |
| A11.160.50.16/200-38IK | 50 | 16 | 200 | 181 | 17 | 38 | 10008 | 86016 | 11103 | 4,391 |
| A11.160.50.16/300-38IK | 50 | 16 | 300 | 281 | 17 | 38 | 10008 | 86016 | 11103 | 5,886 |
| A11.160.50.22/200-48IK | 50 | 22 | 200 | 181 | 19 | 48 | 10010 | 86022 | 11004 | 6,226 |
| A11.160.50.22/300-48IK | 50 | 22 | 300 | 281 | 19 | 48 | 10010 | 86022 | 11004 | 5,900 |
| A11.160.50.27/200-58IK | 50 | 27 | 200 | 181 | 21 | 58 | 10012 | 86027 | 11005 | 6,846 |
| A11.160.50.27/300-58IK | 50 | 27 | 300 | 281 | 21 | 58 | 10012 | 86027 | 11005 | 6,846 |
| A11.160.50.32/300-78IK | 50 | 32 | 300 | 281 | 24 | 78 | 10016 | 86032 | 11105 | 10,576 |



Characteristics:
Cylindrical antivibratory shell mill adaptors. DIN 69871-A
For cutters with driving slot DIN 138.

Eigenschaften:
Zylindrische schwingungsgedämpfte Aufsteckfräsdorne.
DIN 69871-A
Für Fräser mit Quernut DIN 138.



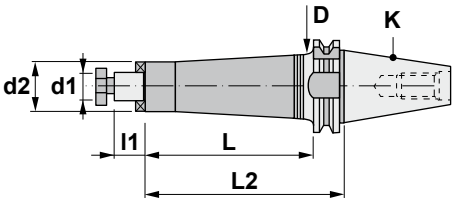

# A11.160

| Reference Bezeichnung | K ISO | d1 h6 | L2 | L | l1 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| A11.160.40.16/150-38 | 40 | 16 | 150 | 131 | 17 | 38 | 10008 | 86016 | 11103 | 2,030 |
| A11.160.40.16/200-38 | 40 | 16 | 200 | 181 | 17 | 38 | 10008 | 86016 | 11103 | 2,510 |
| A11.160.40.16/250-38 | 40 | 16 | 250 | 231 | 17 | 38 | 10008 | 86016 | 11103 | 2,920 |
| A11.160.40.16/300-38 | 40 | 16 | 300 | 281 | 17 | 38 | 10008 | 86016 | 11103 | 3,370 |
| A11.160.40.22/150-48 | 40 | 22 | 150 | 131 | 19 | 48 | 10010 | 86022 | 11004 | 2,370 |
| A11.160.40.22/200-48 | 40 | 22 | 200 | 181 | 19 | 48 | 10010 | 86022 | 11004 | 3,070 |
| A11.160.40.22/250-48 | 40 | 22 | 250 | 231 | 19 | 48 | 10010 | 86022 | 11004 | 4,180 |
| A11.160.40.22/300-48 | 40 | 22 | 300 | 281 | 19 | 48 | 10010 | 86022 | 11004 | 4,890 |
| A11.160.40.27/150-58 | 40 | 27 | 150 | 131 | 21 | 58 | 10012 | 86027 | 11005 | 2,850 |
| A11.160.40.27/200-58 | 40 | 27 | 200 | 181 | 21 | 58 | 10012 | 86027 | 11005 | 3,630 |
| A11.160.40.27/250-58 | 40 | 27 | 250 | 231 | 21 | 58 | 10012 | 86027 | 11005 | 4,440 |
| A11.160.40.27/300-58 | 40 | 27 | 300 | 281 | 21 | 58 | 10012 | 86027 | 11005 | 5,350 |
| A11.160.50.16/150-38 | 50 | 16 | 150 | 131 | 17 | 38 | 10008 | 86016 | 11103 | 4,230 |
| A11.160.50.16/200-38 | 50 | 16 | 200 | 181 | 17 | 38 | 10008 | 86016 | 11103 | 4,391 |
| A11.160.50.16/250-38 | 50 | 16 | 250 | 231 | 17 | 38 | 10008 | 86016 | 11103 | 5,280 |
| A11.160.50.16/300-38 | 50 | 16 | 300 | 281 | 17 | 38 | 10008 | 86016 | 11103 | 5,886 |
| A11.160.50.16/400-38 | 50 | 16 | 400 | 381 | 17 | 38 | 10008 | 86016 | 11103 | 5,886 |
| A11.160.50.22/200-48 | 50 | 22 | 200 | 181 | 19 | 48 | 10010 | 86022 | 11004 | 6,226 |
| A11.160.50.22/250-48 | 50 | 22 | 250 | 231 | 19 | 48 | 10010 | 86022 | 11004 | 5,330 |
| A11.160.50.22/300-48 | 50 | 22 | 300 | 281 | 19 | 48 | 10010 | 86022 | 11004 | 5,900 |
| A11.160.50.22/400-48 | 50 | 22 | 400 | 381 | 19 | 48 | 10010 | 86022 | 11004 | 7,276 |
| A11.160.50.22/500-48 | 50 | 22 | 500 | 481 | 19 | 48 | 10010 | 86022 | 11004 | 8,470 |
| A11.160.50.22/200-60 | 50 | 22 | 200 | 181 | 19 | 60 | 10010 | 86022 | 11004 | 7,276 |
| A11.160.50.22/250-60 | 50 | 22 | 250 | 231 | 19 | 60 | 10010 | 86022 | 11004 | 7,810 |
| A11.160.50.22/300-60 | 50 | 22 | 300 | 281 | 19 | 60 | 10010 | 86022 | 11004 | 8,140 |
| A11.160.50.22/400-60 | 50 | 22 | 400 | 381 | 19 | 60 | 10010 | 86022 | 11004 | 9,240 |
| A11.160.50.22/500-60 | 50 | 22 | 500 | 481 | 19 | 60 | 10010 | 86022 | 11004 | 12,280 |
| A11.160.50.27/200-58 | 50 | 27 | 200 | 181 | 21 | 58 | 10012 | 86027 | 11005 | 6,846 |
| A11.160.50.27/250-58 | 50 | 27 | 250 | 231 | 21 | 58 | 10012 | 86027 | 11005 | 7,130 |
| A11.160.50.27/300-58 | 50 | 27 | 300 | 281 | 21 | 58 | 10012 | 86027 | 11005 | 6,846 |
| A11.160.50.27/400-58 | 50 | 27 | 400 | 381 | 21 | 58 | 10012 | 86027 | 11005 | 6,846 |
| A11.160.50.27/500-58 | 50 | 27 | 500 | 481 | 21 | 58 | 10012 | 86027 | 11005 | 8,140 |
| A11.160.50.32/200-78 | 50 | 32 | 200 | 181 | 24 | 78 | 10016 | 86032 | 11105 | 7,556 |
| A11.160.50.32/250-78 | 50 | 32 | 250 | 231 | 24 | 78 | 10016 | 86032 | 11105 | 9,576 |
| A11.160.50.32/300-78 | 50 | 32 | 300 | 281 | 24 | 78 | 10016 | 86032 | 11105 | 10,576 |
| A11.160.50.32/400-78 | 50 | 32 | 400 | 381 | 24 | 78 | 10016 | 86032 | 11105 | 13,076 |
| A11.160.50.32/500-78 | 50 | 32 | 500 | 481 | 24 | 78 | 10016 | 86032 | 11105 | 16,076 |



Characteristics:
Conical antivibratory shell mill adaptors.
DIN 69871-A
For cutters with driving slot DIN 138.

Eigenschaften:
Konische schwingungsgedämpfte Aufsteckfräsdorne.
DIN 69871-A
Für Fräser mit Quernut DIN 138.



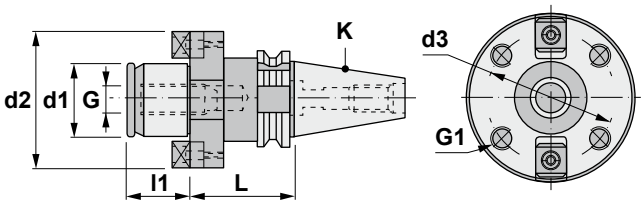

# A11.160

| Reference Bezeichnung | K ISO | d1 h6 | L2 | L | D | l1 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A11.160.40.16/150 | 40 | 16 | 150 | 131 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 2,200 |
| A11.160.40.16/200 | 40 | 16 | 200 | 181 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 2,710 |
| A11.160.40.16/250 | 40 | 16 | 250 | 231 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 3,250 |
| A11.160.40.16/300 | 40 | 16 | 300 | 281 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 3,740 |
| A11.160.40.22/150 | 40 | 22 | 150 | 131 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 2,640 |
| A11.160.40.22/200 | 40 | 22 | 200 | 181 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 3,320 |
| A11.160.40.22/250 | 40 | 22 | 250 | 231 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 4,030 |
| A11.160.40.22/300 | 40 | 22 | 300 | 281 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 4,750 |
| A11.160.50.16/150 | 50 | 16 | 150 | 131 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 4,610 |
| A11.160.50.16/200 | 50 | 16 | 200 | 181 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 5,886 |
| A11.160.50.16/250 | 50 | 16 | 250 | 231 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 5,940 |
| A11.160.50.16/300 | 50 | 16 | 300 | 281 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 6,750 |
| A11.160.50.16/400 | 50 | 16 | 400 | 381 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 10,540 |
| A11.160.50.22/200 | 50 | 22 | 200 | 181 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 5,780 |
| A11.160.50.22/250 | 50 | 22 | 250 | 231 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 6,550 |
| A11.160.50.22/300 | 50 | 22 | 300 | 281 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 7,380 |
| A11.160.50.22/400 | 50 | 22 | 400 | 381 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 10,426 |
| A11.160.50.22/500 | 50 | 22 | 500 | 481 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 11,530 |
| A11.160.50.27/200 | 50 | 27 | 200 | 181 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 6,550 |
| A11.160.50.27/250 | 50 | 27 | 250 | 231 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 7,500 |
| A11.160.50.27/300 | 50 | 27 | 300 | 281 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 8,600 |
| A11.160.50.27/400 | 50 | 27 | 400 | 381 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 10,670 |
| A11.160.50.27/500 | 50 | 27 | 500 | 481 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 13,520 |



Characteristics:
Adaptors for indexable milling cutters. DIN 69871-A / DIN 6357 - Form A

Eigenschaften:
Zwischenhülsen für Fräser. DIN 69871-A / DIN 6357 - Form A




# 11.165

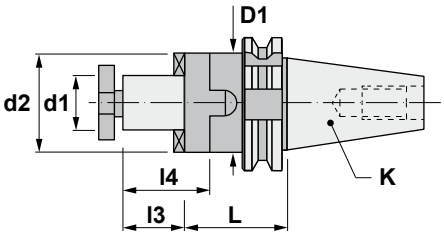
| Reference<br>Bezeichnung | K ISO | d1 g5 | L | d2 | d3 | G | G1 | l1 | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 11.165.40.40 | 40 | 40 | 60 | 89 | 66,7 | M-20 | M-12 | 30 | 2,540 |
| 11.165.50.40 | 50 | 40 | 70 | 89 | 66,7 | M-20 | M-12 | 30 | 5,190 |
| 11.165.50.60 | 50 | 60 | 70 | 129 | 101,6 | M-30 | M-16 | 40 | 7,010 |

| Reference<br>Bezeichnung |  |  |
|---|---|---|
| 11.165.40.40 | 80040 | 11006 |
| 11.165.50.40 | 80040 | 11006 |
| 11.165.50.60 | 80060 | 11012 |



Characteristics:
Combi-Shell mill adaptor.
DIN 69871-A / DIN 6358 - Form B
For cutters with keyway or driving slot DIN 138.

Eigenschaften:
Kombi-Aufsteckfräsdorne.
DIN 69871-A / DIN 6358 - Form B
Für Fräser mit Längsnut oder Stirnmitnehmer DIN 138.



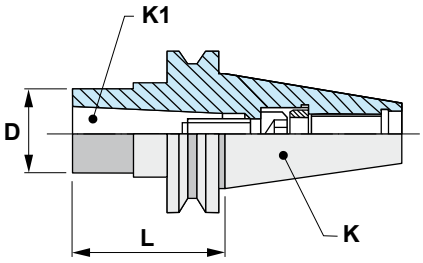

# 11.180

| Reference Bezeichnung | K ISO | d1 h6 | L | l3 | l4 | d2 | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.180.30.16 | 30 | 16 | 50 | 17 | 27 | 32 | - | 10008 | 60116 | 88016 | 0,660 |
| 11.180.30.22 | 30 | 22 | 50 | 19 | 31 | 40 | - | 10010 | 60122 | 88022 | 0,680 |
| 11.180.30.27 | 30 | 27 | 55 | 21 | 33 | 48 | - | 10012 | 60127 | 88027 | 1,000 |
| 11.180.40.16 | 40 | 16 | 55 | 17 | 27 | 32 | - | 10008 | 60116 | 88016 | 1,140 |
| 11.180.40.16/100 | 40 | 16 | 100 | 17 | 27 | 32 | 35 | 10008 | 60116 | 88016 | 1,490 |
| 11.180.40.22 | 40 | 22 | 55 | 19 | 31 | 40 | - | 10010 | 60122 | 88022 | 1,300 |
| 11.180.40.22/100 | 40 | 22 | 100 | 19 | 31 | 40 | 48 | 10010 | 60122 | 88022 | 1,900 |
| 11.180.40.27 | 40 | 27 | 55 | 21 | 33 | 48 | - | 10012 | 60127 | 88027 | 1,510 |
| 11.180.40.27/100 | 40 | 27 | 100 | 21 | 33 | 48 | 48 | 10012 | 60127 | 88027 | 2,040 |
| 11.180.40.32 | 40 | 32 | 60 | 24 | 38 | 58 | - | 10016 | 60132 | 88032 | 1,820 |
| 11.180.40.32/100 | 40 | 32 | 100 | 24 | 38 | 58 | 58 | 10016 | 60132 | 88032 | 2,660 |
| 11.180.40.40 | 40 | 40 | 60 | 27 | 41 | 70 | - | 10020 | 60140 | 88040 | 2,210 |
| 11.180.50.16 | 50 | 16 | 55 | 17 | 27 | 32 | - | 10008 | 60116 | 88016 | 3,010 |
| 11.180.50.16/100 | 50 | 16 | 100 | 17 | 27 | 32 | 35 | 10008 | 60116 | 88016 | 3,590 |
| 11.180.50.22 | 50 | 22 | 55 | 19 | 31 | 40 | - | 10010 | 60122 | 88022 | 3,250 |
| 11.180.50.22/100 | 50 | 22 | 100 | 19 | 31 | 40 | 48 | 10010 | 60122 | 88022 | 3,820 |
| 11.180.50.27 | 50 | 27 | 55 | 21 | 33 | 48 | - | 10012 | 60127 | 88027 | 3,400 |
| 11.180.50.27/100 | 50 | 27 | 100 | 21 | 33 | 48 | 60 | 10012 | 60127 | 88027 | 4,300 |
| 11.180.50.32 | 50 | 32 | 55 | 24 | 38 | 58 | - | 10016 | 60132 | 88032 | 3,750 |
| 11.180.50.32/100 | 50 | 32 | 100 | 24 | 38 | 58 | 78 | 10016 | 60132 | 88032 | 5,260 |
| 11.180.50.40 | 50 | 40 | 55 | 27 | 41 | 70 | - | 10020 | 60140 | 88040 | 3,750 |
| 11.180.50.40/100 | 50 | 40 | 100 | 27 | 41 | 70 | 78 | 10020 | 60140 | 88040 | 5,820 |
| 11.180.50.50 | 50 | 50 | 70 | 30 | 46 | 90 | - | 10024 | 60150 | 88050 | 5,730 |



Characteristics:
Reducing adaptors.
DIN 69871-A / ISO 3937
For tools with Morse taper shank and drawbar thread DIN 228-A.

Eigenschaften:
Reduzierhülsen.
DIN 69871-A / ISO 3937
Für Werkzeuge mit Morsekegel und Anzugsgewinde DIN 228-A.




# 11.210

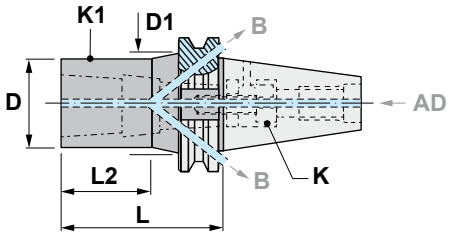
| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 11.210.30.01 | 30 | 1 | 50 | 25 | 0,530 |
| 11.210.30.02 | 30 | 2 | 70 | 32 | 0,670 |
| 11.210.30.03 | 30 | 3 | 100 | 40 | 1,000 |
| 11.210.40.01 | 40 | 1 | 50 | 25 | 1,000 |
| 11.210.40.02 | 40 | 2 | 50 | 32 | 0,990 |
| 11.210.40.03 | 40 | 3 | 70 | 40 | 1,170 |
| 11.210.40.04 | 40 | 4 | 95 | 48 | 1,410 |
| 11.210.50.01 | 50 | 1 | 45 | 25 | 2,870 |
| 11.210.50.02 | 50 | 2 | 60 | 32 | 2,950 |
| 11.210.50.03 | 50 | 3 | 65 | 40 | 3,060 |
| 11.210.50.04 | 50 | 4 | 70 | 48 | 3,080 |
| 11.210.50.05 | 50 | 5 | 100 | 63 | 3,480 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 11.210.30.01 | 16105 | 19312 | 11106 |
| 11.210.30.02 | 16105 | 19315 | 12110 |
| 11.210.30.03 | 16105 | 19318 | 12012 |
| 11.210.40.01 | 16205 | 19516 | 11206 |
| 11.210.40.02 | 16205 | 19416 | 18010 |
| 11.210.40.03 | 16205 | 19420 | 11312 |
| 11.210.40.04 | 16205 | 19322 | 12016 |
| 11.210.50.01 | 16205 | 19624 | 11206 |
| 11.210.50.02 | 16205 | 19324 | 11110 |
| 11.210.50.03 | 16205 | 19524 | 11212 |
| 11.210.50.04 | 16205 | 19424 | 12016 |
| 11.210.50.05 | 16205 | 19338 | 11020 |



Characteristics:
Reducing adaptors.
DIN 69871-A / ISO 3937
For tools with Morse taper shank and drawbar thread DIN 228-A.

Eigenschaften:
Reduzierhülsen.
DIN 69871-A / ISO 3937.
Für Werkzeuge mit Morsekegel und Anzugsgewinde DIN 228-A.




# 13.210

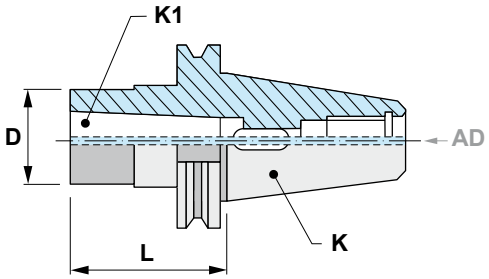
| Reference Bezeichnung | K ISO | K1 MORSE | L | D | D1 | L2 | Kg |
|---|---|---|---|---|---|---|---|
| 13.210.40.01 | 40 | 1 | 50 | 25 | 45 | 16 | 1,010 |
| 13.210.40.02 | 40 | 2 | 50 | 32 | 50 | 19 | 1,020 |
| 13.210.40.03 | 40 | 3 | 70 | 40 | 50 | 42 | 1,160 |
| 13.210.40.04 | 40 | 4 | 95 | 48 | - | - | 1,420 |
| 13.210.50.01 | 50 | 1 | 45 | 25 | 80 | 16 | 3,060 |
| 13.210.50.02 | 50 | 2 | 60 | 32 | 80 | 23 | 3,520 |
| 13.210.50.03 | 50 | 3 | 65 | 40 | 80 | 28 | 3,530 |
| 13.210.50.04 | 50 | 4 | 70 | 48 | 80 | 37 | 3,360 |
| 13.210.50.05 | 50 | 5 | 100 | 63 | 80 | 66 | 3,400 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 13.210.40.01 | 16205 | 19516 | 18006 |
| 13.210.40.02 | 16205 | 19416 | 18010 |
| 13.210.40.03 | 16205 | 19420 | 18012 |
| 13.210.40.04 | 16205 | 19322 | 18016 |
| 13.210.50.01 | 16205 | 19624 | 18006 |
| 13.210.50.02 | 16205 | 19324 | 18110 |
| 13.210.50.03 | 16205 | 19524 | 18112 |
| 13.210.50.04 | 16205 | 19424 | 18016 |
| 13.210.50.05 | 16205 | 19338 | 18020 |



Characteristics:
Reducing adaptors.
DIN 69871-A
For tools with Morse taper shank and tang. DIN 228-B.

Eigenschaften:
Reduzierhülsen.
DIN 69871-A
Für Werkzeuge mit Morsekegel und Austreiblappen. DIN 228-B.



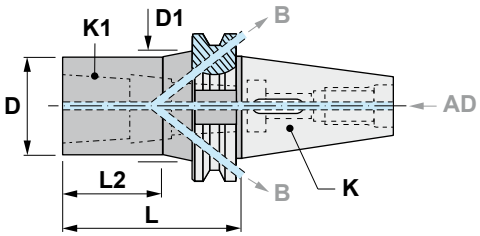

# 11.215

| Reference<br>Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 11.215.30.01 | 30 | 1 | 50 | 25 | 0,490 |
| 11.215.30.02 | 30 | 2 | 60 | 32 | 0,550 |
| 11.215.30.03 | 30 | 3 | 80 | 40 | 0,760 |
| 11.215.40.01 | 40 | 1 | 50 | 25 | 0,920 |
| 11.215.40.02 | 40 | 2 | 50 | 32 | 0,940 |
| 11.215.40.03 | 40 | 3 | 70 | 40 | 1,090 |
| 11.215.40.04 | 40 | 4 | 95 | 48 | 1,330 |
| 11.215.50.01 | 50 | 1 | 45 | 25 | 2,810 |
| 11.215.50.02 | 50 | 2 | 60 | 32 | 2,870 |
| 11.215.50.03 | 50 | 3 | 65 | 40 | 2,910 |
| 11.215.50.04 | 50 | 4 | 95 | 48 | 3,150 |
| 11.215.50.05 | 50 | 5 | 105 | 63 | 3,340 |



Characteristics:
Reducing adaptors.
DIN 69871-A
For tools with Morse taper shank and tang. DIN 228-B.

Eigenschaften:
Reduzierhülsen.
DIN 69871-A
Für Werkzeuge mit Morsekegel und Austreiblappen. DIN 228-B.



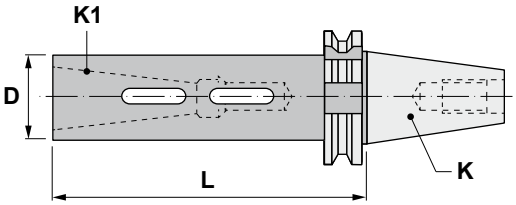

# 13.215

| Reference<br>Bezeichnung | K ISO | K1 MORSE | L | D | D1 | L2 | Kg |
|---|---|---|---|---|---|---|---|
| 13.215.40.01 | 40 | 1 | 50 | 25 | 45 | 16 | 0,940 |
| 13.215.40.02 | 40 | 2 | 50 | 32 | 50 | 18 | 0,970 |
| 13.215.40.03 | 40 | 3 | 70 | 40 | 50 | 42 | 1,100 |
| 13.215.40.04 | 40 | 4 | 95 | 48 | - | - | 1,310 |
| 13.215.50.01 | 50 | 1 | 45 | 25 | 80 | 16 | 3,080 |
| 13.215.50.02 | 50 | 2 | 60 | 32 | 80 | 23 | 3,400 |
| 13.215.50.03 | 50 | 3 | 65 | 40 | 80 | 28 | 3,380 |
| 13.215.50.04 | 50 | 4 | 95 | 48 | 80 | 49 | 3,460 |
| 13.215.50.05 | 50 | 5 | 105 | 63 | 80 | 71 | 3,410 |



Characteristics:
Long reducing adaptors.
DIN 69871-A
For tools with Morse taper shank and tang. DIN 228-B.

Eigenschaften:
Lange Reduzierhülsen.
DIN 69871-A
Für Werkzeuge mit Morsekegel und Austreiblappen. DIN 228-B.



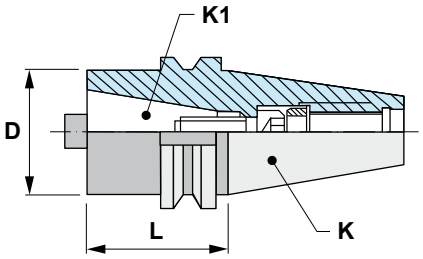

# 11.216

| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 11.216.30.01 | 30 | 1 | 115 | 25 | 0,750 |
| 11.216.30.02 | 30 | 2 | 125 | 32 | 0,960 |
| 11.216.30.03 | 30 | 3 | 145 | 40 | 1,320 |
| 11.216.40.01 | 40 | 1 | 115 | 25 | 1,200 |
| 11.216.40.02 | 40 | 2 | 125 | 32 | 1,440 |
| 11.216.40.03 | 40 | 3 | 145 | 40 | 1,770 |
| 11.216.40.04 | 40 | 4 | 165 | 48 | 2,230 |
| 11.216.50.01 | 50 | 1 | 120 | 25 | 2,980 |
| 11.216.50.02 | 50 | 2 | 135 | 32 | 3,410 |
| 11.216.50.03 | 50 | 3 | 155 | 40 | 3,810 |
| 11.216.50.04 | 50 | 4 | 180 | 48 | 4,380 |
| 11.216.50.05 | 50 | 5 | 215 | 63 | 5,840 |



Characteristics:
Reducing adaptors.
DIN 69871-A
For tools with DIN 2080 ISO taper shank.

Eigenschaften:
Reduzierhülsen.
DIN 69871-A
Für Werkzeuge mit DIN 2080 Kegel.




# 11.225

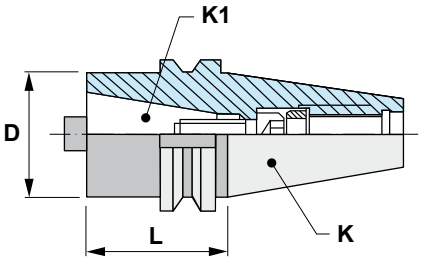
| Reference Bezeichnung | K ISO | K1 DIN 2080 | L | D | Kg |
|---|---|---|---|---|---|
| 11.225.40.30 | 40 | 30 | 50 | 50 | 1,200 |
| 11.225.40.40 | 40 | 40 | 100 | 63 | 2,060 |
| 11.225.50.30 | 50 | 30 | 50 | 50 | 3,110 |
| 11.225.50.40 | 50 | 40 | 70 | 63 | 3,750 |
| 11.225.50.50 | 50 | 50 | 120 | 97 | 6,120 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 11.225.40.30 | 16205 | 19320 | 11312 |
| 11.225.40.40 | 16205 | 19322 | 12016 |
| 11.225.50.30 | 16205 | 19524 | 11112 |
| 11.225.50.40 | 16205 | 19424 | 12016 |
| 11.225.50.50 | 16205 | 19438 | 12024 |



Characteristics:
Reducing adaptors.
DIN 69871-A
For tools with DIN 69871-A
and BT shanks.

Eigenschaften:
Reduzierhülsen.
DIN 69871-A.
Für Werkzeuge mit DIN 69871-A
und BT Kegel.




# 11.226

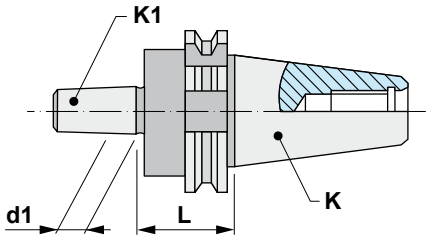
| Reference Bezeichnung | K ISO | K1 DIN 69871 JIS B 6339-BT | L | D | Kg |
|---|---|---|---|---|---|
| 11.226.40.30 | 40 | 30 | 50 | 50 | 1,170 |
| 11.226.40.40 | 40 | 40 | 100 | 63 | 2,090 |
| 11.226.50.30 | 50 | 30 | 50 | 50 | 2,800 |
| 11.226.50.40 | 50 | 40 | 70 | 63 | 3,550 |
| 11.226.50.50 | 50 | 50 | 120 | 97 | 6,240 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 11.226.40.30 | 16205 | 19320 | 11412 |
| 11.226.40.40 | 16205 | 19322 | 12116 |
| 11.226.50.30 | 16205 | 19524 | 11412 |
| 11.226.50.40 | 16205 | 19424 | 12116 |
| 11.226.50.50 | 16205 | 19438 | 12124 |



Characteristics:
Drill chuck adaptors.
DIN 69871-A
For drill chucks with DIN 238 taper.

Eigenschaften:
Bohrfutteraufnahmen.
DIN 69871-A.
Für Bohrfutter mit DIN 238 Kegel.




# 11.290

| Reference<br>Bezeichnung | K ISO | K1 DIN | L | d1 | Kg |
|---|---|---|---|---|---|
| 11.290.30.12 | 30 | B-12 | 25 | 12,065 | 0,450 |
| 11.290.30.16 | 30 | B-16 | 25 | 15,733 | 0,450 |
| 11.290.40.12 | 40 | B-12 | 25 | 12,065 | 0,910 |
| 11.290.40.16 | 40 | B-16 | 25 | 15,733 | 0,930 |
| 11.290.40.18 | 40 | B-18 | 25 | 17,780 | 0,950 |
| 11.290.50.16 | 50 | B-16 | 25 | 15,733 | 2,850 |
| 11.290.50.18 | 50 | B-18 | 25 | 17,780 | 2,850 |

## MU

I199

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MU | Standard keyless drill chucks DIN 238 |
| | Standard Schnellspann-Bohrfutter DIN 238 |



## MP

I200

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MP | Super precision keyless drill chucks DIN 238 |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 |



## MK

I201

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MK | Super precision keyless drill chucks DIN 238 with gripping tongue |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 mit Schlüsselflächen |



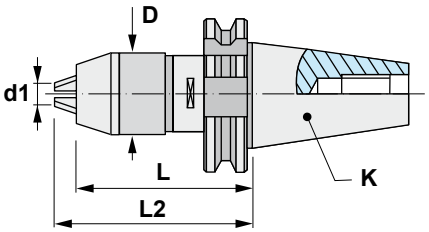


Characteristics:
Self clamping short precision drill chucks.
DIN 69871-A
For right turn only.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
Selbtspann-Kurzbohrfutter,
Genauigkeitsausführung.
DIN 69871-A.
Nur für rechtslaufende Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**




# 11.295

| Reference<br>Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 11.295.30.08 | 30 | 0,3-8 | 38 | 77 | 83 | 0,980 |
| 11.295.40.08 | 40 | 0,3-8 | 38 | 70 | 76 | 1,500 |
| 11.295.40.13 | 40 | 1-13 | 48 | 80 | 91 | 1,620 |
| 11.295.40.16 | 40 | 3-16 | 55 | 97 | 108 | 2,040 |
| 11.295.50.13 | 50 | 1-13 | 48 | 78 | 89 | 3,470 |
| 11.295.50.16 | 50 | 3-16 | 55 | 76 | 89 | 3,700 |

| Reference<br>Bezeichnung |  |  |
|---|---|---|
| 11.295.30.08 | 50008 | 11206 |
| 11.295.40.08 | 50008 | 11206 |
| 11.295.40.13 | 50013 | 11108 |
| 11.295.40.16 | 50016 | 11108 |
| 11.295.50.13 | 50013 | 11108 |
| 11.295.50.16 | 50016 | 11108 |

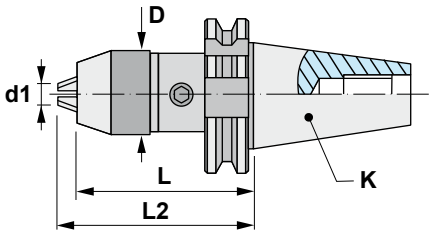


Characteristics:
CNC-Universal precision drill chucks.
DIN 69871-A
For left and right hand turn.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeitsausführung.
DIN 69871-A.
Für links- und rechtslaufende
Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**




# 11.296

| Reference<br>Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 11.296.40.13 | 40 | 1-13 | 54 | 91 | 100 | 1,550 |
| 11.296.40.16 | 40 | 3-16 | 57 | 94 | 101 | 1,830 |
| 11.296.50.13 | 50 | 1-13 | 54 | 93 | 102 | 3,500 |
| 11.296.50.16 | 50 | 3-16 | 57 | 96 | 103 | 3,760 |

| Reference<br>Bezeichnung | | 3x |
|---|---|---|
| 11.296.40.13 | 5006 | 60313 |
| 11.296.40.16 | 5006 | 60313 |
| 11.296.50.13 | 5006 | 60313 |
| 11.296.50.16 | 5006 | 60313 |

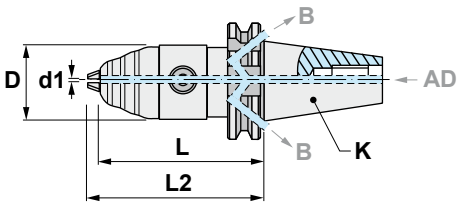


Characteristics:
CNC-Universal precision drill chucks.
DIN 69871-A
For left and right hand turn.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeitsausführung.
DIN 69871-A.
Für links- und rechtslaufende
Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**




# 13.296

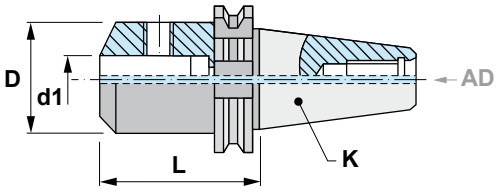
| Reference<br>Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 13.296.40.13 | 40 | 1-13 | 54 | 91 | 100 | 1,920 |
| 13.296.40.16 | 40 | 3-16 | 57 | 94 | 101 | 2,100 |
| 13.296.50.13 | 50 | 1-13 | 54 | 93 | 102 | 3,420 |
| 13.296.50.16 | 50 | 3-16 | 57 | 96 | 103 | 3,690 |

| Reference<br>Bezeichnung | | 3x |
|---|---|---|
| 13.296.40.13 | 5006 | 60313 |
| 13.296.40.16 | 5006 | 60313 |
| 13.296.50.13 | 5006 | 60313 |
| 13.296.50.16 | 5006 | 60313 |



Characteristics:
Weldon end mill adaptors.
DIN 69871-A
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Zylinderschaft-Aufnahme Weldon.
DIN 69871-A.
Für Fräser mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 11.300

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | Kg |
|---|---|---|---|---|---|---|
| 11.300.30.06 | 30 | 6 | 50 | 25 | 15106 | 0,500 |
| 11.300.30.08 | 30 | 8 | 50 | 28 | 15108 | 0,520 |
| 11.300.30.10 | 30 | 10 | 50 | 35 | 15110 | 0,610 |
| 11.300.30.12 | 30 | 12 | 50 | 42 | 15212 | 0,620 |
| 11.300.30.14 | 30 | 14 | 50 | 44 | 15212 | 0,625 |
| 11.300.30.16 | 30 | 16 | 63 | 48 | 15314 | 0,850 |
| 11.300.30.18 | 30 | 18 | 63 | 50 | 15314 | 0,880 |
| 11.300.40.06 | 40 | 6 | 50 | 25 | 15106 | 0,940 |
| 11.300.40.08 | 40 | 8 | 50 | 28 | 15108 | 0,970 |
| 11.300.40.10 | 40 | 10 | 50 | 35 | 15110 | 1,030 |
| 11.300.40.12 | 40 | 12 | 50 | 42 | 15212 | 1,120 |
| 11.300.40.14 | 40 | 14 | 50 | 44 | 15212 | 1,130 |
| 11.300.40.16 | 40 | 16 | 63 | 48 | 15314 | 1,340 |
| 11.300.40.18 | 40 | 18 | 63 | 50 | 15314 | 1,370 |
| 11.300.40.20 | 40 | 20 | 63 | 52 | 15216 | 1,380 |
| 11.300.40.25 | 40 | 25 | 100 | 65 | 2 x 15218 | 2,370 |
| 11.300.40.32 | 40 | 32 | 100 | 72 | 2 x 15220 | 2,710 |
| 11.300.40.40 | 40 | 40 | 120 | 90 | 2 x 15220 | 4,280 |
| 11.300.50.06 | 50 | 6 | 63 | 25 | 15106 | 2,860 |
| 11.300.50.08 | 50 | 8 | 63 | 28 | 15108 | 2,890 |
| 11.300.50.10 | 50 | 10 | 63 | 35 | 15110 | 2,920 |
| 11.300.50.12 | 50 | 12 | 63 | 42 | 15212 | 3,070 |
| 11.300.50.14 | 50 | 14 | 63 | 44 | 15212 | 3,110 |
| 11.300.50.16 | 50 | 16 | 63 | 48 | 15314 | 3,170 |
| 11.300.50.18 | 50 | 18 | 63 | 50 | 15314 | 3,190 |
| 11.300.50.20 | 50 | 20 | 63 | 52 | 15216 | 3,260 |
| 11.300.50.25 | 50 | 25 | 80 | 65 | 2 x 15218 | 3,910 |
| 11.300.50.32 | 50 | 32 | 100 | 72 | 2 x 15220 | 4,670 |
| 11.300.50.40 | 50 | 40 | 120 | 90 | 2 x 15220 | 6,310 |
| 11.300.50.50 | 50 | 50 | 120 | 98 | 2 x 15024 | 6,700 |

## 42.300

I182

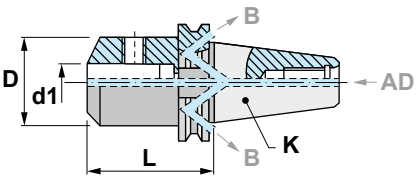
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.300 | Short and long reducing bushings DIN 1835-B Form A and B |
| | Kurze und lange Reduzierhülsen DIN 1835-B Form A und B |





Characteristics:
Weldon end mill adaptors.
DIN 69871-A
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Zylinderschaft-Aufnahme Weldon.
DIN 69871-A.
Für Fräser mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 13.300

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | Kg |
|---|---|---|---|---|---|---|
| 13.300.40.06 | 40 | 6 | 50 | 25 | 15106 | 0,930 |
| 13.300.40.08 | 40 | 8 | 50 | 28 | 15108 | 0,980 |
| 13.300.40.10 | 40 | 10 | 50 | 35 | 15110 | 1,050 |
| 13.300.40.12 | 40 | 12 | 50 | 42 | 15212 | 1,090 |
| 13.300.40.14 | 40 | 14 | 50 | 44 | 15212 | 1,120 |
| 13.300.40.16 | 40 | 16 | 63 | 48 | 15314 | 1,350 |
| 13.300.40.18 | 40 | 18 | 63 | 50 | 15314 | 1,370 |
| 13.300.40.20 | 40 | 20 | 63 | 52 | 15216 | 1,350 |
| 13.300.40.25 | 40 | 25 | 100 | 65 | 2 x 15218 | 2,360 |
| 13.300.40.32 | 40 | 32 | 100 | 72 | 2 x 15220 | 2,580 |
| 13.300.40.40 | 40 | 40 | 120 | 90 | 2 x 15220 | 4,260 |
| 13.300.50.06 | 50 | 6 | 63 | 25 | 15106 | 2,940 |
| 13.300.50.08 | 50 | 8 | 63 | 28 | 15108 | 2,780 |
| 13.300.50.10 | 50 | 10 | 63 | 35 | 15110 | 2,960 |
| 13.300.50.12 | 50 | 12 | 63 | 42 | 15212 | 3,070 |
| 13.300.50.14 | 50 | 14 | 63 | 44 | 15212 | 3,060 |
| 13.300.50.16 | 50 | 16 | 63 | 48 | 15314 | 3,110 |
| 13.300.50.18 | 50 | 18 | 63 | 50 | 15314 | 3,200 |
| 13.300.50.20 | 50 | 20 | 63 | 52 | 15216 | 3,220 |
| 13.300.50.25 | 50 | 25 | 80 | 65 | 2 x 15218 | 3,880 |
| 13.300.50.32 | 50 | 32 | 100 | 72 | 2 x 15220 | 4,690 |
| 13.300.50.40 | 50 | 40 | 120 | 90 | 2 x 15220 | 6,290 |
| 13.300.50.50 | 50 | 50 | 120 | 98 | 2 x 15024 | 6,740 |

## 42.300

I182

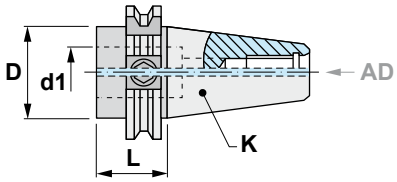
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.300 | Short and long reducing bushings DIN 1835-B Form A and B |
| | Kurze und lange Reduzierhülsen DIN 1835-B Form A und B |





Characteristics:
Short end mill adaptors.
DIN 69871-A
For cutters and tooling with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Kurze Aufsteckfräsdorne.
DIN 69871-A.
Für Fräser und Werkzeuge mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 11.302

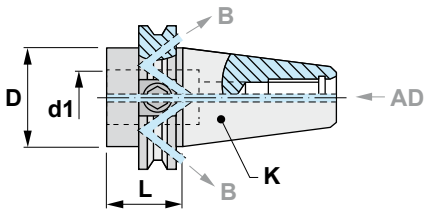
| Reference Bezeichnung | K ISO | d1 H4 | L | D | Kg |
|---|---|---|---|---|---|
| 11.302.30.16 | 30 | 16 | 32 | 32 | 0,440 |
| 11.302.30.20 | 30 | 20 | 34 | 36 | 0,500 |
| 11.302.40.16 | 40 | 16 | 35 | 44 | 0,980 |
| 11.302.40.20 | 40 | 20 | 35 | 44 | 1,000 |
| 11.302.40.25 | 40 | 25 | 35 | 45 | 0,850 |
| 11.302.40.32 | 40 | 32 | 45 | 50 | 0,820 |
| 11.302.50.16 | 50 | 16 | 35 | 70 | 3,140 |
| 11.302.50.20 | 50 | 20 | 35 | 70 | 3,100 |
| 11.302.50.25 | 50 | 25 | 35 | 70 | 2,980 |
| 11.302.50.32 | 50 | 32 | 35 | 70 | 2,830 |

| Reference Bezeichnung |  |
|---|---|
| 11.302.30.16 | 15114 |
| 11.302.30.20 | 15014 |
| 11.302.40.16 | 15214 |
| 11.302.40.20 | 15116 |
| 11.302.40.25 | 15016 |
| 11.302.40.32 | 15020 |
| 11.302.50.16 | 15314 |
| 11.302.50.20 | 15216 |
| 11.302.50.25 | 15118 + 15218 |
| 11.302.50.32 | 15020 + 15120 |



Characteristics:
Short end mill adaptors.
DIN 69871-A
For cutters and tooling with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Kurze Aufsteckfräsdorne.
DIN 69871-A.
Für Fräser und Werkzeuge mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 13.302

| Reference Bezeichnung | K ISO | d1 H4 | L | D | Kg |
|---|---|---|---|---|---|
| 13.302.40.16 | 40 | 16 | 35 | 44 | 0,950 |
| 13.302.40.20 | 40 | 20 | 35 | 44 | 0,890 |
| 13.302.40.25 | 40 | 25 | 35 | 45 | 0,840 |
| 13.302.40.32 | 40 | 32 | 45 | 50 | 0,800 |
| 13.302.50.16 | 50 | 16 | 35 | 70 | 3,030 |
| 13.302.50.20 | 50 | 20 | 35 | 70 | 3,070 |
| 13.302.50.25 | 50 | 25 | 35 | 70 | 2,910 |
| 13.302.50.32 | 50 | 32 | 35 | 70 | 2,790 |

| Reference Bezeichnung |  |
|---|---|
| 13.302.40.16 | 15214 |
| 13.302.40.20 | 15116 |
| 13.302.40.25 | 15016 |
| 13.302.40.32 | 15020 |
| 13.302.50.16 | 15314 |
| 13.302.50.20 | 15216 |
| 13.302.50.25 | 15118 + 15218 |
| 13.302.50.32 | 15020 + 15120 |

## 42.610

I183

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.610 | Tapping head with axial compensation DIN 1835-B |
| | Gewindeschneidfutter mit Längenausgleich DIN 1835-B |



## 42.620

I184

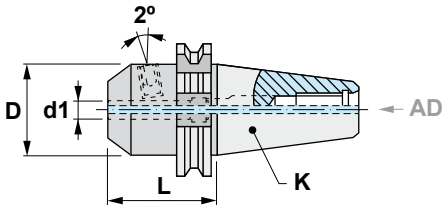
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.620 | Quick change tapping head with axial compensation DIN 1835-B+E |
| | Gewindeschneid-Schnellwechselfutter mit Längenausgleich DIN 1835-B+E |





Characteristics:
End mill adaptors type Whistle-Notch.
DIN 69871-A
For tools with cylindrical shank and tightening inclined flat DIN 1835-E.

Eigenschaften:
Whistle-Notch Zylinderschaft-Aufnahme.
DIN 69871-A.
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-E.

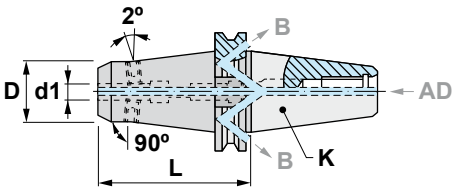



# 11.305

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | | Kg |
|---|---|---|---|---|---|---|---|
| 11.305.30.06 | 30 | 6 | 50 | 25 | 19005 | 15106 | 0,560 |
| 11.305.30.08 | 30 | 8 | 50 | 28 | 19106 | 15108 | 0,560 |
| 11.305.30.10 | 30 | 10 | 50 | 35 | 19008 | 15110 | 0,640 |
| 11.305.30.12 | 30 | 12 | 50 | 42 | 19110 | 15212 | 0,700 |
| 11.305.30.14 | 30 | 14 | 50 | 44 | 19110 | 15212 | 0,660 |
| 11.305.30.16 | 30 | 16 | 63 | 48 | 19012 | 15314 | 0,880 |
| 11.305.30.18 | 30 | 18 | 63 | 50 | 19012 | 15314 | 0,850 |
| 11.305.40.06 | 40 | 6 | 50 | 25 | 19005 | 15106 | 0,960 |
| 11.305.40.08 | 40 | 8 | 50 | 28 | 19106 | 15108 | 0,980 |
| 11.305.40.10 | 40 | 10 | 50 | 35 | 19008 | 15110 | 1,050 |
| 11.305.40.12 | 40 | 12 | 50 | 42 | 19110 | 15212 | 1,140 |
| 11.305.40.14 | 40 | 14 | 50 | 44 | 19110 | 15212 | 1,150 |
| 11.305.40.16 | 40 | 16 | 63 | 48 | 19012 | 15314 | 1,360 |
| 11.305.40.18 | 40 | 18 | 63 | 50 | 19012 | 15314 | 1,370 |
| 11.305.40.20 | 40 | 20 | 63 | 52 | 19016 | 15216 | 1,380 |
| 11.305.40.25 | 40 | 25 | 100 | 65 | 19020 | 2 x 15218 | 2,370 |
| 11.305.40.32 | 40 | 32 | 100 | 72 | 19020 | 2 x 15220 | 2,700 |
| 11.305.50.06 | 50 | 6 | 63 | 25 | 19005 | 15106 | 2,900 |
| 11.305.50.08 | 50 | 8 | 63 | 28 | 19106 | 15108 | 2,920 |
| 11.305.50.10 | 50 | 10 | 63 | 35 | 19008 | 15110 | 3,060 |
| 11.305.50.12 | 50 | 12 | 63 | 42 | 19110 | 15212 | 3,100 |
| 11.305.50.14 | 50 | 14 | 63 | 44 | 19110 | 15212 | 3,160 |
| 11.305.50.16 | 50 | 16 | 63 | 48 | 19012 | 15314 | 3,250 |
| 11.305.50.18 | 50 | 18 | 63 | 50 | 19012 | 15314 | 3,380 |
| 11.305.50.20 | 50 | 20 | 63 | 52 | 19016 | 15216 | 3,280 |
| 11.305.50.25 | 50 | 25 | 80 | 65 | 19020 | 2 x 15218 | 3,990 |
| 11.305.50.32 | 50 | 32 | 100 | 72 | 19020 | 2 x 15220 | 4,700 |
| 11.305.50.40 | 50 | 40 | 120 | 90 | 19020 | 2 x 15220 | 6,400 |



Characteristics:
Combined end mill adaptors type Weldon / Whistle-Notch.
DIN 69871-A
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.




Eigenschaften:
Kombi-Aufnahme Typ Weldon / Whistle-Notch.
DIN 69871-A.
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-B+E.

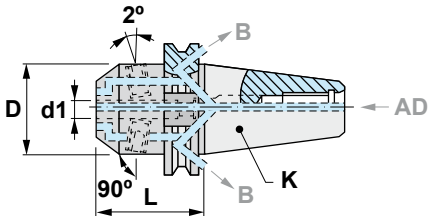
# 13.306

| Reference Bezeichnung | K ISO | d1 H4 | L | D | D1 | 2x | Kg |
|---|---|---|---|---|---|---|---|
| 13.306.40.06/100 | 40 | 6 | 100 | 22 | 28 | 15006 | 1,170 |
| 13.306.40.06/130 | 40 | 6 | 130 | 22 | 28 | 15006 | 1,220 |
| 13.306.40.06/160 | 40 | 6 | 160 | 22 | 33 | 15006 | 1,410 |
| 13.306.40.08/100 | 40 | 8 | 100 | 24 | 30 | 15008 | 1,130 |
| 13.306.40.08/130 | 40 | 8 | 130 | 24 | 30 | 15008 | 1,260 |
| 13.306.40.08/160 | 40 | 8 | 160 | 24 | 35 | 15008 | 1,480 |
| 13.306.40.10/100 | 40 | 10 | 100 | 30 | 38 | 15010 | 1,410 |
| 13.306.40.10/130 | 40 | 10 | 130 | 30 | 38 | 15010 | 1,480 |
| 13.306.40.10/160 | 40 | 10 | 160 | 30 | 39 | 15010 | 1,690 |
| 13.306.40.12/100 | 40 | 12 | 100 | 32 | 40 | 15012 | 1,340 |
| 13.306.40.12/130 | 40 | 12 | 130 | 32 | 40 | 15012 | 1,610 |
| 13.306.40.12/160 | 40 | 12 | 160 | 32 | 43 | 15012 | 1,870 |
| 13.306.40.14/100 | 40 | 14 | 100 | 32 | 40 | 15012 | 1,360 |
| 13.306.40.14/130 | 40 | 14 | 130 | 32 | 40 | 15012 | 1,540 |
| 13.306.40.14/160 | 40 | 14 | 160 | 32 | 44 | 15012 | 1,840 |
| 13.306.40.16/100 | 40 | 16 | 100 | 36 | 44 | 15114 | 1,450 |
| 13.306.40.16/130 | 40 | 16 | 130 | 36 | 44 | 15114 | 1,740 |
| 13.306.40.16/160 | 40 | 16 | 160 | 36 | 44 | 15114 | 1,960 |
| 13.306.40.18/100 | 40 | 18 | 100 | 38 | 46 | 15114 | 1,490 |
| 13.306.40.18/130 | 40 | 18 | 130 | 38 | 46 | 15114 | 1,800 |
| 13.306.40.18/160 | 40 | 18 | 160 | 38 | 46 | 15114 | 2,110 |
| 13.306.40.20/100 | 40 | 20 | 100 | 44 | 50 | 15116 | 1,650 |
| 13.306.40.20/130 | 40 | 20 | 130 | 44 | 50 | 15116 | 2,060 |
| 13.306.40.20/160 | 40 | 20 | 160 | 44 | 50 | 15116 | 2,420 |
| 13.306.40.25/100 | 40 | 25 | 100 | 50 | 50 | 15018 | 1,760 |
| 13.306.40.25/130 | 40 | 25 | 130 | 50 | 50 | 4 x 15018 | 2,220 |
| 13.306.40.25/160 | 40 | 25 | 160 | 50 | 50 | 4 x 15018 | 2,620 |

| Reference<br>Bezeichnung | K ISO | d1 H4 | L | D | D1 | 2x  | Kg |
|---|---|---|---|---|---|---|---|
| 13.306.50.06/130 | 50 | 6 | 130 | 22 | 28 | 15006 | 3,050 |
| 13.306.50.06/160 | 50 | 6 | 160 | 22 | 33 | 15006 | 3,250 |
| 13.306.50.06/200 | 50 | 6 | 200 | 22 | 36 | 15006 | 3,500 |
| 13.306.50.08/130 | 50 | 8 | 130 | 24 | 30 | 15008 | 3,100 |
| 13.306.50.08/160 | 50 | 8 | 160 | 24 | 35 | 15008 | 3,350 |
| 13.306.50.08/200 | 50 | 8 | 200 | 24 | 38 | 15008 | 3,600 |
| 13.306.50.10/130 | 50 | 10 | 130 | 30 | 38 | 15010 | 3,330 |
| 13.306.50.10/160 | 50 | 10 | 160 | 30 | 39 | 15010 | 3,600 |
| 13.306.50.10/200 | 50 | 10 | 200 | 30 | 43 | 15010 | 4,000 |
| 13.306.50.12/130 | 50 | 12 | 130 | 32 | 40 | 15012 | 3,360 |
| 13.306.50.12/160 | 50 | 12 | 160 | 32 | 43 | 15012 | 3,660 |
| 13.306.50.12/200 | 50 | 12 | 200 | 32 | 46 | 15012 | 4,100 |
| 13.306.50.14/130 | 50 | 14 | 130 | 32 | 40 | 15012 | 3,370 |
| 13.306.50.14/160 | 50 | 14 | 160 | 32 | 44 | 15012 | 3,670 |
| 13.306.50.14/200 | 50 | 14 | 200 | 32 | 48 | 15012 | 4,200 |
| 13.306.50.16/130 | 50 | 16 | 130 | 36 | 44 | 15114 | 3,600 |
| 13.306.50.16/160 | 50 | 16 | 160 | 36 | 44 | 15114 | 3,800 |
| 13.306.50.16/200 | 50 | 16 | 200 | 36 | 50 | 15114 | 4,400 |
| 13.306.50.18/130 | 50 | 18 | 130 | 38 | 46 | 15114 | 3,600 |
| 13.306.50.18/160 | 50 | 18 | 160 | 38 | 46 | 15114 | 3,920 |
| 13.306.50.18/200 | 50 | 18 | 200 | 38 | 52 | 15114 | 4,610 |
| 13.306.50.20/100 | 50 | 20 | 100 | 44 | 50 | 15116 | 3,280 |
| 13.306.50.20/130 | 50 | 20 | 130 | 44 | 50 | 15116 | 3,840 |
| 13.306.50.20/160 | 50 | 20 | 160 | 44 | 50 | 15116 | 4,300 |
| 13.306.50.20/200 | 50 | 20 | 200 | 44 | 55 | 15116 | 4,900 |
| 13.306.50.25/130 | 50 | 25 | 130 | 50 | 56 | 4 x 15018 | 4,200 |
| 13.306.50.25/160 | 50 | 25 | 160 | 50 | 60 | 4 x 15018 | 4,800 |
| 13.306.50.25/200 | 50 | 25 | 200 | 50 | 64 | 4 x 15018 | 5,600 |
| 13.306.50.32/200 | 50 | 32 | 200 | 58 | 72 | 4 x 15120 | 6,500 |
| 13.306.50.40/200 | 50 | 40 | 200 | 66 | 80 | 4 x 15120 | 6,670 |



Characteristics:
Combined end mill adaptors type Weldon / Whistle-Notch.
DIN 69871-A
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.
Coolant distribution trough the centre or through the flange of the tool.




Eigenschaften:
Kombi-Aufnahme Typ Weldon / Whistle-Notch.
DIN 69871-A.
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-B+E.
Kühlmittel-Verteilung durch die Zentralbohrung oder durch den Bund.

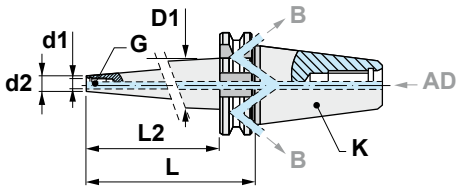
# 13.307

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | 2x | |
|---|---|---|---|---|---|---|---|
| 13.307.40.06 | 40 | 6 | 50 | 25 | 19005 | 15106 | 0,970 |
| 13.307.40.08 | 40 | 8 | 50 | 28 | 19106 | 15108 | 0,990 |
| 13.307.40.10 | 40 | 10 | 50 | 35 | 19008 | 15110 | 1,060 |
| 13.307.40.12 | 40 | 12 | 50 | 42 | 19110 | 15212 | 1,140 |
| 13.307.40.14 | 40 | 14 | 50 | 44 | 19110 | 15212 | 1,160 |
| 13.307.40.16 | 40 | 16 | 63 | 48 | 19012 | 15314 | 1,350 |
| 13.307.40.18 | 40 | 18 | 63 | 50 | 19012 | 15314 | 1,380 |
| 13.307.40.20 | 40 | 20 | 63 | 52 | 19016 | 15216 | 1,380 |
| 13.307.40.25 | 40 | 25 | 100 | 65 | 19020 | 4 x 15218 | 2,360 |
| 13.307.40.32 | 40 | 32 | 100 | 72 | 19020 | 4 x 15220 | 2,560 |
| 13.307.50.06 | 50 | 6 | 63 | 25 | 19005 | 15106 | 2,910 |
| 13.307.50.08 | 50 | 8 | 63 | 28 | 19106 | 15108 | 2,840 |
| 13.307.50.10 | 50 | 10 | 63 | 35 | 19008 | 15110 | 2,920 |
| 13.307.50.12 | 50 | 12 | 63 | 42 | 19110 | 15212 | 3,210 |
| 13.307.50.14 | 50 | 14 | 63 | 44 | 19110 | 15212 | 3,080 |
| 13.307.50.16 | 50 | 16 | 63 | 48 | 19012 | 15314 | 3,210 |
| 13.307.50.18 | 50 | 18 | 63 | 50 | 19012 | 15314 | 3,350 |
| 13.307.50.20 | 50 | 20 | 63 | 52 | 19016 | 15216 | 3,300 |
| 13.307.50.25 | 50 | 25 | 80 | 65 | 19020 | 4 x 15218 | 3,970 |
| 13.307.50.32 | 50 | 32 | 100 | 72 | 19020 | 4 x 15220 | 4,740 |
| 13.307.50.40 | 50 | 40 | 120 | 90 | 19020 | 4 x 15220 | 5,990 |



Characteristics:
Mill adaptors.
DIN 69871-A
For frontal end mill support screwed shanks.

Eigenschaften:
Spannfutter.
DIN 69871-A.
Für Einschraubfräser.

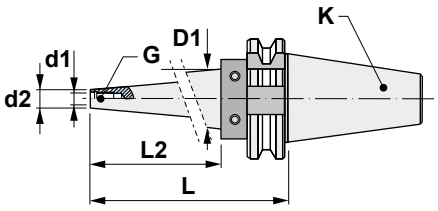



# 13.315

| Reference Bezeichnung | K ISO | L | d1 | G | d2 | L2 | D1 | Kg |
|---|---|---|---|---|---|---|---|---|
| 13.315.40.10/045 | 40 | 45 | 10,5 | M10 | 18 | 25 | 20 | 0,910 |
| 13.315.40.10/070 | 40 | 70 | 10,5 | M10 | 18 | 50 | 23 | 0,960 |
| 13.315.40.10/120 | 40 | 120 | 10,5 | M10 | 18 | 100 | 29 | 1,150 |
| 13.315.40.12/045 | 40 | 45 | 12,5 | M12 | 21 | 25 | 24 | 0,920 |
| 13.315.40.12/070 | 40 | 70 | 12,5 | M12 | 21 | 50 | 26 | 0,980 |
| 13.315.40.12/120 | 40 | 120 | 12,5 | M12 | 21 | 100 | 32 | 1,260 |
| 13.315.40.16/045 | 40 | 45 | 17,0 | M16 | 29 | 25 | 32 | 0,930 |
| 13.315.40.16/070 | 40 | 70 | 17,0 | M16 | 29 | 50 | 35 | 1,040 |
| 13.315.40.16/120 | 40 | 120 | 17,0 | M16 | 29 | 100 | 40 | 1,530 |
| 13.315.50.12/070 | 50 | 70 | 12,5 | M12 | 21 | 50 | 26 | 2,810 |
| 13.315.50.12/120 | 50 | 120 | 12,5 | M12 | 21 | 100 | 32 | 3,110 |
| 13.315.50.12/170 | 50 | 170 | 12,5 | M12 | 21 | 150 | 37 | 3,450 |
| 13.315.50.16/070 | 50 | 70 | 17,0 | M16 | 29 | 50 | 35 | 2,910 |
| 13.315.50.16/120 | 50 | 120 | 17,0 | M16 | 29 | 100 | 40 | 3,370 |
| 13.315.50.16/170 | 50 | 170 | 17,0 | M16 | 29 | 150 | 45 | 3,910 |



Characteristics:
Antivibratory end mill adaptors. DIN 69871-A
For frontal end mill support screwed shanks.
Manufactured with materials and mechanisms having antivibration properties.
Standard and extra long lengths, suitable for moulding and special manufactures.




PRE-BALANCED
ISO-40: 15.000 r.p.m. G-6,3
ISO-50: 10.000 r.p.m. G-6,3

Eigenschaften:
Schwingungsgedämpfte Aufsteckfräsdorne für Einschraubfräser. DIN 69871-A
Hergestellt mit schwingungsdämpfenden Materialien und Mechanismen.
Standard und extralange Ausführungen sind für Werkzeug- und Formenbau besonders geeignet.

VORGEWUCHTET
ISO-40: 15.000 r.p.m. G-6,3
ISO-50: 10.000 r.p.m. G-6,3

# A11.315

| Reference Bezeichnung | K ISO | L2 | D1 | L | D | d1 | G | d2 | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A11.315.40.10/200 | 40 | 165 | 35 | 200 | 50 | 10,5 | M10 | 18 | 1,740 |
| A11.315.40.10/250 | 40 | 215 | 41 | 250 | 50 | 10,5 | M10 | 18 | 2,160 |
| A11.315.40.10/300 | 40 | 265 | 46 | 300 | 50 | 10,5 | M10 | 18 | 2,750 |
| A11.315.40.12/200 | 40 | 165 | 38 | 200 | 50 | 12,5 | M12 | 21 | 2,110 |
| A11.315.40.12/250 | 40 | 215 | 44 | 250 | 50 | 12,5 | M12 | 21 | 2,410 |
| A11.315.40.12/300 | 40 | 265 | 49 | 300 | 50 | 12,5 | M12 | 21 | 3,080 |
| A11.315.40.16/200 | 40 | 165 | 46 | 200 | 50 | 17,0 | M16 | 29 | 2,310 |
| A11.315.40.16/250 | 40 | 215 | 48 | 250 | 50 | 17,0 | M16 | 29 | 2,740 |
| A11.315.40.16/300 | 40 | 265 | 50 | 300 | 50 | 17,0 | M16 | 29 | 3,400 |
| A11.315.50.12/250 | 50 | 215 | 44 | 250 | 80 | 12,5 | M12 | 21 | 4,790 |
| A11.315.50.12/300 | 50 | 265 | 49 | 300 | 80 | 12,5 | M12 | 21 | 5,120 |
| A11.315.50.12/400 | 50 | 365 | 60 | 400 | 80 | 12,5 | M12 | 21 | 6,950 |
| A11.315.50.16/250 | 50 | 215 | 52 | 250 | 80 | 17,0 | M16 | 29 | 5,510 |
| A11.315.50.16/300 | 50 | 265 | 57 | 300 | 80 | 17,0 | M16 | 29 | 6,140 |
| A11.315.50.16/400 | 50 | 365 | 68 | 400 | 80 | 17,0 | M16 | 29 | 7,580 |
| A11.315.50.16/500 | 50 | 465 | 78 | 500 | 80 | 17,0 | M16 | 29 | 11,680 |

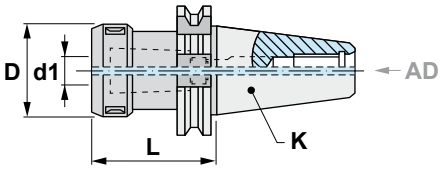
# A11.315IK

| Reference Bezeichnung | K ISO | L2 | D1 | L | D | d1 | G | d2 | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A11.315.40.10/200IK | 40 | 165 | 35 | 200 | 50 | 10,5 | M10 | 18 | 1,740 |
| A11.315.40.10/250IK | 40 | 215 | 41 | 250 | 50 | 10,5 | M10 | 18 | 2,160 |
| A11.315.40.12/200IK | 40 | 165 | 38 | 200 | 50 | 12,5 | M12 | 21 | 2,110 |
| A11.315.40.12/250IK | 40 | 215 | 44 | 250 | 50 | 12,5 | M12 | 21 | 2,410 |
| A11.315.40.16/250IK | 40 | 215 | 48 | 250 | 50 | 17,0 | M16 | 29 | 2,740 |
| A11.315.50.12/300IK | 50 | 265 | 49 | 300 | 80 | 12,5 | M12 | 21 | 5,120 |
| A11.315.50.16/300IK | 50 | 265 | 57 | 300 | 80 | 17,0 | M16 | 29 | 6,140 |



Characteristics:
Collet chucks for DIN 6388 collets.
DIN 69871-A
For tools with cylindrical shank
DIN 1835-B.
* Ball bearing nut, see page: I220

*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Spannzangenfutter für Spannzangen
DIN 6388.
DIN 69871-A.
Für Werkzeuge mit zylindrischem
Schaft DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I220

*** LIEFERUNG OHNE SCHLÜSSEL**

# 11.353

| Reference Bezeichnung | K ISO | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|
| 11.353.30.16 | 30 | 65 | 2-16 | 43 | 43316 | 50116 | 19216 | 0,900 |
| 11.353.30.25 | 30 | 70 | 3-25 | 60 | 43325 | 50125 | 19216 | 0,960 |
| 11.353.40.16 | 40 | 70 | 2-16 | 43 | 43316 | 50116 | 19216 | 1,120 |
| 11.353.40.16/120 | 40 | 120 | 2-16 | 43 | 43316 | 50116 | 19216 | 1,300 |
| 11.353.40.25 | 40 | 70 | 3-25 | 60 | 43325 | 50125 | 19224 | 1,270 |
| 11.353.40.25/120 | 40 | 120 | 3-25 | 60 | 43325 | 50125 | 19224 | 1,910 |
| 11.353.40.32 | 40 | 90 | 4-32 | 72 | 43332 | 50132 | 19224 | 1,780 |
| 11.353.50.16 | 50 | 70 | 2-16 | 43 | 43316 | 50116 | 19216 | 3,000 |
| 11.353.50.25 | 50 | 70 | 3-25 | 60 | 43325 | 50125 | 19224 | 2,690 |
| 11.353.50.25/120 | 50 | 120 | 3-25 | 60 | 43325 | 50125 | 19224 | 3,440 |
| 11.353.50.32 | 50 | 80 | 4-32 | 72 | 43332 | 50132 | 19230 | 3,560 |

## BXX

I206-208

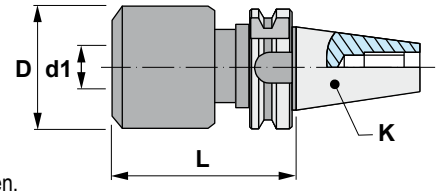
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| BXX | Collets with double slot DIN 6388 - Form B |
| | Spannzangen mit Doppelnut DIN 6388 - Form B |





Characteristics:
Strong hold collet chuck for cylindrical collets.
DIN 69871-A

Eigenschaften:
Kraftspannfutter für zylindrische Spannzangen.
DIN 69871-A

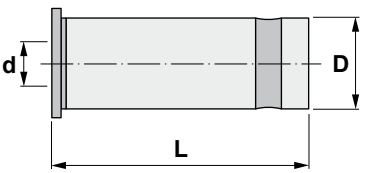



# 11.400

| Reference Bezeichnung | K ISO | L | d1 | D | Kg |
|---|---|---|---|---|---|
| 11.400.40.20 | 40 | 105 | 20 | 54 | 1,950 |
| 11.400.40.32 | 40 | 105 | 32 | 72 | 2,550 |
| 11.400.50.20 | 50 | 105 | 20 | 54 | 3,850 |
| 11.400.50.32 | 50 | 105 | 32 | 72 | 4,450 |

## Complements (Collets type C) / Zubehör (Spannzangen Typ C)

| Reference / Bezeichnung | d | D | L |
|---|---|---|---|
| C2006 | 6 | 20 | 55 |
| C2008 | 8 | 20 | 55 |
| C2010 | 10 | 20 | 55 |
| C2012 | 12 | 20 | 55 |
| C2016 | 16 | 20 | 55 |
| C3206 | 6 | 32 | 65 |
| C3208 | 8 | 32 | 65 |
| C3210 | 10 | 32 | 65 |
| C3212 | 12 | 32 | 65 |
| C3216 | 16 | 32 | 65 |
| C3220 | 20 | 32 | 65 |
| C3225 | 25 | 32 | 65 |








Characteristics:
Set of strong hold milling chuck and collets.
DIN 69871-A / BT

Eigenschaften:
Satz mit Kraftspannfutter und Spannzangen.
DIN 69871-A / BT

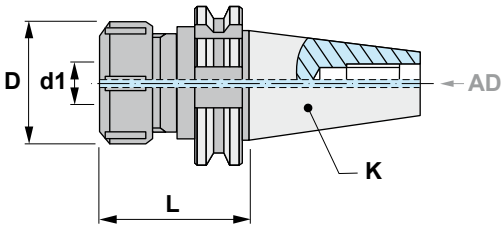
# SET-C20/32

| Reference<br>Bezeichnung | DIN | Composition<br>Bestehend aus | Kg |
|---|---|---|---|
| SET-11.40.C20 | DIN 69871-A | 1 x 11.400.40.20 + 5 collets / Spannzangen | 4,500 |
| SET-11.40.C32 | DIN 69871-A | 1 x 11.400.40.32 + 7 collets / Spannzangen | 6,700 |
| SET-11.50.C32 | DIN 69871-A | 1 x 11.400.50.32 + 7 collets / Spannzangen | 9,150 |



Characteristics:
Collet chucks for DIN 6499 (ER) collets.
DIN 69871-A
For tools with cylindrical shank DIN 1835-B.
* Ball bearing nut, see page: I221

Eigenschaften:
Spannzangenfutter DIN 69871-A für Spannzangen DIN 6499 (ER).
Für Werkzeuge mit zylindrischem Schaft DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I221




*** SUPPLIED WITHOUT WRENCH**
*** LIEFERUNG OHNE SCHLÜSSEL**

# 11.453

| Reference Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 11.453.30.16 | 30 | ER16 | 55 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 0,490 |
| 11.453.30.20 | 30 | ER20 | 55 | 1-13 | 35 | 45320 | 50220 | 19212 | 0,500 |
| 11.453.30.25 | 30 | ER25 | 55 | 1-16 | 42 | 45325 | 50225 | 19216 | 0,530 |
| 11.453.30.32 | 30 | ER32 | 60 | 2-20 | 50 | 45332 | 50232 | 19218 | 0,600 |
| 11.453.40.16 | 40 | ER16 | 70 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 0,990 |
| 11.453.40.16/100 | 40 | ER16 | 100 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 1,100 |
| 11.453.40.16/150 | 40 | ER16 | 150 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 1,280 |
| 11.453.40.20 | 40 | ER20 | 70 | 1-13 | 35 | 45320 | 50220 | 19212 | 1,020 |
| 11.453.40.20/100 | 40 | ER20 | 100 | 1-13 | 35 | 45320 | 50220 | 19212 | 1,170 |
| 11.453.40.20/150 | 40 | ER20 | 150 | 1-13 | 35 | 45320 | 50220 | 19212 | 1,400 |
| 11.453.40.25 | 40 | ER25 | 70 | 1-16 | 42 | 45325 | 50225 | 19216 | 1,090 |
| 11.453.40.25/100 | 40 | ER25 | 100 | 1-16 | 42 | 45325 | 50225 | 19216 | 1,160 |
| 11.453.40.25/150 | 40 | ER25 | 150 | 1-16 | 42 | 45325 | 50225 | 19216 | 1,780 |
| 11.453.40.32 | 40 | ER32 | 70 | 2-20 | 50 | 45332 | 50232 | 19222 | 1,150 |
| 11.453.40.32/100 | 40 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 19222 | 1,310 |
| 11.453.40.32/150 | 40 | ER32 | 150 | 2-20 | 50 | 45332 | 50232 | 19222 | 1,650 |
| 11.453.40.40 | 40 | ER40 | 70 | 3-30 | 63 | 45340 | 50240 | 19224 | 1,280 |
| 11.453.40.40/100 | 40 | ER40 | 100 | 3-30 | 63 | 45340 | 50240 | 19224 | 1,340 |
| 11.453.40.40/150 | 40 | ER40 | 150 | 3-30 | 63 | 45340 | 50240 | 19224 | 2,430 |
| 11.453.50.16/100 | 50 | ER16 | 100 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 3,010 |
| 11.453.50.16/150 | 50 | ER16 | 150 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 3,100 |
| 11.453.50.20/100 | 50 | ER20 | 100 | 1-13 | 35 | 45320 | 50220 | 19212 | 3,100 |
| 11.453.50.20/150 | 50 | ER20 | 150 | 1-13 | 35 | 45320 | 50220 | 19212 | 3,300 |
| 11.453.50.25 | 50 | ER25 | 70 | 1-16 | 42 | 45325 | 50225 | 19216 | 2,980 |
| 11.453.50.25/150 | 50 | ER25 | 150 | 1-16 | 42 | 45325 | 50225 | 19216 | 3,540 |
| 11.453.50.32 | 50 | ER32 | 70 | 2-20 | 50 | 45332 | 50232 | 19222 | 3,030 |
| 11.453.50.32/100 | 50 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 19222 | 3,100 |
| 11.453.50.32/150 | 50 | ER32 | 150 | 2-20 | 50 | 45332 | 50232 | 19222 | 3,890 |
| 11.453.50.40 | 50 | ER40 | 80 | 3-30 | 63 | 45340 | 50240 | 19224 | 3,310 |
| 11.453.50.40/150 | 50 | ER40 | 150 | 3-30 | 63 | 45340 | 50240 | 19224 | 4,690 |
| 11.453.50.50 | 50 | ER50 | 90 | 10-34 | 78 | 45350 | 50250 | 19230 | 3,700 |

**ERXX** I210-212

| Reference / Bezeichnung |
|---|
| ERXX |



**ERCXX** I215-216

| Reference / Bezeichnung |
|---|
| ERCXX |



**ERTXX** I217-218

| Reference / Bezeichnung |
|---|
| ERTXX |



**40.453..** I180

| Reference / Bezeichnung |
|---|
| 40.453.. |



**40.455..** I181

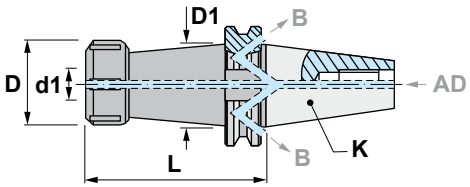
| Reference / Bezeichnung |
|---|
| 40.455.. |





Characteristics:
Collet chucks for DIN 6499 (ER) collets.
DIN 69871-A
For tools with cylindrical shank
DIN 1835-B.
* Ball bearing nut, see page: I221

Eigenschaften:
Spannzangenfutter DIN 69871-A für
Spannzangen DIN 6499 (ER).
Für Werkzeuge mit zylindrischem Schaft
DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I221




*** SUPPLIED WITHOUT WRENCH**
*** LIEFERUNG OHNE SCHLÜSSEL**

# 13.453

| Reference<br>Bezeichnung | K ISO | | L | d1 | D | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 13.453.40.16 | 40 | ER16 | 70 | 0,5-10 | 32 | - | 45316 | 50216 | 19210 | 0,980 |
| 13.453.40.16/100 | 40 | ER16 | 100 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 1,090 |
| 13.453.40.16/150 | 40 | ER16 | 150 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 1,260 |
| 13.453.40.20 | 40 | ER20 | 70 | 1-13 | 35 | - | 45320 | 50220 | 19212 | 1,020 |
| 13.453.40.20/100 | 40 | ER20 | 100 | 1-13 | 35 | 34 | 45320 | 50220 | 19212 | 1,160 |
| 13.453.40.20/150 | 40 | ER20 | 150 | 1-13 | 35 | 34 | 45320 | 50220 | 19212 | 1,400 |
| 13.453.40.25 | 40 | ER25 | 70 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 1,080 |
| 13.453.40.25/150 | 40 | ER25 | 150 | 1-16 | 42 | 42 | 45325 | 50225 | 19216 | 1,690 |
| 13.453.40.32 | 40 | ER32 | 70 | 2-20 | 50 | - | 45332 | 50232 | 19222 | 1,140 |
| 13.453.40.32/100 | 40 | ER32 | 100 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 1,310 |
| 13.453.40.32/150 | 40 | ER32 | 150 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 2,010 |
| 13.453.40.40 | 40 | ER40 | 70 | 3-30 | 63 | - | 45340 | 50240 | 19224 | 1,270 |
| 13.453.40.40/150 | 40 | ER40 | 150 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 1,970 |
| 13.453.50.16/100 | 50 | ER16 | 100 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 2,910 |
| 13.453.50.16/150 | 50 | ER16 | 150 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 3,070 |
| 13.453.50.20/100 | 50 | ER20 | 100 | 1-13 | 35 | 34 | 45320 | 50220 | 19212 | 3,030 |
| 13.453.50.20/150 | 50 | ER20 | 150 | 1-13 | 35 | 34 | 45320 | 50220 | 19212 | 3,260 |
| 13.453.50.25 | 50 | ER25 | 70 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 2,960 |
| 13.453.50.25/150 | 50 | ER25 | 150 | 1-16 | 42 | 42 | 45325 | 50225 | 19216 | 3,530 |
| 13.453.50.32 | 50 | ER32 | 70 | 2-20 | 50 | - | 45332 | 50232 | 19222 | 2,980 |
| 13.453.50.32/100 | 50 | ER32 | 100 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 3,050 |
| 13.453.50.32/150 | 50 | ER32 | 150 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 3,820 |
| 13.453.50.32/200 | 50 | ER32 | 200 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 4,150 |
| 13.453.50.40 | 50 | ER40 | 80 | 3-30 | 63 | - | 45340 | 50240 | 19224 | 3,320 |
| 13.453.50.40/150 | 50 | ER40 | 150 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 4,670 |
| 13.453.50.40/200 | 50 | ER40 | 200 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 4,958 |
| 13.453.50.50 | 50 | ER50 | 90 | 10-34 | 78 | - | 45350 | 50250 | 19230 | 2,950 |

**ERXX** I210-212
**Reference / Bezeichnung**
ERXX



**40.453..** I180
**Reference / Bezeichnung**
40.453..



**ERCXX** I215-216
**Reference / Bezeichnung**
ERCXX



**40.455..** I181
**Reference / Bezeichnung**
40.455..

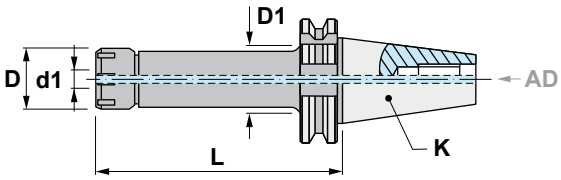


**ERTXX** I217-218
**Reference / Bezeichnung**
ERTXX





Characteristics:
Long collet chuck for
DIN 6499 (ER) collets.
DIN 69871-A
For tools with cylindrical shank
With “mini” collet nut.




*** SUPPLIED WITHOUT WRENCH**

Eigenschaften:
Lange Spannzangenfutter für
Spannzangen DIN 6499 (ER).
DIN 69871-A
Für Werkzeuge mit zylindrischem
Schaft.
Mit “Mini”-Spannmutter.

*** LIEFERUNG OHNE SCHLÜSSEL**

# 11.455

| Reference Bezeichnung | K ISO | | L | d1 | D | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 11.455.40.16/100 | 40 | ER16 | 100 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,050 |
| 11.455.40.16/130 | 40 | ER16 | 130 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,140 |
| 11.455.40.16/160 | 40 | ER16 | 160 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,200 |
| 11.455.40.16/200 | 40 | ER16 | 200 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,310 |
| 11.455.40.20/100 | 40 | ER20 | 100 | 1-13 | 28 | 28 | 45520 | 50920 | 19212 | 1,180 |
| 11.455.40.20/160 | 40 | ER20 | 160 | 1-13 | 28 | 28 | 45520 | 50920 | 19212 | 1,430 |
| 11.455.40.25/100 | 40 | ER25 | 100 | 1-16 | 35 | 35 | 45525 | 50925 | 19216 | 1,380 |
| 11.455.40.25/160 | 40 | ER25 | 160 | 1-16 | 35 | 35 | 45525 | 50925 | 19216 | 1,770 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER) |
| | Spannzangen DIN 6499 - Form Mexin (ER) |

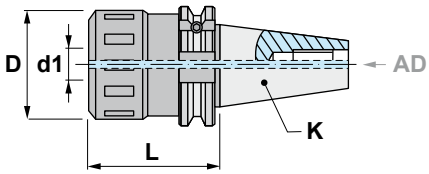




Characteristics:
Mechanical collet chuck with high tightening torque and precision.
DIN 69871-A
For DIN 6499 (ER) collets.

The alternative to hydraulic or other systems. Central coolant supply.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
Mechanisches Spannzangenfutter mit hohem Anzugsmoment.
DIN 69871-A
Für Spannzangen DIN 6499 (ER).

Die Alternative zu hydraulischen und anderen Systemen. Mit Innenkühlung.

*** LIEFERUNG MIT SCHLÜSSEL**

# 11.457

| Reference Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 11.457.40.32 | 40 | ER32 | 80 | 2-20 | 54 | 45732 | 50704 | 19006 | 1,420 |
| 11.457.50.32 | 50 | ER32 | 110 | 2-20 | 54 | 45732 | 50704 | 19006 | 3,580 |
| 11.457.50.40 | 50 | ER40 | 120 | 3-30 | 65 | 45740 | 50706 | 19010 | 4,480 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |

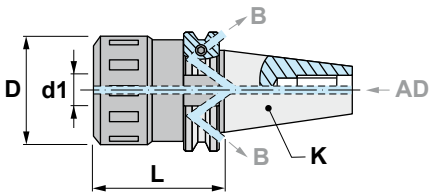




Characteristics:
Mechanical collet chuck with high tightening torque and precision.
DIN 69871-A
For DIN 6499 (ER) collets.

The alternative to hydraulic or other systems. Central coolant supply.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
Mechanisches Spannzangenfutter mit hohem Anzugsmoment.
DIN 69871-A
Für Spannzangen DIN 6499 (ER).

Die Alternative zu hydraulischen und anderen Systemen. Mit Innenkühlung.

*** LIEFERUNG MIT SCHLÜSSEL**

# 13.457

| Reference Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 13.457.40.32 | 40 | ER32 | 80 | 2-20 | 54 | 45732 | 50704 | 19006 | 1,420 |
| 13.457.50.32 | 50 | ER32 | 110 | 2-20 | 54 | 45732 | 50704 | 19006 | 3,560 |
| 13.457.50.40 | 50 | ER40 | 120 | 3-30 | 65 | 45740 | 50706 | 19010 | 4,530 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

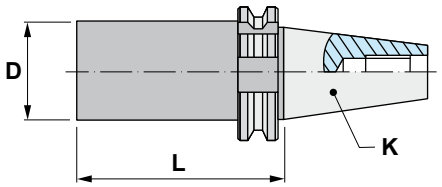
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |





Characteristics:
Blank adaptors.
DIN 69871-A

Eigenschaften:
Rohlinge.
DIN 69871-A

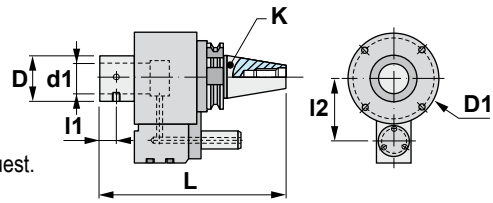



# 11.470

| Reference<br>Bezeichnung | K ISO | D | L | Kg |
|---|---|---|---|---|
| 11.470.30.40 | 30 | 40,5 | 160 | 1,940 |
| 11.470.40.63/250 | 40 | 63,5 | 250 | 6,450 |
| 11.470.50.95/315 | 50 | 95,5 | 315 | 19,000 |



Characteristics:
Cooling fluid supply unit.
DIN 69871-A similar to DIN 6359
For tools with cylindrical shank
DIN 1835-B/E.
* Other sizes are manufactured on request.




**rpm max 4.000 min. -1 ¤ 25 bar max**

Eigenschaften:
Drehverteiler für Innenkühlung.
DIN 69871-A ähnlich wie DIN 6359
für Werkzeuge mit zylindrischem
Schaft DIN 1835-B/E
* Andere Größen werden auf Anfrage hergestellt.

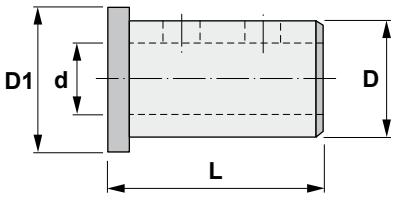
# 11.512

| Reference Bezeichnung | K ISO | d1 G6 | L | D | D1 | l1 | l2* | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 11.512.40.25 | 40 | 25 | 152 | 45 | 95 | 15 | 65 | 14116 | 5,150 |
| 11.512.40.32 | 40 | 32 | 152 | 48 | 95 | 16 | 65 | 14116 | 5,490 |
| 11.512.50.32 | 50 | 32 | 152 | 48 | 90 | 24 | 80 | 14116 | 7,550 |
| 11.512.50.40 | 50 | 40 | 152 | 58 | 90 | 17 | 80 | 14116 | 7,680 |

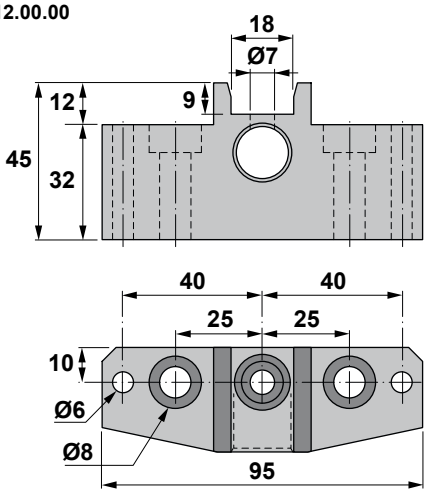
## Complements of 512 group / Zubehör von gruppe 512

| Ref. / Bez. | D | d | D1 | L |
|---|---|---|---|---|
| 512.25.16 | 25 | 16 | 33 | 60 |
| 512.25.20 | | 20 | 33 | 60 |
| 512.32.16 | 32 | 16 | 40 | 60 |
| 512.32.20 | | 20 | 40 | 60 |
| 512.32.25 | | 25 | 40 | 60 |
| 512.40.16 | 40 | 16 | 48 | 60 |
| 512.40.20 | | 20 | 48 | 60 |
| 512.40.25 | | 25 | 48 | 60 |
| 512.40.32 | | 32 | 48 | 60 |
| | | | | |
| 512.00.00 | | | | |

512..

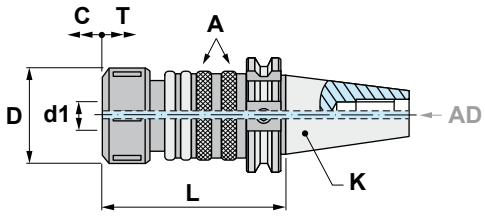



512.00.00





Characteristics:
Tapping head with axial compensation. DIN 69871-A
For DIN 6499 (ER) collets and with central coolant supply.
Compensation in compression (C) and tension (T). Compression can be blocked by turning the rear ring (A).




*** SUPPLIED WITH WRENCH**

Eigenschaften:
Gewindeschneidfutter mit Längenausgleich DIN 69871-A. Befestigung mit Spannzangen 6499 (ER) und mit Innenkühlung. Ausgleich der Kompression (C) und der Traktion (T). Die Kompression kann mit dem Ring (A) blockiert werden.

*** LIEFERUNG MIT SCHLÜSSEL**

# 11.610

| Reference Bezeichnung | K ISO | | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 11.610.30.16 | 30 | ER16 | M3-M12 | 99 | 28 | 5,5 | 6,0 | 45316 | 50216 | 0,890 |
| 11.610.40.16 | 40 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 1,300 |
| 11.610.40.25 | 40 | ER25 | M4-M20 | 125 | 42 | 10,5 | 7,5 | 45325 | 50225 | 1,690 |
| 11.610.40.40 | 40 | ER40 | M8-M33 | 141 | 63 | 10,0 | 10,0 | 45340 | 50240 | 3,200 |
| 11.610.50.16 | 50 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 3,620 |
| 11.610.50.25 | 50 | ER25 | M4-M20 | 134 | 42 | 10,5 | 7,5 | 45325 | 50225 | 4,150 |
| 11.610.50.40 | 50 | ER40 | M8-M33 | 150 | 63 | 10,0 | 10,0 | 45340 | 50240 | 4,520 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |



## 40.453..

I180

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.453.. | Collet chucks for DIN 6499 (ER) collets<br>Spannzangenfutter für DIN 6499 (ER) Spannzangen |



## 40.455..

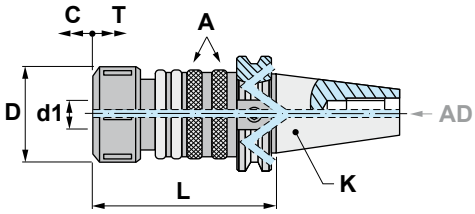
I181

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.455.. | Long collet chucks for DIN 6499 (ER) collets<br>Lange Spannzangenfutter für DIN 6499 (ER) Spannzangen |





Characteristics:
Tapping head with axial compensation.
DIN 69871-A
For DIN 6499 (ER) collets and with central coolant supply.
Compensation in compression (C) and tension (T). Compression can be blocked by turning the rear ring (A).
Control of threading depth.




*** SUPPLIED WITH WRENCH**

Eigenschaften:
Gewindeschneidfutter mit Längenausgleich DIN 69871-A.
Befestigung mit Spannzangen 6499 (ER) und mit Innenkühlung.
Ausgleich der Kompression (C) und der Traktion (T). Die Kompression kann mit dem Ring (A) blockiert werden. Kontrolle der Gewindetiefe.

*** LIEFERUNG MIT SCHLÜSSEL**

# 13.610

| Reference Bezeichnung | K ISO | | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 13.610.40.16 | 40 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 1,430 |
| 13.610.40.25 | 40 | ER25 | M4-M20 | 125 | 42 | 10,5 | 7,5 | 45325 | 50225 | 1,990 |
| 13.610.40.40 | 40 | ER40 | M8-M33 | 141 | 63 | 10,0 | 10,0 | 45340 | 50240 | 3,200 |
| 13.610.50.16 | 50 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 3,480 |
| 13.610.50.25 | 50 | ER25 | M4-M20 | 134 | 42 | 10,5 | 7,5 | 45325 | 50225 | 4,150 |
| 13.610.50.40 | 50 | ER40 | M8-M33 | 150 | 63 | 10,0 | 10,0 | 45340 | 50240 | 5,360 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |



## 40.453..

I180

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.453.. | Collet chucks for DIN 6499 (ER) collets<br>Spannzangenfutter für DIN 6499 (ER) Spannzangen |



## 40.455..

I181

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.455.. | Long collet chucks for DIN 6499 (ER) collets<br>Lange Spannzangenfutter für DIN 6499 (ER) Spannzangen |



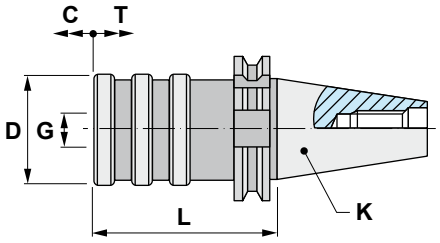


Characteristics:
Quick change tapping head with axial compensation.
DIN 69871-A
With Bilz system tap chucks bushings.

Compensation in compression (C) and tension (T).

Eigenschaften:
Gewindeschneid-Schnellwechselfutter mit Längenausgleich.
DIN 69871-A

Mit Schnellwechseleinsätze Bilz-System.
Ausgleich der Kompression (C) und der Traktion (T).




# 11.620

| Reference Bezeichnung | K ISO | N°. G Ø | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 11.620.30.12 | 30 | 1 19 | M3-M12 | 63 | 38 | 9 | 9 | 710XX | 750XX | 0,620 |
| 11.620.40.12 | 40 | 1 19 | M3-M12 | 68 | 38 | 9 | 9 | 710XX | 750XX | 1,060 |
| 11.620.40.20 | 40 | 2 31 | M8-M20 | 93 | 55 | 15 | 15 | 720XX | 760XX | 1,660 |
| 11.620.40.33 | 40 | 3 48 | M14-M33 | 138 | 79 | 24 | 24 | 730XX | 770XX | 3,490 |
| 11.620.50.12 | 50 | 1 19 | M3-M12 | 80 | 38 | 9 | 9 | 710XX | 750XX | 2,960 |
| 11.620.50.20 | 50 | 2 31 | M8-M20 | 102 | 55 | 15 | 15 | 720XX | 760XX | 3,410 |
| 11.620.50.33 | 50 | 3 48 | M14-M33 | 135 | 79 | 24 | 24 | 730XX | 770XX | 5,110 |

## 710XX..730XX

I202

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch |
| | Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

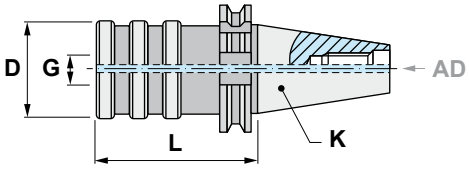
| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch |
| | Schnellwechseleinsätze mit Sicherheitskupplung |





Characteristics:
Quick change tapping head for rigid tapping. DIN69871-A.
With Bilz system tap chucks bushings.

With central coolant.




Eigenschaften:
Gewindeschneid-Schnellwechselfutter ohne Längenausgleich.
DIN69871-A
Mit Schnellwechseleinsätze Bilz-System.

Mit Innenkühlung.

# 11.630

| Reference Bezeichnung | K ISO | N°. | G Ø | d1 | L | D | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 11.630.30.12 | 30 | 1 | 19 | M3-M12 | 60 | 33 | 710XX | 750XX | 1,000 |
| 11.630.40.12 | 40 | 1 | 19 | M3-M12 | 67 | 33 | 710XX | 750XX | 1,040 |
| 11.630.40.20 | 40 | 2 | 31 | M8-M20 | 90 | 50 | 720XX | 760XX | 1,510 |
| 11.630.40.33 | 40 | 3 | 48 | M14-M33 | 117 | 72 | 730XX | 770XX | 3,150 |
| 11.630.50.12 | 50 | 1 | 19 | M3-M12 | 78 | 33 | 710XX | 750XX | 3,100 |
| 11.630.50.20 | 50 | 2 | 31 | M8-M20 | 101 | 50 | 720XX | 760XX | 3,830 |
| 11.630.50.33 | 50 | 3 | 48 | M14-M33 | 125 | 72 | 730XX | 770XX | 5,200 |

## 710XX..730XX

I202

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch |
| | Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

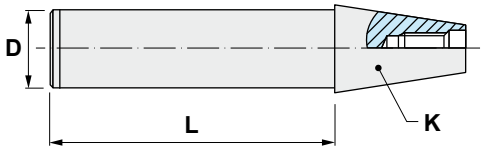
| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch |
| | Schnellwechseleinsätze mit Sicherheitskupplung |





Characteristics:
Test arbors.
DIN 69871-A

Eigenschaften:
Prüfdorne.
DIN 69871-A




# 11.999

| Reference<br>Bezeichnung | K ISO | L | D | Kg |
|---|---|---|---|---|
| 11.999.30 | 30 | 300 | 32 | 4,450 |
| 11.999.40 | 40 | 300 | 40 | 5,450 |
| 11.999.50 | 50 | 300 | 50 | 7,000 |

## 1 TYPE / TYP

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11.160  | 11.165  | 11.180  | 11.210  | 11.215  | 11.216  | 11.225  | 11.226  | 11.290  |
| 11.295  | 11.296  | 11.300  | 11.302  | 11.305  | 11.353  | 11.400  | 11.453  | 11.455  |
| 11.457  | 11.470  | 11.512  | 11.610  | 11.620  | 11.630  | A11.160IK  | A11.160  | A11.160  |
| A11.315IK  | A11.315  | 13.160  | 13.210  | 13.215  | 13.296  | 13.300  | 13.302  | 13.306  |
| 13.307  | 13.315  | 13.453  | 13.457  | 13.610  | | | | |

## 2 DIMENSION / ABMESSUNGEN

| | | | |
|---|---|---|---|
| **30** | **40** | **50** | **60** |

## 3 LENGTH / LÄNGE (L)




| Ø DIAMETER / DURCHMESSER | MK | ISO | COLLET SPANNZANGEN |
|---|---|---|---|
|   |   |   | |
| | | | |

**NOTES / BEMERKUNGEN:**



# HSK DIN 69893-1

Code system
Kodifizierung — I78

Technical information
Technische Auskünfte — I79

Applications index
Anwendungen — I80

Arbors and adaptors HSK DIN 69893-1
Aufnahmen HSK DIN 69893-1 — I81-96

Antivibratory adaptors HSK DIN 69893-1
Schwingungsgedämpfte Aufnahmen HSK DIN 69893-1 — I82-83,91

Special tool request
Sonderwerkzeug-Anfrage — I97

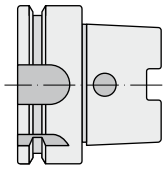
# Code system / Kodifizierung

| A | 16 | 160 | 063 | 22 |
|---|---|---|---|---|
| * | 1 | 2 | 3 | 4 |

***** *Antivibratory adaptors*
*Schwingungsgedämpfte Aufnahmen*

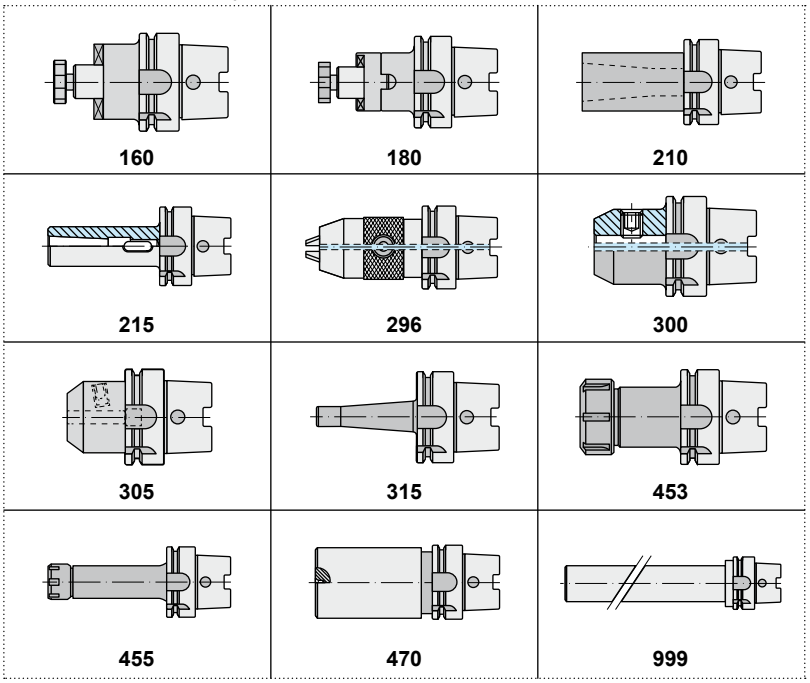
**1** *Model*
*Modell*

HSK DIN 69893-1



16

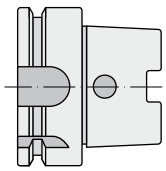
**2** *Arbor type*
*Aufnahmen-Typ*



160 | 180 | 210
215 | 296 | 300
305 | 315 | 453
455 | 470 | 999

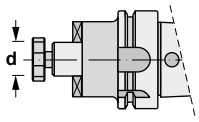
**3** *Arbor size*
*Aufnahmengröße*

HSK DIN 69893-1



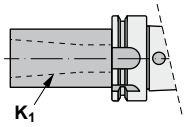
63 | 100

**4** *Adaptor size*
*Adaptergröße*

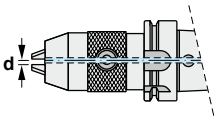


Ø 16 | Ø 22 | Ø 27 | Ø 32 | Ø 40
16 | 22 | 27 | 32 | 40

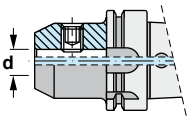
$K_1$ - MORSE



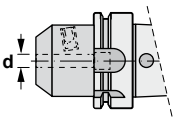
MK1 | MK2 | MK3 | MK4 | MK5
01 | 02 | 03 | 04 | 05



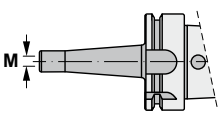
Ø 13 | Ø 16
13 | 16



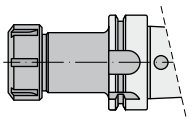
Ø 6 ... Ø 40
6 ... 40



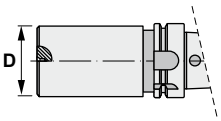
Ø 6 ... Ø 40
6 ... 40



M | M | M
M18 | M21 | M29



ER16 | ER20 | ER25 | ER32 | ER40
16 | 20 | 25 | 32 | 40



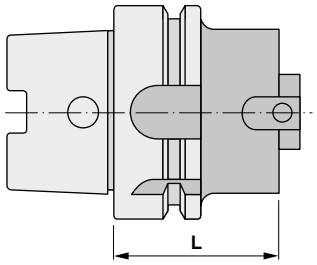
Ø 50 | Ø 63 | Ø 100
50 | 63 | 100

## AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS
## AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN

**MATERIAL:**
- Chromium-manganese carburised steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburised, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburised layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.




**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

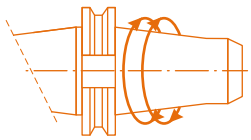
**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

| K | AT3 mm |
|---|---|
| ISO 30 | 0,002 |
| ISO 40 | 0,003 |
| ISO 45 | 0,003 |
| ISO 50 | 0,004 |
| ISO 60 | 0,005 |

**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

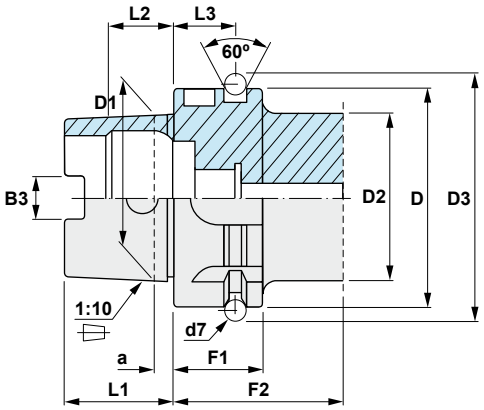
**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

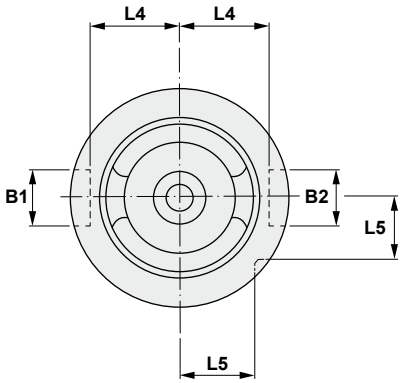
### PREBALANCED TOOLHOLDERS
### VORGEWUCHTETE AUFNAHMEN



**ISO 40 ► 8000 rpm** **ISO 50 ► 8000 rpm**

## 16 DIN 69893-HSK-A




| HSK | Dh10 | D1 | D2 max | D3 -0,1 | B1 H10 | B2 H10 | B3±0,4 | d7 | L1 -0,2 | L2JS10 | L3±0,1 | L4 -0,2 | L5 -0,3 | F1 -0,1 | F2 min | a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | 32 | 24 | 26 | 37,0 | 9 | 7 | 7,05 | 4 | 16 | 8,92 | 16 | 13,0 | 9,5 | 20 | 35 | 3,2 |
| **40** | 40 | 30 | 34 | 45,0 | 11 | 9 | 8,05 | 4 | 20 | 11,42 | 16 | 17,0 | 12,0 | 20 | 35 | 4,0 |
| **50** | 50 | 38 | 42 | 59,3 | 14 | 12 | 10,54 | 7 | 25 | 14,13 | 18 | 21,0 | 15,5 | 26 | 42 | 5,0 |
| **63** | 63 | 48 | 53 | 72,3 | 18 | 16 | 12,54 | 7 | 32 | 18,13 | 18 | 26,5 | 20,0 | 26 | 42 | 3,3 |
| **80** | 80 | 60 | 67 | 88,8 | 20 | 18 | 16,04 | 7 | 40 | 22,85 | 18 | 34,0 | 25,0 | 26 | 42 | 8,0 |
| **100** | 100 | 75 | 85 | 109,75 | 22 | 20 | 20,02 | 7 | 50 | 28,56 | 20 | 44,0 | 31,5 | 29 | 45 | 10,0 |

## *Arbors and adaptors HSK DIN 69893-1*
## *Aufnahmen HSK DIN 69893-1*

**16.160**



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**16.180**



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**16.210**



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**16.215**



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**16.296**



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**16.300**



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**16.305**



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**16.315**



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**16.453**



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**16.455**



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**16.470**



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**16.999**



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## *Antivibratory adaptors HSK DIN 69893-1*
## *Schwingungsgedämpfte Aufnahmen HSK DIN 69893-1*

**A16.160IK**



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**A16.160**



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**A16.315IK**



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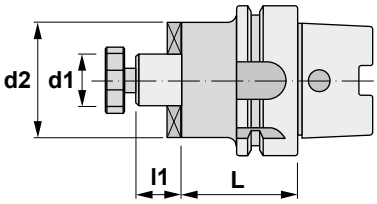
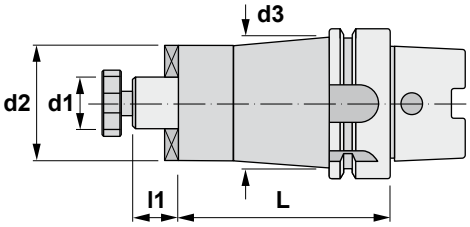
Characteristics:
Shell mill adaptors. DIN 69893-1 / HSK Form A
For cutters with driving slot DIN 138.

Eigenschaften:
Aufsteckfräsdorne DIN 69893-1 / HSK Form A.
Für Fräser mit Quernut DIN 138.



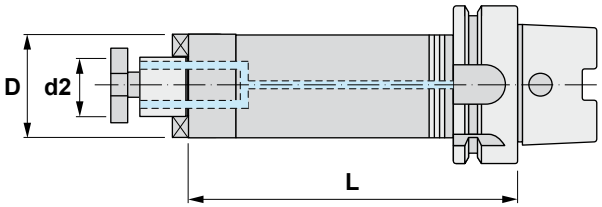

# 16.160

| Reference<br>Bezeichnung | HSK | d1 | L | l1 | d2 | d3 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.160.063.16 | 63 | 16 | 50 | 17 | 38 | - | 10008 | 86016 | 11103 | 0,880 |
| 16.160.063.16/100 | 63 | 16 | 100 | 17 | 38 | 46 | 10008 | 86016 | 11103 | 1,420 |
| 16.160.063.16/160 | 63 | 16 | 160 | 17 | 38 | 46 | 10008 | 86016 | 11103 | 2,050 |
| 16.160.063.22 | 63 | 22 | 50 | 19 | 47 | - | 10010 | 86022 | 11004 | 1,020 |
| 16.160.063.22/100 | 63 | 22 | 100 | 19 | 47 | 53 | 10010 | 86022 | 11004 | 1,810 |
| 16.160.063.22/160 | 63 | 22 | 160 | 19 | 48 | 53 | 10010 | 86022 | 11004 | 2,720 |
| 16.160.063.27 | 63 | 27 | 60 | 21 | 58 | - | 10012 | 86027 | 11005 | 1,420 |
| 16.160.063.27/100 | 63 | 27 | 100 | 21 | 58 | - | 10012 | 86027 | 11005 | 2,240 |
| 16.160.063.27/160 | 63 | 27 | 160 | 21 | 58 | - | 10012 | 86027 | 11005 | 3,450 |
| 16.160.063.32 | 63 | 32 | 60 | 24 | 64 | - | 10016 | 86032 | 11105 | 1,620 |
| 16.160.063.32/100 | 63 | 32 | 100 | 24 | 64 | - | 10016 | 86032 | 11105 | 2,470 |
| 16.160.063.32/160 | 63 | 32 | 160 | 24 | 64 | - | 10016 | 86032 | 11105 | 3,960 |
| 16.160.063.40 | 63 | 40 | 60 | 27 | 80 | - | 10020 | 86040 | 11006 | 2,130 |
| 16.160.063.40/100 | 63 | 40 | 100 | 27 | 80 | - | 10020 | 86040 | 11006 | 3,960 |
| 16.160.100.16 | 100 | 16 | 50 | 17 | 38 | - | 10008 | 86016 | 11103 | 2,320 |
| 16.160.100.22 | 100 | 22 | 50 | 19 | 48 | - | 10010 | 86022 | 11004 | 2,450 |
| 16.160.100.27 | 100 | 27 | 50 | 21 | 55 | - | 10012 | 86027 | 11005 | 2,570 |
| 16.160.100.32 | 100 | 32 | 50 | 24 | 64 | - | 10016 | 86032 | 11105 | 2,740 |
| 16.160.100.40 | 100 | 40 | 60 | 27 | 80 | - | 10020 | 86040 | 11006 | 3,490 |



Characteristics:
Cylindrical antivibratory shell mill adaptors.
DIN 69893-1 / HSK Form A
For cutters with driving slot DIN 138.
With internal coolant.

Eigenschaften:
Schwingungsgedämpfte Aufsteckfräsdorne.
DIN 69893-1 / HSK Form A
Für Fräser mit Quernut DIN 138.
Mit Innenkühlung.



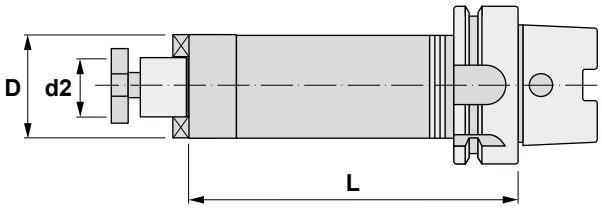

# A16.160IK

| Reference Bezeichnung | HSK | L | D | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|
| A16.160.063.16/200-38IK | 63 | 200 | 38 | 16 | 10008 | 86016 | 11103 | 2,150 |
| A16.160.063.16/300-38IK | 63 | 300 | 38 | 16 | 10008 | 86016 | 11103 | 3,000 |
| A16.160.063.22/200-48IK | 63 | 200 | 48 | 22 | 10010 | 86022 | 11004 | 3,100 |
| A16.160.063.22/300-48IK | 63 | 300 | 48 | 22 | 10010 | 86022 | 11004 | 4,480 |
| A16.160.063.27/300-58IK | 63 | 300 | 58 | 27 | 10012 | 86027 | 11005 | 4,230 |
| A16.160.100.16/200-38IK | 100 | 200 | 38 | 16 | 10008 | 86016 | 11103 | 3,580 |
| A16.160.100.16/300-38IK | 100 | 300 | 38 | 16 | 10008 | 86016 | 11103 | 4,430 |
| A16.160.100.22/200-48IK | 100 | 200 | 48 | 22 | 10010 | 86022 | 11004 | 4,510 |
| A16.160.100.22/300-48IK | 100 | 300 | 48 | 22 | 10010 | 86022 | 11004 | 5,890 |
| A16.160.100.27/200-58IK | 100 | 200 | 58 | 27 | 10012 | 86027 | 11005 | 5,630 |
| A16.160.100.27/300-58IK | 100 | 300 | 58 | 27 | 10012 | 86027 | 11005 | 7,640 |
| A16.160.100.32/300-78IK | 100 | 300 | 78 | 32 | 10016 | 86032 | 11105 | 10,210 |



Characteristics:
Cylindrical antivibratory shell mill adaptors.
DIN 69893-1 / HSK Form A
For cutters with driving slot DIN 138.

Eigenschaften:
Schwingungsgedämpfte Aufsteckfräsdorne.
DIN 69893-1 / HSK Form A
Für Fräser mit Quernut DIN 138.




# A16.160

| Reference Bezeichnung | HSK | L | D | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|
| A16.160.063.16/200-38 | 63 | 200 | 38 | 16 | 10008 | 86016 | 11103 | 2,150 |
| A16.160.063.16/300-38 | 63 | 300 | 38 | 16 | 10008 | 86016 | 11103 | 3,000 |
| A16.160.063.22/200-48 | 63 | 200 | 48 | 22 | 10010 | 86022 | 11004 | 3,100 |
| A16.160.063.22/300-48 | 63 | 300 | 48 | 22 | 10010 | 86022 | 11004 | 4,480 |
| A16.160.063.27/200-58 | 63 | 200 | 58 | 27 | 10012 | 86027 | 11005 | 4,230 |
| A16.160.100.16/200-38 | 100 | 200 | 38 | 16 | 10008 | 86016 | 11103 | 3,580 |
| A16.160.100.16/300-38 | 100 | 300 | 38 | 16 | 10008 | 86016 | 11103 | 4,430 |
| A16.160.100.22/200-48 | 100 | 200 | 48 | 22 | 10010 | 86022 | 11004 | 4,510 |
| A16.160.100.22/300-48 | 100 | 300 | 48 | 22 | 10010 | 86022 | 11004 | 5,890 |
| A16.160.100.27/200-58 | 100 | 200 | 58 | 27 | 10012 | 86027 | 11005 | 5,630 |
| A16.160.100.27/300-58 | 100 | 300 | 58 | 27 | 10012 | 86027 | 11005 | 7,640 |
| A16.160.100.32/300-78 | 100 | 300 | 78 | 32 | 10016 | 86032 | 11105 | 10,210 |

**SPECIAL FOR MOULD AND DIE MAKERS**

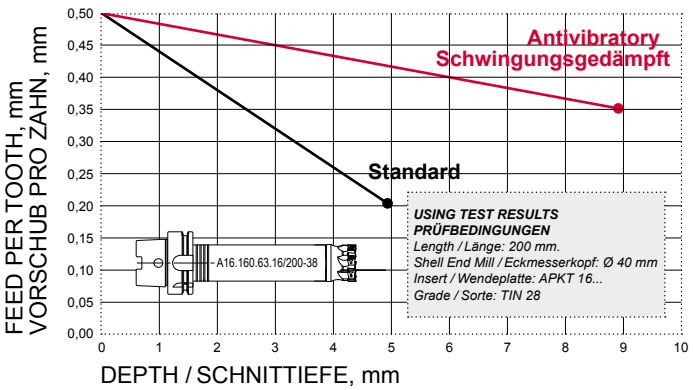
Vibration reduced up to 60% compared to any other conventional shell mill adaptor, as they are manufactured with materials and mechanisms having antivibration properties.

**BESONDERS EMPFOHLEN FÜR WERKZEUG- UND FORMENBAU**

60% weniger Schwingungen im Vergleich mit anderen konventionellen Aufsteckfräsdornen, da diese Ausführung mit schwingungsdämpfenden Materialien und Mechanismen hergestellt wird.

**COMPARISON WHEN USING AN ANTIVIBRATORY TOOLHOLDER**

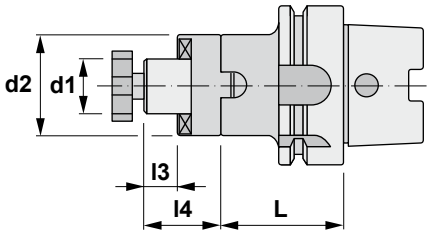
**VERGLEICH ZWISCHEN EINER KONVENZIONELLEN UND EINER SCHWINGUNGSGEDÄMPFTEN AUFNAHME**





Characteristics:
Combi-Shell mill adaptor.
HSK Form A / DIN 69893-1 / DIN 6358 - Form B
For cutters with keyway or driving slot DIN 138.

Eigenschaften:
Kombi-Aufsteckfräsdorne.
HSK Form A / DIN 69893-1 / DIN 6358 - Form B
Für Fräser mit Längsnut oder Stirnmitnehmer DIN 138



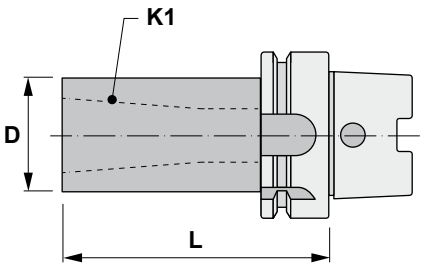

# 16.180

| Reference Bezeichnung | HSK | d1 h6 | L | l3 | l4 | d2 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Kg |
| 16.180.063.16 | 63 | 16 | 55 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 0,910 |
| 16.180.063.16/100 | 63 | 16 | 100 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 1,170 |
| 16.180.063.22 | 63 | 22 | 55 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 1,090 |
| 16.180.063.22/100 | 63 | 22 | 100 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 1,510 |
| 16.180.063.27 | 63 | 27 | 55 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 1,290 |
| 16.180.063.27/100 | 63 | 27 | 100 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 1,910 |
| 16.180.063.32 | 63 | 32 | 60 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 1,740 |
| 16.180.063.32/100 | 63 | 32 | 100 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 2,550 |
| 16.180.063.40 | 63 | 40 | 60 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 2,270 |
| 16.180.063.40/100 | 63 | 40 | 100 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 3,460 |
| 16.180.100.16 | 100 | 16 | 55 | 17 | 27 | 32 | 10008 | 60116 | 88016 | 2,350 |
| 16.180.100.22 | 100 | 22 | 55 | 19 | 31 | 40 | 10010 | 60122 | 88022 | 2,520 |
| 16.180.100.27 | 100 | 27 | 55 | 21 | 33 | 48 | 10012 | 60127 | 88027 | 2,710 |
| 16.180.100.32 | 100 | 32 | 60 | 24 | 38 | 58 | 10016 | 60132 | 88032 | 3,110 |
| 16.180.100.40 | 100 | 40 | 60 | 27 | 41 | 70 | 10020 | 60140 | 88040 | 3,590 |



Characteristics:
Reducing adaptors.
DIN 69893-1 / HSK Form A
For tools with Morse taper shank
and drawbar thread DIN 228-A.

Eigenschaften:
Reduzierhülsen.
DIN 69893-1 / HSK Form A
Für Werkzeuge mit Morsekegel
und Anzugsgewinde DIN 228-A.




# 16.210

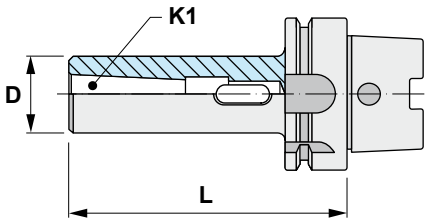
| Reference<br>Bezeichnung | HSK | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 16.210.063.01 | 63 | 1 | 100 | 25 | 0,890 |
| 16.210.063.02 | 63 | 2 | 120 | 32 | 1,110 |
| 16.210.063.03 | 63 | 3 | 140 | 40 | 1,490 |
| 16.210.063.04 | 63 | 4 | 160 | 48 | 1,960 |
| 16.210.100.02 | 100 | 2 | 120 | 32 | 2,530 |
| 16.210.100.03 | 100 | 3 | 150 | 40 | 2,990 |
| 16.210.100.04 | 100 | 4 | 170 | 48 | 3,500 |
| 16.210.100.05 | 100 | 5 | 200 | 63 | 4,630 |

| Reference<br>Bezeichnung |  |  |  |
|---|---|---|---|
| 16.210.063.01 | 16205 | 19624 | 18006 |
| 16.210.063.02 | 16205 | 19324 | 18110 |
| 16.210.063.03 | 16205 | 19524 | 18112 |
| 16.210.063.04 | 16205 | 19424 | 18016 |
| 16.210.100.02 | 16205 | 19324 | 18110 |
| 16.210.100.03 | 16205 | 19524 | 18112 |
| 16.210.100.04 | 16205 | 19424 | 18016 |
| 16.210.100.05 | 16205 | 19338 | 18020 |



Characteristics:
Reducing adaptors.
DIN 69893-1 / HSK Form A
For tools with Morse taper shank and tang or drawbar DIN 228-B.

Eigenschaften:
Reduzierhülsen.
DIN 69893-1 / HSK Form A.
Für Werkzeuge mit Morsekegel und Austreiblappen oder Anzugsgewinde DIN 228-B.




# 16.215

| Reference Bezeichnung | HSK | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 16.215.063.01 | 63 | 1 | 100 | 25 | 0,890 |
| 16.215.063.02 | 63 | 2 | 120 | 32 | 1,110 |
| 16.215.063.03 | 63 | 3 | 140 | 40 | 1,490 |
| 16.215.063.04 | 63 | 4 | 160 | 48 | 1,960 |
| 16.215.100.02 | 100 | 2 | 120 | 32 | 2,530 |
| 16.215.100.03 | 100 | 3 | 150 | 40 | 2,990 |
| 16.215.100.04 | 100 | 4 | 170 | 48 | 3,500 |
| 16.215.100.05 | 100 | 5 | 200 | 63 | 4,630 |

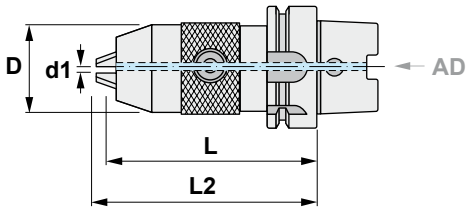


Characteristics:
CNC-Universal precision drill chucks.
DIN 69893-1 / HSK Form A
For left and right hand turn and with internal coolant.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeitsausführung DIN 69893-1 / HSK Form A
Für links- und rechtslaufende Bearbeitungen und mit Innenkühlung.

*** LIEFERUNG MIT SCHLÜSSEL**




# 16.296

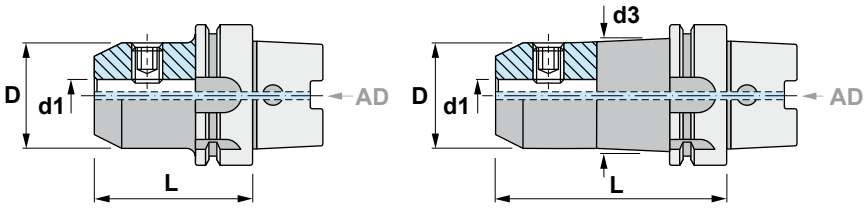
| Reference<br>Bezeichnung | HSK | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 16.296.063.13 | 63 | 1-13 | 54 | 98 | 107 | 1,480 |
| 16.296.063.16 | 63 | 3-16 | 57 | 109 | 108 | 1,750 |
| 16.296.100.13 | 100 | 1-13 | 54 | 110 | 119 | 3,070 |
| 16.296.100.16 | 100 | 3-16 | 57 | 113 | 120 | 3,370 |

| Reference<br>Bezeichnung |  | 3x  |
|---|---|---|
| 16.296.063.13 | 5006 | 60313 |
| 16.296.063.16 | 5006 | 60313 |
| 16.296.100.13 | 5006 | 60313 |
| 16.296.100.16 | 5006 | 60313 |



Characteristics:
Weldon end mill adaptors. DIN 69893-1 / HSK Form A.
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Zylinderschaft-Aufnahme Weldon DIN 69893-1 / HSK Form A.
Für Fräser mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 16.300

| Reference<br>Bezeichnung | HSK | d1 H4 | L | D | d3 | | Kg |
|---|---|---|---|---|---|---|---|
| 16.300.063.06 | 63 | 6 | 65 | 25 | - | 15106 | 0,780 |
| 16.300.063.06/160 | 63 | 6 | 160 | 25 | 30 | 15106 | 1,210 |
| 16.300.063.08 | 63 | 8 | 65 | 28 | - | 15108 | 0,810 |
| 16.300.063.08/160 | 63 | 8 | 160 | 28 | 32 | 15108 | 1,310 |
| 16.300.063.10 | 63 | 10 | 65 | 35 | - | 15110 | 0,900 |
| 16.300.063.10/160 | 63 | 10 | 160 | 35 | 32 | 15110 | 1,680 |
| 16.300.063.12 | 63 | 12 | 80 | 42 | - | 15212 | 1,150 |
| 16.300.063.12/160 | 63 | 12 | 160 | 42 | 45 | 15212 | 2,030 |
| 16.300.063.14 | 63 | 14 | 80 | 44 | - | 15212 | 1,190 |
| 16.300.063.14/160 | 63 | 14 | 160 | 44 | 48 | 15212 | 2,150 |
| 16.300.063.16 | 63 | 16 | 80 | 48 | - | 15314 | 1,290 |
| 16.300.063.16/160 | 63 | 16 | 160 | 48 | 52 | 15314 | 2,410 |
| 16.300.063.18 | 63 | 18 | 80 | 50 | - | 15314 | 1,330 |
| 16.300.063.18/160 | 63 | 18 | 160 | 50 | 52 | 15314 | 2,460 |
| 16.300.063.20 | 63 | 20 | 80 | 52 | - | 15216 | 1,360 |
| 16.300.063.20/160 | 63 | 20 | 160 | 52 | - | 15216 | 2,500 |
| 16.300.063.25 | 63 | 25 | 110 | 65 | - | 2 x 15218 | 2,280 |
| 16.300.063.32 | 63 | 32 | 110 | 72 | - | 2 x 15220 | 2,480 |
| 16.300.100.06 | 100 | 6 | 80 | 25 | - | 15106 | 2,280 |
| 16.300.100.06/160 | 100 | 6 | 160 | 25 | 30 | 15106 | 2,660 |
| 16.300.100.08 | 100 | 8 | 80 | 28 | - | 15108 | 2,320 |
| 16.300.100.08/160 | 100 | 8 | 160 | 28 | 32 | 15108 | 2,750 |
| 16.300.100.10 | 100 | 10 | 80 | 35 | - | 15110 | 2,440 |
| 16.300.100.10/160 | 100 | 10 | 160 | 35 | 32 | 15110 | 3,100 |
| 16.300.100.12 | 100 | 12 | 80 | 42 | - | 15212 | 2,570 |
| 16.300.100.12/160 | 100 | 12 | 160 | 42 | 45 | 15212 | 3,450 |
| 16.300.100.14 | 100 | 14 | 80 | 44 | - | 15212 | 2,600 |
| 16.300.100.14/160 | 100 | 14 | 160 | 44 | 48 | 15212 | 3,570 |
| 16.300.100.16 | 100 | 16 | 100 | 48 | - | 15314 | 2,950 |
| 16.300.100.16/160 | 100 | 16 | 160 | 48 | 52 | 15314 | 3,810 |
| 16.300.100.18 | 100 | 18 | 100 | 50 | - | 15314 | 2,990 |
| 16.300.100.18/160 | 100 | 18 | 160 | 50 | 52 | 15314 | 3,850 |

| Reference<br>Bezeichnung | HSK | d1 H4 | L | D | d3 | | Kg |
|---|---|---|---|---|---|---|---|
| 16.300.100.20 | 100 | 20 | 100 | 52 | - | 15216 | 3,040 |
| 16.300.100.20/160 | 100 | 20 | 160 | 52 | - | 15216 | 3,890 |
| 16.300.100.25 | 100 | 25 | 100 | 65 | - | 2 x 15218 | 3,550 |
| 16.300.100.25/160 | 100 | 25 | 160 | 65 | - | 2 x 15218 | 4,890 |
| 16.300.100.32 | 100 | 32 | 100 | 72 | - | 2 x 15220 | 3,780 |
| 16.300.100.40 | 100 | 40 | 100 | 80 | - | 2 x 15024 | 3,960 |

## 42.300

I182

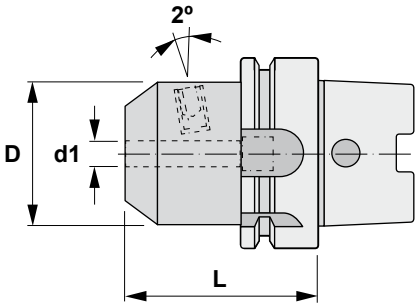
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.300 | Short and long reducing bushings DIN 1835-B Form A and B |
| | Kurze und lange Reduzierhülsen DIN 1835-B Form A und B |





Characteristics:
End mill adaptors type Whistle-Notch.
DIN 69893-1 / HSK Form A.
For tools with cylindrical shank and tightening inclined flat DIN 1835-E.

Eigenschaften:
Whistle-Notch Zylinderschaft-Aufnahme.
DIN 69893-1 / HSK Form A.
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-E.




# 16.305

| Reference Bezeichnung | HSK | d1 H4 | L | D | | | Kg |
|---|---|---|---|---|---|---|---|
| 16.305.063.06 | 63 | 6 | 80 | 25 | 19005 | 15106 | 0,830 |
| 16.305.063.08 | 63 | 8 | 80 | 28 | 19106 | 15108 | 0,880 |
| 16.305.063.10 | 63 | 10 | 80 | 35 | 19008 | 15110 | 1,000 |
| 16.305.063.12 | 63 | 12 | 90 | 42 | 19110 | 15212 | 1,250 |
| 16.305.063.14 | 63 | 14 | 90 | 44 | 19110 | 15212 | 1,300 |
| 16.305.063.16 | 63 | 16 | 100 | 48 | 19012 | 15314 | 1,540 |
| 16.305.063.18 | 63 | 18 | 100 | 50 | 19012 | 15314 | 1,590 |
| 16.305.063.20 | 63 | 20 | 100 | 52 | 19016 | 15216 | 1,650 |
| 16.305.063.25 | 63 | 25 | 110 | 65 | 19020 | 15218 | 2,280 |
| 16.305.063.32 | 63 | 32 | 115 | 72 | 19020 | 15220 | 2,610 |
| 16.305.100.06 | 100 | 6 | 90 | 25 | 19005 | 15106 | 2,320 |
| 16.305.100.08 | 100 | 8 | 90 | 28 | 19106 | 15108 | 2,370 |
| 16.305.100.10 | 100 | 10 | 90 | 35 | 19008 | 15110 | 2,510 |
| 16.305.100.12 | 100 | 12 | 100 | 42 | 19110 | 15212 | 2,770 |
| 16.305.100.14 | 100 | 14 | 100 | 44 | 19110 | 15212 | 2,820 |
| 16.305.100.16 | 100 | 16 | 100 | 48 | 19012 | 15314 | 2,940 |
| 16.305.100.18 | 100 | 18 | 100 | 50 | 19012 | 15314 | 2,990 |
| 16.305.100.20 | 100 | 20 | 100 | 52 | 19016 | 15216 | 3,040 |
| 16.305.100.25 | 100 | 25 | 120 | 65 | 19020 | 15218 | 4,000 |
| 16.305.100.32 | 100 | 32 | 120 | 72 | 19020 | 15220 | 4,290 |
| 16.305.100.40 | 100 | 40 | 130 | 80 | 19020 | 15220 | 4,850 |

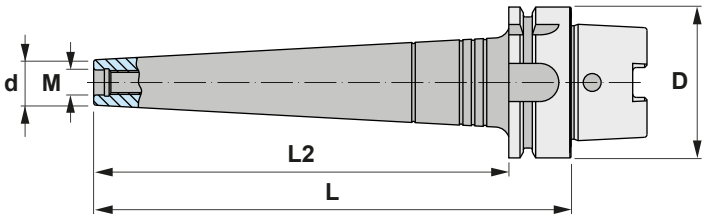


Characteristics:
Antivibratory end mill adaptors.
HSK DIN 69893-1
For frontal end mill support screwed shanks.
Manufactured with materials and
mechanisms having antivibration properties.
Standard and extra long lengths, suitable for
moulding and special manufactures.
With internal coolant.

PRE-BALANCED
ISO-40: 15.000 r.p.m. G-6,3
ISO-50: 10.000 r.p.m. G-6,3

Eigenschaften:
Schwingungsgedämpfte
Aufsteckfräsdorne für Einschraubfräser.
HSK DIN 69893-1
Hergestellt mit schwingungsdämpfenden Materialien
und Mechanismen.
Standard und extralange Ausführungen sind für
Werkzeug- und Formenbau besonders geeignet.
Mit Innenkühlung.

VORGEWUCHTET
ISO-40: 15.000 r.p.m. G-6,3
ISO-50: 10.000 r.p.m. G-6,3



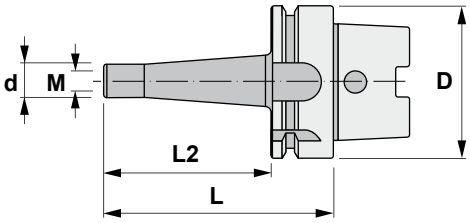

# A16.315IK

| Reference Bezeichnung | K ISO | L | d | M | L2 | D | Kg |
|---|---|---|---|---|---|---|---|
| A16.315.63.10/200IK | 63 | 200 | 18 | M10 | 174 | 63 | 1,290 |
| A16.315.63.10/250IK | 63 | 250 | 18 | M10 | 224 | 63 | 1,500 |
| A16.315.63.12/200IK | 63 | 200 | 21 | M12 | 174 | 63 | 1,340 |
| A16.315.63.12/250IK | 63 | 250 | 21 | M12 | 224 | 63 | 1,550 |
| A16.315.63.16/250IK | 63 | 250 | 29 | M16 | 224 | 63 | 2,130 |
| A16.315.100.12/300IK | 100 | 300 | 21 | M12 | 271 | 100 | 3,580 |
| A16.315.100.16/300IK | 100 | 300 | 29 | M16 | 271 | 100 | 4,400 |



Characteristics:
Milling cutter arbors for screw-on type milling cutters.
DIN 69893-1 / HSK Form A.

Eigenschaften:
Spannfutter für Einschraubfräser.
DIN 69893-1 / HSK Form A.



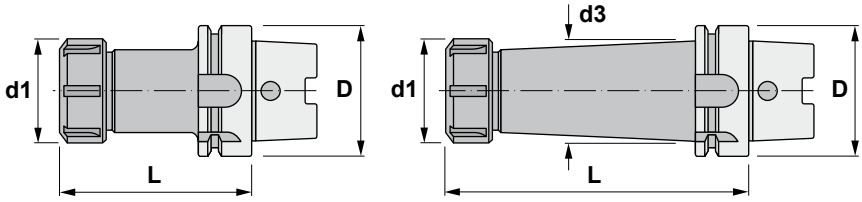

# 16.315

| Reference<br>Bezeichnung | HSK | L | d | M | L2 | D | Kg |
|---|---|---|---|---|---|---|---|
| 16.315.063.10/050 | 63 | 76 | 18 | 10 | 50 | 63 | 0,760 |
| 16.315.063.10/100 | 63 | 126 | 18 | 10 | 100 | 63 | 1,020 |
| 16.315.063.12/050 | 63 | 76 | 21 | 12 | 50 | 63 | 0,780 |
| 16.315.063.12/100 | 63 | 126 | 21 | 12 | 100 | 63 | 1,070 |
| 16.315.063.16/050 | 63 | 76 | 29 | 16 | 50 | 63 | 0,900 |
| 16.315.063.16/100 | 63 | 126 | 29 | 16 | 100 | 63 | 1,210 |
| 16.315.100.10/100 | 100 | 129 | 18 | 10 | 100 | 100 | 2,330 |
| 16.315.100.10/150 | 100 | 179 | 18 | 10 | 150 | 100 | 2,510 |
| 16.315.100.12/100 | 100 | 129 | 21 | 12 | 100 | 100 | 2,360 |
| 16.315.100.12/150 | 100 | 179 | 21 | 12 | 150 | 100 | 2,560 |
| 16.315.100.16/100 | 100 | 129 | 29 | 16 | 100 | 100 | 2,440 |
| 16.315.100.16/150 | 100 | 179 | 29 | 16 | 150 | 100 | 2,710 |



Characteristics:
Collet chucks for DIN 6499 (ER) collets. DIN 69893-1 / HSK Form A
For tools with cylindrical shank DIN 1835-B.
* Ball bearing nut, see page: I221
*** SUPPLIED WITHOUT WRENCH**

Eigenschaften:
Spannzangenfutter für Spannzangen DIN 6499 (ER). DIN 69893-1 / HSK Form A
Für Werkzeuge mit zylindrischem Schaft DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I221
*** LIEFERUNG OHNE SCHLÜSSEL**




# 16.453

| Reference<br>Bezeichnung | HSK | | L | d1 | D | d3 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 16.453.063.16 | 63 | ER16 | 100 | 0,5-10 | 32 | - | 45316 | 50216 | 0,910 |
| 16.453.063.16/160 | 63 | ER16 | 160 | 0,5-10 | 32 | 32 | 45316 | 50216 | 1,050 |
| 16.453.063.20 | 63 | ER20 | 100 | 1-13 | 35 | - | 45320 | 50220 | 1,020 |
| 16.453.063.20/160 | 63 | ER20 | 160 | 1-13 | 35 | 35 | 45320 | 50220 | 1,490 |
| 16.453.063.25 | 63 | ER25 | 100 | 1-16 | 42 | - | 45325 | 50225 | 1,260 |
| 16.453.063.25/160 | 63 | ER25 | 160 | 1-16 | 42 | 42 | 45325 | 50225 | 1,940 |
| 16.453.063.32 | 63 | ER32 | 100 | 2-20 | 50 | - | 45332 | 50232 | 1,630 |
| 16.453.063.32/160 | 63 | ER32 | 160 | 2-20 | 50 | 50 | 45332 | 50232 | 2,720 |
| 16.453.063.40 | 63 | ER40 | 100 | 3-30 | 63 | - | 45340 | 50240 | 2,220 |
| 16.453.063.40/160 | 63 | ER40 | 160 | 3-30 | 63 | - | 45340 | 50240 | 3,140 |
| 16.453.100.25 | 100 | ER25 | 100 | 1-16 | 42 | - | 45325 | 50225 | 2,710 |
| 16.453.100.25/160 | 100 | ER25 | 160 | 1-16 | 42 | 42 | 45325 | 50225 | 3,370 |
| 16.453.100.32 | 100 | ER32 | 100 | 2-20 | 50 | - | 45332 | 50232 | 3,070 |
| 16.453.100.32/160 | 100 | ER32 | 160 | 2-20 | 50 | 50 | 45332 | 50232 | 4,000 |
| 16.453.100.40 | 100 | ER40 | 100 | 3-30 | 63 | - | 45340 | 50240 | 3,640 |
| 16.453.100.40/160 | 100 | ER40 | 160 | 3-30 | 63 | 63 | 45340 | 50240 | 5,110 |

**ERXX** I210-212
**Reference / Bezeichnung**
ERXX



**ERCXX** I215-216
**Reference / Bezeichnung**
ERCXX



**ERTXX** I217-218
**Reference / Bezeichnung**
ERTXX



**40.453..** I180
**Reference / Bezeichnung**
40.453..



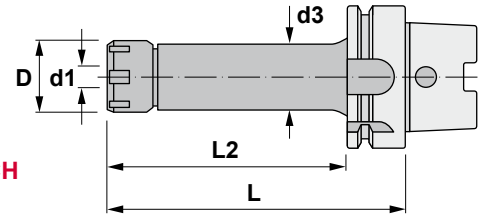
**40.455..** I181
**Reference / Bezeichnung**
40.455..





Characteristics:
Long collet chucks for DIN 6499 (ER) collets. DIN 69893-1 / HSK Form A
For tools with cylindrical shank.
With “mini” collet nut.

*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Lange Spannzangenfutter für Spannzangen DIN 6499 (ER).
DIN 69893-1 / HSK Form A
Für Werkzeuge mit zylindrischem Schaft.
Mit “Mini”-Spannmutter.

*** LIEFERUNG OHNE SCHLÜSSEL**

# 16.455

| Reference Bezeichnung | HSK | | L | d1 | D | L2 | d3 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.455.063.16 | 63 | ER16 | 100 | 0,5-10 | 22 | - | - | 45516 | 50916 | 19210 | 0,880 |
| 16.455.063.16/160 | 63 | ER16 | 160 | 0,5-10 | 22 | 100 | 30 | 45516 | 50916 | 19210 | 1,040 |
| 16.455.063.20/160 | 63 | ER20 | 160 | 1-13 | 28 | 100 | 30 | 45520 | 50920 | 19212 | 1,260 |
| 16.455.063.25/160 | 63 | ER25 | 160 | 1-16 | 35 | 100 | 30 | 45525 | 50925 | 19216 | 1,640 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

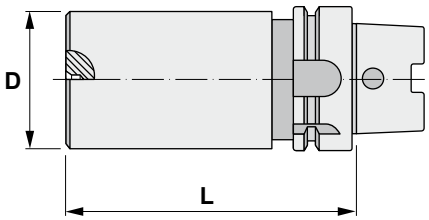
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER) |
| | Spannzangen DIN 6499 - Form Mexin (ER) |





Characteristics:
Blank adaptors.
DIN 69893-1 / HSK Form A

Eigenschaften:
Rohlinge.
DIN 69893-1 / HSK Form A



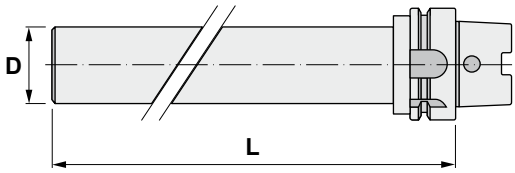

# 16.470

| Reference<br>Bezeichnung | HSK | D | L | Kg |
|---|---|---|---|---|
| 16.470.063.063/250 | 63 | 63 | 250 | 6,100 |
| 16.470.063.080/250 | 63 | 80 | 250 | 10,160 |
| 16.470.100.063/200 | 100 | 63 | 200 | 7,010 |
| 16.470.100.080/250 | 100 | 80 | 250 | 11,980 |
| 16.470.100.090/300 | 100 | 90 | 300 | 17,010 |



Characteristics:
Test arbors.
DIN 69893-1 / HSK Form A

Eigenschaften:
Prüfdorne.
DIN 69893-1 / HSK Form A




# 16.999

| Reference<br>Bezeichnung | HSK | L | D | Kg |
|---|---|---|---|---|
| 16.999.063 | 63 | 346 | 40 | 3,470 |
| 16.999.100 | 100 | 329 | 50 | 6,760 |

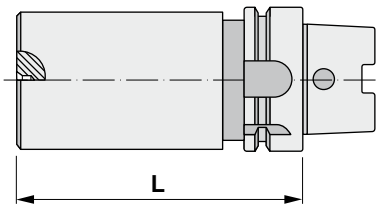
## 1 TYPE / TYP

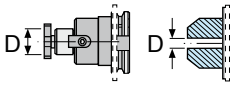
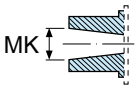
| | | | | |
|---|---|---|---|---|
| A16.160IK  | A16.160  | 16.160  | 16.180  | 16.210  |
| 16.215  | 16.296  | 16.300  | 16.305  | A16.315IK  |
| 16.315  | 16.453  | 16.455  | 16.470  | |

## 2 DIMENSION / ABMESSUNGEN

| | |
|---|---|
| **63** | **100** |

## 3 LENGTH / LÄNGE (L)




| Ø DIAMETER / DURCHMESSER | MK | ISO | COLLET SPANNZANGEN |
|---|---|---|---|
| D D  | MK  | ISO  | |
| | | | |

**NOTES / BEMERKUNGEN:**





# JIS B 6339-BT

Code system
Kodifizierung — I100

Technical information
Technische Auskünfte — I101

Applications index
Anwendungen — I102-103

Arbors and adaptors JIS B 6339-BT
Aufnahmen JIS B 6339-BT — I104-145

Antivibratory adaptors JIS B 6339-BT
Schwingungsgedämpfte Aufnahmen JIS B 6339-BT — I106-107,130

Sets
Sätze — I133

Special tool request
Sonderwerkzeug-Anfrage — I146

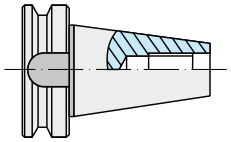
# Code system / Kodifizierung

| A | 20 | 160 | 30 | 16 |
|---|---|---|---|---|
| * | 1 | 2 | 3 | 4 |

***** *Antivibratory adaptors*
*Schwingungsgedämpfte Aufnahmen*

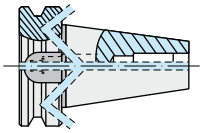
## 1 *Model* *Modell*

ISO



**20**

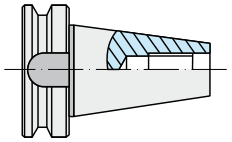
JIS B 6339-BT



**23**

## 3 *Arbor size* *Aufnahmengröße*

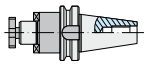
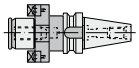
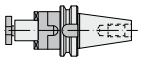
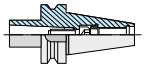
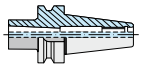
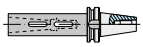
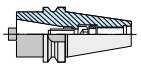
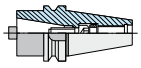
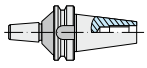
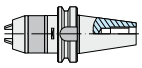
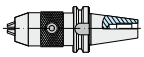
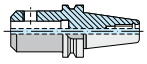
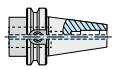
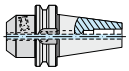
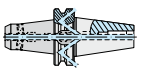
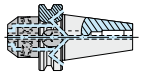
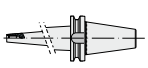
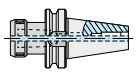
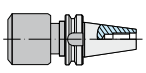
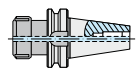
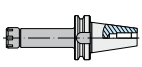
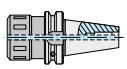
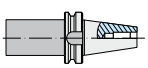
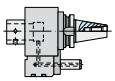
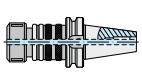
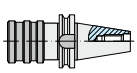
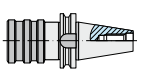
ISO



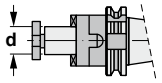
| BT 30 | BT 40 | BT 50 |
|---|---|---|
| **30** | **40** | **50** |

JIS B 6339-BT

## 2 *Arbor type* *Aufnahmen-Typ*

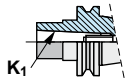
| | | | |
|---|---|---|---|
|  **160** |  **165** |  **180** |  **210** |
|  **215** |  **216** |  **225** |  **226** |
|  **290** |  **295** |  **296** |  **300** |
|  **302** |  **305** |  **306** |  **307** |
|  **315** |  **353** |  **400** |  **453** |
|  **455** |  **457** |  **470** |  **512** |
|  **610** |  **620** |  **630** |  **999** |

## 4 *Adaptor size* *Adaptergröße*



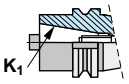
| Ø 16 | Ø 22 | Ø 27 | Ø 32 | Ø 40 | Ø 60 |
|---|---|---|---|---|---|
| **16** | **22** | **27** | **32** | **40** | **60** |

$K_1$ - MORSE

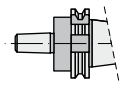


| | |
|---|---|
| **01** | MK1 |
| **02** | MK2 |
| **03** | MK3 |
| **04** | MK4 |

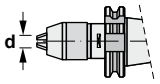
$K_1$ - ISO



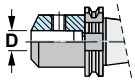
| ISO 30 | ISO 40 |
|---|---|
| **30** | **40** |



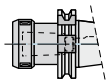
| B12 | B16 | B18 |
|---|---|---|
| **12** | **16** | **18** |



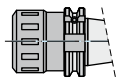
| Ø 8 | Ø 13 | Ø 16 |
|---|---|---|
| **8** | **13** | **16** |



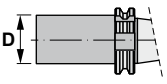
| Ø 6 ... Ø 50 |
|---|
| **6 ... 50** |



| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| **16** | **20** | **25** | **32** | **40** |



| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| **16** | **20** | **25** | **32** | **40** |



| Ø 50 | Ø 63 | Ø 80 | Ø 85 | Ø 90 |
|---|---|---|---|---|
| **50** | **63** | **80** | **85** | **90** |



| Ø 25 | Ø 32 | Ø 40 |
|---|---|---|
| **25** | **32** | **40** |



| Ø 16 | Ø 20 | Ø 25 | Ø 32 |
|---|---|---|---|
| **16** | **20** | **25** | **32** |



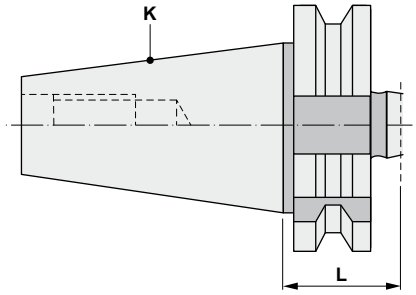
| M3-M12 | M4-M20 | M8-M33 |
|---|---|---|
| **12** | **20** | **33** |

# AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS
# AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN

**MATERIAL:**
- Chromium-manganese carburised steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburised, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburised layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.




**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

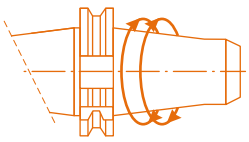
**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

| K | AT3 mm |
|---|---|
| ISO 30 | 0,002 |
| ISO 40 | 0,003 |
| ISO 45 | 0,003 |
| ISO 50 | 0,004 |
| ISO 60 | 0,005 |

**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

## PREBALANCED TOOLHOLDERS
## VORGEWUCHTETE AUFNAHMEN

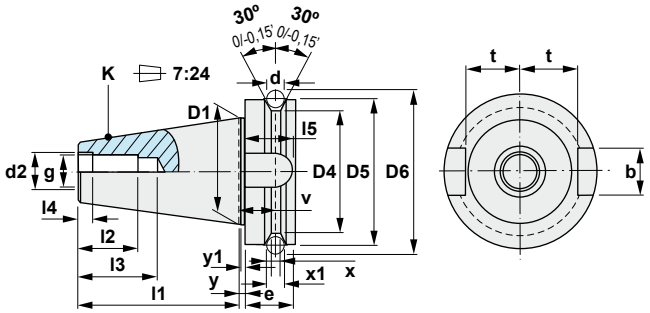


**ISO 40 ▶ 8000 rpm** **ISO 50 ▶ 8000 rpm**

## 20 JIS B 6339 - BT

***FORM A: SIMILAR DIN 69871 AD***
***ÄHNLICH WIE DIN 69871 AD***

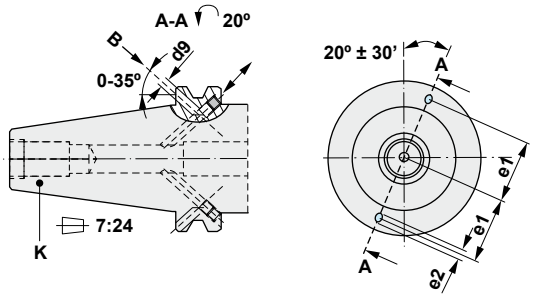
*Without through hole / Ohne Durchgangsbohrung*




## 23 JIS B 6339 - BT

***FORM B: SIMILAR DIN 69871 AD+B***
***ÄHNLICH WIE DIN 69871 AD+B***

*With central coolant feed and through the collar*
*Mit zentraler Kühlmittelzufuhr und durch den Bund*




| K | D1 | l1±0,2 | d2 H8 | g 6H | l2 min | l3 min | l4+0,5/0 | b H12 | l5 min | t 0/-0,2 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 31,75 | 48,4 | 12,5 | M 12 | 24 | 34 | 7 | 16,1 | 17 | 16,3 |
| 35 | 38,10 | 56,4 | 12,5 | M 12 | 24 | 34 | 7 | 16,1 | 20 | 19,6 |
| 40 | 44,45 | 65,4 | 17,0 | M 16 | 30 | 43 | 9 | 16,1 | 21 | 22,6 |
| 45 | 57,15 | 82,8 | 21,0 | M 20 | 38 | 53 | 11 | 19,3 | 26 | 29,1 |
| 50 | 69,85 | 101,8 | 25,0 | M 24 | 45 | 62 | 13 | 25,7 | 31 | 35,1 |

| K | D4 | D5 h8 | e | V±0,1 | X | X1±0,1/0 | y±0,4 | y1±0,5/0 | d9 | e1±0,1 | e2 max |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 38 | 46 | 20 | 13,6 | 4 | 8 | 2 | 7 | 4 | 21 | 5 |
| 35 | 43 | 53 | 22 | 14,6 | 5 | 10 | 2 | 7 | - | - | - |
| 40 | 53 | 63 | 25 | 16,6 | 5 | 10 | 2 | 9 | 4 | 27 | 5 |
| 45 | 73 | 85 | 30 | 21,2 | 6 | 12 | 3 | 11 | 5 | 35 | 6 |
| 50 | 85 | 100 | 35 | 23,2 | 7 | 15 | 3 | 13 | 6 | 42 | 7 |

## *Arbors and adaptors JIS B 6339-BT*
## *Aufnahmen JIS B 6339-BT*

**20.160**



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**23.160**



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**20.165**



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**20.180**



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**20.210**



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**23.210**



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**20.215**



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**23.215**



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**20.216**



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**20.225**



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**20.226**



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**20.290**



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**20.295**



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**20.296**



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**23.296**



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**20.300**



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**23.300**



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**20.302**



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**23.302**



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**20.305**



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**23.306**



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**23.307**



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**23.315**



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**20.353**



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**20.400**



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**20.453**



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**23.453**



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**20.455**



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**20.457**



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**23.457**



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## *Arbors and adaptors JIS B 6339-BT*
## *Aufnahmen JIS B 6339-BT*

**20.470**



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**20.512**



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**20.610**



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**23.610**



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**20.620**



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**20.630**



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**20.999**



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## *Antivibratory adaptors JIS B 6339-BT*
## *Schwingungsgedämpfte Aufnahmen JIS B 6339-BT*

**A20.160** Cylindrical
Zylindrische Form



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**A20.160** Conical
Konische Form



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**A20.315**



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## *Sets JIS B 6339-BT*
## *Sätze JIS B 6339-BT*

**SET-C20/32**



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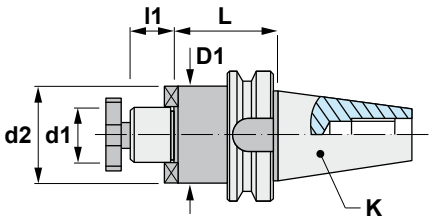
Characteristics:
Shell mill adaptors.
JIS B 6339-BT
For cutters with driving slot DIN 138.

Eigenschaften:
Aufsteckfräsdorne.
JIS B 6339-BT
Für Fräser mit Quernut DIN 138.



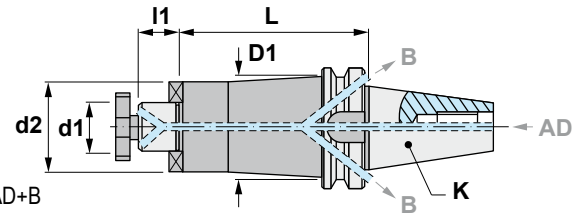

# 20.160

| Reference Bezeichnung | K ISO | d1 h6 | L | l1 | d2 | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 20.160.30.16 | 30 | 16 | 40 | 17 | 38 | - | 10008 | 86016 | 11103 | 0,620 |
| 20.160.30.22 | 30 | 22 | 40 | 19 | 48 | - | 10010 | 86022 | 11004 | 0,700 |
| 20.160.30.27 | 30 | 27 | 45 | 21 | 58 | - | 10012 | 86027 | 11005 | 0,870 |
| 20.160.40.16 | 40 | 16 | 40 | 17 | 38 | - | 10008 | 86016 | 11103 | 1,190 |
| 20.160.40.16/100 | 40 | 16 | 100 | 17 | 38 | 38 | 10008 | 86016 | 11103 | 1,580 |
| 20.160.40.22 | 40 | 22 | 45 | 19 | 48 | - | 10010 | 86022 | 11004 | 1,290 |
| 20.160.40.22/100 | 40 | 22 | 100 | 19 | 48 | 48 | 10010 | 86022 | 11004 | 2,180 |
| 20.160.40.27 | 40 | 27 | 50 | 21 | 58 | - | 10012 | 86027 | 11005 | 1,650 |
| 20.160.40.27/100 | 40 | 27 | 100 | 21 | 58 | 58 | 10012 | 86027 | 11005 | 2,420 |
| 20.160.40.32 | 40 | 32 | 50 | 24 | 63 | - | 10016 | 86032 | 11105 | 1,730 |
| 20.160.40.32/125 | 40 | 32 | 125 | 24 | 78 | 63 | 10016 | 86032 | 11105 | 3,100 |
| 20.160.40.40 | 40 | 40 | 55 | 27 | 73 | - | 10020 | 86040 | 11006 | 2,130 |
| 20.160.50.16 | 50 | 16 | 55 | 17 | 38 | - | 10008 | 86016 | 11103 | 4,100 |
| 20.160.50.16/150 | 50 | 16 | 150 | 17 | 38 | 38 | 10008 | 86016 | 11103 | 4,880 |
| 20.160.50.22 | 50 | 22 | 55 | 19 | 48 | - | 10010 | 86022 | 11004 | 4,150 |
| 20.160.50.22/150 | 50 | 22 | 150 | 19 | 48 | 48 | 10010 | 86022 | 11004 | 5,500 |
| 20.160.50.27 | 50 | 27 | 60 | 21 | 58 | - | 10012 | 86027 | 11005 | 4,280 |
| 20.160.50.27/150 | 50 | 27 | 150 | 21 | 58 | 58 | 10012 | 86027 | 11005 | 6,300 |
| 20.160.50.32 | 50 | 32 | 60 | 24 | 78 | - | 10016 | 86032 | 11105 | 4,320 |
| 20.160.50.32/150 | 50 | 32 | 150 | 24 | 78 | 63 | 10016 | 86032 | 11105 | 8,300 |
| 20.160.50.40 | 50 | 40 | 65 | 27 | 88 | - | 10020 | 86040 | 11006 | 5,370 |
| 20.160.50.40/150 | 50 | 40 | 150 | 27 | 88 | 73 | 10020 | 86040 | 11006 | 9,530 |
| 20.160.50.50 | 50 | 50 | 65 | 30 | 90 | - | 10024 | 86050 | 11008 | 5,700 |



Characteristics:
Shell mill adaptors.
JIS B 6339-BT
For cutters with driving slot
DIN 138.

Similar to DIN 69871 - Form AD+B




Eigenschaften:
Aufsteckfräsdorne.
JIS B 6339-BT.
Für Fräser mit Quernut
DIN 138.

Ähnlich wie DIN 69871 - Form AD+B

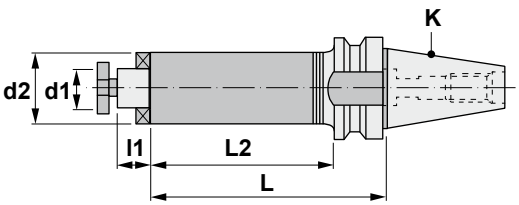
# 23.160

| Reference Bezeichnung | K ISO | d1 h6 | L | l1 | d2 | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 23.160.40.16 | 40 | 16 | 40 | 17 | 38 | - | 10008 | 86016 | 11103 | 1,150 |
| 23.160.40.16/100 | 40 | 16 | 100 | 17 | 38 | 38 | 10008 | 86016 | 11103 | 1,450 |
| 23.160.40.22 | 40 | 22 | 45 | 19 | 48 | - | 10010 | 86022 | 11004 | 1,310 |
| 23.160.40.22/100 | 40 | 22 | 100 | 19 | 48 | 48 | 10010 | 86022 | 11004 | 2,080 |
| 23.160.40.27 | 40 | 27 | 50 | 21 | 58 | - | 10012 | 86027 | 11005 | 1,570 |
| 23.160.40.27/100 | 40 | 27 | 100 | 21 | 58 | 58 | 10012 | 86027 | 11005 | 2,590 |
| 23.160.40.32 | 40 | 32 | 50 | 24 | 63 | - | 10016 | 86032 | 11105 | 1,700 |
| 23.160.40.32/125 | 40 | 32 | 125 | 24 | 78 | 63 | 10016 | 86032 | 11105 | 3,140 |
| 23.160.40.40 | 40 | 40 | 55 | 27 | 73 | - | 10020 | 86040 | 11006 | 2,070 |
| 23.160.50.16 | 50 | 16 | 55 | 17 | 38 | - | 10008 | 86016 | 11108 | 3,780 |
| 23.160.50.16/150 | 50 | 16 | 150 | 17 | 38 | 38 | 10008 | 86016 | 11108 | 4,590 |
| 23.160.50.22 | 50 | 22 | 55 | 19 | 48 | - | 10010 | 86022 | 11004 | 3,970 |
| 23.160.50.22/150 | 50 | 22 | 150 | 19 | 48 | 48 | 10010 | 86022 | 11004 | 5,230 |
| 23.160.50.27 | 50 | 27 | 60 | 21 | 58 | - | 10012 | 86027 | 11005 | 4,230 |
| 23.160.50.27/150 | 50 | 27 | 150 | 21 | 58 | 58 | 10012 | 86027 | 11005 | 6,010 |
| 23.160.50.32 | 50 | 32 | 60 | 24 | 78 | - | 10016 | 86032 | 11105 | 4,340 |
| 23.160.50.32/150 | 50 | 32 | 150 | 24 | 78 | 63 | 10016 | 86032 | 11105 | 6,400 |
| 23.160.50.40 | 50 | 40 | 65 | 27 | 88 | - | 10020 | 86040 | 11006 | 5,250 |
| 23.160.50.40/150 | 50 | 40 | 150 | 27 | 88 | 73 | 10020 | 86040 | 11006 | 9,130 |
| 23.160.50.50 | 50 | 50 | 65 | 30 | 90 | - | 10024 | 86050 | 11008 | 5,560 |



Characteristics:
Cylindrical antivibratory shell mill adaptors. JIS B 6339-BT
For cutters with driving slot DIN 138.

Eigenschaften:
Zylindrische schwingungsgedämpfte Aufsteckfräsdorne.
JIS B 6339-BT
Für Fräser mit Quernut DIN 138.



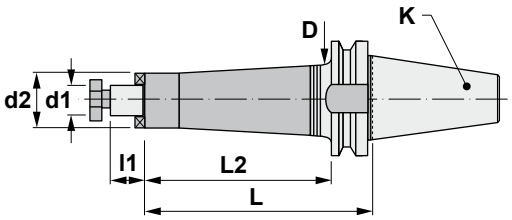

# A20.160

| Reference Bezeichnung | K ISO | d1 h6 | L | L2 | l1 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| A20.160.40.16/150-38 | 40 | 16 | 150 | 123 | 17 | 38 | 10008 | 86016 | 11103 | 2,110 |
| A20.160.40.16/200-38 | 40 | 16 | 200 | 173 | 17 | 38 | 10008 | 86016 | 11103 | 2,560 |
| A20.160.40.16/250-38 | 40 | 16 | 250 | 223 | 17 | 38 | 10008 | 86016 | 11103 | 3,000 |
| A20.160.40.16/300-38 | 40 | 16 | 300 | 273 | 17 | 38 | 10008 | 86016 | 11103 | 3,450 |
| A20.160.40.22/150-48 | 40 | 22 | 150 | 123 | 19 | 48 | 10010 | 86022 | 11004 | 2,790 |
| A20.160.40.22/200-48 | 40 | 22 | 200 | 173 | 19 | 48 | 10010 | 86022 | 11004 | 3,500 |
| A20.160.40.22/250-48 | 40 | 22 | 250 | 223 | 19 | 48 | 10010 | 86022 | 11004 | 4,210 |
| A20.160.40.22/300-48 | 40 | 22 | 300 | 273 | 19 | 48 | 10010 | 86022 | 11004 | 4,920 |
| A20.160.40.27/150-58 | 40 | 27 | 150 | 123 | 21 | 58 | 10012 | 86027 | 11005 | 3,620 |
| A20.160.40.27/200-58 | 40 | 27 | 200 | 173 | 21 | 58 | 10012 | 86027 | 11005 | 4,660 |
| A20.160.40.27/250-58 | 40 | 27 | 250 | 223 | 21 | 58 | 10012 | 86027 | 11005 | 5,690 |
| A20.160.40.27/300-58 | 40 | 27 | 300 | 273 | 21 | 58 | 10012 | 86027 | 11005 | 6,730 |
| A20.160.50.16/150-38 | 50 | 16 | 150 | 112 | 17 | 38 | 10008 | 86016 | 11103 | 4,720 |
| A20.160.50.16/200-38 | 50 | 16 | 200 | 162 | 17 | 38 | 10008 | 86016 | 11103 | 5,160 |
| A20.160.50.16/250-38 | 50 | 16 | 250 | 212 | 17 | 38 | 10008 | 86016 | 11103 | 5,610 |
| A20.160.50.16/300-38 | 50 | 16 | 300 | 262 | 17 | 38 | 10008 | 86016 | 11103 | 6,060 |
| A20.160.50.16/400-38 | 50 | 16 | 400 | 362 | 17 | 38 | 10008 | 86016 | 11103 | 6,950 |
| A20.160.50.22/200-48 | 50 | 22 | 200 | 162 | 19 | 48 | 10010 | 86022 | 11004 | 6,050 |
| A20.160.50.22/250-48 | 50 | 22 | 250 | 212 | 19 | 48 | 10010 | 86022 | 11004 | 6,760 |
| A20.160.50.22/300-48 | 50 | 22 | 300 | 262 | 19 | 48 | 10010 | 86022 | 11004 | 7,470 |
| A20.160.50.22/400-48 | 50 | 22 | 400 | 362 | 19 | 48 | 10010 | 86022 | 11004 | 8,890 |
| A20.160.50.22/500-48 | 50 | 22 | 500 | 462 | 19 | 48 | 10010 | 86022 | 11004 | 10,310 |
| A20.160.50.22/200-58 | 50 | 22 | 200 | 162 | 19 | 58 | 10010 | 86022 | 11004 | 7,110 |
| A20.160.50.22/250-58 | 50 | 22 | 250 | 212 | 19 | 58 | 10010 | 86022 | 11004 | 8,150 |
| A20.160.50.22/300-58 | 50 | 22 | 300 | 262 | 19 | 58 | 10010 | 86022 | 11004 | 9,180 |
| A20.160.50.22/400-58 | 50 | 22 | 400 | 362 | 19 | 58 | 10010 | 86022 | 11004 | 11,260 |
| A20.160.50.22/500-58 | 50 | 22 | 500 | 462 | 19 | 58 | 10010 | 86022 | 11004 | 13,330 |
| A20.160.50.27/200-58 | 50 | 27 | 200 | 162 | 21 | 58 | 10012 | 86027 | 11005 | 7,140 |
| A20.160.50.27/250-58 | 50 | 27 | 250 | 212 | 21 | 58 | 10012 | 86027 | 11005 | 8,180 |
| A20.160.50.27/300-58 | 50 | 27 | 300 | 262 | 21 | 58 | 10012 | 86027 | 11005 | 9,210 |
| A20.160.50.27/400-58 | 50 | 27 | 400 | 362 | 21 | 58 | 10012 | 86027 | 11005 | 11,290 |
| A20.160.50.27/500-58 | 50 | 27 | 500 | 462 | 21 | 58 | 10012 | 86027 | 11005 | 13,360 |
| A20.160.50.32/200-78 | 50 | 32 | 200 | 162 | 24 | 78 | 10016 | 86032 | 11105 | 9,890 |
| A20.160.50.32/250-78 | 50 | 32 | 250 | 212 | 24 | 78 | 10016 | 86032 | 11105 | 11,760 |
| A20.160.50.32/300-78 | 50 | 32 | 300 | 262 | 24 | 78 | 10016 | 86032 | 11105 | 13,640 |
| A20.160.50.32/400-78 | 50 | 32 | 400 | 362 | 24 | 78 | 10016 | 86032 | 11105 | 17,390 |
| A20.160.50.32/500-78 | 50 | 32 | 500 | 462 | 24 | 78 | 10016 | 86032 | 11105 | 21,140 |



Characteristics:
Conical antivibratory shell mill adaptors. JIS B 6339-BT
For cutters with driving slot DIN 138.

Eigenschaften:
Konische schwingungsgedämpfte Aufsteckfräsdorne.
JIS B 6339-BT
Für Fräser mit Quernut DIN 138.




# A20.160

| Reference Bezeichnung | K ISO | d1 h6 | L | L2 | D | l1 | d2 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A20.160.40.16/150 | 40 | 16 | 150 | 123 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 2,550 |
| A20.160.40.16/200 | 40 | 16 | 200 | 173 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 3,150 |
| A20.160.40.16/250 | 40 | 16 | 250 | 223 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 3,750 |
| A20.160.40.16/300 | 40 | 16 | 300 | 273 | 50 | 17 | 38 | 10008 | 86016 | 11103 | 4,350 |
| A20.160.40.22/150 | 40 | 22 | 150 | 123 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 2,750 |
| A20.160.40.22/200 | 40 | 22 | 200 | 173 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 3,430 |
| A20.160.40.22/250 | 40 | 22 | 250 | 223 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 4,110 |
| A20.160.40.22/300 | 40 | 22 | 300 | 273 | 50 | 19 | 48 | 10010 | 86022 | 11004 | 4,790 |
| A20.160.50.16/150 | 50 | 16 | 150 | 112 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 6,510 |
| A20.160.50.16/200 | 50 | 16 | 200 | 162 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 7,630 |
| A20.160.50.16/250 | 50 | 16 | 250 | 212 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 8,750 |
| A20.160.50.16/300 | 50 | 16 | 300 | 262 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 9,860 |
| A20.160.50.16/400 | 50 | 16 | 400 | 362 | 80 | 17 | 38 | 10008 | 86016 | 11103 | 12,100 |
| A20.160.50.22/200 | 50 | 22 | 200 | 162 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 8,100 |
| A20.160.50.22/250 | 50 | 22 | 250 | 212 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 9,400 |
| A20.160.50.22/300 | 50 | 22 | 300 | 262 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 10,680 |
| A20.160.50.22/400 | 50 | 22 | 400 | 362 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 13,260 |
| A20.160.50.22/500 | 50 | 22 | 500 | 462 | 80 | 19 | 48 | 10010 | 86022 | 11004 | 15,840 |
| A20.160.50.27/200 | 50 | 27 | 200 | 162 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 8,790 |
| A20.160.50.27/250 | 50 | 27 | 250 | 212 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 10,310 |
| A20.160.50.27/300 | 50 | 27 | 300 | 262 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 11,830 |
| A20.160.50.27/400 | 50 | 27 | 400 | 362 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 14,870 |
| A20.160.50.27/500 | 50 | 27 | 500 | 462 | 80 | 21 | 58 | 10012 | 86027 | 11005 | 17,920 |

**SPECIAL FOR MOULD AND DIE MAKERS**

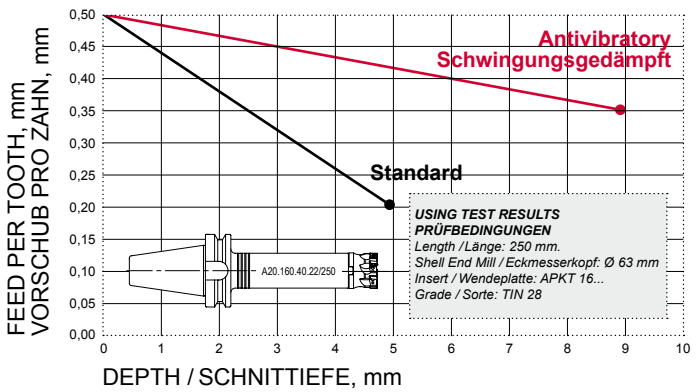
Vibration reduced up to 60% compared to any other conventional shell mill adaptor, as they are manufactured with materials and mechanisms having antivibration properties.

**BESONDERS EMPFOHLEN FÜR WERKZEUG- UND FORMENBAU**

60% weniger Schwingungen im Vergleich mit anderen konventionellen Aufsteckfräsdornen, da diese Ausführung mit schwingungsdämpfenden Materialien und Mechanismen hergestellt wird.

**COMPARISON WHEN USING AN ANTIVIBRATORY TOOLHOLDER**

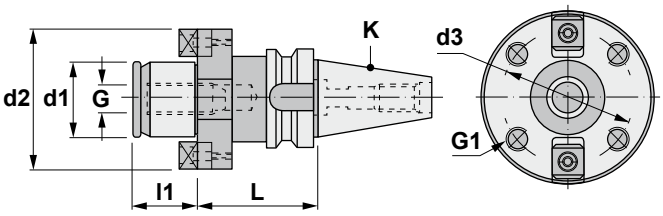
**VERGLEICH ZWISCHEN EINER KONVENZIONELLEN UND EINER SCHWINGUNGSGEDÄMPFTEN AUFNAHME**





Characteristics:
Adaptors for indexable milling cutters.
JIS B 6339-BT / DIN 6357 - Form A

Eigenschaften:
Zwischenhülsen für Fräser.
JIS B 6339-BT / DIN 6357 - Form A




# 20.165

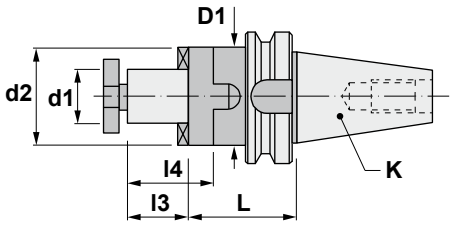
| Reference<br>Bezeichnung | K ISO | d1 g5 | L | d2 | d3 | G | G1 | l1 | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 20.165.40.40 | 40 | 40 | 60 | 89 | 66,7 | M-20 | M-12 | 30 | 2,700 |
| 20.165.50.40 | 50 | 40 | 70 | 89 | 66,7 | M-20 | M-12 | 30 | 5,510 |
| 20.165.50.60 | 50 | 60 | 80 | 129 | 101,6 | M-30 | M-16 | 40 | 8,100 |

| Reference<br>Bezeichnung | 2x  | 2x  |
|---|---|---|
| 20.165.40.40 | 80040 | 11006 |
| 20.165.50.40 | 80040 | 11006 |
| 20.165.50.60 | 80060 | 11012 |



Characteristics:
Combi-Shell mill adaptor.
JIS B 6339-BT
For cutters with keyway or driving slot DIN 138.

Eigenschaften:
Kombi-Aufsteckfräsdorne.
JIS B 6339-BT
Für Fräser mit Längsnut oder Stirnmitnehmer DIN 138.



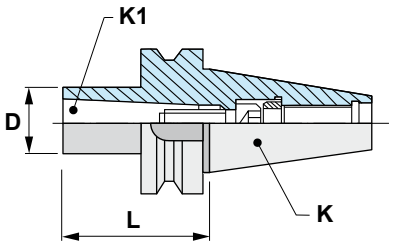

# 20.180

| Reference Bezeichnung | K ISO | d1 h6 | L | l3 | l4 | d2 | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20.180.30.16 | 30 | 16 | 50 | 17 | 27 | 32 | - | 10008 | 60116 | 88016 | 0,620 |
| 20.180.30.22 | 30 | 22 | 50 | 19 | 31 | 40 | - | 10010 | 60122 | 88022 | 0,790 |
| 20.180.30.27 | 30 | 27 | 55 | 21 | 33 | 48 | - | 10012 | 60127 | 88027 | 0,730 |
| 20.180.40.16 | 40 | 16 | 55 | 17 | 27 | 32 | - | 10008 | 60116 | 88016 | 1,260 |
| 20.180.40.16/100 | 40 | 16 | 100 | 17 | 27 | 32 | 35 | 10008 | 60116 | 88016 | 1,510 |
| 20.180.40.22 | 40 | 22 | 55 | 19 | 31 | 40 | - | 10010 | 60122 | 88022 | 1,390 |
| 20.180.40.22/100 | 40 | 22 | 100 | 19 | 31 | 40 | 48 | 10010 | 60122 | 88022 | 1,970 |
| 20.180.40.27 | 40 | 27 | 55 | 21 | 33 | 48 | - | 10012 | 60127 | 88027 | 1,560 |
| 20.180.40.27/100 | 40 | 27 | 100 | 21 | 33 | 48 | 48 | 10012 | 60127 | 88027 | 2,170 |
| 20.180.40.32 | 40 | 32 | 60 | 24 | 38 | 58 | - | 10016 | 60132 | 88032 | 1,560 |
| 20.180.40.32/100 | 40 | 32 | 100 | 24 | 38 | 58 | 58 | 10016 | 60132 | 88032 | 2,780 |
| 20.180.40.40 | 40 | 40 | 60 | 27 | 41 | 70 | - | 10020 | 60140 | 88040 | 1,800 |
| 20.180.50.16 | 50 | 16 | 70 | 17 | 27 | 32 | - | 10008 | 60116 | 88016 | 4,100 |
| 20.180.50.16/125 | 50 | 16 | 125 | 17 | 27 | 32 | 35 | 10008 | 60116 | 88016 | 4,480 |
| 20.180.50.22 | 50 | 22 | 70 | 19 | 31 | 40 | - | 10010 | 60122 | 88022 | 4,230 |
| 20.180.50.22/125 | 50 | 22 | 125 | 19 | 31 | 40 | 48 | 10010 | 60122 | 88022 | 4,950 |
| 20.180.50.27 | 50 | 27 | 70 | 21 | 33 | 48 | - | 10012 | 60127 | 88027 | 4,170 |
| 20.180.50.27/125 | 50 | 27 | 125 | 21 | 33 | 48 | 60 | 10012 | 60127 | 88027 | 5,420 |
| 20.180.50.32 | 50 | 32 | 70 | 24 | 38 | 58 | - | 10016 | 60132 | 88032 | 4,360 |
| 20.180.50.32/125 | 50 | 32 | 125 | 24 | 38 | 58 | 78 | 10016 | 60132 | 88032 | 6,270 |
| 20.180.50.40 | 50 | 40 | 70 | 27 | 41 | 70 | - | 10020 | 60140 | 88040 | 4,520 |
| 20.180.50.40/125 | 50 | 40 | 125 | 27 | 41 | 70 | 78 | 10020 | 60140 | 88040 | 6,950 |
| 20.180.50.50 | 50 | 50 | 70 | 30 | 46 | 90 | - | 10024 | 60150 | 88050 | 5,000 |



Characteristics:
Reducing adaptors.
JIS B 6339-BT
For tools with Morse taper shank and drawbar thread DIN 228-A.

Eigenschaften:
Reduzierhülsen.
JIS B 6339-BT
Für Werkzeuge mit Morsekegel und Anzugsgewinde DIN 228-A.



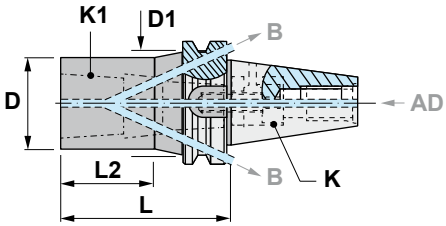

# 20.210

| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 20.210.30.01 | 30 | 1 | 50 | 25 | 0,510 |
| 20.210.30.02 | 30 | 2 | 65 | 32 | 0,590 |
| 20.210.30.03 | 30 | 3 | 80 | 40 | 0,760 |
| 20.210.40.01 | 40 | 1 | 50 | 25 | 1,080 |
| 20.210.40.02 | 40 | 2 | 50 | 32 | 1,130 |
| 20.210.40.03 | 40 | 3 | 70 | 40 | 1,270 |
| 20.210.40.04 | 40 | 4 | 95 | 48 | 1,520 |
| 20.210.50.01 | 50 | 1 | 45 | 25 | 3,850 |
| 20.210.50.02 | 50 | 2 | 60 | 32 | 3,860 |
| 20.210.50.03 | 50 | 3 | 65 | 40 | 3,870 |
| 20.210.50.04 | 50 | 4 | 70 | 48 | 3,870 |
| 20.210.50.05 | 50 | 5 | 100 | 63 | 4,020 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 20.210.30.01 | 16105 | 19312 | 11106 |
| 20.210.30.02 | 16105 | 19315 | 12110 |
| 20.210.30.03 | 16105 | 19318 | 12012 |
| 20.210.40.01 | 16205 | 19516 | 11206 |
| 20.210.40.02 | 16205 | 19416 | 18010 |
| 20.210.40.03 | 16205 | 19420 | 11312 |
| 20.210.40.04 | 16205 | 19322 | 12016 |
| 20.210.50.01 | 16205 | 19624 | 11206 |
| 20.210.50.02 | 16205 | 19324 | 11110 |
| 20.210.50.03 | 16205 | 19524 | 11212 |
| 20.210.50.04 | 16205 | 19424 | 12016 |
| 20.210.50.05 | 16205 | 19338 | 11020 |



Characteristics:
Reducing adaptors.
JIS B 6339-BT
For tools with Morse taper shank
and drawbar thread
DIN 228-A.
Similar to DIN 69871 - Form AD+B




Eigenschaften:
Reduzierhülsen.
JIS B 6339-BT
Für Werkzeuge mit Morsekegel
und Anzugsgewinde DIN 228-A.
Ähnlich wie DIN 69871 - Form AD+B

# 23.210

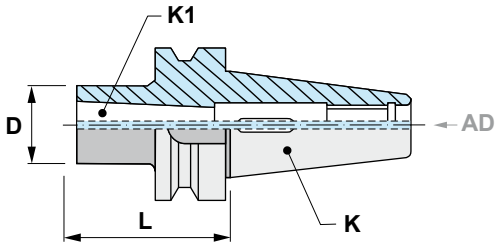
| Reference<br>Bezeichnung | K ISO | K1 MORSE | L | D | D1 | L2 | Kg |
|---|---|---|---|---|---|---|---|
| 23.210.40.01 | 40 | 1 | 50 | 25 | 45 | 16 | 1,050 |
| 23.210.40.02 | 40 | 2 | 50 | 32 | 50 | 19 | 1,090 |
| 23.210.40.03 | 40 | 3 | 70 | 40 | 50 | 42 | 1,270 |
| 23.210.40.04 | 40 | 4 | 95 | 48 | - | - | 1,480 |
| 23.210.50.01 | 50 | 1 | 45 | 25 | 80 | 16 | 3,680 |
| 23.210.50.02 | 50 | 2 | 60 | 32 | 80 | 23 | 3,920 |
| 23.210.50.03 | 50 | 3 | 65 | 40 | 80 | 28 | 3,910 |
| 23.210.50.04 | 50 | 4 | 70 | 48 | 80 | 37 | 3,790 |
| 23.210.50.05 | 50 | 5 | 100 | 63 | 80 | 66 | 4,080 |

| Reference<br>Bezeichnung |  |  |  |
|---|---|---|---|
| 23.210.40.01 | 16205 | 19516 | 18006 |
| 23.210.40.02 | 16205 | 19416 | 18010 |
| 23.210.40.03 | 16205 | 19420 | 18012 |
| 23.210.40.04 | 16205 | 19322 | 18016 |
| 23.210.50.01 | 16205 | 19624 | 18006 |
| 23.210.50.02 | 16205 | 19324 | 18110 |
| 23.210.50.03 | 16205 | 19524 | 18112 |
| 23.210.50.04 | 16205 | 19424 | 18016 |
| 23.210.50.05 | 16205 | 19338 | 18020 |



Characteristics:
Reducing adaptors.
JIS B 6339-BT
For tools with Morse taper shank and tang DIN 228-B shank.

Eigenschaften:
Reduzierhülsen.
JIS B 6339-BT
Für Werkzeuge mit Morsekegel und Austreiblappen DIN 228-B.



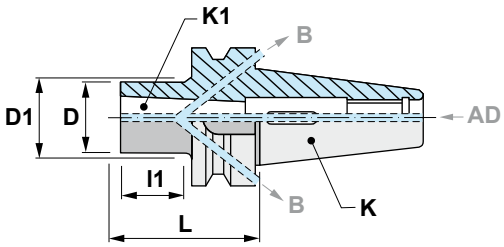

# 20.215

| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 20.215.30.01 | 30 | 1 | 50 | 25 | 0,470 |
| 20.215.30.02 | 30 | 2 | 62 | 32 | 0,530 |
| 20.215.30.03 | 30 | 3 | 78 | 40 | 0,600 |
| 20.215.40.01 | 40 | 1 | 50 | 25 | 1,060 |
| 20.215.40.02 | 40 | 2 | 50 | 32 | 1,070 |
| 20.215.40.03 | 40 | 3 | 70 | 40 | 1,180 |
| 20.215.40.04 | 40 | 4 | 95 | 48 | 1,390 |
| 20.215.50.01 | 50 | 1 | 45 | 25 | 3,750 |
| 20.215.50.02 | 50 | 2 | 60 | 32 | 3,770 |
| 20.215.50.03 | 50 | 3 | 65 | 40 | 3,800 |
| 20.215.50.04 | 50 | 4 | 95 | 48 | 4,000 |
| 20.215.50.05 | 50 | 5 | 105 | 63 | 4,100 |



Characteristics:
Reducing adaptors.
JIS B 6339-BT
For tools with Morse taper shank and tang DIN 228-B.
Similar to DIN 69871 - Form AD+B

Eigenschaften:
Reduzierhülsen.
JIS B 6339-BT
Für Werkzeuge mit Morsekegel und Austreiblappen DIN 228-B.
Ähnlich wie DIN 69871 - Form AD+B



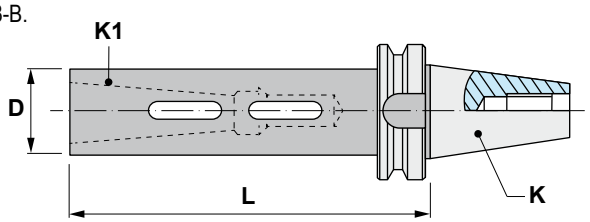

# 23.215

| Reference<br>Bezeichnung | K ISO | K1 MORSE | L | D | D1 | I1 | Kg |
|---|---|---|---|---|---|---|---|
| 23.215.40.01 | 40 | 1 | 50 | 25 | 45 | 16 | 1,080 |
| 23.215.40.02 | 40 | 2 | 50 | 32 | 50 | 18 | 1,080 |
| 23.215.40.03 | 40 | 3 | 70 | 40 | 50 | 42 | 1,170 |
| 23.215.40.04 | 40 | 4 | 95 | 48 | - | - | 1,380 |
| 23.215.50.01 | 50 | 1 | 45 | 25 | 80 | 16 | 3,730 |
| 23.215.50.02 | 50 | 2 | 60 | 32 | 80 | 23 | 3,650 |
| 23.215.50.03 | 50 | 3 | 65 | 40 | 80 | 28 | 3,930 |
| 23.215.50.04 | 50 | 4 | 95 | 48 | 80 | 49 | 3,930 |
| 23.215.50.05 | 50 | 5 | 105 | 63 | 80 | 71 | 3,830 |



Characteristics:
Long reducing adaptors. JIS B 6339-BT
For tools with Morse taper shank and tang DIN 228-B.

Eigenschaften:
Lange Reduzierhülsen. JIS B 6339-BT
Für Werkzeuge mit Morsekegel und Austreiblappen DIN 228-B.



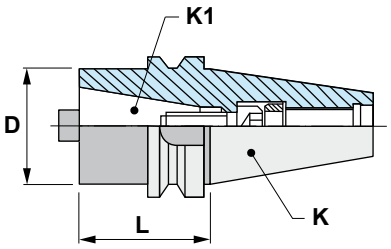

# 20.216

| Reference Bezeichnung | K ISO | K1 MORSE | L | D | Kg |
|---|---|---|---|---|---|
| 20.216.30.01 | 30 | 1 | 115 | 25 | 0,760 |
| 20.216.30.02 | 30 | 2 | 125 | 32 | 0,930 |
| 20.216.30.03 | 30 | 3 | 145 | 40 | 1,320 |
| 20.216.40.01 | 40 | 1 | 115 | 25 | 1,250 |
| 20.216.40.02 | 40 | 2 | 125 | 32 | 1,540 |
| 20.216.40.03 | 40 | 3 | 145 | 40 | 1,890 |
| 20.216.50.01 | 50 | 1 | 120 | 25 | 4,100 |
| 20.216.50.02 | 50 | 2 | 135 | 32 | 4,290 |
| 20.216.50.03 | 50 | 3 | 155 | 40 | 4,650 |
| 20.216.50.04 | 50 | 4 | 180 | 48 | 5,130 |
| 20.216.50.05 | 50 | 5 | 215 | 63 | 6,330 |



Characteristics:
Reducing adaptors.
JIS B 6339-BT
For tools with DIN 2080 taper shank.

Eigenschaften:
Reduzierhülsen.
JIS B 6339-BT
Für Werkzeuge mit DIN 2080 Kegel.




# 20.225

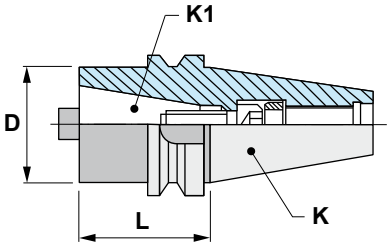
| Reference Bezeichnung | K ISO | K1 DIN 2080 | L | D | Kg |
|---|---|---|---|---|---|
| 20.225.40.30 | 40 | 30 | 50 | 50 | 1,200 |
| 20.225.40.40 | 40 | 40 | 100 | 63 | 2,230 |
| 20.225.50.30 | 50 | 30 | 50 | 50 | 3,810 |
| 20.225.50.40 | 50 | 40 | 70 | 63 | 3,980 |
| 20.225.50.50 | 50 | 50 | 120 | 97 | 6,440 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 20.225.40.30 | 16205 | 19320 | 11312 |
| 20.225.40.40 | 16205 | 19322 | 12016 |
| 20.225.50.30 | 16205 | 19524 | 11112 |
| 20.225.50.40 | 16205 | 19424 | 12016 |
| 20.225.50.50 | 16205 | 19438 | 12024 |



Characteristics:
Reducing adaptors.
JIS B 6339-BT
For tools with DIN 69871-A and BT shanks.

Eigenschaften:
Reduzierhülsen.
JIS B 6339-BT
Für Werkzeuge mit DIN 69871-A und BT Kegel.




# 20.226

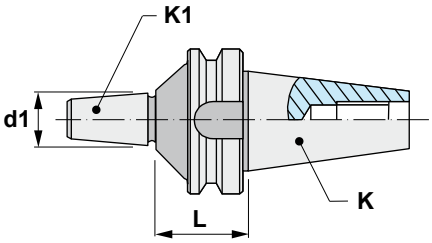
| Reference Bezeichnung | K ISO | K1 DIN 69871 JIS B 6339-BT | L | D | Kg |
|---|---|---|---|---|---|
| 20.226.40.30 | 40 | 30 | 50 | 50 | 1,210 |
| 20.226.40.40 | 40 | 40 | 100 | 63 | 2,250 |
| 20.226.50.30 | 50 | 30 | 50 | 50 | 3,840 |
| 20.226.50.40 | 50 | 40 | 70 | 63 | 4,090 |
| 20.226.50.50 | 50 | 50 | 120 | 97 | 6,580 |

| Reference Bezeichnung |  |  |  |
|---|---|---|---|
| 20.226.40.30 | 16205 | 19320 | 11412 |
| 20.226.40.40 | 16205 | 19322 | 12116 |
| 20.226.50.30 | 16205 | 19524 | 11412 |
| 20.226.50.40 | 16205 | 19424 | 12116 |
| 20.226.50.50 | 16205 | 19438 | 12124 |



Characteristics:
Drill chuck adaptors.
JIS B 6339-BT
For drill chucks with DIN 238 taper.

Eigenschaften:
Bohrfutteraufnahmen.
JIS B 6339-BT
Für Bohrfutter mit DIN 238 Kegel.




# 20.290

| Reference Bezeichnung | K ISO | K1 DIN | L | d1 | Kg |
|---|---|---|---|---|---|
| 20.290.30.12 | 30 | B-12 | 27 | 12,065 | 0,460 |
| 20.290.30.16 | 30 | B-16 | 27 | 15,733 | 0,490 |
| 20.290.40.12 | 40 | B-12 | 32 | 12,065 | 1,070 |
| 20.290.40.16 | 40 | B-16 | 32 | 15,733 | 1,090 |
| 20.290.40.18 | 40 | B-18 | 32 | 17,780 | 1,100 |
| 20.290.50.16 | 50 | B-16 | 43 | 15,733 | 3,880 |
| 20.290.50.18 | 50 | B-18 | 43 | 17,780 | 3,790 |

## MU

I199

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MU | Standard keyless drill chucks DIN 238 |
| | Standard Schnellspann-Bohrfutter DIN 238 |



## MP

I200

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MP | Super precision keyless drill chucks DIN 238 |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 |



## MK

I201

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MK | Super precision keyless drill chucks DIN 238 with gripping tongue |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 mit Schlüsselflächen |



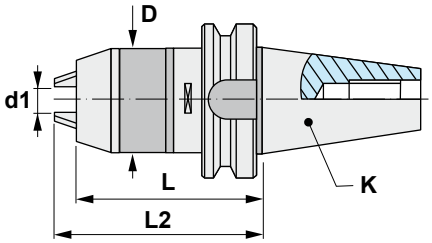


Characteristics:
Self clamping short precision drill chucks.
JIS B 6339-BT
For right turn only.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
Selbtspann-Kurzbohrfutter,
Genauigkeitsausführung.
JIS B 6339-BT
Nur für rechtslaufende Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**




# 20.295

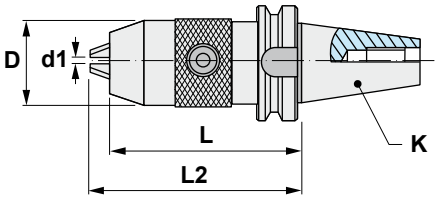
| Reference Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 20.295.30.08 | 30 | 0,3-8 | 38 | 73 | 79 | 1,100 |
| 20.295.40.08 | 40 | 0,3-8 | 38 | 78 | 84 | 1,500 |
| 20.295.40.13 | 40 | 1-13 | 48 | 86 | 97 | 1,900 |
| 20.295.40.16 | 40 | 3-16 | 55 | 105 | 116 | 2,300 |
| 20.295.50.13 | 50 | 1-13 | 48 | 97 | 108 | 4,600 |
| 20.295.50.16 | 50 | 3-16 | 55 | 95 | 106 | 4,700 |

| Reference Bezeichnung |  |  |
|---|---|---|
| 20.295.30.08 | 50008 | 11206 |
| 20.295.40.08 | 50008 | 11206 |
| 20.295.40.13 | 50013 | 11108 |
| 20.295.40.16 | 50016 | 11108 |
| 20.295.50.13 | 50013 | 11108 |
| 20.295.50.16 | 50016 | 11108 |



Characteristics:
CNC-Universal precision drill chucks.
JIS B 6339-BT
For left and right hand turn.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeitsausführung.
JIS B 6339-BT
Für links- und rechtslaufende Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**

# 20.296

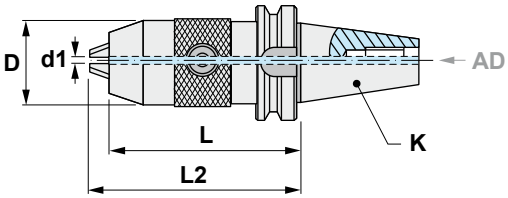
| Reference<br>Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 20.296.40.13 | 40 | 1-13 | 54 | 96 | 105 | 2,040 |
| 20.296.40.16 | 40 | 3-16 | 57 | 99 | 106 | 2,220 |
| 20.296.50.13 | 50 | 1-13 | 54 | 107 | 116 | 4,380 |
| 20.296.50.16 | 50 | 3-16 | 57 | 110 | 117 | 4,480 |

| Reference<br>Bezeichnung |  | 3x  |
|---|---|---|
| 20.296.40.13 | 5006 | 60313 |
| 20.296.40.16 | 5006 | 60313 |
| 20.296.50.13 | 5006 | 60313 |
| 20.296.50.16 | 5006 | 60313 |



Characteristics:
CNC-Universal precision drill chucks.
JIS B 6339-BT
For left and right hand turn.

*** SUPPLIED WITH WRENCH**




Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeitsausführung.
JIS B 6339-BT
Für links- und rechtslaufende
Bearbeitungen.

*** LIEFERUNG MIT SCHLÜSSEL**

# 23.296

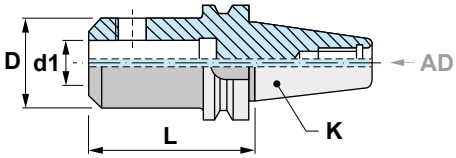
| Reference<br>Bezeichnung | K ISO | d1 | D | L | L2 max | Kg |
|---|---|---|---|---|---|---|
| 23.296.40.13 | 40 | 1-13 | 54 | 96 | 105 | 2,040 |
| 23.296.40.16 | 40 | 3-16 | 57 | 99 | 106 | 2,220 |
| 23.296.50.13 | 50 | 1-13 | 54 | 107 | 116 | 4,380 |
| 23.296.50.16 | 50 | 3-16 | 57 | 110 | 117 | 4,480 |

| Reference<br>Bezeichnung |  | 3x  |
|---|---|---|
| 23.296.40.13 | 5006 | 60313 |
| 23.296.40.16 | 5006 | 60313 |
| 23.296.50.13 | 5006 | 60313 |
| 23.296.50.16 | 5006 | 60313 |



Characteristics:
Weldon end mill adaptors.
JIS B 6339-BT
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Zylinderschaft-Aufnahme Weldon.
JIS B 6339-BT
Für Fräser mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.




# 20.300

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | Kg |
|---|---|---|---|---|---|---|
| 20.300.30.06 | 30 | 6 | 50 | 25 | 15106 | 0,500 |
| 20.300.30.08 | 30 | 8 | 50 | 28 | 15108 | 0,520 |
| 20.300.30.10 | 30 | 10 | 50 | 35 | 15110 | 0,610 |
| 20.300.30.12 | 30 | 12 | 50 | 42 | 15212 | 0,620 |
| 20.300.30.14 | 30 | 14 | 50 | 44 | 15212 | 0,625 |
| 20.300.30.16 | 30 | 16 | 63 | 48 | 15314 | 0,850 |
| 20.300.30.18 | 30 | 18 | 63 | 50 | 15314 | 0,880 |
| 20.300.40.06 | 40 | 6 | 50 | 25 | 15106 | 0,940 |
| 20.300.40.08 | 40 | 8 | 50 | 28 | 15108 | 0,970 |
| 20.300.40.10 | 40 | 10 | 50 | 35 | 15110 | 1,030 |
| 20.300.40.12 | 40 | 12 | 50 | 42 | 15212 | 1,120 |
| 20.300.40.14 | 40 | 14 | 50 | 44 | 15212 | 1,130 |
| 20.300.40.16 | 40 | 16 | 63 | 48 | 15314 | 1,340 |
| 20.300.40.18 | 40 | 18 | 63 | 50 | 15314 | 1,370 |
| 20.300.40.20 | 40 | 20 | 63 | 52 | 15216 | 1,380 |
| 20.300.40.25 | 40 | 25 | 100 | 65 | 2 x 15218 | 2,370 |
| 20.300.40.32 | 40 | 32 | 100 | 72 | 2 x 15220 | 2,710 |
| 20.300.40.40 | 40 | 40 | 120 | 90 | 2 x 15220 | 4,280 |
| 20.300.50.06 | 50 | 6 | 63 | 25 | 15106 | 2,860 |
| 20.300.50.08 | 50 | 8 | 63 | 28 | 15108 | 2,890 |
| 20.300.50.10 | 50 | 10 | 63 | 35 | 15110 | 2,920 |
| 20.300.50.12 | 50 | 12 | 63 | 42 | 15212 | 3,070 |
| 20.300.50.14 | 50 | 14 | 63 | 44 | 15212 | 3,110 |
| 20.300.50.16 | 50 | 16 | 63 | 48 | 15314 | 3,170 |
| 20.300.50.18 | 50 | 18 | 63 | 50 | 15314 | 3,190 |
| 20.300.50.20 | 50 | 20 | 63 | 52 | 15216 | 3,260 |
| 20.300.50.25 | 50 | 25 | 80 | 65 | 2 x 15218 | 3,910 |
| 20.300.50.32 | 50 | 32 | 100 | 72 | 2 x 15220 | 4,670 |
| 20.300.50.40 | 50 | 40 | 120 | 90 | 2 x 15220 | 6,310 |
| 20.300.50.50 | 50 | 50 | 120 | 98 | 2 x 15024 | 6,700 |

## 42.300

I182

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.300 | Short and long reducing bushings DIN 1835-B Form A and B |
| | Kurze und lange Reduzierhülsen DIN 1835-B Form A und B |



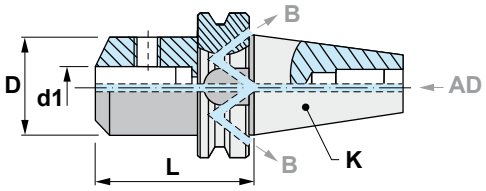


Characteristics:
Weldon end mill adaptors.
JIS B 6339-BT
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Similar to DIN 69871 - Form AD+B

Eigenschaften:
Zylinderschaft-Aufnahme Weldon.
JIS B 6339-BT
Für Fräser mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.

Ähnlich wie DIN 69871 - Form AD+B




# 23.300

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | Kg |
|---|---|---|---|---|---|---|
| 23.300.40.06 | 40 | 6 | 50 | 25 | 15106 | 1,070 |
| 23.300.40.08 | 40 | 8 | 50 | 28 | 15108 | 1,090 |
| 23.300.40.10 | 40 | 10 | 63 | 35 | 15110 | 1,230 |
| 23.300.40.12 | 40 | 12 | 63 | 42 | 15212 | 1,300 |
| 23.300.40.14 | 40 | 14 | 63 | 44 | 15212 | 1,320 |
| 23.300.40.16 | 40 | 16 | 63 | 48 | 15314 | 1,380 |
| 23.300.40.18 | 40 | 18 | 63 | 50 | 15314 | 1,390 |
| 23.300.40.20 | 40 | 20 | 63 | 52 | 15216 | 1,410 |
| 23.300.40.25 | 40 | 25 | 90 | 65 | 2 x 15218 | 2,250 |
| 23.300.40.32 | 40 | 32 | 100 | 72 | 2 x 15220 | 2,730 |
| 23.300.40.40 | 40 | 40 | 110 | 90 | 2 x 15220 | 3,960 |
| 23.300.50.06 | 50 | 6 | 63 | 25 | 15106 | 3,770 |
| 23.300.50.08 | 50 | 8 | 63 | 28 | 15108 | 3,790 |
| 23.300.50.10 | 50 | 10 | 65 | 35 | 15110 | 3,850 |
| 23.300.50.12 | 50 | 12 | 80 | 42 | 15212 | 4,000 |
| 23.300.50.14 | 50 | 14 | 80 | 44 | 15212 | 4,020 |
| 23.300.50.16 | 50 | 16 | 80 | 48 | 15314 | 4,100 |
| 23.300.50.18 | 50 | 18 | 80 | 50 | 15314 | 4,200 |
| 23.300.50.20 | 50 | 20 | 80 | 52 | 15216 | 4,250 |
| 23.300.50.25 | 50 | 25 | 100 | 65 | 2 x 15218 | 4,870 |
| 23.300.50.32 | 50 | 32 | 105 | 72 | 2 x 15220 | 5,180 |
| 23.300.50.40 | 50 | 40 | 120 | 90 | 2 x 15220 | 5,900 |
| 23.300.50.50 | 50 | 50 | 120 | 98 | 2 x 15024 | 6,930 |

## 42.300

I182

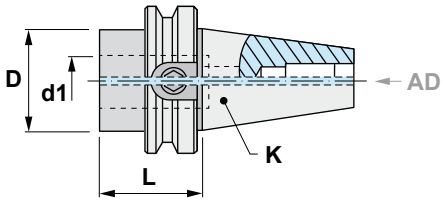
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.300 | Short and long reducing bushings DIN 1835-B Form A and B |
| | Kurze und lange Reduzierhülsen DIN 1835-B Form A und B |





Characteristics:
Short end mill adaptors.
JIS B 6339-BT
For cutters and tooling with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Kurze Aufsteckfräsdorne.
JIS B 6339-BT
Für Fräser und Werkzeuge mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.



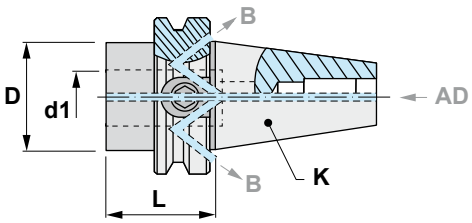

# 20.302

| Reference<br>Bezeichnung | K ISO | d1 H4 | L | D | Kg |
|---|---|---|---|---|---|
| 20.302.30.16 | 30 | 16 | 32 | 32 | 0,400 |
| 20.302.30.20 | 30 | 20 | 34 | 36 | 0,370 |
| 20.302.40.16 | 40 | 16 | 35 | 45 | 1,060 |
| 20.302.40.20 | 40 | 20 | 35 | 45 | 1,000 |
| 20.302.40.25 | 40 | 25 | 35 | 45 | 0,920 |
| 20.302.40.32 | 40 | 32 | 45 | 50 | 0,880 |
| 20.302.50.16 | 50 | 16 | 44 | 70 | 3,800 |
| 20.302.50.20 | 50 | 20 | 44 | 70 | 3,730 |
| 20.302.50.25 | 50 | 25 | 44 | 70 | 3,620 |
| 20.302.50.32 | 50 | 32 | 44 | 70 | 3,470 |

| Reference<br>Bezeichnung |  |
|---|---|
| 20.302.30.16 | 15114 |
| 20.302.30.20 | 15014 |
| 20.302.40.16 | 15214 |
| 20.302.40.20 | 15116 |
| 20.302.40.25 | 15016 |
| 20.302.40.32 | 15020 |
| 20.302.50.16 | 15314 |
| 20.302.50.20 | 15216 |
| 20.302.50.25 | 15118 + 15218 |
| 20.302.50.32 | 15020 + 15120 |



Characteristics:
Short end mill adaptors.
JIS B 6339-BT
For cutters and tooling with cylindrical shank and Weldon flat DIN 1835-B.
Similar to DIN 69871 - Form AD+B




Eigenschaften:
Kurze Aufsteckfräsdorne.
JIS B 6339-BT
Für Fräser und Werkzeuge mit zylindrischem Schaft und Weldon-Fläche DIN 1835-B.
Ähnlich wie DIN 69871 - Form AD+B

# 23.302

| Reference Bezeichnung | K ISO | d1 H4 | L | D | Kg |
|---|---|---|---|---|---|
| 23.302.40.16 | 40 | 16 | 35 | 45 | 1,070 |
| 23.302.40.20 | 40 | 20 | 35 | 45 | 0,990 |
| 23.302.40.25 | 40 | 25 | 35 | 45 | 0,890 |
| 23.302.40.32 | 40 | 32 | 45 | 50 | 0,880 |
| 23.302.50.16 | 50 | 16 | 44 | 70 | 3,880 |
| 23.302.50.20 | 50 | 20 | 44 | 70 | 3,710 |
| 23.302.50.25 | 50 | 25 | 44 | 70 | 3,620 |
| 23.302.50.32 | 50 | 32 | 44 | 70 | 3,450 |

| Reference Bezeichnung |  |
|---|---|
| 23.302.40.16 | 15214 |
| 23.302.40.20 | 15116 |
| 23.302.40.25 | 15016 |
| 23.302.40.32 | 15020 |
| 23.302.50.16 | 15314 |
| 23.302.50.20 | 15216 |
| 23.302.50.25 | 15118 + 15218 |
| 23.302.50.32 | 15020 + 15120 |

## 42.610

I183

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.610 | Tapping head with axial compensation DIN 1835-B<br>Gewindeschneidfutter mit Längenausgleich DIN 1835-B |



## 42.620

I184

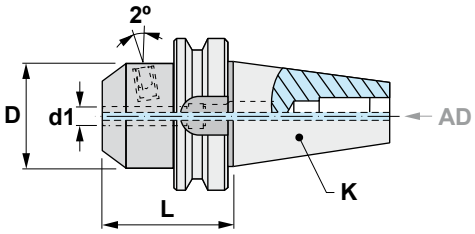
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 42.620 | Quick change tapping head with axial compensation DIN 1835-B+E<br>Gewindeschneid-Schnellwechselfutter mit Längenausgleich DIN 1835-B+E |





Characteristics:
End mill adaptors type Whistle-Notch.
JIS B 6339-BT
For tools with cylindrical shank and tightening inclined flat DIN 1835-E.

Eigenschaften:
Whistle-Notch Zylinderschaft-Aufnahme.
JIS B 6339-BT
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-E.

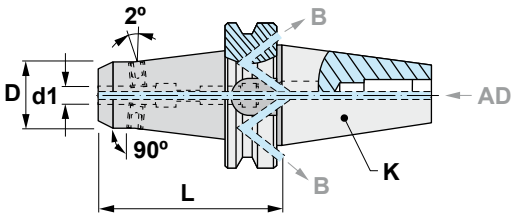



# 20.305

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | | Kg |
|---|---|---|---|---|---|---|---|
| 20.305.30.06 | 30 | 6 | 50 | 25 | 19005 | 15106 | 0,550 |
| 20.305.30.08 | 30 | 8 | 50 | 28 | 19106 | 15108 | 0,540 |
| 20.305.30.10 | 30 | 10 | 50 | 35 | 19008 | 15110 | 0,590 |
| 20.305.30.12 | 30 | 12 | 50 | 42 | 19110 | 15212 | 0,660 |
| 20.305.30.14 | 30 | 14 | 50 | 44 | 19110 | 15212 | 0,630 |
| 20.305.30.16 | 30 | 16 | 50 | 48 | 19012 | 15314 | 0,650 |
| 20.305.30.18 | 30 | 18 | 60 | 50 | 19012 | 15314 | 0,820 |
| 20.305.40.06 | 40 | 6 | 50 | 25 | 19005 | 15106 | 1,100 |
| 20.305.40.08 | 40 | 8 | 50 | 28 | 19106 | 15108 | 1,140 |
| 20.305.40.10 | 40 | 10 | 63 | 35 | 19008 | 15110 | 1,260 |
| 20.305.40.12 | 40 | 12 | 50 | 42 | 19110 | 15212 | 1,320 |
| 20.305.40.14 | 40 | 14 | 50 | 44 | 19110 | 15212 | 1,360 |
| 20.305.40.16 | 40 | 16 | 63 | 48 | 19012 | 15314 | 1,430 |
| 20.305.40.18 | 40 | 18 | 63 | 50 | 19012 | 15314 | 1,440 |
| 20.305.40.20 | 40 | 20 | 63 | 52 | 19016 | 15216 | 1,430 |
| 20.305.40.25 | 40 | 25 | 90 | 65 | 19020 | 2 x 15218 | 2,240 |
| 20.305.40.32 | 40 | 32 | 100 | 72 | 19020 | 2 x 15220 | 2,730 |
| 20.305.50.06 | 50 | 6 | 63 | 25 | 19005 | 15106 | 3,700 |
| 20.305.50.08 | 50 | 8 | 63 | 28 | 19106 | 15108 | 3,730 |
| 20.305.50.10 | 50 | 10 | 65 | 35 | 19008 | 15110 | 3,810 |
| 20.305.50.12 | 50 | 12 | 80 | 42 | 19110 | 15212 | 4,160 |
| 20.305.50.14 | 50 | 14 | 80 | 44 | 19110 | 15212 | 4,070 |
| 20.305.50.16 | 50 | 16 | 80 | 48 | 19012 | 15314 | 4,110 |
| 20.305.50.18 | 50 | 18 | 80 | 50 | 19012 | 15314 | 4,190 |
| 20.305.50.20 | 50 | 20 | 80 | 52 | 19016 | 15216 | 4,170 |
| 20.305.50.25 | 50 | 25 | 100 | 65 | 19020 | 2 x 15218 | 5,010 |
| 20.305.50.32 | 50 | 32 | 105 | 72 | 19020 | 2 x 15220 | 5,270 |
| 20.305.50.40 | 50 | 40 | 120 | 90 | 19020 | 2 x 15220 | 6,650 |



Characteristics:
Combined end mill adaptors type Weldon / Whistle-Notch.
JIS B 6339-BT
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.
Similar to DIN 69871 - Form AD+B




Eigenschaften:
Kombi-Aufnahme Typ Weldon / Whistle-Notch.
JIS B 6339-BT.
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-B+E.
Ähnlich wie DIN 69871 - Form AD+B

# 23.306

| Reference Bezeichnung | K ISO | d1 H4 | L | D | D1 | 2x | Kg |
|---|---|---|---|---|---|---|---|
| 23.306.40.06/100 | 40 | 6 | 100 | 22 | 28 | 15006 | 1,240 |
| 23.306.40.06/130 | 40 | 6 | 130 | 22 | 28 | 15006 | 1,340 |
| 23.306.40.06/160 | 40 | 6 | 160 | 22 | 33 | 15006 | 1,560 |
| 23.306.40.08/100 | 40 | 8 | 100 | 24 | 30 | 15008 | 1,270 |
| 23.306.40.08/130 | 40 | 8 | 130 | 24 | 30 | 15008 | 1,420 |
| 23.306.40.08/160 | 40 | 8 | 160 | 24 | 35 | 15008 | 1,620 |
| 23.306.40.10/100 | 40 | 10 | 100 | 30 | 38 | 15010 | 1,460 |
| 23.306.40.10/130 | 40 | 10 | 130 | 30 | 38 | 15010 | 1,630 |
| 23.306.40.10/160 | 40 | 10 | 160 | 30 | 39 | 15010 | 1,850 |
| 23.306.40.12/100 | 40 | 12 | 100 | 32 | 40 | 15012 | 1,440 |
| 23.306.40.12/130 | 40 | 12 | 130 | 32 | 40 | 15012 | 1,730 |
| 23.306.40.12/160 | 40 | 12 | 160 | 32 | 43 | 15012 | 1,950 |
| 23.306.40.14/100 | 40 | 14 | 100 | 32 | 40 | 15012 | 1,470 |
| 23.306.40.14/130 | 40 | 14 | 130 | 32 | 40 | 15012 | 1,650 |
| 23.306.40.14/160 | 40 | 14 | 160 | 32 | 44 | 15012 | 2,200 |
| 23.306.40.16/100 | 40 | 16 | 100 | 36 | 44 | 15114 | 1,580 |
| 23.306.40.16/130 | 40 | 16 | 130 | 36 | 44 | 15114 | 1,830 |
| 23.306.40.16/160 | 40 | 16 | 160 | 36 | 44 | 15114 | 2,100 |
| 23.306.40.18/100 | 40 | 18 | 100 | 38 | 46 | 15114 | 1,600 |
| 23.306.40.18/130 | 40 | 18 | 130 | 38 | 46 | 15114 | 1,900 |
| 23.306.40.18/160 | 40 | 18 | 160 | 38 | 46 | 15114 | 2,700 |
| 23.306.40.20/100 | 40 | 20 | 100 | 44 | 50 | 15116 | 1,710 |
| 23.306.40.20/130 | 40 | 20 | 130 | 44 | 50 | 15116 | 2,070 |
| 23.306.40.20/160 | 40 | 20 | 160 | 44 | 50 | 15018 | 2,490 |
| 23.306.40.25/130 | 40 | 25 | 130 | 50 | 50 | 15018 | 2,240 |
| 23.306.40.25/160 | 40 | 25 | 160 | 50 | 50 | 15018 | 2,660 |
| 23.306.50.06/130 | 50 | 6 | 130 | 22 | 28 | 15006 | 3,970 |
| 23.306.50.06/160 | 50 | 6 | 160 | 22 | 33 | 15006 | 4,140 |
| 23.306.50.06/200 | 50 | 6 | 200 | 22 | 36 | 15006 | 4,440 |
| 23.306.50.08/130 | 50 | 8 | 130 | 24 | 30 | 15008 | 3,950 |
| 23.306.50.08/160 | 50 | 8 | 160 | 24 | 35 | 15008 | 4,240 |
| 23.306.50.08/200 | 50 | 8 | 200 | 24 | 38 | 15008 | 4,530 |
| 23.306.50.10/130 | 50 | 10 | 130 | 30 | 38 | 15010 | 4,250 |
| 23.306.50.10/160 | 50 | 10 | 160 | 30 | 39 | 15010 | 4,470 |
| 23.306.50.10/200 | 50 | 10 | 200 | 30 | 43 | 15010 | 4,900 |

| Reference Bezeichnung | K ISO | d1 H4 | L | D | D1 | 2x  | Kg |
|---|---|---|---|---|---|---|---|
| 23.306.50.12/130 | 50 | 12 | 130 | 32 | 40 | 15012 | 4,270 |
| 23.306.50.12/160 | 50 | 12 | 160 | 32 | 43 | 15012 | 4,570 |
| 23.306.50.12/200 | 50 | 12 | 200 | 32 | 46 | 15012 | 4,980 |
| 23.306.50.14/130 | 50 | 14 | 130 | 32 | 40 | 15012 | 4,230 |
| 23.306.50.14/160 | 50 | 14 | 160 | 32 | 44 | 15012 | 4,490 |
| 23.306.50.14/200 | 50 | 14 | 200 | 32 | 48 | 15012 | 5,100 |
| 23.306.50.16/130 | 50 | 16 | 130 | 36 | 44 | 15114 | 4,340 |
| 23.306.50.16/160 | 50 | 16 | 160 | 36 | 44 | 15114 | 4,610 |
| 23.306.50.16/200 | 50 | 16 | 200 | 36 | 50 | 15114 | 5,230 |
| 23.306.50.18/130 | 50 | 18 | 130 | 38 | 46 | 15114 | 4,390 |
| 23.306.50.18/160 | 50 | 18 | 160 | 38 | 46 | 15114 | 4,770 |
| 23.306.50.18/200 | 50 | 18 | 200 | 38 | 52 | 15114 | 5,340 |
| 23.306.50.20/130 | 50 | 20 | 130 | 44 | 50 | 15116 | 4,640 |
| 23.306.50.20/160 | 50 | 20 | 160 | 44 | 50 | 15116 | 4,950 |
| 23.306.50.20/200 | 50 | 20 | 200 | 44 | 55 | 15116 | 5,650 |
| 23.306.50.25/130 | 50 | 25 | 130 | 50 | 56 | 4 x 15018 | 4,800 |
| 23.306.50.25/160 | 50 | 25 | 160 | 50 | 60 | 4 x 15018 | 5,440 |
| 23.306.50.25/200 | 50 | 25 | 200 | 50 | 64 | 4 x 15018 | 6,270 |
| 23.306.50.32/200 | 50 | 32 | 200 | 58 | 72 | 4 x 15120 | 7,050 |

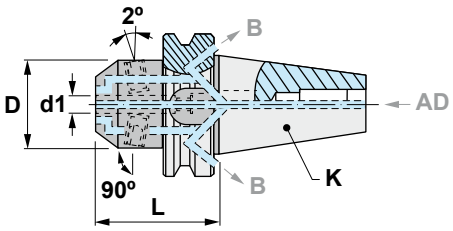


Characteristics:
Combined end mills adaptors type Weldon / Whistle-Notch.
JIS B 6339-BT
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.
Similar to DIN 69871 - Form AD+B

Coolant distribution through the centre or through the flange of the tool.

Eigenschaften:
Kombi-Aufnahme Typ Weldon/ Whistle-Notch. JIS B 6339-BT
Für Werkzeuge mit zylindrischem Schaft und geneigter Spannfläche DIN 1835-B+E.
Ähnlich wie DIN 69871 - Form AD+B

Kühlmittel-Verteilung durch die Zentralbohrung oder durch den Bund.

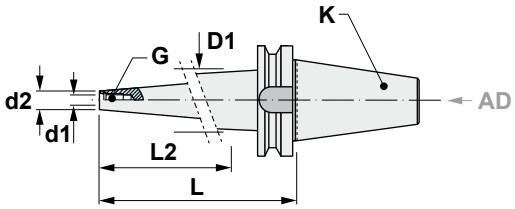



# 23.307

| Reference Bezeichnung | K ISO | d1 H4 | L | D | | 2x | Kg |
|---|---|---|---|---|---|---|---|
| 23.307.40.06 | 40 | 6 | 50 | 25 | 19005 | 15106 | 1,080 |
| 23.307.40.08 | 40 | 8 | 50 | 28 | 19106 | 15108 | 1,130 |
| 23.307.40.10 | 40 | 10 | 63 | 35 | 19008 | 15110 | 1,200 |
| 23.307.40.12 | 40 | 12 | 63 | 42 | 19110 | 15212 | 1,280 |
| 23.307.40.14 | 40 | 14 | 63 | 44 | 19110 | 15212 | 1,290 |
| 23.307.40.16 | 40 | 16 | 63 | 48 | 19012 | 15314 | 1,440 |
| 23.307.40.18 | 40 | 18 | 63 | 50 | 19012 | 15314 | 1,360 |
| 23.307.40.20 | 40 | 20 | 63 | 52 | 19016 | 15216 | 1,380 |
| 23.307.40.25 | 40 | 25 | 90 | 65 | 19020 | 4 x 15218 | 2,190 |
| 23.307.40.32 | 40 | 32 | 100 | 72 | 19020 | 4 x 15220 | 2,700 |
| 23.307.50.06 | 50 | 6 | 63 | 25 | 19005 | 15106 | 3,850 |
| 23.307.50.08 | 50 | 8 | 63 | 28 | 19106 | 15108 | 3,690 |
| 23.307.50.10 | 50 | 10 | 65 | 35 | 19008 | 15110 | 3,950 |
| 23.307.50.12 | 50 | 12 | 80 | 42 | 19110 | 15212 | 3,880 |
| 23.307.50.14 | 50 | 14 | 80 | 44 | 19110 | 15212 | 3,910 |
| 23.307.50.16 | 50 | 16 | 80 | 48 | 19012 | 15314 | 3,990 |
| 23.307.50.18 | 50 | 18 | 80 | 50 | 19012 | 15314 | 4,290 |
| 23.307.50.20 | 50 | 20 | 80 | 52 | 19016 | 15216 | 4,050 |
| 23.307.50.25 | 50 | 25 | 100 | 65 | 19020 | 4 x 15218 | 4,950 |
| 23.307.50.32 | 50 | 32 | 105 | 72 | 19020 | 4 x 15220 | 5,310 |
| 23.307.50.40 | 50 | 40 | 120 | 90 | 19020 | 4 x 15220 | 6,770 |



Characteristics:
Mill adaptors.
JIS B 6339-BT
For frontal end mill support screwed shanks.
Similar to DIN 69871 - Form AD+B



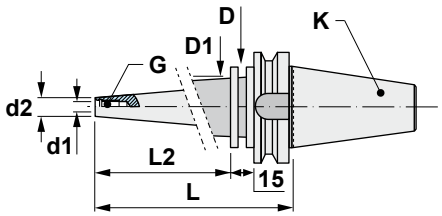

Eigenschaften:
Spannfutter.
JIS B 6339-BT
Für Einschraubfräser.
Ähnlich wie DIN 69871 - Form AD+B

# 23.315

| Reference<br>Bezeichnung | K ISO | L | d1 | G | d2 | L2 | D1 | Kg |
|---|---|---|---|---|---|---|---|---|
| 23.315.40.10/055 | 40 | 55 | 10,5 | M10 | 18 | 25 | 20 | 1,040 |
| 23.315.40.10/080 | 40 | 80 | 10,5 | M10 | 18 | 50 | 23 | 1,110 |
| 23.315.40.10/130 | 40 | 130 | 10,5 | M10 | 18 | 100 | 29 | 1,350 |
| 23.315.40.12/055 | 40 | 55 | 12,5 | M12 | 21 | 25 | 24 | 1,100 |
| 23.315.40.12/080 | 40 | 80 | 12,5 | M12 | 21 | 50 | 26 | 1,140 |
| 23.315.40.12/130 | 40 | 130 | 12,5 | M12 | 21 | 100 | 32 | 1,430 |
| 23.315.40.16/055 | 40 | 55 | 17,0 | M16 | 29 | 25 | 32 | 1,100 |
| 23.315.40.16/080 | 40 | 80 | 17,0 | M16 | 29 | 50 | 35 | 1,200 |
| 23.315.40.16/130 | 40 | 130 | 17,0 | M16 | 29 | 100 | 40 | 1,710 |
| 23.315.50.12/090 | 50 | 90 | 12,5 | M12 | 21 | 50 | 26 | 4,100 |
| 23.315.50.12/140 | 50 | 140 | 12,5 | M12 | 21 | 100 | 32 | 4,150 |
| 23.315.50.12/190 | 50 | 190 | 12,5 | M12 | 21 | 150 | 37 | 4,480 |
| 23.315.50.16/090 | 50 | 90 | 17,0 | M16 | 29 | 50 | 35 | 3,950 |
| 23.315.50.16/140 | 50 | 140 | 17,0 | M16 | 29 | 100 | 40 | 4,360 |
| 23.315.50.16/190 | 50 | 190 | 17,0 | M16 | 29 | 150 | 45 | 4,950 |



Characteristics:
Antivibratory end mill adaptors.
JIS B 6339-BT
For frontal end mill support screwed shanks.
Manufactured with materials and mechanisms having antivibration properties. Standard and extra long lengths, suitable for moulding and special manufactures.
PRE-BALANCED
ISO-40: 15.000 r.p.m. G-6,3
ISO-50: 10.000 r.p.m. G-6,3




Eigenschaften:
Schwingungsgedämpfte Aufsteckfräsdorne für Einschraubfräser. JIS B 6339-BT
Hergestellt mit schwingungsdämpfenden Materialien und Mechanismen.
Standard und extralange Ausführungen sind für Werkzeug- und Formenbau besonders geeignet.
VORGEWUCHTET
ISO-40: 15.000 r.p.m. G-6,3
ISO-50: 10.000 r.p.m. G-6,3

# A20.315

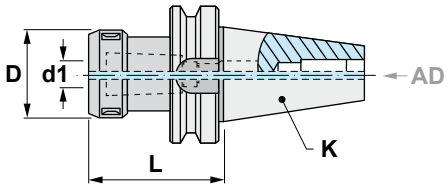
| Reference<br>Bezeichnung | K ISO | L2 | D1 | L | D | d1 | G | d2 | Kg |
|---|---|---|---|---|---|---|---|---|---|
| A20.315.40.10/200 | 40 | 158 | 35 | 200 | 50 | 10,5 | M10 | 18 | 1,970 |
| A20.315.40.10/250 | 40 | 208 | 40 | 250 | 50 | 10,5 | M10 | 18 | 2,260 |
| A20.315.40.10/300 | 40 | 258 | 45 | 300 | 50 | 10,5 | M10 | 18 | 2,820 |
| A20.315.40.12/200 | 40 | 158 | 38 | 200 | 50 | 12,5 | M12 | 21 | 2,000 |
| A20.315.40.12/250 | 40 | 208 | 43 | 250 | 50 | 12,5 | M12 | 21 | 2,490 |
| A20.315.40.12/300 | 40 | 258 | 44 | 300 | 50 | 12,5 | M12 | 21 | 3,130 |
| A20.315.40.16/200 | 40 | 158 | 43 | 200 | 50 | 17,0 | M16 | 29 | 2,490 |
| A20.315.40.16/250 | 40 | 208 | 44 | 250 | 50 | 17,0 | M16 | 29 | 2,810 |
| A20.315.40.16/300 | 40 | 258 | 47 | 300 | 50 | 17,0 | M16 | 29 | 3,450 |
| A20.315.50.12/250 | 50 | 197 | 42 | 250 | 80 | 12,5 | M12 | 21 | 5,250 |
| A20.315.50.12/300 | 50 | 247 | 47 | 300 | 80 | 12,5 | M12 | 21 | 5,910 |
| A20.315.50.12/400 | 50 | 347 | 57 | 400 | 80 | 12,5 | M12 | 21 | 7,580 |
| A20.315.50.16/300 | 50 | 247 | 55 | 300 | 80 | 17,0 | M16 | 29 | 6,800 |
| A20.315.50.16/400 | 50 | 347 | 65 | 400 | 80 | 17,0 | M16 | 29 | 9,000 |
| A20.315.50.16/500 | 50 | 447 | 76 | 500 | 80 | 17,0 | M16 | 29 | 12,000 |



Characteristics:
Collet chucks for DIN 6388 collets.
JIS B 6339-BT
For tools with cylindrical shank
DIN 1835-B.

* Ball bearing nut, see page: I220

*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Spannzangenfutter für Spannzangen
DIN6388. JIS B 6339-BT
Für Werkzeuge mit zylindrischem
Schaft DIN 1835-B.

* Für Kugellager-Mutter, siehe Seite: I220

*** LIEFERUNG OHNE SCHLÜSSEL**

# 20.353

| Reference<br>Bezeichnung | K ISO | L | d1 | D | | | | kg |
|---|---|---|---|---|---|---|---|---|
| 20.353.30.16 | 30 | 65 | 2-16 | 43 | 43316 | 50116 | 19216 | 0,650 |
| 20.353.30.25 | 30 | 70 | 3-25 | 60 | 43325 | 50125 | 19216 | 0,830 |
| 20.353.40.16 | 40 | 70 | 2-16 | 43 | 43316 | 50116 | 19216 | 1,210 |
| 20.353.40.16/120 | 40 | 120 | 2-16 | 43 | 43316 | 50116 | 19216 | 1,580 |
| 20.353.40.25 | 40 | 70 | 3-25 | 60 | 43325 | 50125 | 19224 | 1,320 |
| 20.353.40.25/120 | 40 | 120 | 3-25 | 60 | 43325 | 50125 | 19224 | 1,880 |
| 20.353.40.32 | 40 | 90 | 4-32 | 72 | 43332 | 50132 | 19224 | 1,790 |
| 20.353.50.16 | 50 | 70 | 2-16 | 43 | 43316 | 50116 | 19216 | 3,850 |
| 20.353.50.16/120 | 50 | 120 | 2-16 | 43 | 43316 | 50116 | 19216 | 4,170 |
| 20.353.50.25 | 50 | 85 | 3-25 | 60 | 43325 | 50125 | 19224 | 4,100 |
| 20.353.50.25/140 | 50 | 140 | 3-25 | 60 | 43325 | 50125 | 19224 | 4,980 |
| 20.353.50.32 | 50 | 90 | 4-32 | 72 | 43332 | 50132 | 19230 | 4,220 |

## BXX

I206-208

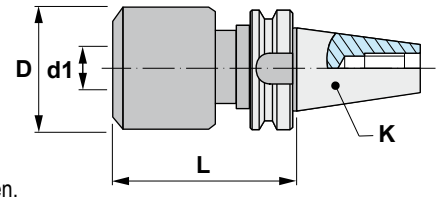
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| BXX | Collets with double slot DIN 6388 - Form B |
| | Spannzangen mit Doppelnut DIN 6388 - Form B |





Characteristics:
Strong hold collet chuck for cylindrical collets.
JIS B 6339-BT

Eigenschaften:
Kraftspannfutter für zylindrische Spannzangen.
JIS B 6339-BT

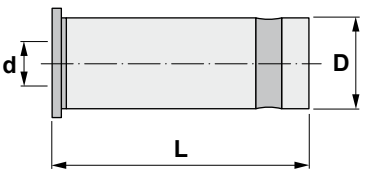



# 20.400

| Reference Bezeichnung | K ISO | L | d1 | D | Kg |
|---|---|---|---|---|---|
| 20.400.40.20 | 40 | 105 | 20 | 54 | 1,950 |
| 20.400.40.32 | 40 | 105 | 32 | 72 | 2,550 |
| 20.400.50.20 | 50 | 105 | 20 | 54 | 3,850 |
| 20.400.50.32 | 50 | 105 | 32 | 72 | 4,450 |

## Complements (collets type C) / Zubehör (Spannzangen typ C)

| Reference / Bezeichnung | d | D | L |
|---|---|---|---|
| C2006 | 6 | 20 | 55 |
| C2008 | 8 | 20 | 55 |
| C2010 | 10 | 20 | 55 |
| C2012 | 12 | 20 | 55 |
| C2016 | 16 | 20 | 55 |
| C3206 | 6 | 32 | 65 |
| C3208 | 8 | 32 | 65 |
| C3210 | 10 | 32 | 65 |
| C3212 | 12 | 32 | 65 |
| C3216 | 16 | 32 | 65 |
| C3220 | 20 | 32 | 65 |
| C3225 | 25 | 32 | 65 |








Characteristics:
Set of strong hold milling chuck and collets.
JIS B 6339-BT

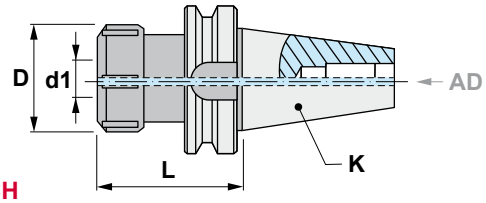
Eigenschaften:
Satz mit Kraftspannfutter und Spannzangen.
JIS B 6339-BT

# SET-C20/32

| Reference<br>Bezeichnung | JIS | Composition<br>Bestehend aus | Kg |
|---|---|---|---|
| SET-20.40.C20 | JIS B 6339-BT | 1 x 20.400.40.20 + 5 collets / Spannzangen | 4,500 |
| SET-20.40.C32 | JIS B 6339-BT | 1 x 20.400.40.32 + 7 collets / Spannzangen | 6,800 |
| SET-20.50.C32 | JIS B 6339-BT | 1 x 20.400.50.32 + 7 collets / Spannzangen | 9,300 |



Characteristics:
Collet chucks for DIN 6499 (ER) collets.
JIS B 6339-BT
For tools with cylindrical shank
DIN 1835-B.
* Ball bearing nut, see page: I221
*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Spannzangenfutter für Spannzangen
DIN 6499 (ER).
JIS B 6339-BT
Für Werkzeuge mit zylindrischem Schaft
DIN 1835-B.
* Für Kugellager-Mutter, siehe Seite: I221
*** LIEFERUNG OHNE SCHLÜSSEL**

# 20.453

| Reference<br>Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 20.453.30.16 | 30 | ER16 | 55 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 0,490 |
| 20.453.30.20 | 30 | ER20 | 55 | 1-13 | 35 | 45320 | 50220 | 19212 | 0,490 |
| 20.453.30.25 | 30 | ER25 | 55 | 1-16 | 42 | 45325 | 50225 | 19216 | 0,520 |
| 20.453.30.32 | 30 | ER32 | 60 | 2-20 | 50 | 45332 | 50232 | 19218 | 0,580 |
| 20.453.40.16 | 40 | ER16 | 70 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 1,130 |
| 20.453.40.16/100 | 40 | ER16 | 100 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 1,230 |
| 20.453.40.16/150 | 40 | ER16 | 150 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 1,400 |
| 20.453.40.20 | 40 | ER20 | 70 | 1-13 | 35 | 45320 | 50220 | 19212 | 1,120 |
| 20.453.40.20/100 | 40 | ER20 | 100 | 1-13 | 35 | 45320 | 50220 | 19212 | 1,320 |
| 20.453.40.20/150 | 40 | ER20 | 150 | 1-13 | 35 | 45320 | 50220 | 19212 | 1,550 |
| 20.453.40.25 | 40 | ER25 | 70 | 1-16 | 42 | 45325 | 50225 | 19216 | 1,200 |
| 20.453.40.25/100 | 40 | ER25 | 100 | 1-16 | 42 | 45325 | 50225 | 19216 | 1,690 |
| 20.453.40.25/150 | 40 | ER25 | 150 | 1-16 | 42 | 45325 | 50225 | 19216 | 1,790 |
| 20.453.40.32 | 40 | ER32 | 70 | 2-20 | 50 | 45332 | 50232 | 19222 | 1,230 |
| 20.453.40.32/100 | 40 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 19222 | 2,090 |
| 20.453.40.32/150 | 40 | ER32 | 150 | 2-20 | 50 | 45332 | 50232 | 19222 | 2,180 |
| 20.453.40.40 | 40 | ER40 | 70 | 3-30 | 63 | 45340 | 50240 | 19224 | 1,340 |
| 20.453.40.40/150 | 40 | ER40 | 150 | 3-30 | 63 | 45340 | 50240 | 19224 | 2,280 |
| 20.453.50.16/100 | 50 | ER16 | 100 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 3,840 |
| 20.453.50.16/150 | 50 | ER16 | 150 | 0,5-10 | 32 | 45316 | 50216 | 19210 | 4,080 |
| 20.453.50.20/100 | 50 | ER20 | 100 | 1-13 | 35 | 45320 | 50220 | 19212 | 3,950 |
| 20.453.50.20/150 | 50 | ER20 | 150 | 1-13 | 35 | 45320 | 50220 | 19212 | 4,060 |
| 20.453.50.25 | 50 | ER25 | 70 | 1-16 | 42 | 45325 | 50225 | 19216 | 3,830 |
| 20.453.50.25/150 | 50 | ER25 | 150 | 1-16 | 42 | 45325 | 50225 | 19216 | 4,360 |
| 20.453.50.32 | 50 | ER32 | 70 | 2-20 | 50 | 45332 | 50232 | 19222 | 3,850 |
| 20.453.50.32/100 | 50 | ER32 | 100 | 2-20 | 50 | 45332 | 50232 | 19222 | 4,660 |
| 20.453.50.32/150 | 50 | ER32 | 150 | 2-20 | 50 | 45332 | 50232 | 19222 | 4,530 |
| 20.453.50.40 | 50 | ER40 | 80 | 3-30 | 63 | 45340 | 50240 | 19224 | 4,060 |
| 20.453.50.40/150 | 50 | ER40 | 150 | 3-30 | 63 | 45340 | 50240 | 19224 | 5,240 |
| 20.453.50.50 | 50 | ER50 | 90 | 10-34 | 78 | 45350 | 50250 | 19230 | 4,290 |

**ERXX** I210-212
**Reference / Bez.**
ERXX



**ERCXX** I215-216
**Reference / Bez.**
ERCXX



**ERTXX** I217-218
**Reference / Bez.**
ERTXX



**40.453..** I180
**Reference / Bez.**
40.453..

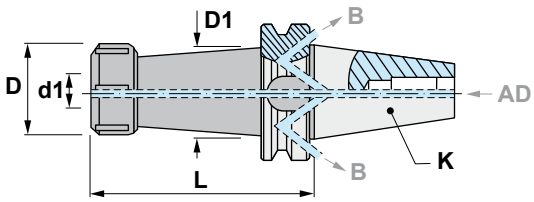


**40.455..** I181
**Reference / Bez.**
40.455..





Characteristics:
Collet chucks for DIN 6499 (ER) collets. JIS B 6339-BT
For tools with cylindrical shank DIN 1835-B.
Similar to DIN 69871 - Form AD+B
* Ball bearing nut, see page: I221




*** SUPPLIED WITHOUT WRENCH**

Eigenschaften:
Spannzangenfutter für Spannzangen DIN 6499 (ER). JIS B 6339-BT.
Für Werkzeuge mit zylindrischem Schaft DIN 1835-B.
Ähnlich wie DIN 69871 - Form AD+B
* Für Kugellager-Mutter, siehe Seite: I221

*** LIEFERUNG OHNE SCHLÜSSEL**

# 23.453

| Reference Bezeichnung | K ISO | | L | d1 | D | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 23.453.40.16 | 40 | ER16 | 70 | 0,5-10 | 32 | - | 45316 | 50216 | 19210 | 1,140 |
| 23.453.40.16/100 | 40 | ER16 | 100 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 1,310 |
| 23.453.40.16/150 | 40 | ER16 | 150 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 1,390 |
| 23.453.40.20 | 40 | ER20 | 70 | 1-13 | 35 | - | 45320 | 50220 | 19212 | 1,140 |
| 23.453.40.20/100 | 40 | ER20 | 100 | 1-13 | 35 | 34 | 45320 | 50220 | 19212 | 1,480 |
| 23.453.40.20/150 | 40 | ER20 | 150 | 1-13 | 35 | 34 | 45320 | 50220 | 19212 | 1,520 |
| 23.453.40.25 | 40 | ER25 | 70 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 1,200 |
| 23.453.40.25/150 | 40 | ER25 | 150 | 1-16 | 42 | 42 | 45325 | 50225 | 19216 | 1,850 |
| 23.453.40.32 | 40 | ER32 | 70 | 2-20 | 50 | - | 45332 | 50232 | 19222 | 1,230 |
| 23.453.40.32/150 | 40 | ER32 | 150 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 2,100 |
| 23.453.40.40 | 40 | ER40 | 70 | 3-30 | 63 | - | 45340 | 50240 | 19224 | 1,340 |
| 23.453.40.40/150 | 40 | ER40 | 150 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 2,430 |
| 23.453.50.16/100 | 50 | ER16 | 100 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 3,870 |
| 23.453.50.16/150 | 50 | ER16 | 150 | 0,5-10 | 32 | 28 | 45316 | 50216 | 19210 | 4,170 |
| 23.453.50.20/100 | 50 | ER20 | 100 | 1-13 | 35 | 28 | 45320 | 50220 | 19212 | 3,910 |
| 23.453.50.20/150 | 50 | ER20 | 150 | 1-13 | 35 | 28 | 45320 | 50220 | 19212 | 4,360 |
| 23.453.50.25 | 50 | ER25 | 70 | 1-16 | 42 | - | 45325 | 50225 | 19216 | 3,810 |
| 23.453.50.25/150 | 50 | ER25 | 150 | 1-16 | 42 | 42 | 45325 | 50225 | 19216 | 4,320 |
| 23.453.50.32 | 50 | ER32 | 70 | 2-20 | 50 | - | 45332 | 50232 | 19222 | 3,810 |
| 23.453.50.32/100 | 50 | ER32 | 100 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 4,660 |
| 23.453.50.32/150 | 50 | ER32 | 150 | 2-20 | 50 | 50 | 45332 | 50232 | 19222 | 5,190 |
| 23.453.50.40 | 50 | ER40 | 80 | 3-30 | 63 | - | 45340 | 50240 | 19224 | 3,950 |
| 23.453.50.40/150 | 50 | ER40 | 150 | 3-30 | 63 | 63 | 45340 | 50240 | 19224 | 5,180 |
| 23.453.50.50 | 50 | ER50 | 90 | 10-34 | 78 | - | 45350 | 50250 | 19230 | 4,230 |

**ERXX** I210-212
Reference / Bez.
ERXX



**ERCXX** I215-216
Reference / Bez.
ERCXX



**ERTXX** I217-218
Reference / Bez.
ERTXX



**40.453..** I180
Reference / Bez.
40.453..

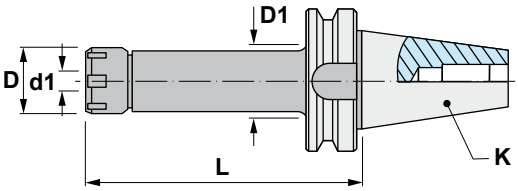


**40.455..** I181
Reference / Bez.
40.455..





Characteristics:
Long collet chuck for DIN 6499 (ER) collets.
JIS B 6339-BT
For tools with cylindrical shank.
With “mini” collet nut.




*** SUPPLIED WITHOUT WRENCH**

Eigenschaften:
Lange Spannzangenfutter für Spannzangen DIN 6499 (ER).
JIS B 6339-BT
Für Werkzeuge mit zylindrischem Schaft.
Mit “Mini”-Spannmutter.

*** LIEFERUNG OHNE SCHLÜSSEL**

# 20.455

| Reference Bezeichnung | K ISO | | L | d1 | D | D1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 20.455.40.16/100 | 40 | ER16 | 100 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,230 |
| 20.455.40.16/130 | 40 | ER16 | 130 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,310 |
| 20.455.40.16/160 | 40 | ER16 | 160 | 0,5-10 | 22 | 22 | 45516 | 50916 | 19210 | 1,390 |
| 20.455.40.20/100 | 40 | ER20 | 100 | 1-13 | 28 | 28 | 45520 | 50920 | 19212 | 1,350 |
| 20.455.40.20/160 | 40 | ER20 | 160 | 1-13 | 28 | 28 | 45520 | 50920 | 19212 | 1,580 |
| 20.455.40.25/100 | 40 | ER25 | 100 | 1-16 | 35 | 35 | 45525 | 50925 | 19216 | 1,600 |
| 20.455.40.25/160 | 40 | ER25 | 160 | 1-16 | 35 | 35 | 45525 | 50925 | 19216 | 1,990 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER) |
| | Spannzangen DIN 6499 - Form Mexin (ER) |



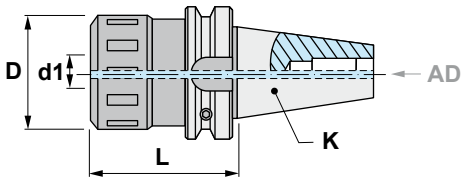


Characteristics:
Mechanical collet chuck with high tightening torque and precision.
JIS B 6339-BT
For DIN 6499 (ER) collets.
The alternative to hydraulic or other systems. With central coolant supply.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
Mechanisches Spannzangenfutter mit hohem Anzugsmoment.
JIS B 6339-BT
Für Spannzangen DIN 6499 (ER).
Die Alternative zu hydraulischen und anderen Systemen. Mit Innenkühlung.

*** LIEFERUNG MIT SCHLÜSSEL**




# 20.457

| Reference Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 20.457.40.32 | 40 | ER32 | 80 | 2-20 | 54 | 45732 | 50704 | 19006 | 1,420 |
| 20.457.50.32 | 50 | ER32 | 110 | 2-20 | 54 | 45732 | 50704 | 19006 | 4,610 |
| 20.457.50.40 | 50 | ER40 | 120 | 3-30 | 65 | 45740 | 50706 | 19010 | 5,500 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |



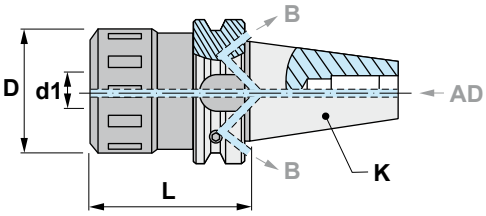


Characteristics:
Mechanical collet chuck with high tightening torque and precision.
JIS B 6339-BT
For DIN 6499 (ER) collets.
The alternative to hydraulic or other systems. With central coolant supply.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
Mechanisches Spannzangenfutter mit hohem Anzugsmoment.
JIS B 6339-BT
Für Spannzangen DIN 6499 (ER).
Die Alternative zu hydraulischen und anderen Systemen. Mit Innenkühlung.

*** LIEFERUNG MIT SCHLÜSSEL**




# 23.457

| Reference Bezeichnung | K ISO | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 23.457.40.32 | 40 | ER32 | 80 | 2-20 | 54 | 45732 | 50704 | 19006 | 1,750 |
| 23.457.50.32 | 50 | ER32 | 110 | 2-20 | 54 | 45732 | 50704 | 19006 | 4,380 |
| 23.457.50.40 | 50 | ER40 | 120 | 3-30 | 65 | 45740 | 50706 | 19010 | 5,470 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

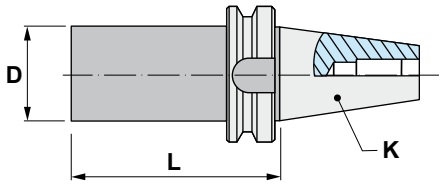
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |





Characteristics:
Blank adaptors.
JIS B 6339-BT

Eigenschaften:
Rohlinge.
JIS B 6339-BT



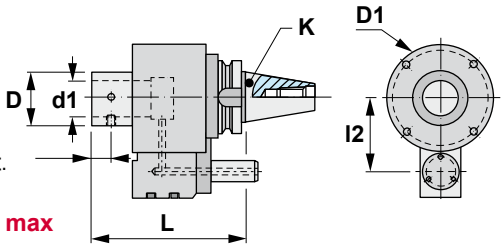

# 20.470

| Reference<br>Bezeichnung | K ISO | D | L | Kg |
|---|---|---|---|---|
| 20.470.30.40 | 30 | 40,5 | 160 | 2,170 |
| 20.470.40.63/250 | 40 | 63,5 | 250 | 6,570 |
| 20.470.50.95/315 | 50 | 95,5 | 315 | 19,000 |



Characteristics:
Cooling fluid supply unit.
JIS B 6339-BT similar to DIN 6359
For tools with cylindrical shank
DIN 1835-B/E.
* Other sizes are manufactured on request.

**rpm max 4.000 min. -1 ¤ 25 bar max**




Eigenschaften:
Drehverteiler für Innenkühlung.
JIS B 6339-BT ähnlich wie DIN 6359.
Für Werkzeuge mit zylindrischem
Schaft DIN 1835-B/E.
* Andere Größen werden auf Anfrage hergestellt.

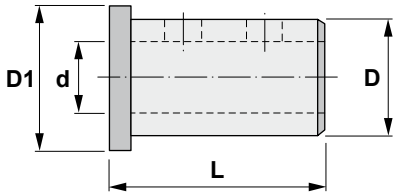
# 20.512

| Reference Bezeichnung | K ISO | d1 G6 | L | D | D1 | I1 | I2* | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 20.512.40.25 | 40 | 25 | 152 | 45 | 95 | 15 | 65 | 14116 | 5,780 |
| 20.512.40.32 | 40 | 32 | 152 | 48 | 95 | 16 | 65 | 14116 | 5,640 |
| 20.512.50.32 | 50 | 32 | 152 | 48 | 110 | 16 | 80 | 14116 | 8,100 |
| 20.512.50.40 | 50 | 40 | 166 | 58 | 110 | 17 | 80 | 14116 | 8,140 |

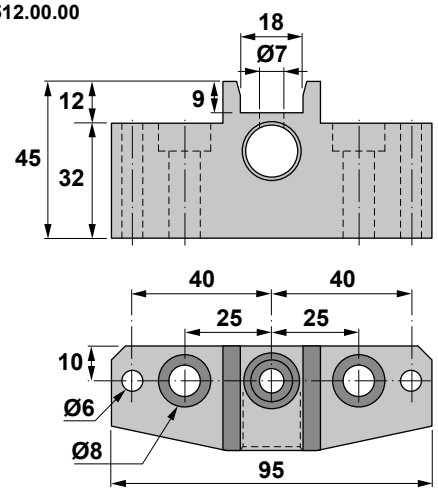
## Complements of 512 group / Zubehör von gruppe 512

| Reference / Bezeichnung | D | d | D1 | L |
|---|---|---|---|---|
| 512.25.16 | 25 | 16 | 33 | 60 |
| 512.25.20 | | 20 | 33 | 60 |
| 512.32.16 | 32 | 16 | 40 | 60 |
| 512.32.20 | | 20 | 40 | 60 |
| 512.32.25 | | 25 | 40 | 60 |
| 512.40.16 | 40 | 16 | 48 | 60 |
| 512.40.20 | | 20 | 48 | 60 |
| 512.40.25 | | 25 | 48 | 60 |
| 512.40.32 | | 32 | 48 | 60 |
| | | | | |
| 512.00.00 | | | | |

512..

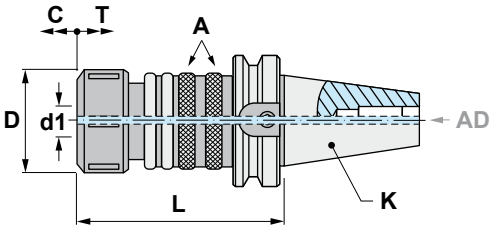



512.00.00





Characteristics:
Tapping head with axial compensation.
JIS B 6339-BT
For DIN 6499 (ER) collets and with central coolant supply.
Compensation in compression (C) and tension (T). Compression can be blocked by turning the rear ring (A). Control of threading depth.




*** SUPPLIED WITH WRENCH**

Eigenschaften:
Gewindeschneidfutter mit Längenausgleich JIS B 6339-BT.
Befestigung mit Spannzangen 6499 (ER) und mit Innenkühlung.
Ausgleich der Kompression (C) und der Traktion (T). Die Kompression kann mit dem Ring (A) blockiert werden. Kontrolle der Gewindetiefe.

*** LIEFERUNG MIT SCHLÜSSEL**

# 20.610

| Reference Bezeichnung | K ISO | | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 20.610.30.16 | 30 | ER16 | M3-M12 | 99 | 28 | 5,5 | 6,0 | 45316 | 50216 | 0,580 |
| 20.610.40.16 | 40 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 1,560 |
| 20.610.40.25 | 40 | ER25 | M4-M20 | 125 | 42 | 10,5 | 7,5 | 45325 | 50225 | 2,170 |
| 20.610.40.40 | 40 | ER40 | M8-M33 | 141 | 63 | 10,0 | 10,0 | 45340 | 50240 | 3,440 |
| 20.610.50.16 | 50 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 4,230 |
| 20.610.50.25 | 50 | ER25 | M4-M20 | 134 | 42 | 10,5 | 7,5 | 45325 | 50225 | 4,960 |
| 20.610.50.40 | 50 | ER40 | M8-M33 | 150 | 63 | 10,0 | 10,0 | 45340 | 50240 | 6,230 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER) |
| | Spannzangen DIN 6499 - Form Mexin (ER) |



## 40.453..

I180

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.453.. | Collet chucks for DIN 6499 (ER) collets |
| | Spannzangenfutter für DIN 6499 (ER) Spannzangen |



## 40.455..

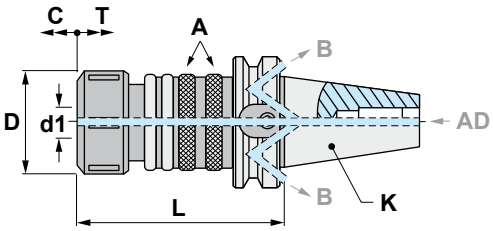
I181

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.455.. | Long collet chucks for DIN 6499 (ER) collets |
| | Lange Spannzangenfutter für DIN 6499 (ER) Spannzangen |





Characteristics:
Tapping head with axial compensation.
JIS B 6339-BT
For DIN 6499 (ER) collets and with central coolant supply.
Compensation in compression (C) and tension (T). Compression can be blocked by turning the rear ring (A). Control of threading depth.




*** SUPPLIED WITH WRENCH**

Eigenschaften:
Gewindeschneidfutter mit Längenausgleich JIS B 6339-BT.
Befestigung mit Spannzangen 6499 (ER) und mit Innenkühlung.
Ausgleich der Kompression (C) und der Traktion (T). Die Kompression kann mit dem Ring (A) blockiert werden. Kontrolle der Gewindetiefe.

*** LIEFERUNG MIT SCHLÜSSEL**

# 23.610

| Reference Bezeichnung | K ISO | | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 23.610.40.16 | 40 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 1,540 |
| 23.610.40.25 | 40 | ER25 | M4-M20 | 125 | 42 | 10,5 | 7,5 | 45325 | 50225 | 2,170 |
| 23.610.40.40 | 40 | ER40 | M8-M33 | 141 | 63 | 10,0 | 10,0 | 45340 | 50240 | 3,440 |
| 23.610.50.16 | 50 | ER16 | M3-M12 | 100 | 28 | 5,5 | 6,0 | 45316 | 50216 | 4,300 |
| 23.610.50.25 | 50 | ER25 | M4-M20 | 134 | 42 | 10,5 | 7,5 | 45325 | 50225 | 4,960 |
| 23.610.50.40 | 50 | ER40 | M8-M33 | 150 | 63 | 10,0 | 10,0 | 45340 | 50240 | 6,230 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |



## 40.453..

I180

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.453.. | Collet chucks for DIN 6499 (ER) collets<br>Spannzangenfutter für DIN 6499 (ER) Spannzangen |



## 40.455..

I181

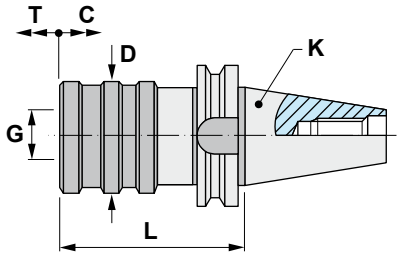
| Ref . / Bez. | Accessories / Zubehör |
|---|---|
| 40.455.. | Long collet chucks for DIN 6499 (ER) collets<br>Lange Spannzangenfutter für DIN 6499 (ER) Spannzangen |





Characteristics:
Quick change tapping head with axial compensation.
JIS B 6339-BT
With Bilz system tap chuck bushings.

Compensation in compression (C) and tension (T).




Eigenschaften:
Gewindeschneid-Schnellwechselfutter mit Längenausgleich.
JIS B 6339-BT
Mit Schnellwechseleinsätze Bilz-System.

Ausgleich der Kompression (C) und der Traktion (T).

# 20.620

| Reference Bezeichnung | K ISO | G Nº. Ø | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 20.620.30.12 | 30 | 1 19 | M3-M12 | 63 | 38 | 9 | 9 | 710XX | 750XX | 1,000 |
| 20.620.40.12 | 40 | 1 19 | M3-M12 | 68 | 38 | 9 | 9 | 710XX | 750XX | 1,220 |
| 20.620.40.20 | 40 | 2 31 | M8-M20 | 93 | 55 | 15 | 15 | 720XX | 760XX | 1,700 |
| 20.620.40.33 | 40 | 3 48 | M14-M33 | 138 | 79 | 24 | 24 | 730XX | 770XX | 3,710 |
| 20.620.50.12 | 50 | 1 19 | M3-M12 | 80 | 38 | 9 | 9 | 710XX | 750XX | 3,940 |
| 20.620.50.20 | 50 | 2 31 | M8-M20 | 102 | 55 | 15 | 15 | 720XX | 760XX | 4,420 |
| 20.620.50.33 | 50 | 3 48 | M14-M33 | 135 | 79 | 24 | 24 | 730XX | 770XX | 5,630 |

## 710XX..730XX

I202

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch |
| | Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch |
| | Schnellwechseleinsätze mit Sicherheitskupplung |



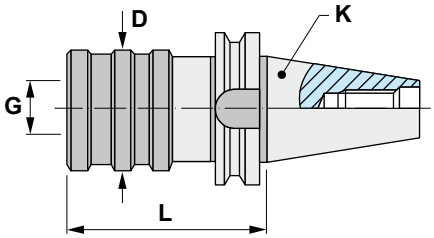


Characteristics:
Quick change tapping head for rigid tapping.
With Bilz system tap chuck bushings.

With central coolant.

Eigenschaften:
Gewindeschneid-Schnellwechselfutter ohne Längenausgleich.
JIS B 6339-BT
Mit Schnellwechseleinsätze Bilz-System.

Mit Innenkühlung.




# 20.630

| Reference Bezeichnung | K ISO | G N°. | G Ø | d1 | L | D | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 20.630.30.12 | 30 | 1 | 19 | M3-M12 | 60 | 33 | 710XX | 750XX | 1,000 |
| 20.630.40.12 | 40 | 1 | 19 | M3-M12 | 67 | 33 | 710XX | 750XX | 1,170 |
| 20.630.40.20 | 40 | 2 | 31 | M8-M20 | 90 | 50 | 720XX | 760XX | 1,620 |
| 20.630.40.33 | 40 | 3 | 48 | M14-M33 | 117 | 72 | 730XX | 770XX | 2,000 |
| 20.630.50.12 | 50 | 1 | 19 | M3-M12 | 78 | 33 | 710XX | 750XX | 4,600 |
| 20.630.50.20 | 50 | 2 | 31 | M8-M20 | 101 | 50 | 720XX | 760XX | 4,600 |
| 20.630.50.33 | 50 | 3 | 48 | M14-M33 | 125 | 72 | 730XX | 770XX | 5,000 |

## 710XX..730XX

I202

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch<br>Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

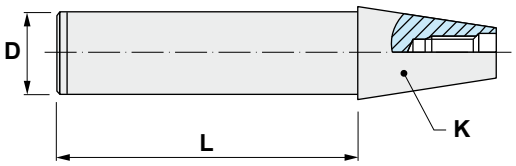
| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch<br>Schnellwechseleinsätze mit Sicherheitskupplung |





Characteristics:
Test arbors.
JIS B 6339-BT

Eigenschaften:
Prüfdorne.
JIS B 6339-BT




# 20.999

| Reference<br>Bezeichnung | K ISO | L | D | Kg |
|---|---|---|---|---|
| 20.999.30 | 30 | 300 | 32 | 2,160 |
| 20.999.40 | 40 | 300 | 40 | 3,710 |
| 20.999.50 | 50 | 300 | 50 | 7,780 |

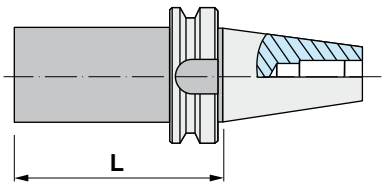
## 1 TYPE / TYP

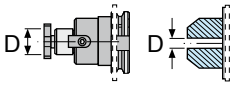
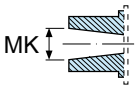
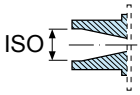
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 20.160 | 20.165 | 20.180 | 20.210 | 20.215 | 20.216 | 20.225 | 20.226 | 20.290 |
| 20.295 | 20.296 | 20.300 | 20.302 | 20.305 | 20.353 | 20.400 | 20.453 | 20.455 |
| 20.457 | 20.470 | 20.512 | 20.610 | 20.620 | 20.630 | A20.160 | A20.160 | A20.315 |
| 23.160 | 23.210 | 23.215 | 23.296 | 23.300 | 23.302 | 23.306 | 23.307 | 23.315 |
| 23.453 | 23.457 | 23.610 | | | | | | |

## 2 DIMENSION / ABMESSUNGEN

| | | | |
|---|---|---|---|
| **30** | **40** | **50** | **60** |

## 3 LENGTH / LÄNGE (L)




| Ø DIAMETER / DURCHMESSER | MK | ISO | COLLET SPANNZANGEN |
|---|---|---|---|
|   |   |   | |
| | | | |

**NOTES / BEMERKUNGEN:**



# BORING HEADS
# BOHRKÖPFE

Code system / Kodifizierung — I148-151

Technical information / Technische Auskünfte — I152

Applications index / Anwendungen — I153

Adjustable boring bars / Verstellbare Bohrstangen — I154

Boring heads / Bohrköpfe — I155-163

Arbors for boring heads / Aufnahmen für Bohrköpfe — I164-170

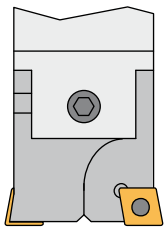
Sets / Sätze — I171

Special tool request / Sonderwerkzeug-Anfrage — I172

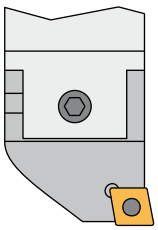
# Code system - Boring heads
# Kodifizierung - Bohrköpfe

| 63 | 12 | 2430 |
|---|---|---|
| 1 | 2 | 3 |

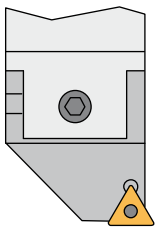
**1** *Holder style*
*Haltertyp*



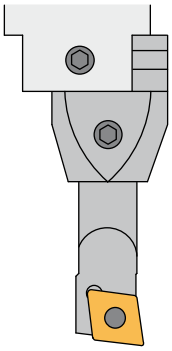
63



64

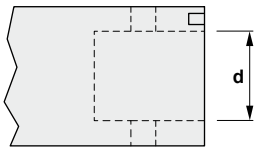


66



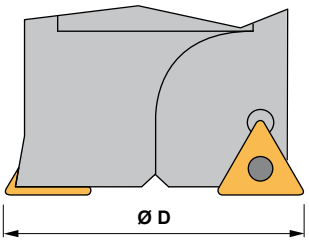
97

**2** *Adapter size, mm.*
*Adaptergröße, mm.*




| 12 | 15 | 20 | 24 | 28 | 36 | 50 | 60 |
|---|---|---|---|---|---|---|---|

**3** *Diameter (Min.-Max.), mm.*
*Durchmesser (Min.-Max.), mm.*

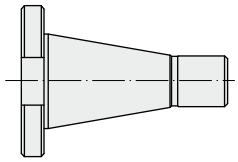


# Code system - Arbors for boring heads
# Kodifizierung - Aufnahmen für Bohrköpfe

| 10 | 700 | 30 | 12 | / | 100 |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | | 5 |

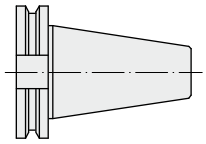
## 1 *Machining center / Modell*

DIN 2080



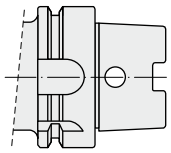
10

ISO 7388 DIN 69871/A



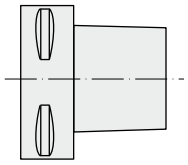
11

HSK DIN 69893-1



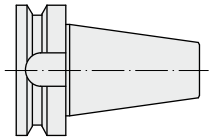
16

PSC ISO 26623-1



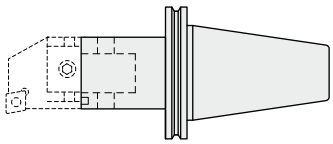
18

ISO JIS B 6339-BT



20

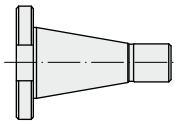
## 2 *Adapter type / Aufnahmen-Typ*



700

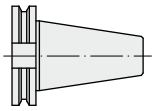
## 3 *Connection dimension / Aufnahmengröße*

ISO DIN 2080



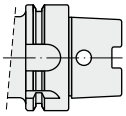
ISO 30 | ISO 40 | ISO 50
30 | 40 | 50

ISO 7388 DIN 69871/A



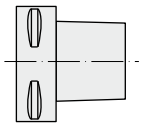
7388 30 | 7388 40 | 7388 50
30 | 40 | 50

HSK DIN 69893-1



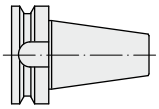
50 | 63 | 100

PSC ISO 26623-1



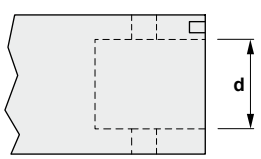
32 | 40 | 50 | 63 | 80 | 100

ISO JIS B 6339-BT



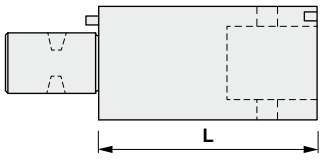
BT 30 | BT 40 | BT 50
30 | 40 | 50

## 4 *Adapter size, mm. / Adaptergröße, mm.*




12 | 15 | 20 | 24 | 28 | 36 | 50 | 60

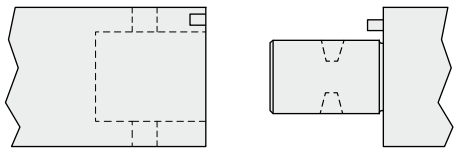
## 5 *Adapter length, mm. / Adapterlänge, mm.*



# Code system - Arbors for boring heads
# Kodifizierung - Aufnahmen für Bohrköpfe

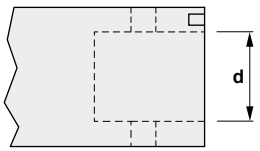
| 60 | 12 | 12 / | 20 |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

**1** *Adapter type*
*Aufnahmen-Typ*



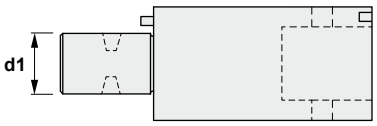
60

**2** *Adapter size, mm.*
*Adaptergröße, mm.*

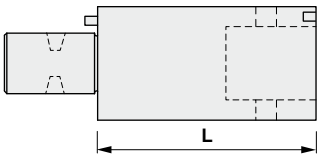



12 | 15 | 20 | 24 | 28 | 36 | 50 | 60

**3** *Shank diameter, mm.*
*Schaftdurchmesser, mm.*

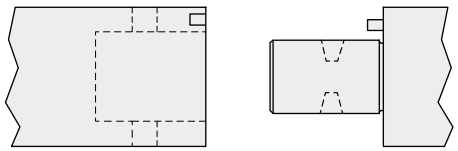



**4** *Adapter length, mm.*
*Adapterlänge, mm.*



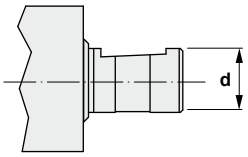

| 60 | 62 | 12 |
|---|---|---|
| 1 | 2 | 3 |

**1** *Adapter type*
*Aufnahmen-Typ*



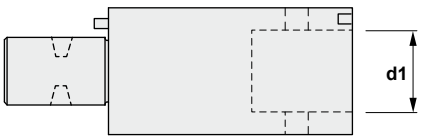
60

**2** *Shank diameter*
*Schaftdurchmesser*




62 | 63 | 64

**3** *Adapter size, mm.*
*Adaptergröße, mm.*




I

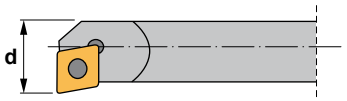
# Code system - Tools for boring heads
# Kodifizierung - Werkzeuge für Bohrköpfe

| S | 08 | 16 | F | S | C | L | C | R | 06 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

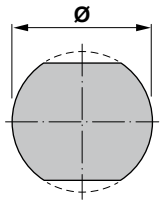
## 1 *Type of bar* *Schaft-Ausführung*

| | |
|---|---|
| A | Steel shank with coolant hole<br>Bohrstange aus Stahl mit Külhmittelzufuhr |
| S | Steel shank<br>Standard-Bohrstange aus Stahl |

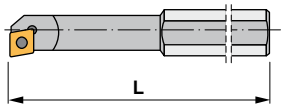
## 2 *Minimum diameter, mm.* *Minimum Durchmesser, mm.*




## 3 *Bar diameter, mm.* *Schaftdurchmesser, mm.*

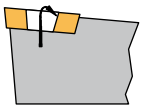



## 4 *Bar length, mm.* *Werkzeuglänge, mm.*




| 70 | 80 | 90 | 100 | 110 | 115 | Special |
|---|---|---|---|---|---|---|
| E | F | G | H | I | J | Sonderausführung X |

## 5 *Clamping method of insert* *Klemmsystem*



S

## 6 *Insert shape* *Wendeplatten-Form*




C

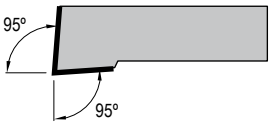


T

## 7 *Holder style* *Einstellwinkel*

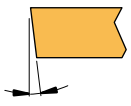



F

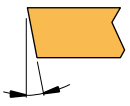



L

## 8 *Clearance angle of insert* *Wendeschneidplatten-Freiwinkel*

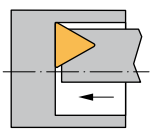



C

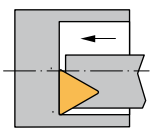



P

## 9 *Hand* *Bearbeitungsrichtung*

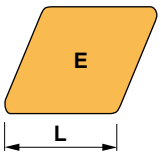


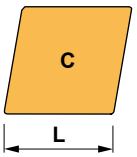
L

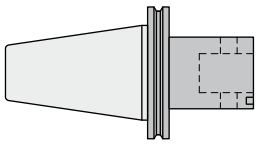


R

## 10 *Cutting edge length, mm.* *Schneidkantenlänge, mm.*



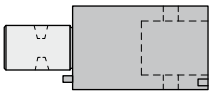





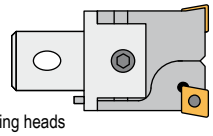
Arbors for boring heads
Aufnahmen für Bohrköpfe



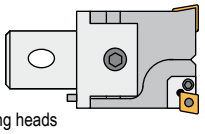
Arbors for boring heads
Aufnahmen für Bohrköpfe



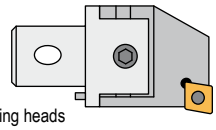
Arbors for boring heads
Aufnahmen für Bohrköpfe



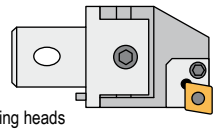
Roughing boring heads
Bohrköpfe zum Schruppen



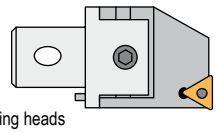
Roughing boring heads
Bohrköpfe zum Schruppen



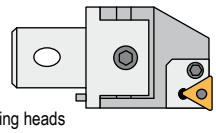
Finishing boring heads
Bohrköpfe zum Schlichten



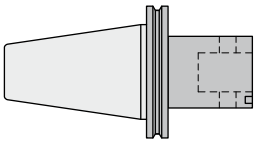
Finishing boring heads
Bohrköpfe zum Schlichten



Finishing boring heads
Bohrköpfe zum Schlichten



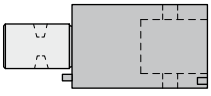
Finishing boring heads
Bohrköpfe zum Schlichten



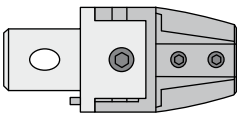
Arbors for boring heads
Aufnahmen für Bohrköpfe



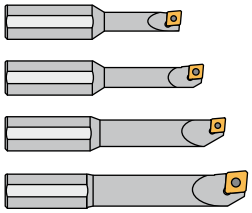
Arbors for boring heads
Aufnahmen für Bohrköpfe



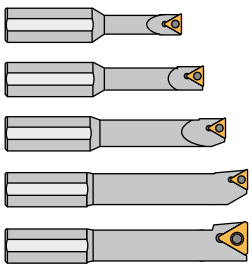
Arbors for boring heads
Aufnahmen für Bohrköpfe



Finishing boring heads
Bohrköpfe zum Schlichten



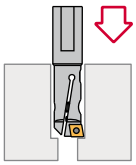
Tools for boring heads
Werkzeuge für Bohrköpfe



Tools for boring heads
Werkzeuge für Bohrköpfe

## *Adjustable boring bars*
## *Verstellbare Bohrstangen*

**6114.$^{0}_{2}$7**



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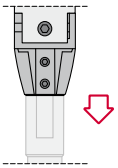
*Seite I154*

## *Boring heads*
## *Bohrköpfe*

**97.15/24**



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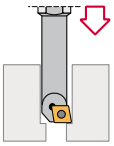
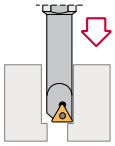
**SCLC**



*Page*
*Seite I156*
CC.. 0602..
CC.. 09T3..

**STFC**



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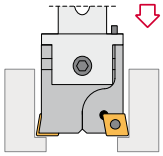
TC.. 0902..
TC.. 16T3..

**63.12/28**



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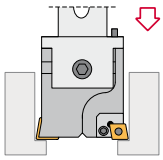
CC.. 0602..
CC.. 1204..

**63.36/60**



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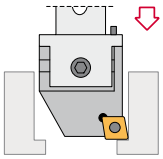
CC.. 1204..

**64.12/28**



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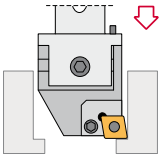
CC.. 0602..
CC.. 1204..

**64.36/60**



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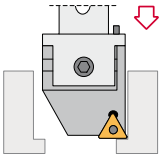
CC.. 1204..

**66.20/28**



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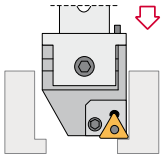
TC.. 16T3..

**66.36/60**



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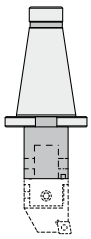
*Seite I163*
TC.. 16T3..

## *Arbors for boring heads*
## *Aufnahmen für Bohrköpfe*

**10.700**
DIN 2080



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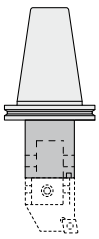
*Seite I164*

**11.700**
DIN 69871-A



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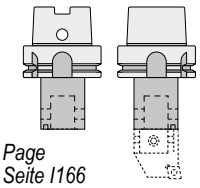
**16.700**
DIN 69893-1 / FORM A



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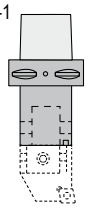
**18.700**
PSC ISO 26623-1



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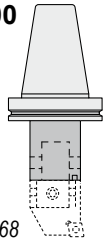
*Seite I167*

**20.700**
MAS BT



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*Seite I168*

**60.62/64**



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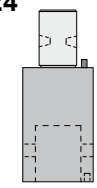
*Seite I169*

**60.12/24**



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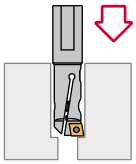
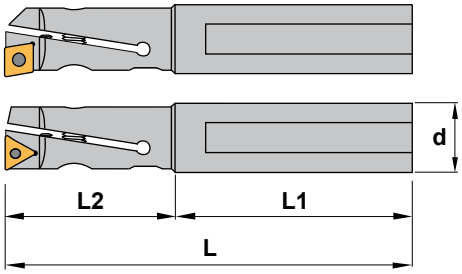
*Seite I170*



Characteristics:
Adjustable boring bars.

Eigenschaften:
Verstellbare Bohrstangen.






# 6114.$^{0}_{2}$7

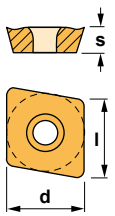
| Reference<br>Bezeichnung | L | L1 | L2 | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| 6114.07.012 | 105 | 70 | 35 | 12 | 12 | 15 | CC.. 0602.. | 0,080 |
| 6114.07.015 | 110 | 60 | 50 | 16 | 15 | 20 | CC.. 0602.. | 0,110 |
| 6114.07.020 | 120 | 60 | 60 | 20 | 20 | 25 | TC.. 1102.. | 0,160 |
| 6114.07.025 | 140 | 70 | 70 | 25 | 25 | 30 | TC.. 16T3.. | 0,280 |
| 6114.07.030 | 160 | 70 | 90 | 25 | 30 | 35 | TC.. 16T3.. | 0,360 |
| 6114.27.012 | 175 | 145 | 30 | 12 | 12 | 15 | CC.. 0602.. | 0,150 |
| 6114.27.015 | 175 | 125 | 50 | 16 | 15 | 20 | CC.. 0602.. | 0,260 |
| 6114.27.020 | 200 | 140 | 60 | 20 | 20 | 25 | TC.. 1102.. | 0,430 |
| 6114.27.025 | 200 | 130 | 70 | 25 | 25 | 30 | TC.. 16T3.. | 0,550 |
| 6114.27.030 | 200 | 110 | 90 | 25 | 30 | 35 | TC.. 16T3.. | 0,500 |

| Reference<br>Bezeichnung |  |  |  |  |  |  |  | Nm |
|---|---|---|---|---|---|---|---|---|
| 6114.07.012 | 1550 | 1503 | 1425 | - | 5015 | 5520 | 5507 | 0.9 |
| 6114.07.015 | 1261 | 1534 | 1425 | 1534 | 5002 | 5525 | 5507 | 0.9 |
| 6114.07.020 | 1182 | 1515 | 1225 | 1515 | 5025 | 5525 | 5507 | 0.9 |
| 6114.07.025 | 1908 | 1517 | 1240 | 1517 | 5025 / 5005 | - | 5515 | 3.0 |
| 6114.07.030 | 1910 | 1517 | 1240 | 1518 | 5025 / 5006 | - | 5515 | 3.0 |
| 6114.27.012 | 1550 | 1503 | 1425 | - | 5015 | 5520 | 5507 | 0.9 |
| 6114.27.015 | 1261 | 1534 | 1425 | 1534 | 5002 | 5525 | 5507 | 0.9 |
| 6114.27.020 | 1182 | 1515 | 1225 | 1515 | 5025 | 5525 | 5507 | 0.9 |
| 6114.27.025 | 1908 | 1517 | 1240 | 1517 | 5025 / 5005 | - | 5515 | 3.0 |
| 6114.27.030 | 1910 | 1517 | 1240 | 1518 | 5025 / 5006 | - | 5515 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° Rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |




CCGT-AL



CCMT



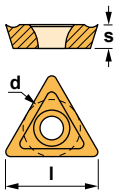
CCMW



## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT-39



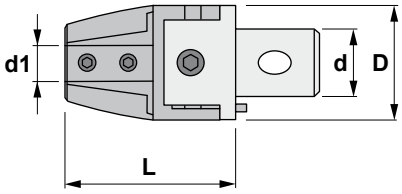
TCMW





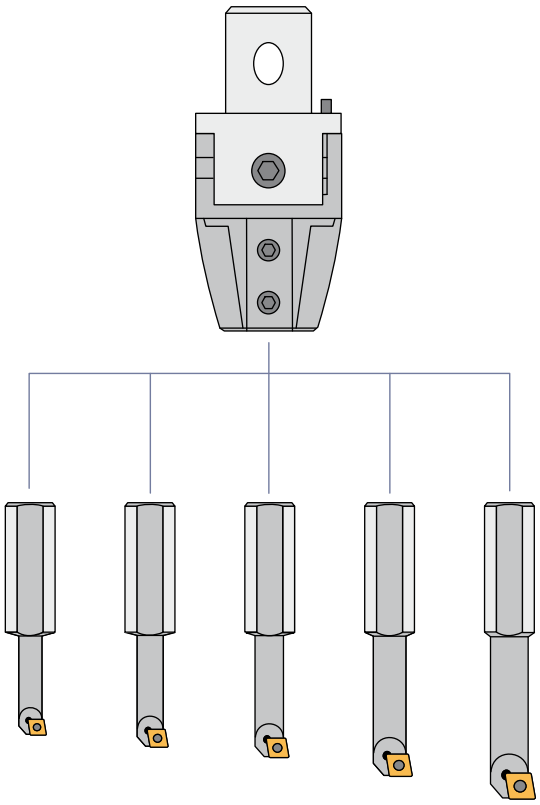
Characteristics:
Finishing boring heads.
With graduated dial.
Read-out precision 0,01 mm Ø.

Eigenschaften:
Bohrköpfe zum Schlichten.
Mit Einstellscheibe.
Ablesegenauigkeit 0,01 mm Ø.




# 97.15/24

| Reference<br>Bezeichnung | D | L | d | d1 | Dmin | Dmax | Kg |
|---|---|---|---|---|---|---|---|
| 97.15.08 | 27 | 50 | 15 | 8 | 10 | 21 | 0,170 |
| 97.20.08 | 32 | 58 | 20 | 8 | 10 | 21 | 0,280 |
| 97.20.10 | 32 | 58 | 20 | 10 | 13 | 25 | 0,290 |
| 97.24.10 | 42 | 70 | 24 | 10 | 13 | 29 | 0,650 |
| 97.24.12 | 42 | 70 | 24 | 12 | 16 | 34 | 0,620 |
| 97.24.16 | 42 | 70 | 24 | 16 | 20 | 38 | 0,600 |



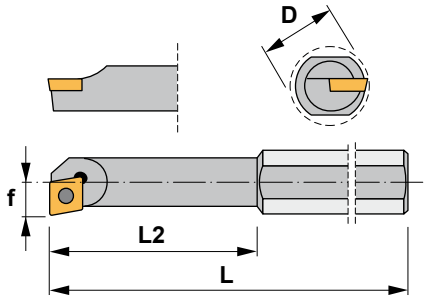
**SCLC / STFC**



Characteristics:

Tool for boring heads equipped with rhombic positive insert (angle 80°).

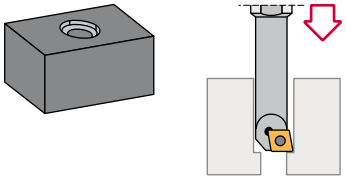
The center screw ensures good rigidity and chip flow.




Eigenschaften:

Bohrstange mit einer rhombischen positiven Wendeschneidplatte (80° Winkel).

Die zentrale Schraube garantiert eine gute Starrheit und einen guten Spanabfluß.



# SCLC

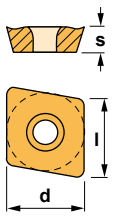
| Reference<br>Bezeichnung | D | L | L2 | f | Bore range<br>Bohrungsbereich<br>min | <br><br>max | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| S0816F SCLC R 06 | 16 | 80 | 35 | 4 | 10 | 28 | CC.. 0602.. | 0,070 |
| S1016G SCLC R 06 | 16 | 90 | 45 | 6 | 13 | 31 | CC.. 0602.. | 0,100 |
| S1216H SCLC R 06 | 16 | 100 | 57 | 7 | 16 | 34 | CC.. 0602.. | 0,100 |
| S1616I SCLC R 09 | 16 | 110 | 73 | 9 | 20 | 38 | CC.. 09T3.. | 0,150 |

| Reference<br>Bezeichnung |  |  | Nm |
|---|---|---|---|
| S0816F SCLC R 06 | 1425 | 5507 | 0.9 |
| S1016G SCLC R 06 | 1425 | 5507 | 0.9 |
| S1216H SCLC R 06 | 1425 | 5507 | 0.9 |
| S1616I SCLC R 09 | 1440 | 5515 | 3.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° Rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |




CCGT-AL



CCMT

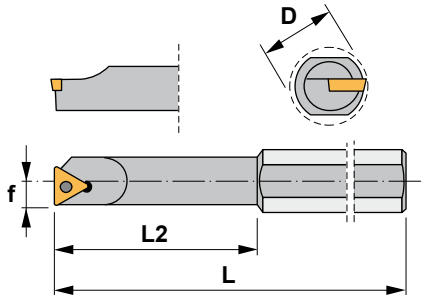


CCMW

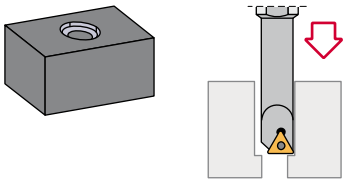




Characteristics:
Tool for boring heads equipped with triangular positive insert.
The center screw ensures good rigidity and chip flow.




Eigenschaften:
Bohrstange für Bohrköpfe mit dreieckigen positiven Wendeschneidplatten.
Die zentrale Schraube garantiert eine gute Starrheit und einen guten Spanabfluß.



# STFC

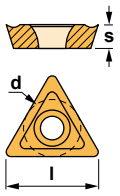
| Reference<br>Bezeichnung | D | L | L2 | f | Bore range<br>Bohrungsbereich<br>min | <br><br>max | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|---|
| S0816F STFC R 09 | 16 | 80 | 35 | 5 | 10 | 28 | TC.. 0902.. | 0,090 |
| S1016G STFC R 09 | 16 | 90 | 45 | 6 | 13 | 31 | TC.. 0902.. | 0,100 |
| S1216H STFC R 09 | 16 | 100 | 57 | 7 | 16 | 34 | TC.. 0902.. | 0,100 |
| S1616I STFC R 09 | 16 | 110 | 73 | 9 | 20 | 38 | TC.. 0902.. | 0,100 |
| S1616I STFC R 16 | 16 | 110 | 73 | 11 | 20 | 38 | TC.. 16T3.. | 0,150 |

| Reference<br>Bezeichnung |  |  | Nm |
|---|---|---|---|
| S0816F STFC R 09 | 1222 | 5506 | 0.6 |
| S1016G STFC R 09 | 1222 | 5506 | 0.6 |
| S1216H STFC R 09 | 1222 | 5506 | 0.6 |
| S1616I STFC R 09 | 1222 | 5506 | 0.6 |
| S1616I STFC R 16 | 1425 | 5515 | 3.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT-39

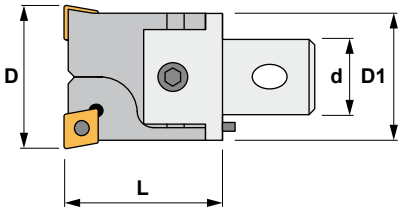


TCMW

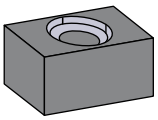


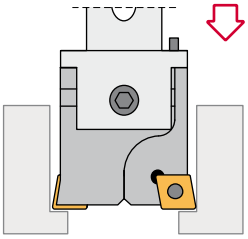


Characteristics:
Roughing boring heads.




Eigenschaften:
Bohrkopf zum Schruppen.





# 63.12/28

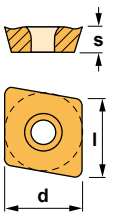
| Reference<br>Bezeichnung | D1 | L | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 63.12.2430 | 22 | 34 | 12 | 24 | 30 | CC.. 0602.. | 0,075 |
| 63.15.2940 | 27 | 42 | 15 | 29 | 40 | CC.. 09T3.. | 0,150 |
| 63.20.3950 | 32 | 45 | 20 | 39 | 50 | CC.. 09T3.. | 0,250 |
| 63.24.4965 | 42 | 56 | 24 | 49 | 65 | CC.. 1204.. | 0,500 |
| 63.28.6382 | 54 | 56 | 28 | 63 | 82 | CC.. 1204.. | 1,000 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 63.12.2430 | 1425 | 5607 | 5003 | 5002 | 0.9 |
| 63.15.2940 | 1240 | 5615 | 5004 | 5002 | 3.0 |
| 63.20.3950 | 1240 | 5615 | 5004 | 5025 | 3.0 |
| 63.24.4965 | 1250 | 5620 | 5005 | 5003 | 4.0 |
| 63.28.6382 | 1250 | 5620 | 5006 | 5003 | 4.0 |

## CC..

80° rhombic positive inserts with 7° clearance.
80° Rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCMT

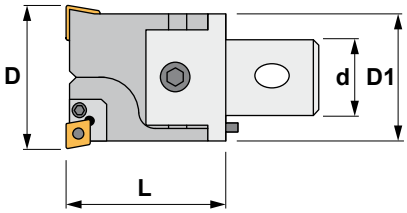


CCMW

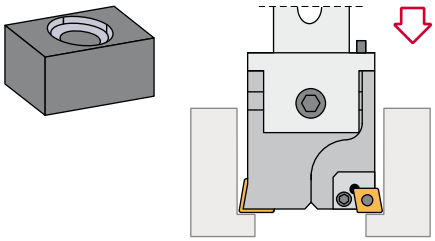




Characteristics:
Roughing boring heads.




Eigenschaften:
Bohrkopf zum Schruppen.



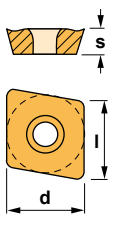
# 63.36/60

| Reference<br>Bezeichnung | D1 | L | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 63.36.080102 | 68 | 86 | 36 | 80 | 102 | CC.. 1204.. | 2,200 |
| 63.50.100125 | 85 | 100 | 50 | 100 | 125 | CC.. 1204.. | 4,000 |
| 63.60.125160 | 110 | 100 | 60 | 125 | 160 | CC.. 1204.. | 6,550 |
| 63.60.160220 | 145 | 100 | 60 | 160 | 220 | CC.. 1204.. | 8,700 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| 63.36.080102 | 1250 | 5620 | 5508 | 5004 | 6412 | 4.0 |
| 63.50.100125 | 1250 | 5620 | 5508 | 5005 | 6412 | 4.0 |
| 63.60.125160 | 1250 | 5620 | 5508 | 5005 | 6412 | 4.0 |
| 63.60.160220 | 1250 | 5620 | 5508 | 5005 | 6412 | 4.0 |

**CC..** 80° rhombic positive inserts with 7° clearance.
80° Rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCMT

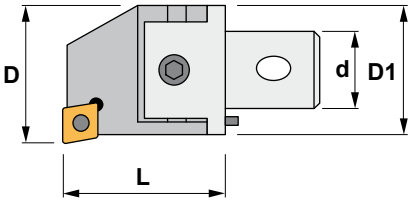


CCMW

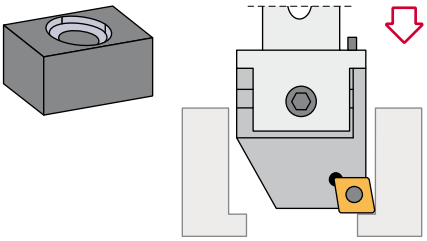




Characteristics:
Finishing boring heads.
With graduated dial.
Read-out precision 0,01 mm Ø.




Eigenschaften:
Bohrköpfe zum Schlichten.
Mit Einstellscheibe.
Ablesegenauigkeit 0,01 mm Ø.



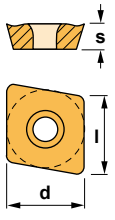
# 64.12/28

| Reference<br>Bezeichnung | D1 | L | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 64.12.2430 | 22 | 34 | 12 | 24 | 30 | CC.. 0602.. | 0,075 |
| 64.15.2940 | 27 | 42 | 15 | 29 | 40 | CC.. 09T3.. | 0,150 |
| 64.20.3950 | 32 | 45 | 20 | 39 | 50 | CC.. 09T3.. | 0,250 |
| 64.24.4965 | 42 | 56 | 24 | 49 | 65 | CC.. 1204.. | 0,450 |
| 64.28.6382 | 54 | 56 | 28 | 63 | 82 | CC.. 1204.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 64.12.2430 | 1425 | 5607 | 5003 | 5002 | 0.9 |
| 64.15.2940 | 1240 | 5615 | 5004 | 5002 | 3.0 |
| 64.20.3950 | 1240 | 5615 | 5004 | 5025 | 3.0 |
| 64.24.4965 | 1250 | 5620 | 5005 | 5003 | 4.0 |
| 64.28.6382 | 1250 | 5620 | 5006 | 5003 | 4.0 |

**CC..** 80° rhombic positive inserts with 7° clearance. 80° Rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCMT

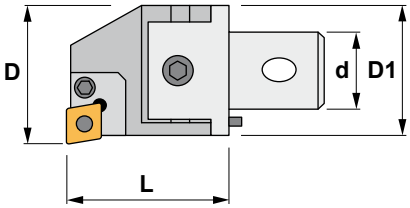


CCMW

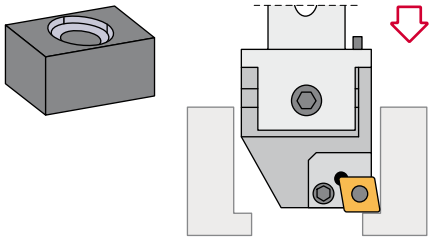




Characteristics:
Finishing boring heads.
With graduated dial.
Read-out precision 0,01 mm Ø.




Eigenschaften:
Bohrköpfe zum Schlichten.
Mit Einstellscheibe.
Ablesegenauigkeit 0,01 mm Ø.



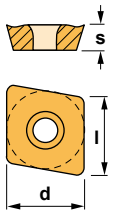
# 64.36/60

| Reference<br>Bezeichnung | D1 | L | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 64.36.080102 | 68 | 86 | 36 | 80 | 102 | CC.. 1204.. | 2,050 |
| 64.50.100125 | 85 | 100 | 50 | 100 | 125 | CC.. 1204.. | 3,700 |
| 64.60.125160 | 110 | 100 | 60 | 125 | 160 | CC.. 1204.. | 6,150 |
| 64.60.160220 | 145 | 100 | 60 | 160 | 220 | CC.. 1204.. | 8,050 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| 64.36.080102 | 1250 | 5620 | 5508 | 5004 | 6412 | 4.0 |
| 64.50.100125 | 1250 | 5620 | 5508 | 5005 | 6412 | 4.0 |
| 64.60.125160 | 1250 | 5620 | 5508 | 5005 | 6412 | 4.0 |
| 64.60.160220 | 1250 | 5620 | 5508 | 5005 | 6412 | 4.0 |

**CC..** 80° rhombic positive inserts with 7° clearance.
80° Rhombische positive Wendeschneidplatten mit 7° Freiwinkel. F12

| Reference / Bez. | l | s | d |
|---|---|---|---|
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |




CCGT-AL



CCMT

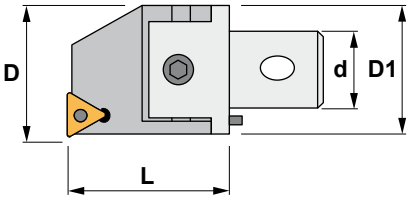


CCMW

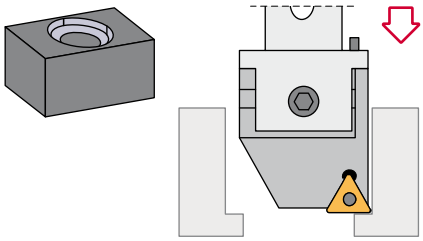




Characteristics:
Finishing boring heads.
With graduated dial.
Read-out precision 0,01 mm Ø.




Eigenschaften:
Bohrköpfe zum Schlichten.
Mit Einstellscheibe.
Ablesegenauigkeit 0,01 mm Ø.



# 66.20/28

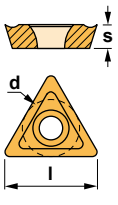
| Reference<br>Bezeichnung | D1 | L | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 66.20.3950 | 32 | 45 | 20 | 39 | 50 | TC.. 16T3.. | 0,250 |
| 66.24.4965 | 42 | 56 | 24 | 49 | 65 | TC.. 16T3.. | 0,450 |
| 66.28.6382 | 54 | 66 | 28 | 63 | 82 | TC.. 16T3.. | 0,900 |

| Reference<br>Bezeichnung | | | | | Nm |
|---|---|---|---|---|---|
| 66.20.3950 | 1240 | 5615 | 5004 | 5025 | 3.0 |
| 66.24.4965 | 1240 | 5615 | 5005 | 5003 | 4.0 |
| 66.28.6382 | 1240 | 5615 | 5006 | 5003 | 4.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT-39

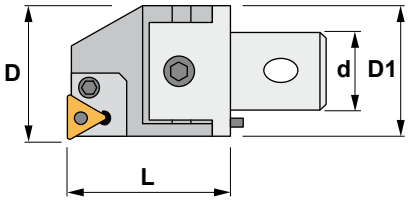


TCMW

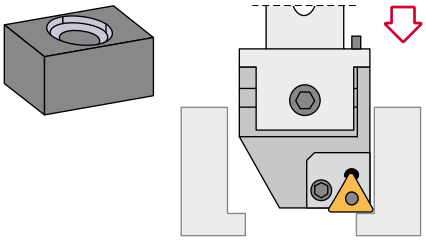




Characteristics:
Finishing boring heads.
With graduated dial.
Read-out precision 0,01 mm Ø.




Eigenschaften:
Bohrköpfe zum Schlichten.
Mit Einstellscheibe.
Ablesegenauigkeit 0,01 mm Ø.



# 66.36/60

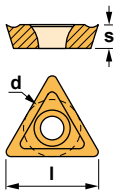
| Reference<br>Bezeichnung | D1 | L | d | Dmin | Dmax | Insert size<br>Wendeschneidplatte | Kg |
|---|---|---|---|---|---|---|---|
| 66.36.080102 | 68 | 86 | 36 | 80 | 102 | TC.. 16T3.. | 2,050 |
| 66.50.100125 | 85 | 100 | 50 | 100 | 125 | TC.. 16T3.. | 3,700 |
| 66.60.125160 | 110 | 100 | 60 | 125 | 160 | TC.. 16T3.. | 6,150 |
| 66.60.160220 | 145 | 100 | 60 | 160 | 220 | TC.. 16T3.. | 8,050 |

| Reference<br>Bezeichnung | | | | | | Nm |
|---|---|---|---|---|---|---|
| 66.36.080102 | 1240 | 5615 | 5508 | 5004 | 6416 | 4.0 |
| 66.50.100125 | 1240 | 5615 | 5508 | 5005 | 6416 | 4.0 |
| 66.60.125160 | 1240 | 5615 | 5508 | 5005 | 6416 | 4.0 |
| 66.60.160220 | 1240 | 5615 | 5508 | 5005 | 6416 | 4.0 |

## TC..

Triangular positive inserts with 7° clearance.
Dreikantige positive Wendeschneidplatten mit 7° Freiwinkel. F21

| Reference / Bez. | l | s | d |
|---|---|---|---|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |




TCGT-AL



TCMT-39



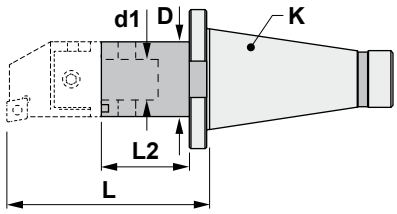
TCMW





Characteristics:
Arbors for boring heads.
DIN 2080

Eigenschaften:
Aufnahmen für Bohrköpfe.
DIN 2080



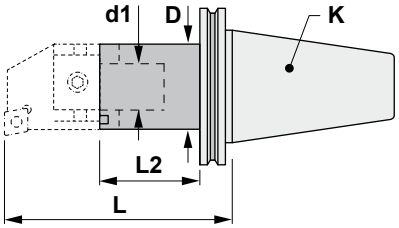

# 10.700

| Reference<br>Bezeichnung | K ISO | D | L | L2 | d1 | Kg |
|---|---|---|---|---|---|---|
| 10.700.30.12/100 | 30 | 22 | 113 | 79 | 12 | 0,450 |
| 10.700.30.15/100 | 30 | 27 | 113 | 100 | 15 | 0,550 |
| 10.700.30.20/100 | 30 | 32 | 113 | 68 | 20 | 0,600 |
| 10.700.40.12/100 | 40 | 22 | 115 | 81 | 12 | 0,950 |
| 10.700.40.15/100 | 40 | 27 | 115 | 73 | 15 | 1,050 |
| 10.700.40.20/100 | 40 | 32 | 115 | 70 | 20 | 1,100 |
| 10.700.40.24/160 | 40 | 42 | 175 | 119 | 24 | 1,850 |
| 10.700.40.28/160 | 40 | 54 | 175 | 109 | 28 | 2,300 |
| 10.700.40.36/160 | 40 | 68 | 176 | 90 | 36 | 2,500 |
| 10.700.50.12/100 | 50 | 22 | 119 | 85 | 12 | 2,850 |
| 10.700.50.15/100 | 50 | 27 | 119 | 77 | 15 | 2,900 |
| 10.700.50.20/130 | 50 | 32 | 149 | 104 | 20 | 3,150 |
| 10.700.50.24/160 | 50 | 42 | 179 | 123 | 24 | 3,700 |
| 10.700.50.28/160 | 50 | 54 | 179 | 113 | 28 | 4,250 |
| 10.700.50.36/200 | 50 | 68 | 220 | 134 | 36 | 5,650 |
| 10.700.50.50/200 | 50 | 85 | 281 | 181 | 50 | 6,350 |
| 10.700.50.60/260 | 50 | 100 | 281 | 181 | 60 | 11,000 |



Characteristics:
Arbors for boring heads.
DIN 69871-A

Eigenschaften:
Aufnahmen für Bohrköpfe.
DIN 69871-A



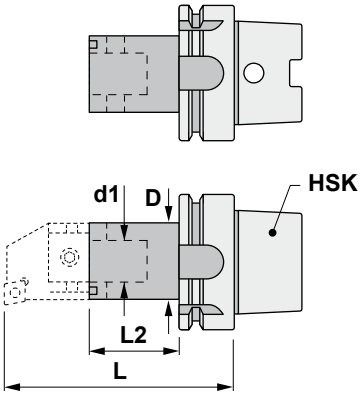

# 11.700

| Reference<br>Bezeichnung | K ISO | D | L | L2 | d1 | Kg |
|---|---|---|---|---|---|---|
| 11.700.40.12/100 | 40 | 22 | 138 | 104 | 12 | 1,200 |
| 11.700.40.15/100 | 40 | 27 | 138 | 96 | 15 | 1,250 |
| 11.700.40.20/100 | 40 | 32 | 138 | 93 | 20 | 1,500 |
| 11.700.40.24/160 | 40 | 42 | 182 | 126 | 24 | 1,900 |
| 11.700.40.28/160 | 40 | 54 | 182 | 116 | 28 | 2,300 |
| 11.700.40.36/160 | 40 | 68 | 183 | 97 | 36 | 2,600 |
| 11.700.50.12/100 | 50 | 22 | 138 | 104 | 12 | 3,350 |
| 11.700.50.15/100 | 50 | 27 | 138 | 96 | 15 | 3,400 |
| 11.700.50.20/130 | 50 | 32 | 168 | 123 | 20 | 3,600 |
| 11.700.50.24/160 | 50 | 42 | 198 | 142 | 24 | 4,200 |
| 11.700.50.28/160 | 50 | 54 | 198 | 132 | 28 | 4,700 |
| 11.700.50.36/200 | 50 | 68 | 223 | 137 | 36 | 5,650 |
| 11.700.50.50/200 | 50 | 85 | 224 | 124 | 50 | 6,200 |
| 11.700.50.60/260 | 50 | 100 | 284 | 184 | 60 | 10,850 |



Characteristics:
Arbors for boring heads.
DIN 69893-1 / Form A

Eigenschaften:
Aufnahmen für Bohrköpfe.
DIN 69893-1 / Form A



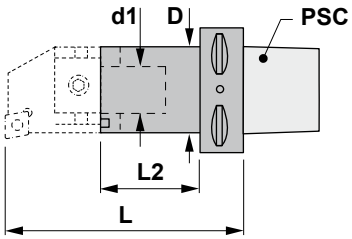

# 16.700

| Reference<br>Bezeichnung | HSK | D | L | L2 | d1 | Kg |
|---|---|---|---|---|---|---|
| 16.700.63.12/055 | 63 | 22 | 81 | 47 | 12 | 0,700 |
| 16.700.63.12/110 | 63 | 22 | 136 | 102 | 12 | 0,840 |
| 16.700.63.15/065 | 63 | 27 | 91 | 49 | 15 | 0,730 |
| 16.700.63.15/110 | 63 | 27 | 110 | 68 | 15 | 0,910 |
| 16.700.63.20/075 | 63 | 32 | 101 | 56 | 20 | 0,780 |
| 16.700.63.20/120 | 63 | 32 | 120 | 75 | 20 | 1,050 |



Characteristics:
Arbors for boring heads.
PSC ISO 26623-1

Eigenschaften:
Aufnahmen für Bohrköpfe.
PSC ISO 26623-1



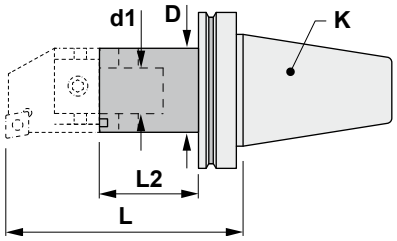

# 18.700

| Reference<br>Bezeichnung | PSC | D | L | L2 | d1 | Kg |
|---|---|---|---|---|---|---|
| 18.700.63.12/055 | 63 | 22 | 77 | 43 | 12 | 0,750 |
| 18.700.63.12/110 | 63 | 22 | 132 | 98 | 12 | 0,920 |
| 18.700.63.15/065 | 63 | 27 | 87 | 45 | 15 | 0,880 |
| 18.700.63.15/110 | 63 | 27 | 132 | 90 | 15 | 1,080 |
| 18.700.63.20/075 | 63 | 32 | 97 | 52 | 20 | 1,000 |
| 18.700.63.20/120 | 63 | 32 | 142 | 97 | 20 | 1,280 |



Characteristics:
Arbors for boring heads.
MAS BT

Eigenschaften:
Aufnahmen für Bohrköpfe.
MAS BT



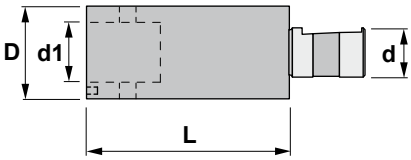

# 20.700

| Reference<br>Bezeichnung | K ISO | D | L | L2 | d1 | Kg |
|---|---|---|---|---|---|---|
| 20.700.40.12/100 | 40 | 22 | 130 | 96 | 12 | 1,200 |
| 20.700.40.15/100 | 40 | 27 | 130 | 88 | 15 | 1,250 |
| 20.700.40.20/100 | 40 | 32 | 130 | 100 | 20 | 1,600 |
| 20.700.40.24/160 | 40 | 42 | 190 | 134 | 24 | 2,050 |
| 20.700.40.28/160 | 40 | 54 | 190 | 124 | 28 | 2,550 |
| 20.700.40.36/160 | 40 | 68 | 181 | 95 | 36 | 2,550 |
| 20.700.50.12/100 | 50 | 22 | 141 | 107 | 12 | 3,850 |
| 20.700.50.15/100 | 50 | 27 | 141 | 99 | 15 | 3,950 |
| 20.700.50.20/130 | 50 | 32 | 171 | 126 | 20 | 4,200 |
| 20.700.50.24/160 | 50 | 42 | 201 | 145 | 24 | 5,200 |
| 20.700.50.28/160 | 50 | 54 | 201 | 135 | 28 | 5,800 |
| 20.700.50.36/200 | 50 | 68 | 242 | 156 | 36 | 6,650 |
| 20.700.50.50/200 | 50 | 85 | 242 | 142 | 50 | 7,400 |
| 20.700.50.60/260 | 50 | 100 | 302 | 202 | 60 | 12,300 |



Characteristics:
Extensions DIN 1835 for the arbors for boring heads.

Eigenschaften:
Verlängerungen DIN 1835 für die Aufnahmen für Bohrköpfe.



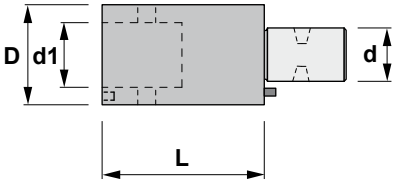

# 60.62/64

| Reference<br>Bezeichnung | D | d | L | d1 | Kg |
|---|---|---|---|---|---|
| 60.62.12 | 22 | 20 | 20 | 12 | 0,050 |
| 60.62.15 | 27 | 20 | 30 | 15 | 0,100 |
| 60.63.12 | 22 | 20 | 30 | 12 | 0,120 |
| 60.63.15 | 27 | 20 | 45 | 15 | 0,230 |
| 60.63.20 | 32 | 25 | 35 | 20 | 0,320 |
| 60.64.12 | 22 | 20 | 52 | 12 | 0,210 |
| 60.64.15 | 27 | 20 | 52 | 15 | 0,290 |
| 60.64.20 | 32 | 20 | 52 | 20 | 0,400 |
| 60.64.24 | 42 | 25 | 60 | 24 | 0,500 |



Characteristics:
Extensions for the arbors for boring heads.

Eigenschaften:
Verlängerungen für die Aufnahmen für Bohrköpfe.



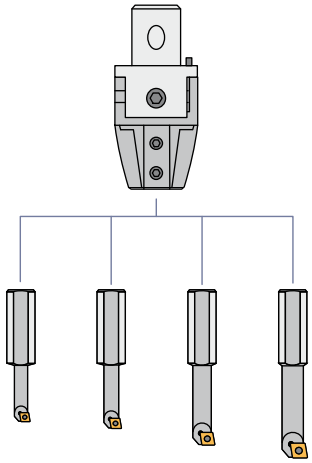

# 60.12/24

| Reference<br>Bezeichnung | D | d | L | d1 | Kg |
|---|---|---|---|---|---|
| 60.12.12/20 | 22 | 12 | 20 | 12 | 0,050 |
| 60.12.12/30 | 22 | 12 | 30 | 12 | 0,100 |
| 60.15.15/30 | 27 | 15 | 30 | 15 | 0,130 |
| 60.15.15/45 | 27 | 15 | 45 | 15 | 0,190 |
| 60.20.20/35 | 32 | 20 | 35 | 20 | 0,200 |
| 60.20.20/52 | 32 | 20 | 52 | 20 | 0,270 |
| 60.24.24/40 | 42 | 24 | 40 | 24 | 0,400 |
| 60.24.24/60 | 42 | 24 | 60 | 24 | 0,600 |



Characteristics:
Set of roughing boring head and boring bars.

Eigenschaften:
Satz mit Bohrkopf und Bohrstangen zum Schruppen.



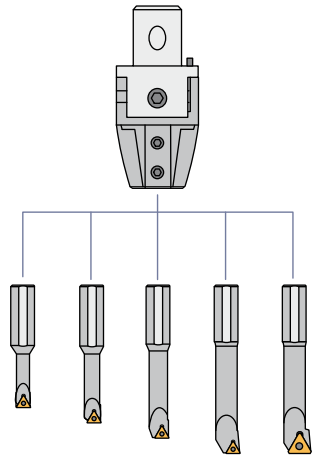
## SET-97

| Reference<br>Bezeichnung | Boring head<br>Bohrkopf | Boring bars<br>Bohrstangen | Bore range<br>Bohrungsbereich<br>min | <br>max | Kg |
|---|---|---|---|---|---|
| SET-97 SCLC | 97.24.16 | S0816F SCLC R 06 | 10 | 28 | 1,020 |
| | | S1016G SCLC R 06 | 13 | 31 | |
| | | S1216H SCLC R 06 | 16 | 34 | |
| | | S1616I SCLC R 09 | 20 | 38 | |



Characteristics:
Set of roughing boring head and boring bars.

Eigenschaften:
Satz mit Bohrkopf und Bohrstangen zum Schruppen.



## SET-97

| Reference<br>Bezeichnung | Boring head<br>Bohrkopf | Boring bars<br>Bohrstangen | Bore range<br>Bohrungsbereich<br>min | <br>max | Kg |
|---|---|---|---|---|---|
| SET-97 STFC | 97.24.16 | S0816F STFC R09 | 10 | 28 | 1,140 |
| | | S1016G STFC R 09 | 13 | 31 | |
| | | S1216H STFC R 09 | 16 | 34 | |
| | | S1216I STFC R 09 | 20 | 38 | |
| | | S1616I STFC R 16 | 20 | 38 | |

## 1 TYPE / TYP

| 10.700 | 11.700 | 16.700 | 18.700 | 20.700 | 60.62/24 | 60.12/24 |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |

## 2 DIMENSION / ABMESSUNGEN

**ISO**

| 30 | 40 | 50 |
|---|---|---|

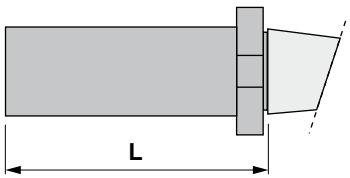
**HSK**

| 63 |
|---|

**PSC**

| 63 |
|---|

## 3 LENGTH / LÄNGE (L)




| Ø DIAMETER / DURCHMESSER | COLLET<br>SPANNZANGEN |
|---|---|
|   | |

**NOTES / BEMERKUNGEN:**



# CYLINDRICAL SHANKS
# ZYLINDRISCHE SCHÄFTE

Code system / Kodifizierung — I174

Technical information / Technische Auskünfte — I175

Applications index / Anwendungen — I175

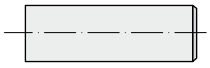
Cylindrical shanks / Zylindrische Schäfte — I176-184

# Code system / Kodifizierung

| 40 | 315 | 32 | 16 | - | 250E |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | | 5 |

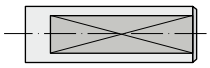
## 1 Shank type / Schaftausführung

Cylindric / Zylindrisch — DIN 1835-A



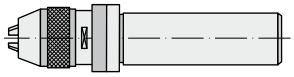
**40**

Cylindric / Zylindrisch — DIN 1835-A

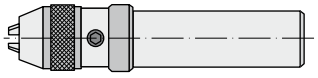


**42** | **43**

## 2 Adaptor type / Aufnahmen-Typ

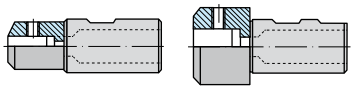


**295**

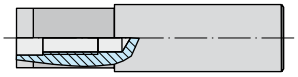


**296**

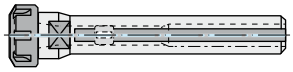
FORM A — FORM B



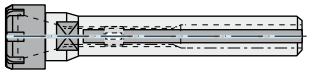
**300**



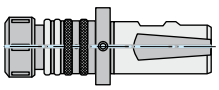
**315**



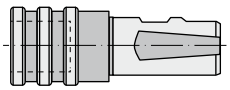
**453**



**455**



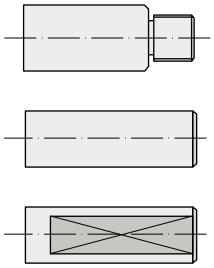
**610**



**620**

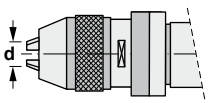
## 3 Shank size / Schaftgröße

Cylindric / Zylindrisch — DIN 1835-A

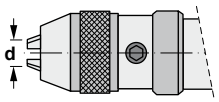


| Ø 16 | Ø 20 | Ø 25 | Ø 32 | Ø 40 | Ø 50 |
|---|---|---|---|---|---|
| **16** | **20** | **25** | **32** | **40** | **50** |

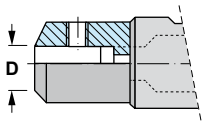
## 4 Adaptor size / Adaptergröße



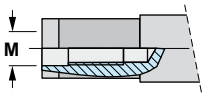
| Ø 0 - Ø 8 | Ø 0 - Ø 13 | Ø 3 - Ø 16 |
|---|---|---|
| **8** | **13** | **16** |



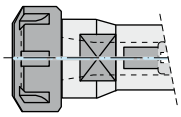
| Ø 0 - Ø 8 | Ø 1 - Ø 13 | Ø 3 - Ø 16 |
|---|---|---|
| **8** | **13** | **16** |



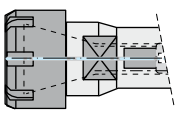
| Ø 6 ... Ø 20 |
|---|
| **6 ... 20** |



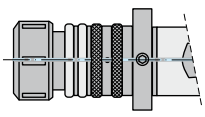
| M6 | M8 | M10 | M12 | M16 |
|---|---|---|---|---|
| **06** | **08** | **10** | **12** | **16** |



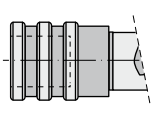
| ER16 | ER20 | ER25 | ER32 | ER40 |
|---|---|---|---|---|
| **16** | **20** | **25** | **32** | **40** |



| ER16 | ER25 | ER40 |
|---|---|---|
| **16** | **25** | **40** |



| ER16 | ER25 | ER40 |
|---|---|---|
| **16** | **25** | **40** |



| M3-M12 | M8-M20 | M14-M33 |
|---|---|---|
| **12** | **20** | **33** |

## 5 E = Antivibration shank (Carbide) / E = Schwingungsgedämpfter Schaft (Hartmetall)

## AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS
## AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN

**MATERIAL:**
- Chromium-manganese carburized steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburized, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburized layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.

**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

## CYLINDRICAL SHANKS
## ZYLINDRISCHE SCHÄFTE
## DIN 1835A/B
## DIN 1835B+E




| **B** h6 | | | | | |
|---|---|---|---|---|---|
| 16 | 20 | 25 | 32 | 40 | 50 |

## Cylindrical shanks
## Zylindrische Schäfte

**40.295**

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**43.296**

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**42.300**

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**42.610**

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**42.620**

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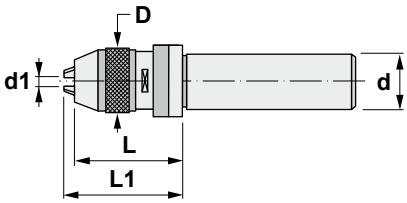
Characteristics:
Self clamping short precision drill chucks.
DIN 1835-A
For right turn only.
*** SUPPLIED WITH WRENCH**




Eigenschaften:
Kurze Selbstspann-Bohrfutter,
Genauigkeit-Ausführung nach DIN 1835-A.
Nut für Rechtsumdrehung.
*** LIEFERUNG MIT SCHLÜSSEL**

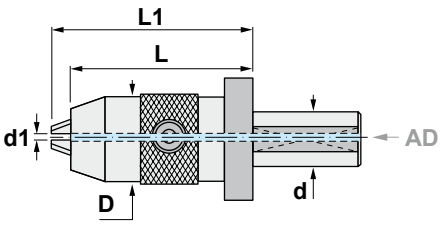
# 40.295

| Reference<br>Bezeichnung | d | d1 | D | L | L1 max | Kg |
|---|---|---|---|---|---|---|
| 40.295.25.08 | 25 | 0,3-8 | 38 | 66 | 73 | 0,850 |
| 40.295.30.08 | 30 | 0,3-8 | 38 | 66 | 73 | 1,300 |
| 40.295.32.08 | 32 | 0,3-8 | 38 | 66 | 73 | 1,850 |
| 40.295.32.13 | 32 | 1-13 | 48 | 80 | 92 | 2,250 |
| 40.295.40.13 | 40 | 1-13 | 48 | 80 | 92 | 2,500 |
| 40.295.40.16 | 40 | 3-16 | 55 | 84 | 96 | 3,650 |
| 40.295.50.16 | 50 | 3-16 | 55 | 84 | 96 | 3,850 |

| Reference<br>Bezeichnung |  |  |
|---|---|---|
| 40.295.25.08 | 50008 | 11206 |
| 40.295.30.08 | 50008 | 11206 |
| 40.295.32.08 | 50008 | 11206 |
| 40.295.32.13 | 50013 | 11108 |
| 40.295.40.13 | 50013 | 11108 |
| 40.295.40.16 | 50013 | 11108 |
| 40.295.50.16 | 50016 | 11108 |



Characteristics:
CNC-Universal precision drill chucks.
DIN 1835-A
For left and right hand turn.
*** SUPPLIED WITH WRENCH**




Eigenschaften:
CNC-Universal Bohrfutter,
Genauigkeit-Ausführung nach DIN 1835-A.
Für Links- und Rechtsumdrehung.
*** LIEFERUNG MIT SCHLÜSSEL**

# 43.296

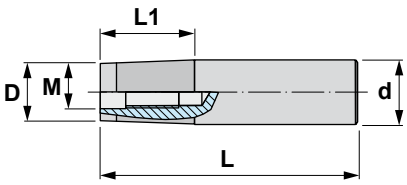
| Reference<br>Bezeichnung | d | d1 | D | L | L1 max | Kg |
|---|---|---|---|---|---|---|
| 43.296.25.13 | 25 | 1-13 | 54 | 82 | 91 | 1,400 |
| 43.296.32.13 | 32 | 1-13 | 54 | 82 | 91 | 1,560 |
| 43.296.32.16 | 32 | 3-16 | 57 | 85 | 92 | 1,640 |

| Reference<br>Bezeichnung | | 3x |
|---|---|---|
| 43.296.25.13 | 5006 | 60313 |
| 43.296.32.13 | 5006 | 60313 |
| 43.296.32.16 | 5006 | 60313 |



Characteristics:
Cylindrical modular shanks.
For modular milling heads.

Eigenschaften:
Zylindrische Modular-Schäfte.
Für Modular-Fräsköpfe.

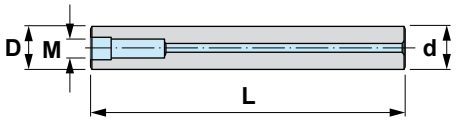



# 40.315

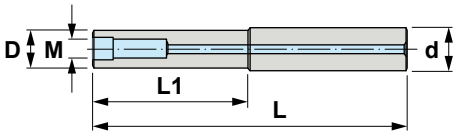
| Reference<br>Bezeichnung | d | L | M | D | L1 | Kg |
|---|---|---|---|---|---|---|
| 40.315.20.10 | 20 | 125 | M10 | 18 | 25 | 0,300 |
| 40.315.25.12 | 25 | 125 | M12 | 21 | 40 | 0,450 |
| 40.315.32.16 | 32 | 150 | M16 | 30 | 45 | 0,880 |



**STANDARD**




**MODIFIED / GEÄNDERT**




Characteristics:
Cylindrical modular shanks.
For modular milling heads.
**E= Carbide**
**Antivibration shank**

Eigenschaften:
Zylindrische Modular-Schäfte.
Für Modular-Fräsköpfe.
**E= Hartmetall**
**Schwingungsgedämpfter Schaft**

# 40.315E

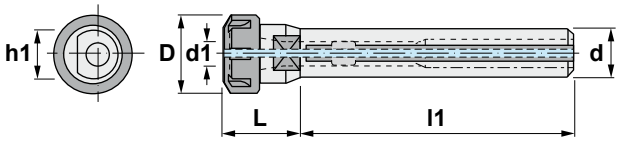
| Reference<br>Bezeichnung | d | L | M | D | L1* | Kg |
|---|---|---|---|---|---|---|
| 40.315.12.06/100E | 12 | 100 | M6 | 12 | - | 0,230 |
| 40.315.16.08/100E | 16 | 100 | M8 | 16 | - | 0,405 |
| 40.315.12.06/150E | 12 | 150 | M6 | 12 | - | 0,265 |
| 40.315.16.08/150E | 16 | 150 | M8 | 16 | - | 0,470 |
| 40.315.20.10/150E | 20 | 150 | M10 | 20 | - | 0,755 |
| 40.315.25.12/150E | 25 | 150 | M12 | 25 | - | 1,105 |
| 40.315.20.10/200E | 20 | 200 | M10 | 20 | - | 1,005 |
| 40.315.25.12/200E | 25 | 200 | M12 | 25 | - | 1,460 |
| 40.315.32.16/250E | 32 | 250 | M16 | 32 | - | 1,510 |

*** L1 (Upon request) / (Auf Anfrage)**



Characteristics: Collet chucks for DIN 6499 (ER) system. DIN 1835-A
For tools with cylindrical shank.
WITH CLAMPING FLAT FOR CNC LATHES AND TURRET LATHES
*** SUPPLIED WITHOUT WRENCH**

Eigenschaften: Spannzangenfutter für Spannzangen DIN 6499 (ER). DIN 1835-A
Für Werkzeuge mit Zylinderschaft.
MIT SPANNFLÄCHE FÜR CNC-DREHMASCHINEN UND REVOLVERDREHBÄNKE
*** LIEFERUNG OHNE SCHLÜSSEL**




# 40.453

| Reference<br>Bezeichnung | d | | L | d1 | l1 | D | h1 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40.453.20.16/050 | 20 | ER16 | 31 | 0,5-10 | 50 | 32 | 19,5 | 45316 | 50216 | 19210 | 0,150 |
| 40.453.20.16/100 | 20 | ER16 | 31 | 0,5-10 | 100 | 32 | 19,5 | 45316 | 50216 | 19210 | 0,260 |
| 40.453.20.16/160 | 20 | ER16 | 31 | 0,5-10 | 160 | 32 | 19,5 | 45316 | 50216 | 19210 | 0,350 |
| 40.453.20.25/050 | 20 | ER25 | 46 | 1,0-16 | 50 | 42 | 19,5 | 45325 | 50225 | 19210 | 0,300 |
| 40.453.20.25/100 | 20 | ER25 | 46 | 1,0-16 | 100 | 42 | 19,5 | 45325 | 50225 | 19210 | 0,380 |
| 40.453.20.25/160 | 20 | ER25 | 46 | 1,0-16 | 160 | 42 | 19,5 | 45325 | 50225 | 19210 | 0,470 |
| 40.453.20.32/050 | 20 | ER32 | 53 | 2,0-20 | 50 | 50 | 19,5 | 45332 | 50232 | 19210 | 0,440 |
| 40.453.20.32/100 | 20 | ER32 | 53 | 2,0-20 | 100 | 50 | 19,5 | 45332 | 50232 | 19210 | 0,520 |
| 40.453.25.20/100 | 25 | ER20 | 28 | 1,0-13 | 100 | 35 | 24,0 | 45320 | 50220 | 19212 | 0,390 |
| 40.453.25.25/050 | 25 | ER25 | 40 | 1,0-16 | 50 | 42 | 24,0 | 45325 | 50225 | 19216 | 0,350 |
| 40.453.25.25/100 | 25 | ER25 | 40 | 1,0-16 | 100 | 42 | 24,0 | 45325 | 50225 | 19216 | 0,420 |
| 40.453.25.32/050 | 25 | ER32 | 53 | 2,0-20 | 50 | 50 | 24,0 | 45332 | 50232 | 19216 | 0,440 |
| 40.453.25.32/100 | 25 | ER32 | 53 | 2,0-20 | 100 | 50 | 24,0 | 45332 | 50232 | 19216 | 0,540 |
| 40.453.25.40/060 | 25 | ER40 | 60 | 3,0-30 | 60 | 63 | 24,0 | 45340 | 50240 | 19216 | 0,730 |
| 40.453.32.32/050 | 32 | ER32 | 48 | 2,0-20 | 50 | 50 | 31,0 | 45332 | 50232 | 19218 | 0,550 |
| 40.453.32.32/100 | 32 | ER32 | 48 | 2,0-20 | 100 | 50 | 31,0 | 45332 | 50232 | 19218 | 0,620 |
| 40.453.32.40/070 | 32 | ER40 | 60 | 3,0-30 | 70 | 63 | 31,0 | 45340 | 50240 | 19218 | 0,860 |
| 40.453.40.32/080 | 40 | ER32 | 38 | 2,0-20 | 80 | 50 | 38,0 | 45332 | 50232 | 19218 | 0,830 |
| 40.453.40.40/080 | 40 | ER40 | 60 | 3,0-30 | 80 | 63 | 38,0 | 45340 | 50240 | 19218 | 1,240 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

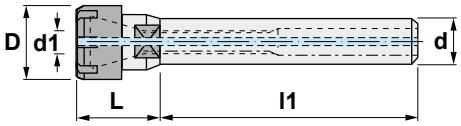
I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |





Characteristics:
Long collet chucks for
DIN 6499 (ER) collets.
DIN 1835-A
For tools with cylindrical shank.




WITH "MINI" COLLET NUT
*** SUPPLIED WITHOUT WRENCH**

Eigenschaften:
Lange Spannzangenfutter für Spannzangen DIN 6499 (ER).
DIN 1835-A
Für Werkzeuge mit Zylinderschaft.

MIT SPANNMUTTER "MINI"
*** LIEFERUNG OHNE SCHLÜSSEL**

# 40.455

| Reference Bezeichnung | d | | L | d1 | D | l1 | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 40.455.12.16/080 | 12 | ER16 | 38 | 0,5-10 | 22 | 80 | 45516 | 50916 | 19106 | 0,100 |
| 40.455.16.16/080 | 16 | ER16 | 38 | 0,5-10 | 22 | 80 | 45516 | 50916 | 19210 | 0,100 |
| 40.455.16.16/100 | 16 | ER16 | 38 | 0,5-10 | 22 | 100 | 45516 | 50916 | 19210 | 0,170 |
| 40.455.16.16/160 | 16 | ER16 | 38 | 0,5-10 | 22 | 160 | 45516 | 50916 | 19210 | 0,230 |
| 40.455.16.20/100 | 16 | ER20 | 42 | 1,0-13 | 28 | 100 | 45520 | 50920 | 19210 | 0,190 |
| 40.455.20.16/060 | 20 | ER16 | 31 | 0,5-10 | 22 | 60 | 45516 | 50916 | 19210 | 0,130 |
| 40.455.20.16/100 | 20 | ER16 | 31 | 0,5-10 | 22 | 100 | 45516 | 50916 | 19210 | 0,340 |
| 40.455.20.16/160 | 20 | ER16 | 31 | 0,5-10 | 22 | 160 | 45516 | 50916 | 19210 | 0,320 |
| 40.455.20.16/200 | 20 | ER16 | 31 | 1,0-10 | 22 | 200 | 45516 | 50916 | 19210 | 0,650 |
| 40.455.20.20/060 | 20 | ER20 | 36 | 1,0-13 | 28 | 60 | 45520 | 50920 | 19212 | 0,300 |
| 40.455.20.20/100 | 20 | ER20 | 36 | 1,0-13 | 28 | 100 | 45520 | 50920 | 19212 | 0,230 |
| 40.455.20.20/160 | 20 | ER20 | 36 | 1,0-13 | 28 | 160 | 45520 | 50920 | 19212 | 0,300 |
| 40.455.25.20/240 | 25 | ER20 | 36 | 1,0-13 | 28 | 240 | 45520 | 50920 | 19216 | 1,040 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

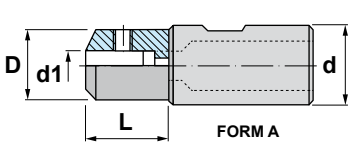
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER) |
| | Spannzangen DIN 6499 - Form Mexin (ER) |

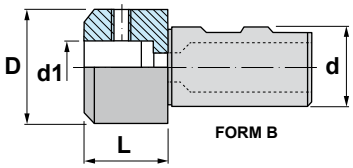




Characteristics:
Short and long reducing bushings.
For cutters with cylindrical shank and Weldon flat DIN 1835-B.

Eigenschaften:
Kurze und lange Reduzierhülsen für Fräser mit
Zylinderschaft und Weldonfläche DIN 1835-B.



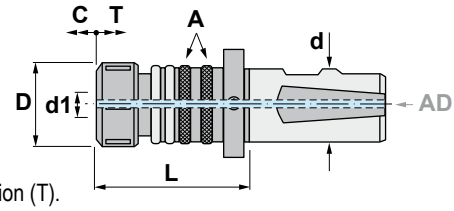




# 42.300

| Reference Bezeichnung | d | d1 H5 | L | D | FORM | | Kg |
|---|---|---|---|---|---|---|---|
| 42.300.20.06 | 40 | 6 | 30 | 25 | B | 15106 | 0,170 |
| 42.300.20.08 | 40 | 8 | 30 | 28 | B | 15108 | 0,200 |
| 42.300.20.10 | 40 | 10 | 35 | 35 | B | 15110 | 0,330 |
| 42.300.20.12 | 40 | 12 | 35 | 42 | B | 15212 | 0,410 |
| 42.300.20.14 | 40 | 14 | 35 | 44 | B | 15212 | 0,410 |
| 42.300.20.16 | 40 | 16 | 60 | 48 | B | 15314 | 0,790 |
| 42.300.20.18 | 40 | 18 | 60 | 50 | B | 15314 | 0,800 |
| 42.300.25.06 | 40 | 6 | 30 | 25 | A | 15106 | 0,250 |
| 42.300.25.08 | 40 | 8 | 30 | 28 | A | 15108 | 0,275 |
| 42.300.25.10 | 40 | 10 | 35 | 35 | B | 15110 | 0,410 |
| 42.300.25.12 | 40 | 12 | 35 | 42 | B | 15212 | 0,460 |
| 42.300.25.14 | 40 | 14 | 35 | 44 | B | 15212 | 0,500 |
| 42.300.25.16 | 50 | 16 | 40 | 48 | B | 15314 | 0,600 |
| 42.300.32.06 | 50 | 6 | 30 | 25 | A | 15106 | 0,400 |
| 42.300.32.08 | 50 | 8 | 30 | 28 | A | 15108 | 0,460 |
| 42.300.32.10 | 50 | 10 | 35 | 35 | B | 15110 | 0,520 |
| 42.300.32.12 | 50 | 12 | 35 | 42 | B | 15212 | 0,570 |
| 42.300.32.14 | 50 | 14 | 35 | 44 | B | 15212 | 0,590 |
| 42.300.32.16 | 50 | 16 | 40 | 48 | B | 15314 | 0,700 |
| 42.300.32.18 | 50 | 18 | 40 | 50 | B | 15314 | 0,750 |
| 42.300.32.20 | 50 | 20 | 40 | 52 | B | 15216 | 0,770 |



Characteristics:
Tapping head with axial compensation.
DIN 1835-B
For DIN 6499 (ER) collets and with central coolant supply.




Compensation in compression (C) and tension (T).
Compression can be blocked by turning the rear ring (A).
Control of threading depth.
*** SUPPLIED WITH WRENCH**

Eigenschaften:
Gewindeschneid-Wechselfutter mit Axial-Längenausgleich DIN 1835-B.
Befestigung mit Spannzangen DIN6499 (ER) und mit Innenkühlung.

Ausgleich der Kompression (C) und der Traktion (T). Die Kompression kann mit dem Ring (A) blockiert werden. Kontrolle der Gewindetiefe.
*** LIEFERUNG MIT SCHLÜSSEL**

# 42.610

| Reference<br>Bezeichnung | d | | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 42.610.20.16 | 20 | ER16 | M3-M12 | 65 | 28 | 5,5 | 6,0 | 45316 | 50216 | 0,430 |
| 42.610.25.16 | 25 | ER16 | M3-M12 | 67 | 28 | 5,5 | 6,0 | 45316 | 50216 | 0,440 |
| 42.610.25.25 | 25 | ER25 | M4-M20 | 90 | 42 | 10,5 | 7,5 | 45325 | 50225 | 0,840 |
| 42.610.25.40 | 25 | ER40 | M8-M33 | 106 | 63 | 10,0 | 10,0 | 45340 | 50240 | 1,320 |
| 42.610.32.40 | 32 | ER40 | M8-M33 | 106 | 63 | 10,0 | 10,0 | 45340 | 50240 | 1,480 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER)<br>Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER)<br>Abgedichtete Spannzangen DIN 6499 (ER) |



## ERTXX

I217-218

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERTXX | Collets DIN 6499 - Form Mexin (ER)<br>Spannzangen DIN 6499 - Form Mexin (ER) |



## 40.453..

I180

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.453.. | Collet chucks for DIN 6499 (ER) collets<br>Spannzangenfutter für DIN 6499 (ER) Spannzangen |



## 40.455..

I181

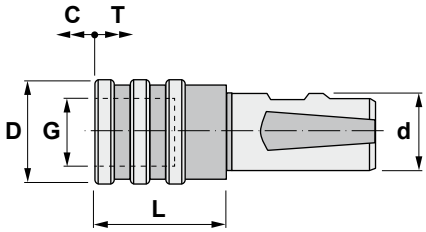
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| 40.455.. | Long collet chucks for DIN 6499 (ER) collets<br>Lange Spannzangenfutter für DIN 6499 (ER) Spannzangen |





Characteristics:
Quick change tapping head with axial compensation.
DIN 1835-B+E
With Bilz system tap chucks bushings.

Compensation in compression (C) and tension (T).




Eigenschaften:
Gewindeschneid-Schnellwechselfutter mit Axial-Längenausgleich mit Gewindebohrer-Buchsen System Bilz.
DIN 1835-B+E

Ausgleich der Kompression (C) un der Traktion (T).

# 42.620

| Reference Bezeichnung | d | G Nº. Ø | d1 | L | D | C | T | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 42.620.20.12 | 20 | 1 19 | M3-M12 | 41 | 38 | 9 | 9 | 710XX | 750XX | 0,350 |
| 42.620.20.20 | 20 | 2 31 | M8-M20 | 63 | 55 | 15 | 15 | 720XX | 760XX | 0,860 |
| 42.620.25.12 | 25 | 1 19 | M3-M12 | 41 | 38 | 9 | 9 | 710XX | 750XX | 0,430 |
| 42.620.25.20 | 25 | 2 31 | M8-M20 | 63 | 55 | 15 | 15 | 720XX | 760XX | 0,880 |
| 42.620.32.12 | 32 | 1 19 | M3-M12 | 41 | 38 | 9 | 9 | 710XX | 750XX | 0,600 |
| 42.620.32.20 | 32 | 2 31 | M8-M20 | 63 | 55 | 15 | 15 | 720XX | 760XX | 1,050 |
| 42.620.32.33 | 32 | 3 48 | M14-M33 | 97 | 79 | 24 | 24 | 730XX | 770XX | 2,690 |
| 42.620.40.12 | 40 | 1 19 | M3-M12 | 41 | 38 | 9 | 9 | 710XX | 750XX | 0,200 |
| 42.620.40.20 | 40 | 2 31 | M8-M20 | 63 | 55 | 15 | 15 | 720XX | 760XX | 1,200 |
| 42.620.40.33 | 40 | 3 48 | M14-M33 | 97 | 79 | 24 | 24 | 730XX | 770XX | 1,200 |

## 710XX..730XX

I202

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 710XX..730XX | Quick change adapters without overload clutch<br>Schnellwechseleinsätze ohne Sicherheitskupplung |



## 750XX..770XX

I203

| Ref. / Bezeichnung | Accessories / Zubehör |
|---|---|
| 750XX..770XX | Quick change adapters with overload clutch<br>Schnellwechseleinsätze mit Sicherheitskupplung |





# MORSE SHANKS
# MORSE SCHÄFTE

Code system / Kodifizierung — I186

Technical information / Technische Auskünfte — I187

Applications index / Anwendungen — I188

Morse shanks / Morse Schäfte — I189-194

# Code system / Kodifizierung

| 30 | 315 | 03 | 08 |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

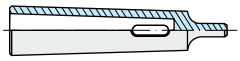
## 1 Machining center / Modell

Morse — DIN 228



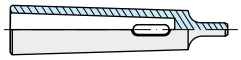
30 | 36

Morse — DIN 228



37

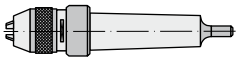
## 2 Adaptor type / Aufnahmen-Typ



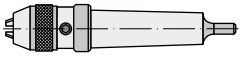
215



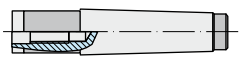
290



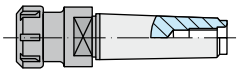
295



296



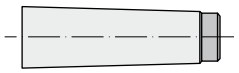
315



453

## 3 Machining center size / Aufnahmengröße

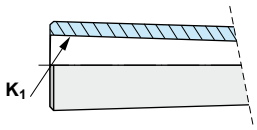
Morse shank / Morse Schäfte — DIN 228



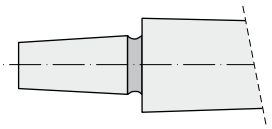
MK2 | MK3 | MK4 | MK5
02 | 03 | 04 | 05

## 4 Adaptor size / Adaptergröße

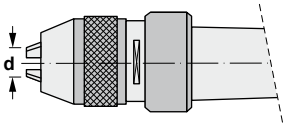
$K_1$ - MORSE



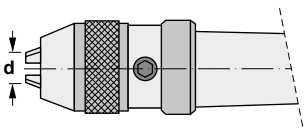

MK1 | MK2 | MK3 | MK4
01 | 02 | 03 | 04



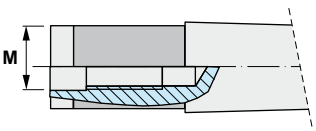
B12 | B16 | B18
12 | 16 | 18



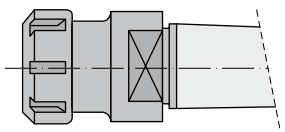

Ø 0 - Ø 8 | Ø 0 - Ø 13 | Ø 3 - Ø 16
8 | 13 | 16




Ø 1 - Ø 13 | Ø 3 - Ø 16
13 | 16




M | M | M | M
08 | 10 | 12 | 16



ER32 | ER40
32 | 40

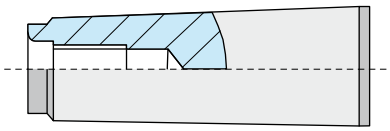
## *AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS*
## *AT3 TECHNISCHE EIGENSCHAFTEN DER AUFNAHMEN*

**MATERIAL:**
- Chromium-manganese carburized steel 1.7131 (16MnCr5).

**EXECUTION:**
- Carburized, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburized layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

**ACCURACY:**
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.

**TOLERANCE *AT*:**
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.



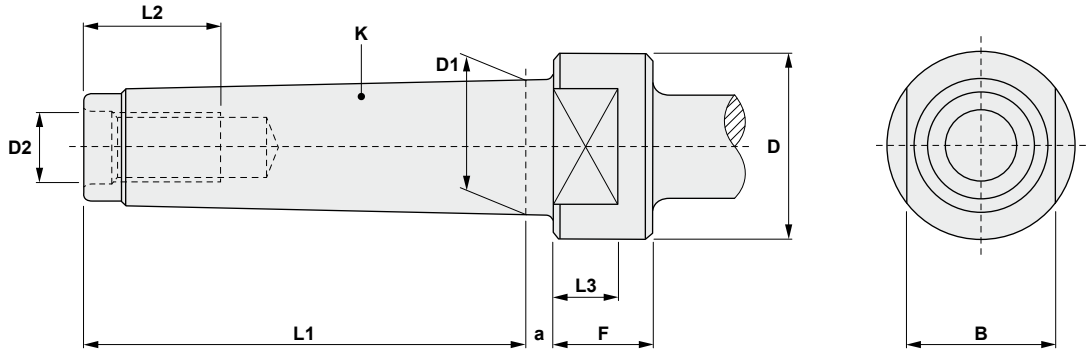
**MATERIALIEN:**
- Legierter aufgekohlter Stahl mit Chrom-Mangan 1.7131 (16MnCr5).

**KONSTRUKTIONSDATEN:**
- Aufgekohlt, gehärtet und angelassen.
- Oberflächenhärte HRC 58±2 (670±40 HV30)
- Aufgekohlt auf minimum 0,5 mm Tiefe.
- Zugfestigkeit im Kern minimum 800 N/mm2 nach der Aufkohlung.

**GENAUIGKEIT:**
- Dorn nach DIN 254
- Kegelwinkel:
  Toleranz AT 3 DIN 7178 Teil 1 und DIN 2080 Teil 1.
- Andere Toleranzen entsprechend DIN 7160 und 7168.
- Rauhigkeit der Oberfläche RZ<0,001 mm.

**TOLERANZ *AT*:**
- Zeigt die Toleranz auf der Messebene D zwischen dem tatsächlichen Wert der Kegelkonizität und dem theoretischen Wert.
- Dieser Wert auf der Messebene D sollte immer minus (negativ) sein, nie plus (positiv), um für einen guten Halt des Futters in den größeren Durchmesser des Kegels zu GARANTIEREN.

# *MORSE SHANKS*
# *MORSE SCHÄFTE DIN 228A/B*




| MORSE | L1 | L2 | L3 | D | D1 | D2 | F min | B d9 | a |
|---|---|---|---|---|---|---|---|---|---|
| **1** | 53,5 | 16 | - | - | 12,065 | M 6 | - | - | 3,5 |
| **2** | 64,0 | 24 | - | - | 17,780 | M 10 | - | - | 5,0 |
| **3** | 81,0 | 24 | 12 | 36 | 23,825 | M 12 | 18 | 24 | 5,0 |
| **4** | 102,5 | 32 | 15 | 43 | 31,267 | M 16 | 23 | 32 | 6,5 |
| **5** | 129,5 | 40 | 18 | 60 | 44,399 | M 20 | 28 | 45 | 6,5 |
| **6** | 182,0 | 47 | 25 | 84 | 63,348 | M 24 | 39 | 65 | 8,0 |

## *Morse shanks*
## *Morse Schäfte*

**30.315**



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**36.453**



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**37.215**



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**37.290**



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**37.295**



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**37.296**



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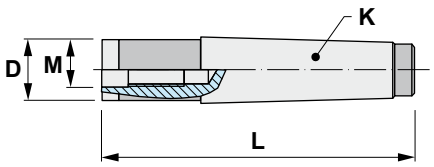
Characteristics:
Morse modular shanks.
For modular milling heads.

Eigenschaften:
Morse Modular-Schäfte.
Für Modular-Fräsköpfe.



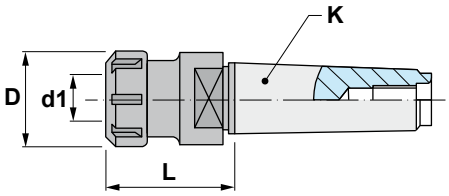

# 30.315

| Reference<br>Bezeichnung | K MORSE | L | M | D | Kg |
|---|---|---|---|---|---|
| 30.315.03.08 | 3 | 125 | M8 | 14 | 0,290 |
| 30.315.03.10 | 3 | 125 | M10 | 18 | 0,300 |
| 30.315.03.12 | 3 | 125 | M12 | 21 | 0,305 |
| 30.315.04.16 | 4 | 154 | M16 | 29 | 0,670 |



Characteristics:
Threaded Morse taper chuck
for ER collets DIN 6499/B

*** SUPPLIED WITHOUT WRENCH**




Eigenschaften:
Spannzangenaufnahme mit
Morsekegel und Anzugsgewinde
für "ER" Spannzangen nach
DIN6499/B

*** LIEFERUNG OHNE SCHLÜSSEL**

# 36.453

| Reference<br>Bezeichnung | K MORSE | | L | d1 | D | | | | Kg |
|---|---|---|---|---|---|---|---|---|---|
| 36.453.03.32 | 3 | ER32 | 70 | 2-20 | 50 | 45332 | 50232 | 19218 | 0,600 |
| 36.453.03.40 | 3 | ER40 | 80 | 4-30 | 63 | 45340 | 50240 | 19224 | 0,950 |
| 36.453.04.32 | 4 | ER32 | 60 | 2-20 | 50 | 45332 | 50232 | 19218 | 0,700 |
| 36.453.04.40 | 4 | ER40 | 81 | 4-30 | 63 | 45340 | 50240 | 19224 | 1,200 |

## ERXX

I210-212

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERXX | Collets with double slot DIN 6499 - Form B (ER) |
| | Spannzangen mit Doppelnut DIN 6499 - Form B (ER) |



## ERCXX

I215-216

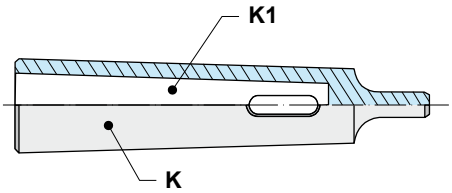
| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| ERCXX | Sealed collets DIN 6499 (ER) |
| | Abgedichtete Spannzangen DIN 6499 (ER) |





Characteristics:
Precision drill chuck arbors.
DIN 2185

Eigenschaften:
Kegel-Aufsteckdorne für
Bohrfutteraufnahmen.
DIN 2185



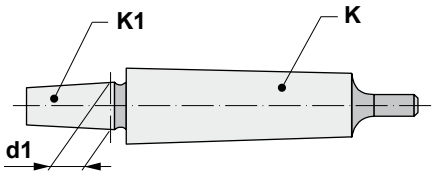

# 37.215

| Reference<br>Bezeichnung | K MORSE | K1 MORSE | Kg |
|---|---|---|---|
| 37.215.02.01 | 2 | 1 | 0,230 |
| 37.215.03.01 | 3 | 1 | 0,200 |
| 37.215.03.02 | 3 | 2 | 0,170 |
| 37.215.04.02 | 4 | 2 | 0,450 |
| 37.215.04.03 | 4 | 3 | 0,380 |
| 37.215.05.03 | 5 | 3 | 1,170 |
| 37.215.05.04 | 5 | 4 | 1,030 |



Characteristics:
Drill sleeves.
DIN 238

Eigenschaften:
Reduzierhülsen.
DIN 238




# 37.290

| Reference<br>Bezeichnung | K MORSE | K1 DIN | d1 | Kg |
|---|---|---|---|---|
| 37.290.02.12 | 2 | B-12 | 12,065 | 0,100 |
| 37.290.02.16 | 2 | B-16 | 15,733 | 0,160 |
| 37.290.02.18 | 2 | B-18 | 17,780 | 0,200 |
| 37.290.03.12 | 3 | B-12 | 12,065 | 0,150 |
| 37.290.03.16 | 3 | B-16 | 15,733 | 0,320 |
| 37.290.03.18 | 3 | B-18 | 17,780 | 0,400 |
| 37.290.04.16 | 4 | B-16 | 15,733 | 0,630 |
| 37.290.04.18 | 4 | B-18 | 17,780 | 0,660 |

## MU

I199

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MU | Standard keyless drill chucks DIN 238 |
| | Standard Schnellspann-Bohrfutter DIN 238 |



## MP

I200

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MP | Super precision keyless drill chucks DIN 238 |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 |



## MK

I201

| Ref. / Bez. | Accessories / Zubehör |
|---|---|
| MK | Super precision keyless drill chucks DIN 238 with gripping tongue |
| | Höchst-Genauigkeit-Selbstspannbohrfutter DIN 238 mit Schlüsselflächen |



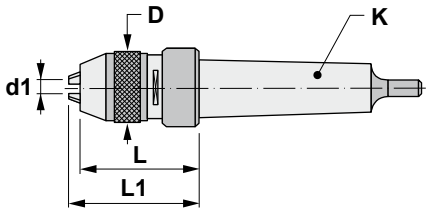


Characteristics:
Self clamping short precision drill chucks.
For right turn only.

*** SUPPLIED WITH WRENCH**

Eigenschaften:
Kurze Selbstspann-Bohrfutter, Genauigkeits-Ausführung.
Nut für Rechtsumdrehung.

*** LIEFERUNG MIT SCHLÜSSEL**




# 37.295

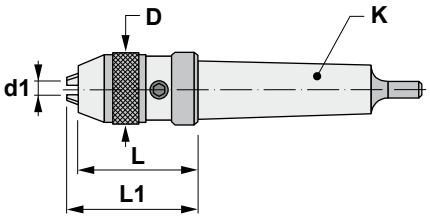
| Reference<br>Bezeichnung | K MORSE | d1 | D | L | L1 max | Kg |
|---|---|---|---|---|---|---|
| 37.295.02.08 | 2 | 0 - 8 | 35 | 56 | 65 | 0,800 |
| 37.295.02.13 | 2 | 0-13 | 51 | 81 | 95 | 1,060 |
| 37.295.03.13 | 3 | 0-13 | 51 | 81 | 95 | 1,320 |
| 37.295.03.16 | 3 | 3-16 | 56 | 85 | 98 | 1,720 |
| 37.295.04.13 | 4 | 0-13 | 51 | 81 | 95 | 1,880 |
| 37.295.04.16 | 4 | 3-16 | 56 | 85 | 98 | 1,980 |

| Reference<br>Bezeichnung | |
|---|---|
| 37.295.02.08 | 50008 |
| 37.295.02.13 | 50013 |
| 37.295.03.13 | 50013 |
| 37.295.03.16 | 50016 |
| 37.295.04.13 | 50013 |
| 37.295.04.16 | 50016 |



Characteristics:
CNC-Universal precision drill chucks.
For left and right hand turn.

As the Morse shank is part of the drill chuck, it can solve the coupling problems of any other system.




*** SUPPLIED WITH WRENCH**

Eigenschaften:
CNC-Universal Bohrfutter, Genauigkeits-Ausführung.
Für Links- und Rechtsumdrehung.

Da der Morse-Schaft ein Teil des Bohrfutters ist, löst er die Kupplungsprobleme von anderen Systemen.

*** LIEFERUNG MIT SCHLÜSSEL**

# 37.296

| Reference<br>Bezeichnung | K MORSE | d1 | D | L | L1 max | Kg |
|---|---|---|---|---|---|---|
| 37.296.02.13 | 2 | 1-13 | 54 | 85 | 94 | 1,320 |
| 37.296.03.13 | 3 | 1-13 | 54 | 85 | 94 | 1,480 |
| 37.296.03.16 | 3 | 3-16 | 57 | 88 | 95 | 1,550 |
| 37.296.04.13 | 4 | 1-13 | 54 | 85 | 94 | 1,800 |
| 37.296.04.16 | 4 | 3-16 | 57 | 88 | 95 | 1,880 |

| Reference<br>Bezeichnung | | 3x |
|---|---|---|
| 37.296.02.13 | 5006 | 60313 |
| 37.296.03.13 | 5006 | 60313 |
| 37.296.03.16 | 5006 | 60313 |
| 37.296.04.13 | 5006 | 60313 |
| 37.296.04.16 | 5006 | 60313 |



# ACCESSORIES
# ZUBEHÖR

Applications index **I196-197**
Anwendungen

Revolving lathe centres **I198**
Zentrierspitze

Drill chucks **I199-201**
Bohrfutter

Quick change adapters **I202-203**
Wechseleinsätze für Gewindebohrer

Selection table of tap adapters **I204-205**
Auswahltabelle von Wechseleinsätzen für Gewindebohrer

Collets **I206-218**
Spannzangen

Wrenches **I219**
Schlüssel

Nuts for collet chucks **I220-222**
Spannmutter für Spannzangen

Pull studs **I223-227**
Anzugsbolzen

Assembly fixtures **I228**
Montagevorrichtungen

## *Revolving lathe centres*
## *Zentrierspitze*

**RC**



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**RN**



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## *Quick change adapters*
## *Wechseleinsätze für Gewindebohrer*

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**$7^{5}_{6}_{7}$0XX**



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## *Drill chucks*
## *Bohrfutter*

**MU**



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**MP**



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**MK**



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## *Collets*
## *Spannzangen*

**BXX**



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**ERXX**



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**SET- ER**



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**ERBXX**



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**ERCXX**



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**ERTXX**



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## *Wrenches*
## *Schlüssel*

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## Nuts for collet chucks
## Spannmutter für Spannzangen

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## Pull studs
## Anzugsbolzen

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DIN 69872-A



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DIN 69872-B



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DIN 69872-B



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ISO 7388/2-B



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ISO 7388/2-A



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ISO 7388/2-A



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MAHO-OTT / DIN 69871, BT



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BT-TYPE / TYP I



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BT- TYPE / TYP II



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**92..**
BT-TYPE / TYP III



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**9...**
SPECIAL / SONDER



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## Assembly fixtures
## Montagevorrichtungen

**02_70/80**



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**02_71/81**



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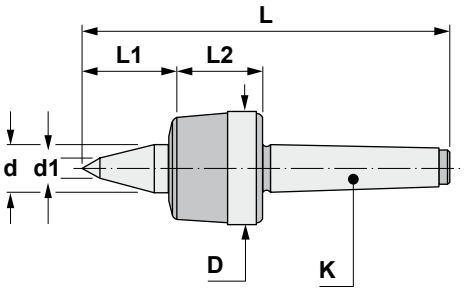
Characteristics:
All-round revolving lathe centre with extended centerpoint.
It enlarges the work area between centerpoint and workpiece and improves the workpiece accessibility.

Eigenschaften:
Mitlaufende Allround-Zentrierspitze mit verlängerter Laufspitze.
Sie vergrößert den Arbeitsraum zwischen Spitze und Werkstück und verbessert die Werkstückzugänglichkeit.



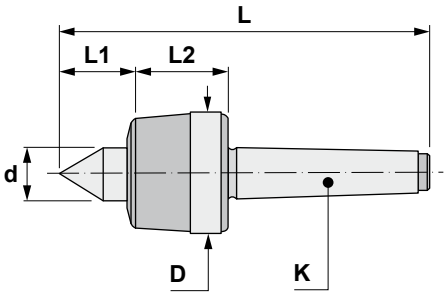

# RC

| Reference<br>Bezeichnung | K | D | d | d1 | L1 | L2 | L | Kg |
|---|---|---|---|---|---|---|---|---|
| R-300-C | MK3 | 49 | 22 | 10 | 38 | 47 | 174 | 0,900 |
| R-400-C | MK4 | 63 | 30 | 11 | 46 | 52 | 207 | 1,950 |
| R-500-C | MK5 | 85 | 35 | 18 | 64 | 64 | 266 | 4,000 |



Characteristics:
All-round revolving lathe centre, standard design.
An economic solution for almost every standard workholding situation.

Eigenschaften:
Mitlaufende Allround-Zentrierspitze, Standard-Ausführung.
Eine wirtschaftliche Lösung für nahezu jede Standard-Spannsituation.



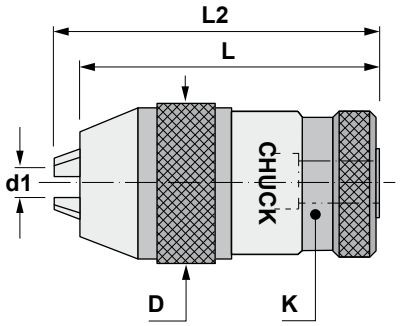

# RN

| Reference<br>Bezeichnung | K | D | d | L1 | L2 | L | Kg |
|---|---|---|---|---|---|---|---|
| R-200-N | MK2 | 42 | 18 | 24 | 39 | 137 | 0,500 |
| R-300-N | MK3 | 49 | 22 | 29 | 47 | 163 | 0,850 |
| R-400-N | MK4 | 63 | 30 | 35 | 52 | 196 | 1,900 |
| R-500-N | MK5 | 85 | 35 | 48 | 64 | 250 | 3,950 |



Characteristics:
Keyless drill chucks, standard class.
DIN 238

Eigenschaften:
Selbstspann-Bohrfutter, Standard-Ausführung.
DIN 238




# MU

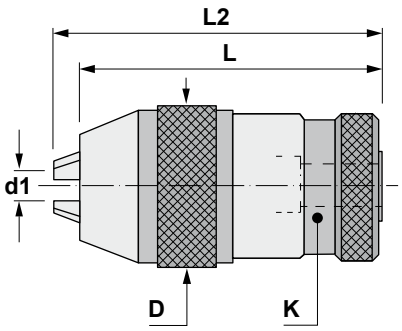
| Reference<br>Bezeichnung | K DIN 238 | d1 | D | L | L2 | Kg |
|---|---|---|---|---|---|---|
| MU08B12 | B-12 | 0,8-8 | 37 | 72 | 78 | 0,340 |
| MU10B12 | B-12 | 0,8-10 | 40 | 79 | 86 | 0,610 |
| MU13B16 | B-16 | 1-13 | 47 | 93 | 103 | 0,940 |
| MU16B16 | B-16 | 3-16 | 52 | 95 | 105 | 1,150 |
| MU16B18 | B-18 | 3-16 | 52 | 95 | 105 | 1,140 |
| MU20B18 | B-18 | 5-20 | 64 | 121 | 131 | 2,250 |

| Reference<br>Bezeichnung | 3x |
|---|---|
| MU08B12 | 60328 |
| MU10B12 | 60330 |
| MU13B16 | 60333 |
| MU16B16 | 60336 |
| MU16B18 | 60336 |
| MU20B18 | 60336 |



Characteristics:
Super precision keyless drill chucks.
DIN 238

Eigenschaften:
Höchst-Genauigkeit-Selbstspannbohrfutter.
DIN 238




# MP

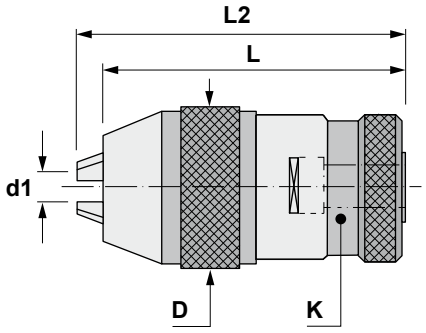
| Reference<br>Bezeichnung | K DIN 238 | d1 | D | L | L2 | Kg |
|---|---|---|---|---|---|---|
| MP08B12 | B-12 | 0,3-8 | 38 | 67 | 74 | 0,500 |
| MP10B12 | B-12 | 0,5-10 | 43 | 81 | 89 | 0,720 |
| MP10B16 | B-16 | 0,5-10 | 43 | 81 | 89 | 0,740 |
| MP13B16 | B-16 | 1-13 | 49 | 91 | 103 | 0,990 |
| MP16B16 | B-16 | 3-16 | 55 | 95 | 107 | 1,320 |
| MP16B18 | B-18 | 3-16 | 55 | 95 | 107 | 1,270 |

| Reference<br>Bezeichnung | 3x |
|---|---|
| MP08B12 | 60308 |
| MP10B12 | 60310 |
| MP10B16 | 60310 |
| MP13B16 | 60313 |
| MP16B16 | 60313 |
| MP16B18 | 60313 |



Characteristics:
Super precision keyless drill chucks, with supplementary gripping tongue.
DIN 238

Eigenschaften:
Höchst-Genauigkeit-Selbstspannbohrfutter mit Schlüsselflächen zur Spannkrafterhöhung.
DIN 238




# MK

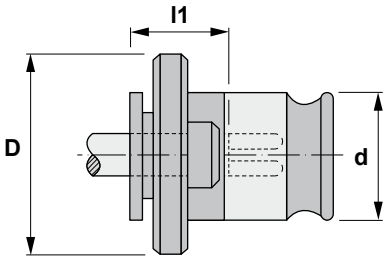
| Reference<br>Bezeichnung | K DIN 238 | d1 | D | L | L2 | Kg |
|---|---|---|---|---|---|---|
| MK08B12 | B-12 | 0,3-8 | 38 | 67 | 74 | 0,480 |
| MK10B12 | B-12 | 0,5-10 | 43 | 81 | 89 | 0,940 |
| MK10B16 | B-16 | 0,5-10 | 43 | 81 | 89 | 0,940 |
| MK13B16 | B-16 | 1-13 | 49 | 91 | 103 | 1,150 |
| MK16B16 | B-16 | 3-16 | 55 | 95 | 107 | 1,540 |
| MK16B18 | B-18 | 3-16 | 55 | 95 | 107 | 1,260 |

| Reference<br>Bezeichnung |  | 3x  |
|---|---|---|
| MK08B12 | 50008 | 60308 |
| MK10B12 | 50010 | 60310 |
| MK10B16 | 50010 | 60310 |
| MK13B16 | 50013 | 60313 |
| MK16B16 | 50016 | 60313 |
| MK16B18 | 50016 | 60313 |



Characteristics:
Quick change adapter without overload clutch.
BILZ system.

Eigenschaften:
Wechseleinsatz für Gewindebohrer ohne Sicherheitskupplung.
BILZ System.



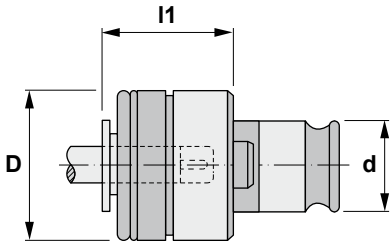

## $7\frac{1}{2}\frac{0}{3}$XX

| Reference<br>Bezeichnung | DIN d1 x a | d | D | l1 |
|---|---|---|---|---|
| 71002 | 2,8 x 2,1 | 19 | 30 | 11 |
| 71003 | 3,5 x 2,7 | 19 | 30 | 11 |
| 71004 | 4,0 x 3,0 | 19 | 30 | 11 |
| 71005 | 4,5 x 3,4 | 19 | 30 | 11 |
| 71006 | 5,5 x 4,3 | 19 | 30 | 11 |
| 71007 | 6,0 x 4,9 | 19 | 30 | 11 |
| 71008 | 7,0 x 5,5 | 19 | 30 | 11 |
| 71009 | 8,0 x 6,2 | 19 | 30 | 11 |
| 71010 | 9,0 x 7,0 | 19 | 30 | 11 |
| 71011 | 10,0 x 8,0 | 19 | 30 | 11 |
| 71012 | 11,0 x 9,0 | 19 | 30 | 11 |
| 71013 | 12,0 x 9,0 | 19 | 30 | 11 |
| 72007 | 6,0 x 4,9 | 31 | 48 | 11 |
| 72008 | 7,0 x 5,5 | 31 | 48 | 11 |
| 72009 | 8,0 x 6,2 | 31 | 48 | 11 |
| 72010 | 9,0 x 7,0 | 31 | 48 | 11 |
| 72011 | 10,0 x 8,0 | 31 | 48 | 11 |
| 72012 | 11,0 x 9,0 | 31 | 48 | 11 |
| 72013 | 12,0 x 9,0 | 31 | 48 | 11 |
| 72014 | 14,0 x 11,0 | 31 | 48 | 11 |
| 72015 | 16,0 x 12,0 | 31 | 48 | 11 |
| 72016 | 18,0 x 14,5 | 31 | 48 | 11 |
| 72017 | 20,0 x 16,0 | 31 | 48 | 11 |
| 72018 | 22,0 x 18,0 | 31 | 48 | 11 |
| 73012 | 11,0 x 9,0 | 48 | 70 | 14 |
| 73013 | 12,0 x 9,0 | 48 | 70 | 14 |
| 73014 | 14,0 x 11,0 | 48 | 70 | 14 |
| 73015 | 16,0 x 12,0 | 48 | 70 | 14 |
| 73016 | 18,0 x 14,5 | 48 | 70 | 14 |
| 73017 | 20,0 x 16,0 | 48 | 70 | 14 |
| 73018 | 22,0 x 18,0 | 48 | 70 | 14 |
| 73019 | 25,0 x 20,0 | 48 | 70 | 14 |
| 73020 | 28,0 x 22,0 | 48 | 70 | 14 |
| 73021 | 32,0 x 24,0 | 48 | 70 | 14 |
| 73022 | 36,0 x 29,0 | 48 | 70 | 14 |



Characteristics:
Quick change adapter with overload clutch.
BILZ system.

Eigenschaften:
Wechseleinsatz für Gewindebohrer mit Sicherheitskupplung.
BILZ System.




## 7$^{5}_{6}{}_{7}$0XX

| Reference<br>Bezeichnung | DIN d1 x a | d | D | l1 |
|---|---|---|---|---|
| 75002 | 2,8 x 2,1 | 19 | 32 | 25 |
| 75003 | 3,5 x 2,7 | 19 | 32 | 25 |
| 75004 | 4,0 x 3,0 | 19 | 32 | 25 |
| 75005 | 4,5 x 3,4 | 19 | 32 | 25 |
| 75006 | 5,5 x 4,3 | 19 | 32 | 25 |
| 75007 | 6,0 x 4,9 | 19 | 32 | 25 |
| 75008 | 7,0 x 5,5 | 19 | 32 | 25 |
| 75009 | 8,0 x 6,2 | 19 | 32 | 25 |
| 75010 | 9,0 x 7,0 | 19 | 32 | 25 |
| 75011 | 10,0 x 8,0 | 19 | 32 | 25 |
| 75012 | 11,0 x 9,0 | 19 | 32 | 25 |
| 75013 | 12,0 x 9,0 | 19 | 32 | 25 |
| 76007 | 6,0 x 4,9 | 31 | 50 | 34 |
| 76008 | 7,0 x 5,5 | 31 | 50 | 34 |
| 76009 | 8,0 x 6,2 | 31 | 50 | 34 |
| 76010 | 9,0 x 7,0 | 31 | 50 | 34 |
| 76011 | 10,0 x 8,0 | 31 | 50 | 34 |
| 76012 | 11,0 x 9,0 | 31 | 50 | 34 |
| 76013 | 12,0 x 9,0 | 31 | 50 | 34 |
| 76014 | 14,0 x 11,0 | 31 | 50 | 34 |
| 76015 | 16,0 x 12,0 | 31 | 50 | 34 |
| 76016 | 18,0 x 14,5 | 31 | 50 | 34 |
| 76017 | 20,0 x 16,0 | 31 | 50 | 34 |
| 76018 | 22,0 x 18,0 | 31 | 50 | 34 |
| 77010 | 9,0 x 7,0 | 48 | 72 | 45 |
| 77012 | 11,0 x 7,0 | 48 | 72 | 45 |
| 77013 | 12,0 x 9,0 | 48 | 72 | 45 |
| 77014 | 14,0 x 11,0 | 48 | 72 | 45 |
| 77015 | 16,0 x 12,0 | 48 | 72 | 45 |
| 77016 | 18,0 x 14,5 | 48 | 72 | 45 |
| 77017 | 20,0 x 16,0 | 48 | 72 | 45 |
| 77018 | 22,0 x 18,0 | 48 | 72 | 45 |
| 77019 | 25,0 x 20,0 | 48 | 72 | 45 |
| 77020 | 28,0 x 22,0 | 48 | 72 | 45 |
| 77021 | 32,0 x 24,0 | 48 | 72 | 45 |
| 77022 | 36,0 x 29,0 | 48 | 72 | 45 |

## *Selection table of tap adapters*
## *Auswahltabelle von Wechseleinsätzen für Gewindebohrer*

| "XX" | Ø X □ | DIN 352 | DIN 5156/ 5157 | DIN 371 | DIN 374 | DIN 376 | DIN 371 | DIN 374/ 376 |
|---|---|---|---|---|---|---|---|---|
| **01** | 2,5 x 2,1 | M 1/1,8 | | M 1/1,8 | M 3,5 | M 3,5 | 1/16" | |
| | | | | | | | Nr. 0/1 | |
| **02** | 2,8 x 2,1 | M 2 | | M 2 | M 4 | M 4 | 3/32" | |
| | | M 2,2 | | M 2,2 | | | Nr. 2 | |
| | | M 2,5 | | M 2,5 | | | Nr. 3 | |
| **03** | 3,5 x 2,7 | M 3 | | M 3 | M 5 | M 5 | 1/8" | |
| | | | | | | | Nr. 4 | |
| | | | | | | | Nr. 5 | |
| **04** | 4 x 3 | M 3,5 | | M 3,5 | M 5,5 | M 5,5 | Nr. 6 | |
| **05** | 4,5 x 3,4 | M 4 | | M 4 | M 6 | M 6 | 5/32" | |
| | | | | | | | Nr. 8 | |
| **06** | 5,5 x 4,3 | | | | M 7 | M 7 | | |
| **07** | 6 x 4,9 | M 4,5 | G 1/16" | M 4,5 | M 8 | M 8 | Nr. 10/12 | |
| | | M 5 | | M 5 | | | 3/16" | 1/4" |
| | | M 6 | | M 6 | | | 7/32" | 5/16" |
| | | M 7 | | | | | | |
| | | M 8 | | | | | | |
| **08** | 7 x 5,5 | M 10 | G 1/8" | M 7 | M 10 | M 10 | 1/4" | 3/8" |
| **09** | 8 x 6,2 | M 11 | | M 8 | M 11 | M 11 | 5/16" | 7/16" |
| **10** | 9 x 7 | M 12 | | M 9 | M 12 | M 12 | 3/8" | 1/2" |
| **11** | 10 x 8 | | | M 10 | | | | |
| **12** | 11 x 9 | M 14 | G 1/4" | | M 14 | M 14 | 9/16" | |
| **13** | 12 x 9 | M 16 | G 3/8" | | M 16 | M 16 | 5/8" | |
| **14** | 14 x 11 | M 18 | | | M 18 | M 18 | 11/16" | |
| | | | | | | | | 3/4" |
| **15** | 16 x 12 | M 20 | G 1/2" | | M 20 | M 20 | 13/16" | |
| **16** | 18 x 14,5 | M 22 | G 5/8" | | M 22 | M 22 | 7/8" | |
| | | M 24 | | | M 24 | M 24 | 15/16" | |
| **17** | 20 x 16 | M 27 | G 3/4" | | M 27 | M 27 | 1" | |
| **18** | 22 x 18 | M 30 | G 7/8" | | M 30 | M 30 | 1.1/8" | |
| **19** | 25 x 20 | M 33 | G 1" | | M 33 | M 33 | 1.1/4" | |
| **20** | 28 x 22 | M 36 | G 1.1/8" | | M 36 | M 36 | 1.3/8" | |
| **21** | 32 x 24 | M 39 | G 1.1/4" | | M 39 | M 39 | 1.1/2" | |
| | | M 42 | | | M 42 | M 42 | 1.5/8" | |
| **22** | 36 x 29 | M 45 | G 1.3/8" | | M 45 | M 45 | 1.3/4" | |
| | | M 48 | G 1.1/2" | | M 48 | M 48 | | 1.7/8" |

**A = REDUCED SHANK / B = REINFORCED SHANK**

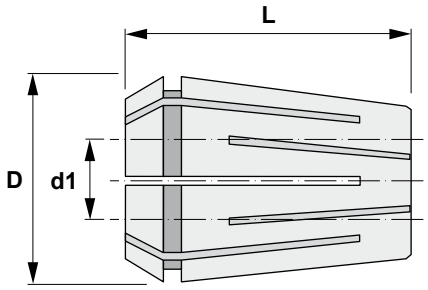
**A = REDUZIERTE AUFNAHME / B = VERSTÄRKTE AUFNAHME**

| "XX" | Ø X □ | M - MF | | UNC - UNF | | BSW - BSF | | BA |
|---|---|---|---|---|---|---|---|---|
| | | A | B | A | B | A | B | A |
| **30** | 2,24 x 1,8 | M 3 | | Nr. 5 | | 1/8 | | |
| **31** | 2,5 x 2 | M 3,5 | M 1,0/2 | Nr. 6 | Nr. 0 | | | Nr. 11 |
| | | | | | Nr. 1 | | | Nr. 10 |
| | | | | | | | | Nr. 9 |
| **32** | 2,8 x 2,24 | | M 2,2 | | Nr. 2 | | | Nr. 8 |
| | | | M 2,5 | | Nr. 3 | | | Nr. 7 |
| | | | | | | | | Nr. 6 |
| **33** | 3,15 x 2,5 | M 4 | M 3 | | Nr. 4 | | 1/8 | Nr. 5 |
| | | | | Nr. 8 | Nr. 5 | | | |
| **34** | 3,55 x 2,8 | M 4,5 | M 3,5 | Nr. 10 | Nr. 6 | 3/16 | | Nr. 4 |
| **35** | 4 x 3,15 | M 5 | M 4 | Nr. 12 | | 7/32 | | |
| **36** | 4,5 x 3,55 | M 6 | M 4,5 | 1/4 | Nr. 8 | 1/4 | | Nr. 3 |
| **37** | 5 x 4 | | M 5 | | Nr. 10 | | 3/16 | Nr. 2 |
| **38** | 5,6 x 4,5 | M 7 | | | Nr. 12 | 9/32 | 7/32 | Nr. 1 |
| **39** | 6,3 x 5 | M 8 | M 6 | 5/16 | 1/4 | 5/16 | 1/4 | Nr. 0 |
| **40** | 7,1 x 5,6 | M 9 | M 7 | 3/8 | | 3/8 | 9/32 | |
| **41** | 8 x 6,3 | M 10 | M 8 | 7/16 | 5/16 | 7/16 | 5/16 | |
| **42** | 9 x 7,1 | M 12 | M 9 | 1/2 | | 1/2 | | |
| **11** | 10 x 8 | | M 10 | | 3/8 | | 3/8 | |
| **43** | 11,2 x 9 | M 14 | | 9/16 | | 9/16 | | |
| **44** | 12,5 x 10 | M 16 | | 5/8 | | 5/8 | | |
| **45** | 14 x 11,2 | M 18 | | | | 11/16 | | |
| | | M 20 | | 3/4 | | 3/4 | | |
| **46** | 16 x 12,5 | M 22 | | 7/8 | | 7/8 | | |
| **47** | 18 x 14 | M 24 | | 1 | | 1 | | |
| **17** | 20 x 16 | M 27 | | 1.1/8 | | 1.1/8 | | |
| | | M 30 | | | | | | |
| **48** | 22,4 x 18 | M 33 | | 1.1/4 | | 1.1/4 | | |
| **19** | 25 x 20 | M 36 | | 1.3/8 | | 1.3/8 | | |
| **49** | 28 x 22,4 | M 39 | | 1.1/2 | | 1.1/2 | | |
| | | M 42 | | | | 1.5/8 | | |
| **50** | 31,5 x 25 | M 45 | | 1.3/4 | | 1.3/4 | | |
| | | M 48 | | | | | | |
| **51** | 35,45 x 28 | M 52 | | 2 | | 2 | | |
| | | | | | | | | |



Characteristics:
Collets with double slot DIN 6388 - Form B.
For tools with cylindrical shank
DIN 1835 - A.

Eigenschaften:
Spannzangen mit Doppelnut DIN 6388 - FORM-B, für Werkzeuge mit Zylinderschaft DIN 1835-A.




# BXX

| Reference<br>Bezeichnung | | d1 | D | L |
|---|---|---|---|---|
| B1602.0 | B16 | 2,0-1,5 | 25,50 | 40 |
| B1602.5 | B16 | 2,5-2,0 | 25,50 | 40 |
| B1603.0 | B16 | 3,0-2,5 | 25,50 | 40 |
| B1603.5 | B16 | 3,5-3,0 | 25,50 | 40 |
| B1604.0 | B16 | 4,0-3,5 | 25,50 | 40 |
| B1604.5 | B16 | 4,5-4,0 | 25,50 | 40 |
| B1605.0 | B16 | 5,0-4,5 | 25,50 | 40 |
| B1605.5 | B16 | 5,5-5,0 | 25,50 | 40 |
| B1606.0 | B16 | 6,0-5,5 | 25,50 | 40 |
| B1606.5 | B16 | 6,5-6,0 | 25,50 | 40 |
| B1607.0 | B16 | 7,0-6,5 | 25,50 | 40 |
| B1607.5 | B16 | 7,5-7,0 | 25,50 | 40 |
| B1608.0 | B16 | 8,0-7,5 | 25,50 | 40 |
| B1608.5 | B16 | 8,5-8,0 | 25,50 | 40 |
| B1609.0 | B16 | 9,0-8,5 | 25,50 | 40 |
| B1609.5 | B16 | 9,5-9,0 | 25,50 | 40 |
| B1610.0 | B16 | 10,0-9,5 | 25,50 | 40 |
| B1610.5 | B16 | 10,5-10,0 | 25,50 | 40 |
| B1611.0 | B16 | 11,0-10,5 | 25,50 | 40 |
| B1611.5 | B16 | 11,5-11,0 | 25,50 | 40 |
| B1612.0 | B16 | 12,0-11,5 | 25,50 | 40 |
| B1612.5 | B16 | 12,5-12,0 | 25,50 | 40 |
| B1613.0 | B16 | 13,0-12,5 | 25,50 | 40 |
| B1613.5 | B16 | 13,5-13,0 | 25,50 | 40 |
| B1614.0 | B16 | 14,0-13,5 | 25,50 | 40 |
| B1614.5 | B16 | 14,5-14,0 | 25,50 | 40 |
| B1615.0 | B16 | 15,0-14,5 | 25,50 | 40 |
| B1615.5 | B16 | 15,5-15,0 | 25,50 | 40 |
| B1616.0 | B16 | 16,0-15,5 | 25,50 | 40 |
| B2503.0 | B25 | 3,0-2,5 | 35,05 | 52 |
| B2503.5 | B25 | 3,5-3,0 | 35,05 | 52 |
| B2504.0 | B25 | 4,0-3,5 | 35,05 | 52 |
| B2504.5 | B25 | 4,5-4,0 | 35,05 | 52 |
| B2505.0 | B25 | 5,0-4,5 | 35,05 | 52 |
| B2505.5 | B25 | 5,5-5,0 | 35,05 | 52 |
| B2506.0 | B25 | 6,0-5,5 | 35,05 | 52 |
| B2506.5 | B25 | 6,5-6,0 | 35,05 | 52 |
| B2507.0 | B25 | 7,0-6,5 | 35,05 | 52 |
| B2507.5 | B25 | 7,5-7,0 | 35,05 | 52 |
| B2508.0 | B25 | 8,0-7,5 | 35,05 | 52 |

| Reference<br>Bezeichnung |  | d1 | D | L |
|---|---|---|---|---|
| B2508.5 | B25 | 8,5-8,0 | 35,05 | 52 |
| B2509.0 | B25 | 9,0-8,5 | 35,05 | 52 |
| B2509.5 | B25 | 9,5-9,0 | 35,05 | 52 |
| B2510.0 | B25 | 10,0-9,5 | 35,05 | 52 |
| B2510.5 | B25 | 10,5-10,0 | 35,05 | 52 |
| B2511.0 | B25 | 11,0-10,5 | 35,05 | 52 |
| B2511.5 | B25 | 11,5-11,0 | 35,05 | 52 |
| B2512.0 | B25 | 12,0-11,5 | 35,05 | 52 |
| B2512.5 | B25 | 12,5-12,0 | 35,05 | 52 |
| B2513.0 | B25 | 13,0-12,5 | 35,05 | 52 |
| B2513.5 | B25 | 13,5-13,0 | 35,05 | 52 |
| B2514.0 | B25 | 14,0-13,5 | 35,05 | 52 |
| B2514.5 | B25 | 14,5-14,0 | 35,05 | 52 |
| B2515.0 | B25 | 15,0-14,5 | 35,05 | 52 |
| B2515.5 | B25 | 15,5-15,0 | 35,05 | 52 |
| B2516.0 | B25 | 16,0-15,5 | 35,05 | 52 |
| B2516.5 | B25 | 16,5-16,0 | 35,05 | 52 |
| B2517.0 | B25 | 17,0-16,5 | 35,05 | 52 |
| B2517.5 | B25 | 17,5-17,0 | 35,05 | 52 |
| B2518.0 | B25 | 18,0-17,5 | 35,05 | 52 |
| B2518.5 | B25 | 18,5-18,0 | 35,05 | 52 |
| B2519.0 | B25 | 19,0-18,5 | 35,05 | 52 |
| B2519.5 | B25 | 19,5-19,0 | 35,05 | 52 |
| B2520.0 | B25 | 20,0-19,5 | 35,05 | 52 |
| B2520.5 | B25 | 20,5-20,0 | 35,05 | 52 |
| B2521.0 | B25 | 21,0-20,5 | 35,05 | 52 |
| B2521.5 | B25 | 21,5-21,0 | 35,05 | 52 |
| B2522.0 | B25 | 22,0-21,5 | 35,05 | 52 |
| B2522.5 | B25 | 22,5-22,0 | 35,05 | 52 |
| B2523.0 | B25 | 23,0-22,5 | 35,05 | 52 |
| B2523.5 | B25 | 23,5-23,0 | 35,05 | 52 |
| B2524.0 | B25 | 24,0-23,5 | 35,05 | 52 |
| B2524.5 | B25 | 24,5-24,0 | 35,05 | 52 |
| B2525.0 | B25 | 25,0-24,5 | 35,05 | 52 |
| B3204.0 | B32 | 4,0-3,5 | 43,70 | 60 |
| B3204.5 | B32 | 4,5-4,0 | 43,70 | 60 |
| B3205.0 | B32 | 5,0-4,5 | 43,70 | 60 |
| B3205.5 | B32 | 5,5-5,0 | 43,70 | 60 |
| B3206.0 | B32 | 6,0-5,5 | 43,70 | 60 |
| B3206.5 | B32 | 6,5-6,0 | 43,70 | 60 |
| B3207.0 | B32 | 7,0-6,5 | 43,70 | 60 |
| B3207.5 | B32 | 7,5-7,0 | 43,70 | 60 |
| B3208.0 | B32 | 8,0-7,5 | 43,70 | 60 |
| B3208.5 | B32 | 8,5-8,0 | 43,70 | 60 |
| B3209.0 | B32 | 9,0-8,5 | 43,70 | 60 |
| B3209.5 | B32 | 9,5-9,0 | 43,70 | 60 |
| B3210.0 | B32 | 10,0-9,5 | 43,70 | 60 |
| B3210.5 | B32 | 10,5-10,0 | 43,70 | 60 |
| B3211.0 | B32 | 11,0-10,5 | 43,70 | 60 |
| B3211.5 | B32 | 11,5-11,0 | 43,70 | 60 |
| B3212.0 | B32 | 12,0-11,5 | 43,70 | 60 |
| B3212.5 | B32 | 12,5-12,0 | 43,70 | 60 |
| B3213.0 | B32 | 13,0-12,5 | 43,70 | 60 |

| Reference<br>Bezeichnung |  | d1 | D | L |
|---|---|---|---|---|
| B3213.5 | B32 | 13,5-13,0 | 43,70 | 60 |
| B3214.0 | B32 | 14,0-13,5 | 43,70 | 60 |
| B3214.5 | B32 | 14,5-14,0 | 43,70 | 60 |
| B3215.0 | B32 | 15,0-14,5 | 43,70 | 60 |
| B3215.5 | B32 | 15,5-15,0 | 43,70 | 60 |
| B3216.0 | B32 | 16,0-15,5 | 43,70 | 60 |
| B3216.5 | B32 | 16,5-16,0 | 43,70 | 60 |
| B3217.0 | B32 | 17,0-16,5 | 43,70 | 60 |
| B3217.5 | B32 | 17,5-17,0 | 43,70 | 60 |
| B3218.0 | B32 | 18,0-17,5 | 43,70 | 60 |
| B3218.5 | B32 | 18,5-18,0 | 43,70 | 60 |
| B3219.0 | B32 | 19,0-18,5 | 43,70 | 60 |
| B3219.5 | B32 | 19,5-19,0 | 43,70 | 60 |
| B3220.0 | B32 | 20,0-19,5 | 43,70 | 60 |
| B3220.5 | B32 | 20,5-20,0 | 43,70 | 60 |
| B3221.0 | B32 | 21,0-20,5 | 43,70 | 60 |
| B3221.5 | B32 | 21,5-21,0 | 43,70 | 60 |
| B3222.0 | B32 | 22,0-21,5 | 43,70 | 60 |
| B3222.5 | B32 | 22,5-22,0 | 43,70 | 60 |
| B3223.0 | B32 | 23,0-22,5 | 43,70 | 60 |
| B3223.5 | B32 | 23,5-23,0 | 43,70 | 60 |
| B3224.0 | B32 | 24,0-23,5 | 43,70 | 60 |
| B3224.5 | B32 | 24,5-24,0 | 43,70 | 60 |
| B3225.0 | B32 | 25,0-24,5 | 43,70 | 60 |
| B3225.5 | B32 | 25,5-25,0 | 43,70 | 60 |
| B3226.0 | B32 | 26,0-25,5 | 43,70 | 60 |
| B3226.5 | B32 | 26,5-26,0 | 43,70 | 60 |
| B3227.0 | B32 | 27,0-26,5 | 43,70 | 60 |
| B3227.5 | B32 | 27,5-27,0 | 43,70 | 60 |
| B3228.0 | B32 | 28,0-27,5 | 43,70 | 60 |
| B3228.5 | B32 | 28,5-28,0 | 43,70 | 60 |
| B3229.0 | B32 | 29,0-28,5 | 43,70 | 60 |
| B3229.5 | B32 | 29,5-29,0 | 43,70 | 60 |
| B3230.0 | B32 | 30,0-29,5 | 43,70 | 60 |
| B3230.5 | B32 | 30,5-30,0 | 43,70 | 60 |
| B3231.0 | B32 | 31,0-30,5 | 43,70 | 60 |
| B3231.5 | B32 | 31,5-31,0 | 43,70 | 60 |
| B3232.0 | B32 | 32,0-31,5 | 43,70 | 60 |

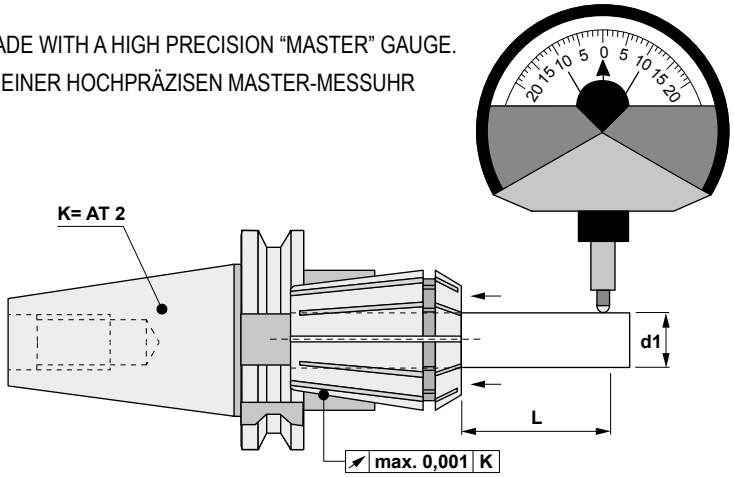
## *DIN 6499 ERXX/X - Runout table for collets DIN 6499*
## *Rundlauftabelle der Spannzangen DIN 6499*

Runout table of Mexin collets according to DIN 6499 showing the high precision of normal collets type ER/XX, in comparison with other brands.

Rundlauftabelle der Spannzangen Mexin nach DIN 6499. Die Tabelle zeigt die Hochgenauigkeit der normalen Spannzangen Typ ERXX im Vergleich mit anderen Marken.

THE CONTROL MUST BE MADE WITH A HIGH PRECISION "MASTER" GAUGE.

DIE KONTROLLE MUSS MIT EINER HOCHPRÄZISEN MASTER-MESSUHR GEMACHT WERDEN.




| d1 mm | L mm | DIN CLASS / KLASSE 2 mm 452XX ERXX | DIN CLASS / KLASSE 1 mm | mexin NORMAL mm ERXX | mexin SUPER mm |
|---|---|---|---|---|---|
| 1,0 - 1,6 | 6 | 0,015 | 0,010 | 0,010 | 0,005 |
| >1,6 - 3,0 | 10 | 0,015 | 0,010 | 0,010 | 0,005 |
| >3,0 - 7,0 | 16 | 0,015 | 0,010 | 0,010 | 0,005 |
| >7,0 - 10,0 | 25 | 0,015 | 0,010 | 0,010 | 0,005 |
| >10,0 - 18,0 | 40 | 0,020 | 0,015 | 0,015 | 0,005 |
| >18,0 - 26,0 | 50 | 0,020 | 0,015 | 0,015 | 0,005 |
| >26,0 - 34,0 | 60 | 0,025 | 0,020 | 0,020 | 0,010 |

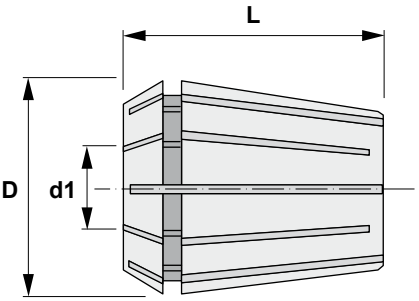
RECOMMENDED CLAMPING TORQUE FOR NUTS FOR DIN 6499 ER COLLETS.
EMPFOHLENES ANZUGSMOMENT FÜR SPANNMUTTER FÜR SPANNZANGEN DIN 6499 ER.

| |  | Normal  453 / 456 Max. Torque Nm Max. Anzugsmoment Nm | Bearings / Kugellager  451 Max. Torque Nm Max. Anzugsmoment Nm | Mini  455 Max. Torque Nm Max. Anzugsmoment Nm |
|---|---|---|---|---|
| **ER16** | | 35 / 60 | 50 / 70 | 25 / 30 |
| **ER20** | | 40 / 100 | 50 / 100 | 25 / 35 |
| **ER25** | | 80 / 120 | 90 / 130 | 35 / 40 |
| **ER32** | | 100 / 130 | 130 / 170 | |
| **ER40** | | 170 / 200 | 220 / 220 | |
| **ER50** | | 280 / 300 | 300 / 300 | |



Characteristics:
Collets with double slot DIN 6499 - Form B (ER).
For tools with cylindrical shank
DIN 1835-A.

Eigenschaften:
Spannzangen mit Doppelnut DIN 6499 - FORM B (ER) für Werkzeuge mit Zylinderschaft DIN 1835-A.




# ERXX

| Reference<br>Bezeichnung | | d1 | D | L |
|---|---|---|---|---|
| ER1601 | ER16 | 1,0-0,5 | 17 | 27,5 |
| ER1601.5 | ER16 | 1,5-1,0 | 17 | 27,5 |
| ER1602 | ER16 | 2,0-1,5 | 17 | 27,5 |
| ER1602.5 | ER16 | 2,5-2,0 | 17 | 27,5 |
| ER1603 | ER16 | 3,0-2,5 | 17 | 27,5 |
| ER1604 | ER16 | 4,0-3,0 | 17 | 27,5 |
| ER1605 | ER16 | 5,0-4,0 | 17 | 27,5 |
| ER1606 | ER16 | 6,0-5,0 | 17 | 27,5 |
| ER1607 | ER16 | 7,0-6,0 | 17 | 27,5 |
| ER1608 | ER16 | 8,0-7,0 | 17 | 27,5 |
| ER1609 | ER16 | 9,0-8,0 | 17 | 27,5 |
| ER1610 | ER16 | 10,0-9,0 | 17 | 27,5 |
| ER2001 | ER20 | 1,0-0,5 | 21 | 31,5 |
| ER2001.5 | ER20 | 1,5-1,0 | 21 | 31,5 |
| ER2002 | ER20 | 2,0-1,5 | 21 | 31,5 |
| ER2002.5 | ER20 | 2,5-2,0 | 21 | 31,5 |
| ER2003 | ER20 | 3,0-2,5 | 21 | 31,5 |
| ER2004 | ER20 | 4,0-3,0 | 21 | 31,5 |
| ER2005 | ER20 | 5,0-4,0 | 21 | 31,5 |
| ER2006 | ER20 | 6,0-5,0 | 21 | 31,5 |
| ER2007 | ER20 | 7,0-6,0 | 21 | 31,5 |
| ER2008 | ER20 | 8,0-7,0 | 21 | 31,5 |
| ER2009 | ER20 | 9,0-8,0 | 21 | 31,5 |
| ER2010 | ER20 | 10,0-9,0 | 21 | 31,5 |
| ER2011 | ER20 | 11,0-10,0 | 21 | 31,5 |
| ER2012 | ER20 | 12,0-11,0 | 21 | 31,5 |
| ER2013 | ER20 | 13,0-12,0 | 21 | 31,5 |
| ER2501 | ER25 | 1,0-0,5 | 26 | 34,0 |
| ER2501.5 | ER25 | 1,5-1,0 | 26 | 34,0 |
| ER2502 | ER25 | 2,0-1,5 | 26 | 34,0 |
| ER2502.5 | ER25 | 2,5-2,0 | 26 | 34,0 |
| ER2503 | ER25 | 3,0-2,5 | 26 | 34,0 |
| ER2504 | ER25 | 4,0-3,0 | 26 | 34,0 |
| ER2505 | ER25 | 5,0-4,0 | 26 | 34,0 |
| ER2506 | ER25 | 6,0-5,0 | 26 | 34,0 |
| ER2507 | ER25 | 7,0-6,0 | 26 | 34,0 |
| ER2508 | ER25 | 8,0-7,0 | 26 | 34,0 |
| ER2509 | ER25 | 9,0-8,0 | 26 | 34,0 |
| ER2510 | ER25 | 10,0-9,0 | 26 | 34,0 |
| ER2511 | ER25 | 11,0-10,0 | 26 | 34,0 |

| Reference<br>Bezeichnung |  | d1 | D | L |
|---|---|---|---|---|
| ER2512 | ER25 | 12,0-11,0 | 26 | 34,0 |
| ER2513 | ER25 | 13,0-12,0 | 26 | 34,0 |
| ER2514 | ER25 | 14,0-13,0 | 26 | 34,0 |
| ER2515 | ER25 | 15,0-14,0 | 26 | 34,0 |
| ER2516 | ER25 | 16,0-15,0 | 26 | 34,0 |
| ER3202 | ER32 | 2,0-1,5 | 33 | 40,0 |
| ER3202.5 | ER32 | 2,5-2,0 | 33 | 40,0 |
| ER3203 | ER32 | 3,0-2,5 | 33 | 40,0 |
| ER3204 | ER32 | 4,0-3,0 | 33 | 40,0 |
| ER3205 | ER32 | 5,0-4,0 | 33 | 40,0 |
| ER3206 | ER32 | 6,0-5,0 | 33 | 40,0 |
| ER3207 | ER32 | 7,0-6,0 | 33 | 40,0 |
| ER3208 | ER32 | 8,0-7,0 | 33 | 40,0 |
| ER3209 | ER32 | 9,0-8,0 | 33 | 40,0 |
| ER3210 | ER32 | 10,0-9,0 | 33 | 40,0 |
| ER3211 | ER32 | 11,0-10,0 | 33 | 40,0 |
| ER3212 | ER32 | 12,0-11,0 | 33 | 40,0 |
| ER3213 | ER32 | 13,0-12,0 | 33 | 40,0 |
| ER3214 | ER32 | 14,0-13,0 | 33 | 40,0 |
| ER3215 | ER32 | 15,0-14,0 | 33 | 40,0 |
| ER3216 | ER32 | 16,0-15,0 | 33 | 40,0 |
| ER3217 | ER32 | 17,0-16,0 | 33 | 40,0 |
| ER3218 | ER32 | 18,0-17,0 | 33 | 40,0 |
| ER3219 | ER32 | 19,0-18,0 | 33 | 40,0 |
| ER3220 | ER32 | 20,0-19,0 | 33 | 40,0 |
| ER4003 | ER40 | 3-2 | 41 | 46,0 |
| ER4004 | ER40 | 4-3 | 41 | 46,0 |
| ER4005 | ER40 | 5-4 | 41 | 46,0 |
| ER4006 | ER40 | 6-5 | 41 | 46,0 |
| ER4007 | ER40 | 7-6 | 41 | 46,0 |
| ER4008 | ER40 | 8-7 | 41 | 46,0 |
| ER4009 | ER40 | 9-8 | 41 | 46,0 |
| ER4010 | ER40 | 10-9 | 41 | 46,0 |
| ER4011 | ER40 | 11-10 | 41 | 46,0 |
| ER4012 | ER40 | 12-11 | 41 | 46,0 |
| ER4013 | ER40 | 13-12 | 41 | 46,0 |
| ER4014 | ER40 | 14-13 | 41 | 46,0 |
| ER4015 | ER40 | 15-14 | 41 | 46,0 |
| ER4016 | ER40 | 16-15 | 41 | 46,0 |
| ER4017 | ER40 | 17-16 | 41 | 46,0 |
| ER4018 | ER40 | 18-17 | 41 | 46,0 |
| ER4019 | ER40 | 19-18 | 41 | 46,0 |
| ER4020 | ER40 | 20-19 | 41 | 46,0 |
| ER4021 | ER40 | 21-20 | 41 | 46,0 |
| ER4022 | ER40 | 22-21 | 41 | 46,0 |
| ER4023 | ER40 | 23-22 | 41 | 46,0 |
| ER4024 | ER40 | 24-23 | 41 | 46,0 |
| ER4025 | ER40 | 25-24 | 41 | 46,0 |
| ER4026 | ER40 | 26-25 | 41 | 46,0 |
| ER4027 | ER40 | 27-26 | 41 | 46,0 |
| ER4028 | ER40 | 28-27 | 41 | 46,0 |
| ER4029 | ER40 | 29-28 | 41 | 46,0 |
| ER4030 | ER40 | 30-29 | 41 | 46,0 |

| Reference<br>Bezeichnung |  | d1 | D | L |
|---|---|---|---|---|
| ER5006 | ER50 | 6-4 | 52 | 60,0 |
| ER5008 | ER50 | 8-6 | 52 | 60,0 |
| ER5010 | ER50 | 10-8 | 52 | 60,0 |
| ER5012 | ER50 | 12-10 | 52 | 60,0 |
| ER5014 | ER50 | 14-12 | 52 | 60,0 |
| ER5016 | ER50 | 16-14 | 52 | 60,0 |
| ER5018 | ER50 | 18-16 | 52 | 60,0 |
| ER5020 | ER50 | 20-18 | 52 | 60,0 |
| ER5022 | ER50 | 22-20 | 52 | 60,0 |
| ER5024 | ER50 | 24-22 | 52 | 60,0 |
| ER5026 | ER50 | 26-24 | 52 | 60,0 |
| ER5028 | ER50 | 28-26 | 52 | 60,0 |
| ER5030 | ER50 | 30-28 | 52 | 60,0 |
| ER5032 | ER50 | 32-30 | 52 | 60,0 |
| ER5034 | ER50 | 34-32 | 52 | 60,0 |



Characteristics:
Set of collets DIN 6499 (ER) Form B in a plastic box.
DIN 6499-B

Eigenschaften:
Spannzangensatz DIN 6499 (ER) Form B im Etui.
DIN 6499-B

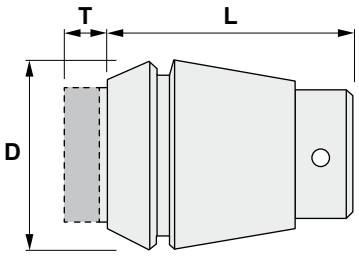
# SET-ER

| Reference Bezeichnung |  | CAP | nº  | Ø |
|---|---|---|---|---|
| SET-ER16 | ER16 | 1-10 | 10 | 1-2-3-4-5-6-7-8-9-10 |
| SET-ER20 | ER20 | 2-13 | 12 | 2-3-4-5-6-7-8-9-10-11-12-13 |
| SET-ER25 | ER25 | 2-16 | 15 | 2-3-4-5-6-7-8-9-10-11-12-13-14-15-16 |
| SET-ER32 | ER32 | 3-20 | 18 | 3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20 |
| SET-ER40 | ER40 | 4-26 | 23 | 4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26 |



Characteristics:
Collets DIN 6499 - Form Mexin (ER).
With square locking drive and tension length-adjustment.

Eigenschaften:
Spannzangen DIN 6499 - Form Mexin (ER) mit vierkantigem Antrieb und Zuglängenausgleich.



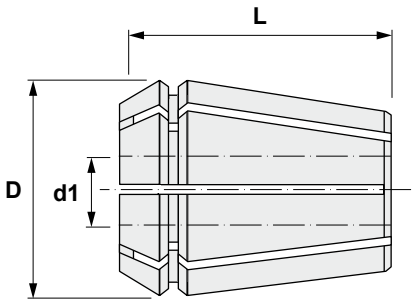

# ERBXX

| Reference<br>Bezeichnung | | DIN d1 x a | D | L | T |
|---|---|---|---|---|---|
| ERB1601 | ER16 | 2,5 x 2,1 | 17 | 27 | 7 |
| ERB1602 | ER16 | 2,8 x 2,1 | 17 | 27 | 7 |
| ERB1603 | ER16 | 3,5 x 2,7 | 17 | 27 | 7 |
| ERB1604 | ER16 | 4,0 x 3,0 | 17 | 27 | 7 |
| ERB1605 | ER16 | 4,5 x 3,4 | 17 | 27 | 7 |
| ERB1606 | ER16 | 5,5 x 4,3 | 17 | 27 | 7 |
| ERB1607 | ER16 | 6,0 x 4,9 | 17 | 27 | 7 |
| ERB2001 | ER20 | 2,5 x 2,1 | 21 | 31 | 7 |
| ERB2002 | ER20 | 2,8 x 2,1 | 21 | 31 | 7 |
| ERB2003 | ER20 | 3,5 x 2,7 | 21 | 31 | 7 |
| ERB2004 | ER20 | 4,0 x 3,0 | 21 | 31 | 7 |
| ERB2005 | ER20 | 4,5 x 3,4 | 21 | 31 | 7 |
| ERB2006 | ER20 | 5,5 x 4,3 | 21 | 31 | 7 |
| ERB2007 | ER20 | 6,0 x 4,9 | 21 | 31 | 7 |
| ERB2008 | ER20 | 7,0 x 5,5 | 21 | 31 | 7 |
| ERB2501 | ER25 | 2,5 x 2,1 | 26 | 34 | 8 |
| ERB2502 | ER25 | 2,8 x 2,1 | 26 | 34 | 8 |
| ERB2503 | ER25 | 3,5 x 2,7 | 26 | 34 | 8 |
| ERB2504 | ER25 | 4,0 x 3,0 | 26 | 34 | 8 |
| ERB2505 | ER25 | 4,5 x 3,4 | 26 | 34 | 8 |
| ERB2506 | ER25 | 5,5 x 4,3 | 26 | 34 | 8 |
| ERB2507 | ER25 | 6,0 x 4,9 | 26 | 34 | 8 |
| ERB2508 | ER25 | 7,0 x 5,5 | 26 | 34 | 8 |
| ERB2509 | ER25 | 8,0 x 6,2 | 26 | 34 | 8 |
| ERB2510 | ER25 | 9,0 x 7,0 | 26 | 34 | 8 |
| ERB3205 | ER32 | 4,5 x 3,4 | 33 | 43 | 10 |
| ERB3206 | ER32 | 5,5 x 4,3 | 33 | 43 | 10 |
| ERB3207 | ER32 | 6,0 x 4,9 | 33 | 43 | 10 |
| ERB3208 | ER32 | 7,0 x 5,5 | 33 | 43 | 10 |
| ERB3209 | ER32 | 8,0 x 6,2 | 33 | 43 | 10 |
| ERB3210 | ER32 | 9,0 x 7,0 | 33 | 43 | 10 |
| ERB3211 | ER32 | 10,0 x 8,0 | 33 | 43 | 10 |
| ERB3212 | ER32 | 11,0 x 9,0 | 33 | 43 | 10 |
| ERB3213 | ER32 | 12,0 x 9,0 | 33 | 43 | 10 |
| ERB4007 | ER40 | 6,0 x 4,9 | 41 | 54 | 13 |
| ERB4008 | ER40 | 7,0 x 5,5 | 41 | 54 | 13 |
| ERB4009 | ER40 | 8,0 x 6,2 | 41 | 54 | 13 |
| ERB4010 | ER40 | 9,0 x 7,0 | 41 | 54 | 13 |
| ERB4011 | ER40 | 10,0 x 8,0 | 41 | 54 | 13 |
| ERB4012 | ER40 | 11,0 x 9,0 | 41 | 54 | 13 |
| ERB4013 | ER40 | 12,0 x 9,0 | 41 | 54 | 13 |
| ERB4014 | ER40 | 14,0 x 11,0 | 41 | 54 | 13 |
| ERB4015 | ER40 | 16,0 x 12,0 | 41 | 54 | 13 |



Characteristics:
Sealed collets DIN 6499 (ER).
For tools with cylindrical shank DIN 1835-A and coolant channel.

Eigenschaften:
Abgedichtete Spannzangen DIN 6499 (ER) für Werkzeuge mit Zylinderschaft DIN 1835-A und Innenkühlung.




# ERCXX

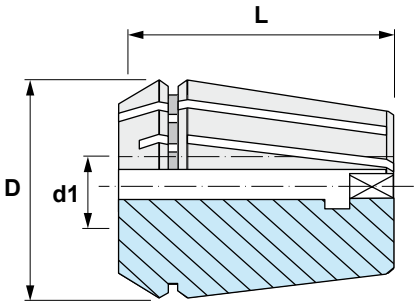
| Reference<br>Bezeichnung | | D | L | d1 |
|---|---|---|---|---|
| ERC1604 | ER16 | 17 | 27,5 | 4 |
| ERC1605 | ER16 | 17 | 27,5 | 5 |
| ERC1606 | ER16 | 17 | 27,5 | 6 |
| ERC1607 | ER16 | 17 | 27,5 | 7 |
| ERC1608 | ER16 | 17 | 27,5 | 8 |
| ERC1609 | ER16 | 17 | 27,5 | 9 |
| ERC1610 | ER16 | 17 | 27,5 | 10 |
| ERC2004 | ER20 | 21 | 31,5 | 4 |
| ERC2005 | ER20 | 21 | 31,5 | 5 |
| ERC2006 | ER20 | 21 | 31,5 | 6 |
| ERC2007 | ER20 | 21 | 31,5 | 7 |
| ERC2008 | ER20 | 21 | 31,5 | 8 |
| ERC2009 | ER20 | 21 | 31,5 | 9 |
| ERC2010 | ER20 | 21 | 31,5 | 10 |
| ERC2011 | ER20 | 21 | 31,5 | 11 |
| ERC2012 | ER20 | 21 | 31,5 | 12 |
| ERC2013 | ER20 | 21 | 31,5 | 13 |
| ERC2504 | ER25 | 26 | 34,0 | 4 |
| ERC2505 | ER25 | 26 | 34,0 | 5 |
| ERC2506 | ER25 | 26 | 34,0 | 6 |
| ERC2507 | ER25 | 26 | 34,0 | 7 |
| ERC2508 | ER25 | 26 | 34,0 | 8 |
| ERC2509 | ER25 | 26 | 34,0 | 9 |
| ERC2510 | ER25 | 26 | 34,0 | 10 |
| ERC2511 | ER25 | 26 | 34,0 | 11 |
| ERC2512 | ER25 | 26 | 34,0 | 12 |
| ERC2513 | ER25 | 26 | 34,0 | 13 |
| ERC2514 | ER25 | 26 | 34,0 | 14 |
| ERC2515 | ER25 | 26 | 34,0 | 15 |
| ERC2516 | ER25 | 26 | 34,0 | 16 |
| ERC3204 | ER32 | 33 | 40,0 | 4 |
| ERC3205 | ER32 | 33 | 40,0 | 5 |
| ERC3206 | ER32 | 33 | 40,0 | 6 |
| ERC3207 | ER32 | 33 | 40,0 | 7 |
| ERC3208 | ER32 | 33 | 40,0 | 8 |
| ERC3209 | ER32 | 33 | 40,0 | 9 |
| ERC3210 | ER32 | 33 | 40,0 | 10 |
| ERC3211 | ER32 | 33 | 40,0 | 11 |
| ERC3212 | ER32 | 33 | 40,0 | 12 |
| ERC3213 | ER32 | 33 | 40,0 | 13 |

| Reference<br>Bezeichnung |  | D | L | d1 |
|---|---|---|---|---|
| ERC3214 | ER32 | 33 | 40,0 | 14 |
| ERC3215 | ER32 | 33 | 40,0 | 15 |
| ERC3216 | ER32 | 33 | 40,0 | 16 |
| ERC3217 | ER32 | 33 | 40,0 | 17 |
| ERC3218 | ER32 | 33 | 40,0 | 18 |
| ERC3219 | ER32 | 33 | 40,0 | 19 |
| ERC3220 | ER32 | 33 | 40,0 | 20 |
| ERC4004 | ER40 | 41 | 46,0 | 4 |
| ERC4005 | ER40 | 41 | 46,0 | 5 |
| ERC4006 | ER40 | 41 | 46,0 | 6 |
| ERC4007 | ER40 | 41 | 46,0 | 7 |
| ERC4008 | ER40 | 41 | 46,0 | 8 |
| ERC4009 | ER40 | 41 | 46,0 | 9 |
| ERC4010 | ER40 | 41 | 46,0 | 10 |
| ERC4011 | ER40 | 41 | 46,0 | 11 |
| ERC4012 | ER40 | 41 | 46,0 | 12 |
| ERC4013 | ER40 | 41 | 46,0 | 13 |
| ERC4014 | ER40 | 41 | 46,0 | 14 |
| ERC4015 | ER40 | 41 | 46,0 | 15 |
| ERC4016 | ER40 | 41 | 46,0 | 16 |
| ERC4017 | ER40 | 41 | 46,0 | 17 |
| ERC4018 | ER40 | 41 | 46,0 | 18 |
| ERC4019 | ER40 | 41 | 46,0 | 19 |
| ERC4020 | ER40 | 41 | 46,0 | 20 |
| ERC4021 | ER40 | 41 | 46,0 | 21 |
| ERC4022 | ER40 | 41 | 46,0 | 22 |
| ERC4023 | ER40 | 41 | 46,0 | 23 |
| ERC4024 | ER40 | 41 | 46,0 | 24 |
| ERC4025 | ER40 | 41 | 46,0 | 25 |
| ERC4026 | ER40 | 41 | 46,0 | 26 |
| ERC5012 | ER50 | 52 | 60,0 | 12 |
| ERC5014 | ER50 | 52 | 60,0 | 14 |
| ERC5016 | ER50 | 52 | 60,0 | 16 |
| ERC5018 | ER50 | 52 | 60,0 | 18 |
| ERC5020 | ER50 | 52 | 60,0 | 20 |
| ERC5022 | ER50 | 52 | 60,0 | 22 |
| ERC5024 | ER50 | 52 | 60,0 | 24 |
| ERC5026 | ER50 | 52 | 60,0 | 26 |
| ERC5028 | ER50 | 52 | 60,0 | 28 |
| ERC5030 | ER50 | 52 | 60,0 | 30 |
| ERC5032 | ER50 | 52 | 60,0 | 32 |
| ERC5034 | ER50 | 52 | 60,0 | 34 |



Characteristics:
Collets DIN 6499 - Form Mexin (ER).
With square locking drive.

Eigenschaften:
Spannzangen DIN 6499 - Form Mexin (ER) mit vierkantigem Antrieb.




# ERTXX

| Reference<br>Bezeichnung | | d1 | D | L |
|---|---|---|---|---|
| ERT1605 | ER16 | 4,5 x 3,4 | 17 | 27,5 |
| ERT1606 | ER16 | 5,5 x 4,3 | 17 | 27,5 |
| ERT1607 | ER16 | 6,0 x 4,9 | 17 | 27,5 |
| ERT1608 | ER16 | 7,0 x 5,5 | 17 | 27,5 |
| ERT2005 | ER20 | 4,5 x 3,4 | 21 | 31,5 |
| ERT2006 | ER20 | 5,5 x 4,3 | 21 | 31,5 |
| ERT2007 | ER20 | 6,0 x 4,9 | 21 | 31,5 |
| ERT2008 | ER20 | 7,0 x 5,5 | 21 | 31,5 |
| ERT2009 | ER20 | 8,0 x 6,2 | 21 | 31,5 |
| ERT2010 | ER20 | 9,0 x 7,0 | 21 | 31,5 |
| ERT2011 | ER20 | 10,0 x 8,0 | 21 | 31,5 |
| ERT2505 | ER25 | 4,5 x 3,4 | 26 | 34,0 |
| ERT2506 | ER25 | 5,5 x 4,3 | 26 | 34,0 |
| ERT2507 | ER25 | 6,0 x 4,9 | 26 | 34,0 |
| ERT2508 | ER25 | 7,0 x 5,5 | 26 | 34,0 |
| ERT2509 | ER25 | 8,0 x 6,2 | 26 | 34,0 |
| ERT2510 | ER25 | 9,0 x 7,0 | 26 | 34,0 |
| ERT2511 | ER25 | 10,0 x 8,0 | 26 | 34,0 |
| ERT2512 | ER25 | 11,0 x 9,0 | 26 | 34,0 |
| ERT2513 | ER25 | 12,0 x 9,0 | 26 | 34,0 |
| ERT3205 | ER32 | 4,5 x 3,4 | 33 | 40,0 |
| ERT3206 | ER32 | 5,5 x 4,3 | 33 | 40,0 |
| ERT3207 | ER32 | 6,0 x 4,9 | 33 | 40,0 |
| ERT3208 | ER32 | 7,0 x 5,5 | 33 | 40,0 |
| ERT3209 | ER32 | 8,0 x 6,2 | 33 | 40,0 |
| ERT3210 | ER32 | 9,0 x 7,0 | 33 | 40,0 |
| ERT3211 | ER32 | 10,0 x 8,0 | 33 | 40,0 |
| ERT3212 | ER32 | 11,0 x 9,0 | 33 | 40,0 |
| ERT3213 | ER32 | 12,0 x 9,0 | 33 | 40,0 |
| ERT3214 | ER32 | 14,0 x 11,0 | 33 | 40,0 |
| ERT3215 | ER32 | 16,0 x 12,0 | 33 | 40,0 |
| ERT4008 | ER40 | 7,0 x 5,5 | 41 | 46,0 |
| ERT4009 | ER40 | 8,0 x 6,2 | 41 | 46,0 |
| ERT4010 | ER40 | 9,0 x 7,0 | 41 | 46,0 |
| ERT4011 | ER40 | 10,0 x 8,0 | 41 | 46,0 |
| ERT4012 | ER40 | 11,0 x 9,0 | 41 | 46,0 |
| ERT4013 | ER40 | 12,0 x 9,0 | 41 | 46,0 |
| ERT4014 | ER40 | 14,0 x 11,0 | 41 | 46,0 |
| ERT4015 | ER40 | 16,0 x 12,0 | 41 | 46,0 |
| ERT4016 | ER40 | 18,0 x 14,5 | 41 | 46,0 |

| Reference<br>Bezeichnung |  | d1 | D | L |
|---|---|---|---|---|
| ERT4017 | ER40 | 20,0 x 16,0 | 41 | 46,0 |
| ERT5013 | ER50 | 12,0 x 9,0 | 52 | 60,0 |
| ERT5014 | ER50 | 14,0 x 11,0 | 52 | 60,0 |
| ERT5015 | ER50 | 16,0 x 12,0 | 52 | 60,0 |
| ERT5016 | ER50 | 18,0 x 14,5 | 52 | 60,0 |
| ERT5017 | ER50 | 20,0 x 16,0 | 52 | 60,0 |
| ERT5018 | ER50 | 22,0 x 18,0 | 52 | 60,0 |
| ERT5019 | ER50 | 25,0 x 20,0 | 52 | 60,0 |
| ERT5020 | ER50 | 28,0 x 22,0 | 52 | 60,0 |
| ERT5021 | ER50 | 32,0 x 24,0 | 52 | 60,0 |



I



Characteristics: Eigenschaften:
Wrenches Schlüssel
DIN 6499 DIN 6499

## 50XX

| Reference Bezeichnung | CAP |
|---|---|
| 50008 | 0 - 8 |
| 50010 | 0-10 |
| 50013 | 0-13 |
| 50016 | 3-16 |



Characteristics: Eigenschaften:
Wrenches Schlüssel
DIN 6499 DIN 6499

## 50XX

| Reference Bezeichnung | CAP |
|---|---|
| 50116 | 16 |
| 50125 | 25 |
| 50132 | 32 |
| 50140 | 40 |



Characteristics: Eigenschaften:
Wrenches Schlüssel
DIN 6499 DIN 6499

## 50XX

| Reference Bezeichnung | ER | CAP |
|---|---|---|
| 50216 | 16 | 10 |
| 50220 | 20 | 13 |
| 50225 | 25 | 16 |
| 50232 | 32 | 20 |
| 50240 | 40 | 30 |
| 50250 | 50 | 34 |



Characteristics: Eigenschaften:
Wrenches Schlüssel
DIN 6499 DIN 6499

## 50XX

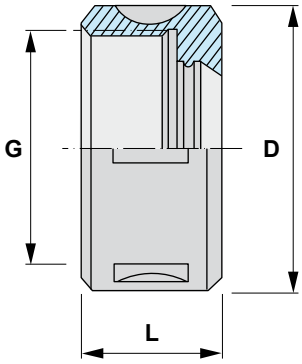
| Reference Bezeichnung | ER | CAP |
|---|---|---|
| 50907 | 07 | - |
| 50908 | 08 | - |
| 50916 | 16 | 10 |
| 50920 | 20 | 13 |
| 50925 | 25 | 16 |



Characteristics:
Nut for collet chucks
DIN 6388-D

*** STANDARD**

Eigenschaften:
Spannmutter für Spannzangen
DIN 6388-D




# 433XX

| Reference<br>Bezeichnung | d1 max | D | L | G |
|---|---|---|---|---|
| 43316 | 16 | 43 | 24,0 | M 33 x 1,5 |
| 43325 | 25 | 60 | 30,0 | M 48 x 2,0 |
| 43332 | 32 | 72 | 33,5 | M 60 x 2,5 |

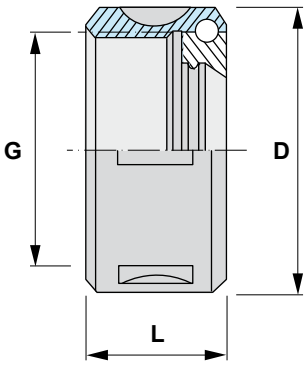


Characteristics:
Nut for collet chucks
DIN 6388-D

*** BALL BEARING NUT**

Eigenschaften:
Spannmutter für Spannzangen
DIN 6388-D

*** KUGELLAGER-MUTTER**






# 431XX

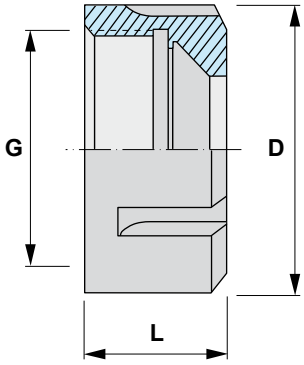
| Reference<br>Bezeichnung | d1 max | D | L | G |
|---|---|---|---|---|
| 43116 | 16 | 43 | 24,0 | M 33 x 1,5 |
| 43125 | 25 | 60 | 30,0 | M 48 x 2,0 |
| 43132 | 32 | 72 | 33,5 | M 60 x 2,5 |



Characteristics:
Nut for collet chucks DIN 6499 (ER) D-F

*** STANDARD**

Eigenschaften:
Spannmutter für Spannzangen DIN 6499 (ER) D-F




# 453XX

| Reference Bezeichnung | | d1 max | D | L | G |
|---|---|---|---|---|---|
| 45316 | ER16 | 10 | 32 | 17,5 | M 22 x 1,5 |
| 45320 | ER20 | 13 | 35 | 19,0 | M 25 x 1,5 |
| 45325 | ER25 | 16 | 42 | 20,0 | M 32 x 1,5 |
| 45332 | ER32 | 20 | 50 | 22,5 | M 40 x 1,5 |
| 45340 | ER40 | 26 | 63 | 25,5 | M 50 x 1,5 |
| 45350 | ER50 | 34 | 78 | 35,5 | M 64 x 2,0 |

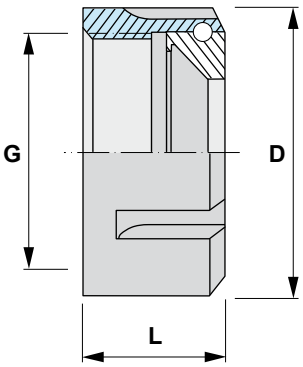


Characteristics:
Nut for collet chucks DIN 6499 (ER) D-F

*** BALL BEARING NUT**

Eigenschaften:
Spannmutter für Spannzangen DIN 6499 (ER) D-F

*** KUGELLAGER-MUTTER**




# 451XX

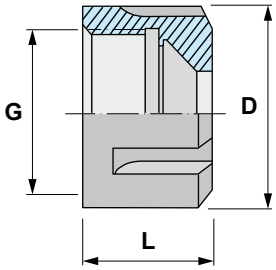
| Reference Bezeichnung | | d1 max | D | L | G |
|---|---|---|---|---|---|
| 45116 | ER16 | 10 | 29 | 19,5 | M 22 x 1,5 |
| 45120 | ER20 | 13 | 34 | 21,0 | M 25 x 1,5 |
| 45125 | ER25 | 16 | 42 | 22,7 | M 32 x 1,5 |
| 45132 | ER32 | 20 | 50 | 26,5 | M 40 x 1,5 |
| 45140 | ER40 | 26 | 63 | 29,8 | M 50 x 1,5 |
| 45150 | ER50 | 34 | 78 | 40,0 | M 64 x 2,0 |



Characteristics:
Nut for collet chucks DIN 6499 (ER) D-F

*** MINI**

Eigenschaften:
Spannmutter für Spannzangen DIN 6499 (ER) D-F



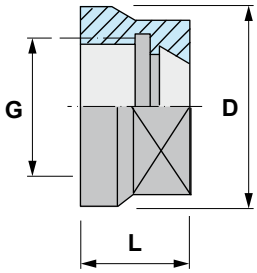

# 455XX

| Reference<br>Bezeichnung | | d1 max | D | L | G |
|---|---|---|---|---|---|
| 45516 | ER16 | 13 | 22 | 19 | M 19 x 1 |
| 45520 | ER20 | 16 | 28 | 20 | M 24 x 1 |
| 45525 | ER25 | - | 35 | - | M 30 x 1 |



Characteristics:
Nut for collet chucks DIN 6499 (ER) D-F

Eigenschaften:
Spannmutter für Spannzangen DIN 6499 (ER) D-F




# 456XX

| Reference<br>Bezeichnung | | d1 max | D | L | G |
|---|---|---|---|---|---|
| 45616 | ER16 | 10 | 28 | 17,5 | M 22 x 1,5 |
| 45620 | ER20 | 13 | 34 | 19,0 | M 25 x 1,5 |

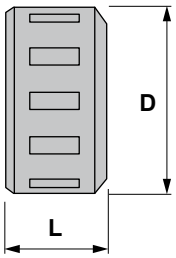


Characteristics:
Nut for collet chucks DIN 6499 (ER) D-F

*** SPECIAL 457**

Eigenschaften:
Spannmutter für Spannzangen DIN 6499 (ER) D-F

*** SONDER 457**



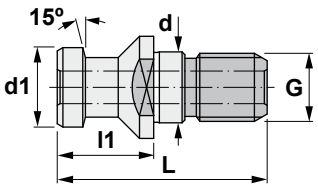

# 457XX

| Reference<br>Bezeichnung | | d1 max | D | L | G |
|---|---|---|---|---|---|
| 45732 | ER32 | 20 | 54 | 40 | M 45 x 1,5 |
| 45740 | ER40 | 30 | 65 | 50 | M 56 x 2,0 |



Characteristics: Pull Studs - DIN 69872-A
Eigenschaften: Anzugsbolzen - DIN 69872-A

*** Without central hole**
*** Ohne zentraler Bohrung**



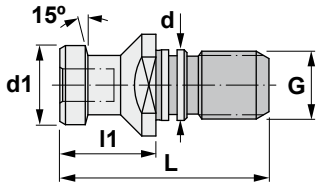

## 91.. DIN 69872-A

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91103 * | 30 | M 12 | 13 | 13 | 44 | 24 |
| 91104 | 40 | M 16 | 17 | 19 | 54 | 26 |
| 91105 | 50 | M 24 | 25 | 28 | 74 | 34 |



Characteristics: Pull Studs - DIN 69872-B
Eigenschaften: Anzugsbolzen - DIN 69872-B

**With half hole**
**Mit Sachlochbohrung**



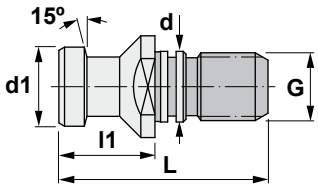

## 91.. DIN 69872-B

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91154 | 40 | M 16 | 17 | 19 | 54 | 26 |
| 91155 | 50 | M 24 | 25 | 28 | 74 | 34 |



Characteristics: Pull Studs - DIN 69872-B
Eigenschaften: Anzugsbolzen - DIN 69872-B

**Without central hole**
**Ohne zentraler Bohrung**

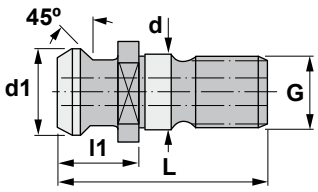



## 91.. DIN 69872-B

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91164 | 40 | M 16 | 17 | 19 | 54 | 26 |
| 91165 | 50 | M 24 | 25 | 28 | 74 | 34 |



Characteristics: Pull Studs - ISO 7388/2-B
Eigenschaften: Anzugsbolzen - ISO 7388/2-B



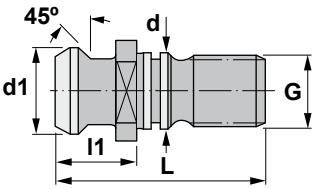

## 91.. ISO 7388/2-B

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91304 | 40 | M 16 | 17 | 18,95 | 44,5 | 16,40 |
| 91305 | 50 | M 24 | 25 | 29,10 | 65,5 | 25,55 |



Characteristics: Pull Studs - ISO 7388/2-B
Eigenschaften: Anzugsbolzen - ISO 7388/2-B

**Without central hole**
**Ohne zentraler Bohrung**

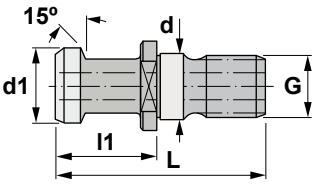



## 91.. ISO 7388/2-B

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91114 | 40 | M 16 | 17 | 18,95 | 44,5 | 16,40 |
| 91115 | 50 | M 24 | 25 | 29,10 | 65,5 | 25,55 |



Characteristics: Pull Studs - ISO 7388/2-A
Eigenschaften: Anzugsbolzen - ISO 7388/2-A



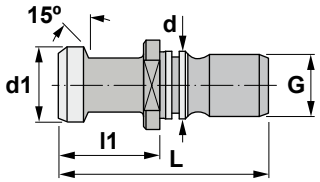

## 91.. ISO 7388/2-A

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91354 | 40 | M 16 | 17 | 19 | 54 | 26 |
| 91355 | 50 | M 24 | 25 | 28 | 74 | 34 |



Characteristics: Pull Studs - ISO 7388/2-A
Eigenschaften: Anzugsbolzen - ISO 7388/2-A

**Without central hole**
**Ohne zentraler Bohrung**

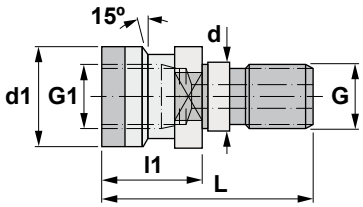



## 91.. ISO 7388/2-A

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 91263 | 30 | M 12 | 13 | 12 | 44 | 24 |
| 91264 | 40 | M 16 | 17 | 19 | 54 | 26 |
| 91265 | 50 | M 24 | 25 | 28 | 74 | 34 |



Characteristics: Pull Studs
Eigenschaften: Anzugsbolzen




## 91.. MAHO - OTT / DIN 69871 - BT

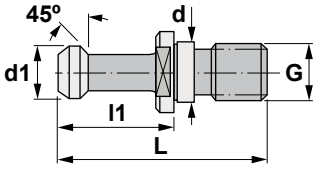
| Reference Bezeichnung | K ISO | G | G1 | d | d1 | L | l1 | |
|---|---|---|---|---|---|---|---|---|
| 91004 | 40 | M 16 | M 16 | 17 | 25,00 | 53 | 25 | DIN 69871 |
| 91014 | 40 | M 16 | M 16 | 17 | 25,00 | 56 | 28 | BT |
| 91005 | 50 | M 24 | M 24 | 25 | 39,60 | 65 | 25 | DIN 69871 / BT |

**Accessory to assemble DIN-69872-A (Ref. 91004) and JIS 6339-BT (Ref. 91014) on DIN 2080 machines.**
**Ersatzteil um die DIN-69872-A (Bez. 91004) und die JIS 6339-BT (Bez. 91014) auf Maschinen DIN 2080 zu montieren.**



Characteristics: Pull Studs - JIS 6339 B-BT
Eigenschaften: Anzugsbolzen - JIS 6339 B-BT

*** Without central hole**
*** Ohne zentraler Bohrung**



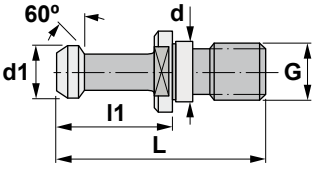

## 92.. BT - TYPE / TYP I (45º)

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 92003 * | 30 | M 12 | 12,5 | 11 | 43 | 23 |
| 92004 * | 40 | M 16 | 17,0 | 15 | 60 | 35 |
| 92005 * | 50 | M 24 | 25,0 | 23 | 85 | 45 |
| 92304 | 40 | M 16 | 17,0 | 15 | 60 | 35 |
| 92305 | 50 | M 24 | 25,0 | 23 | 85 | 45 |



Characteristics: Pull Studs - JIS 6339 B-BT
Eigenschaften: Anzugsbolzen - JIS 6339 B-BT

*** Without central hole**
*** Ohne zentraler Bohrung**



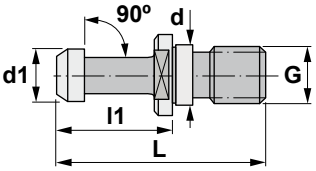

## 92.. BT - TYPE / TYP II (60º)

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 92013 * | 30 | M 12 | 12,5 | 11 | 43 | 23 |
| 92014 * | 40 | M 16 | 17,0 | 15 | 60 | 35 |
| 92015 * | 50 | M 24 | 25,0 | 23 | 85 | 45 |
| 92314 | 40 | M 16 | 17,0 | 15 | 60 | 35 |
| 92315 | 50 | M 24 | 25,0 | 23 | 85 | 45 |



Characteristics: Pull Studs - JIS 6339 B-BT
Eigenschaften: Anzugsbolzen - JIS 6339 B-BT

*** Without central hole**
*** Ohne zentraler Bohrung**



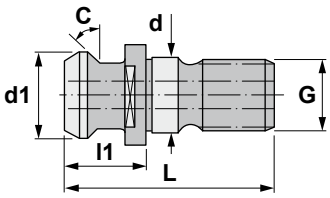

## 92.. BT - TYPE / TYP III (90º)

| Reference Bezeichnung | K ISO | G | d | d1 | L | l1 |
|---|---|---|---|---|---|---|
| 92024 * | 40 | M 16 | 17 | 15 | 60 | 35 |
| 92025 * | 50 | M 24 | 25 | 23 | 85 | 45 |
| 92324 | 40 | M 16 | 17 | 15 | 60 | 35 |
| 92325 | 50 | M 24 | 25 | 23 | 85 | 45 |



Characteristics: Pull Studs
Eigenschaften: Anzugsbolzen

*** Without central hole**
*** Ohne zentraler Bohrung**




# 9... SPECIAL / SONDER

| Reference<br>Bezeichnung | K ISO | C | G | d | d1 | L | l1 | Type<br>Typ |
|---|---|---|---|---|---|---|---|---|
| 9CA40 | 40 | 45º | M 16 | 17 | 18,18 | 41,25 | 16,25 | MAZAK |
| 9CA41 | 40 | 45º | M 16 | 17 | 18,18 | 44,10 | 19,10 | MAZAK |
| 9CO50 * | 50 | | M 24 | - | 20,00 | 76,00 | 36,00 | CORREA |
| 9MT40 | 40 | 15º | M 16 | 17 | 19,00 | 54,00 | 29,00 | MATSURA |
| 9OK35 * | 35 | | | | | | | KITAMURA |
| 9CI40 * | 40 | | | | | | | CINCINNATI |
| 9ZA50 * | 50 | | | 23 | 22,00 | 90,00 | 46,00 | ZAYER |



Characteristics:
Assembly fixture for toolholders.
It can be used with all sizes of DIN 2080, DIN 69871/A, MAS BT, HSK and PSC adaptors.
It can be tightened on a bench or with a clamp.
Useful for assembling and disassembling the tools in any toolholder.

*** Combined stainless steel / blackened**

Eigenschaften:
Montagevorrichtung für Werkzeughalter. Verwendbar mit allen Größen von Aufnahmen DIN 2080, DIN 69871/A, MAS BT, HSK und PSC.
Sie kann auf einer Bank oder mit einem Schraubstock befestigt werden. Nützlich, um die Werkzeuge in jedem Werkzeughalter zu montieren und demontieren.

*** Kombiniert rostfrei / brüniert**

# 02_70/80

| Reference<br>Bezeichnung | DIN 2080 | DIN 69871/A | MAS BT | HSK | PSC |
|---|---|---|---|---|---|
| 02.30.70 | 30 | 30 | X | 50 | C5 |
| 02.30.80 | X | X | 30 | X | X |
| 02.40.70 | 40 | 40 | 40 | 63 | C6 |
| 02.50.70 | 50 | 50 | X | 100 | X |
| 02.50.80 | X | X | 50 | X | X |



Characteristics:
Assembly fixture for toolholders.
It can be used with all sizes of DIN 2080, DIN 69871/A, MAS BT, HSK and PSC adaptors.
It can be tightened on a bench or with a clamp.
Useful for assembling and disassembling the tools in any toolholder.

*** 100% stainless steel**

Eigenschaften:
Montagevorrichtung für Werkzeughalter. Verwendbar mit allen Größen von Aufnahmen DIN 2080, DIN 69871/A, MAS BT, HSK und PSC.
Sie kann auf einer Bank oder mit einem Schraubstock befestigt werden. Nützlich, um die Werkzeuge in jedem Werkzeughalter zu montieren und demontieren.

*** 100% rostfreier Stahl**

# 02_71/81

| Reference<br>Bezeichnung | DIN 2080 | DIN 69871/A | MAS BT | HSK | PSC |
|---|---|---|---|---|---|
| 02.30.71 | 30 | 30 | X | 50 | C5 |
| 02.30.81 | X | X | 30 | X | X |
| 02.40.71 | 40 | 40 | 40 | 63 | C6 |
| 02.50.71 | 50 | 50 | X | 100 | X |
| 02.50.81 | X | X | 50 | X | X |





# SPARE PARTS
# ERSATZTEILE

***TURNING SPARE PARTS***
***ERSATZTEILE ZUM DREHEN***

Screws Schrauben **J02-05**

Lock pins Rohrstifte **J06**

Clamps Pratzen **J06-09**

Shim seats Unterlegplatten **J10-15**

Seats Kassetten **J15**

Levers Kniehebel **J16-17**

Others Andere **J17-18**

Wrenches Schlüssel **J19**

***MILLING SPARE PARTS***
***ERSATZTEILE ZUM FRÄSEN***

Screws Schrauben **J20-22**

Washers Unterlegscheiben **J22**

Shim seats Unterlegplatten **J23**

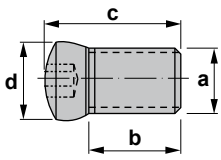
Wedges and seats Keile und Kassetten **J24**

Seats and cartridges Kassetten **J25-27**

Wrenches Schlüssel **J28**

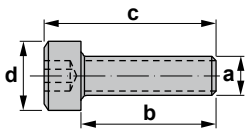
# Screws (Allen) / Schrauben (Imbus)





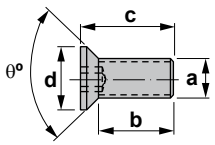

| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1006 | M6x1 | 11,2 | 17,0 | 9,0 | A4 | 3.5 |





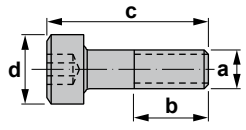

| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1075 | M5x0.8 | 25,0 | 30,1 | 8,35 | A4 | 3.5 |
| 1076 | M6x1 | 30,0 | 36,0 | 10,00 | A5 | 4.0 |
| 1078 | M8x1.25 | 40,0 | 48,1 | 12,60 | A6 | - |
| 1093 | M3x0.5 | 8,0 | 11,2 | 5,40 | A2.5 | 2.0 |
| 1095 | M5x0.8 | 8,2 | 11,8 | 8,40 | A4 | 3.5 |
| 1096 | M6x1 | 25,0 | 31,0 | 10,00 | A5 | 4.0 |
| 1296 | M6x1 | 10,0 | 14,0 | 9,80 | A5 | 4.0 |
| 1392 | M2.5 | 9,6 | 12,5 | 4,40 | A2 | 1.4 |
| 1393 | M3x0.5 | 4,0 | 7,0 | 5,50 | A2.5 | 2.0 |
| 1394 | M4 | 6,1 | 8,6 | 6,90 | A2.5 | 2.0 |
| 1396 | M6x1 | 16,0 | 21,9 | 9,75 | A5 | 4.0 |
| 1494 | M4x0.7 | 12,0 | 16,0 | 7,00 | A3 | 3.0 |
| 1495 | M5x0.8 | 16,0 | 21,2 | 8,40 | A4 | 3.5 |
| 1496 | M6x1 | 12,0 | 16,0 | 9,80 | A4 | 3.5 |
| 1695 | M5x0.8 | 20,0 | 23,6 | 8,30 | A4 | 3.5 |
| 1696 | M6x1 | 25,0 | 29,0 | 10,00 | A4 | 3.5 |
| 1905 | M5x0.8 | 12,0 | 16,9 | 8,30 | A4 | 3.5 |
| 1906 | M6x1 | 20,0 | 26,0 | 10,00 | A5 | 4.0 |
| 1916 | M6x1 | 12,0 | 18,0 | 10,00 | A5 | 4.0 |






| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1059 | M10x1.5 | 13,2 | 18,5 | 11,5 | 60 | A6 | |
| 1192 | M8x1.25 | 13,8 | 20,0 | 14,1 | 70 | A5 | 4.0 |

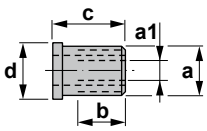





| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1614 | W1/4 | 12 | 25 | 10 | A4 | 3.5 |

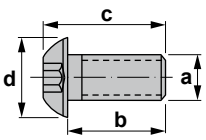
# Screws (Allen) / Screws (Imbus)





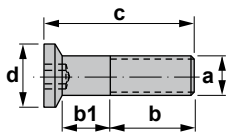

| Reference Bezeichnung | a | a1 | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1750 | M5x0.5 | M3.5x0.6 | 5,0 | 8,5 | 6,2 | A3.5 | - |
| 1760 | M6x0.75 | M4x0.5 | 5,5 | 10,0 | 7,7 | A4 | 3.5 |
| 1764 | M5x0.8 | M5x0.8 | 5,8 | 8,0 | 6,3 | A2 | 1.4 |
| 1765 | M6x0.75 | M4x0.5 | 6,0 | 10,0 | 7,5 | A4 | 3.5 |
| 1766 | M6x1 | M6x1 | 6,5 | 10,0 | 7,8 | A2.5 | 2.0 |
| 1768 | M6x1 | M6x1 | 13,3 | 15,5 | 10,4 | A3 | 3.0 |
| 1770 | M6x1 | M6x1 | 11,0 | 15,0 | 11,9 | A3 | 3.0 |





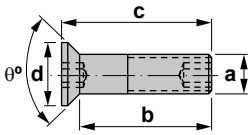

| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1803 | M3 | 8,0 | 9,4 | 5,5 | A2 | 1.4 |
| 1804 | M4x0.7 | 10,0 | 12,1 | 7,5 | A2.5 | 2.0 |
| 1806 | M6x1 | 25,0 | 28,2 | 10,5 | A4 | 3.5 |
| 1808 | M8x1.25 | 30,0 | 34,3 | 14,0 | A5 | 4.0 |
| 1810 | M10x1.5 | 40,0 | 45,3 | 18,0 | A6 | - |
| 1813 | M3 | 4,5 | 5,9 | 5,5 | A2 | 1.4 |
| 1814 | M4 | 3,5 | 5,5 | 7,5 | A2.5 | 2.0 |
| 1815 | M5x0.8 | 12,5 | 15,0 | 9,3 | A3 | 3.0 |
| 1816 | M6x1 | 20,0 | 23,2 | 10,5 | A4 | 3.5 |






| Reference Bezeichnung | a | b | b1 | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1907 | M7x0.75 | 14,0 | 10,6 | 27,5 | 10,7 | A4 | 3.5 |
| 1915 | M5x0.8 | 12,1 | 8,0 | 23,0 | 8,7 | A2.5 | 2.0 |






| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1935 | M3.5x0.6 | 11,5 | 13 | 5,6 | 90 | A2 | 1.4 |
| 1950 | M5x0.8 | 16,7 | 19 | 7,9 | 92 | A2.5 | 2.0 |
| 1955 | M5x0.8 | 16,9 | 19 | 8,9 | 90 | A3 | 3.0 |

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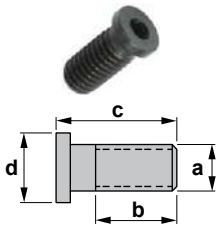
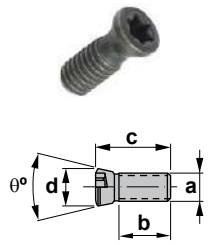
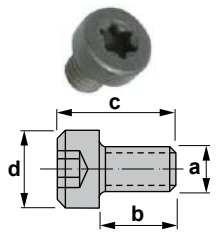
# Screws (Torx) / Schrauben (Torx)




| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1140 | M4x0.7 | 3,2 | 7,5 | 5,0 | T15 | 3.0 |
| 1150 | M5x0.8 | 10,0 | 13,5 | 6,4 | T9 | 1.4 |
| 1151 | M5x0.8 | 7,0 | 10,5 | 6,4 | T9 | 1.4 |
| 1160 | M6x1 | 9,5 | 13,5 | 7,8 | T20 | 4.0 |
| 1161 | M6x1 | 6,5 | 10,5 | 7,9 | T20 | 4.0 |
| 1180 | M8x1 | 9,5 | 13,5 | 11,0 | T25 | 5.0 |




| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1182 | M8x1 | 9,5 | 13,5 | 10,5 | 60 | T25 | 5.0 |
| 1220 | M2x0.4 | 3,7 | 5,5 | 3,3 | 55 | T6 | 0.6 |
| 1222 | M2.2x0.45 | 3,5 | 6,0 | 3,3 | 55 | T6 | 0.6 |
| 1225 | M2.5x0.45 | 4,0 | 7,0 | 3,3 | 55 | T7 | 0.9 |
| 1226 | M2.5 | 6,0 | 8,3 | 4,0 | 94 | T8 | 1.2 |
| 1230 | M3x0.5 | 5,6 | 9,0 | 4,4 | 55 | T8 | 1.2 |
| 1235 | M3.5 | 6,5 | 9,5 | 5,3 | 55 | T15 | 3.0 |
| 1240 | M4x0.7 | 6,2 | 11,0 | 5,3 | 55 | T15 | 3.0 |
| 1244 | M4x0.7 | 8,0 | 12,0 | 7,0 | 55 | T20 | 4.0 |
| 1250 | M5x0.8 | 6,0 | 12,0 | 7,0 | 55 | T20 | 4.0 |
| 1255 | M5x0.8 | 9,0 | 12,0 | 7,0 | 94 | T20 | 4.0 |
| 1260 | M6x1 | 11,5 | 16,0 | 7,9 | 55 | T25 | 5.0 |
| 1334 | M3.5x0.6 | 7,2 | 12,0 | 5,3 | 55 | T15 | 3.0 |
| 1335 | M3.5x0.6 | 10,2 | 15,0 | 5,3 | 55 | T20 | 3.0 |
| 1340 | M4x0.7 | 11,2 | 16,0 | 5,3 | 55 | T15 | 3.0 |
| 1350 | M5x0.8 | 17,8 | 22,0 | 7,0 | 55 | T20 | 4.0 |
| 1360 | M6x1 | 17,0 | 22,5 | 7,9 | 55 | T25 | 5.0 |
| 1415 | M1.6x0.35 | 1,5 | 3,2 | 2,6 | 60 | T6 | 0.6 |
| 1420 | M2x0.4 | 2,2 | 4,3 | 3,3 | 55 | T6 | 0.6 |
| 1422 | M2.2x0.45 | 1,8 | 4,3 | 3,3 | 55 | T6 | 0.6 |
| 1425 | M2.5x0.45 | 3,0 | 5,5 | 3,3 | 55 | T7 | 0.9 |
| 1430 | M3x0.5 | 2,8 | 5,8 | 4,4 | 55 | T8 | 1.2 |
| 1440 | M4x0.7 | 3,2 | 7,5 | 5,3 | 55 | T15 | 3.0 |
| 1450 | M5x0.8 | 11,0 | 17,0 | 7,0 | 55 | T20 | 4.0 |
| 1535 | M3.5 | 7,5 | 10,0 | 5,0 | 94 | T10 | 2.0 |
| 1540 | M4x0.5 | 7,9 | 14,1 | 6,8 | 60 | T15 | 3.0 |
| 1622 | M2.2x0.45 | 4,0 | 6,0 | 3,4 | 60 | T7 | 0.9 |
| 1625 | M2.5x0.45 | 3,6 | 6,5 | 3,8 | 60 | T8 | 1.2 |
| 1630 | M3x0.5 | 5,2 | 8,3 | 4,3 | 60 | T9 | 1.4 |
| 1635 | M3.5x0.6 | 5,5 | 9,0 | 4,7 | 60 | T10 | 2.0 |
| 1640 | M4 | 7,0 | 10,5 | 5,5 | 60 | T15 | 3.0 |
| SA3 | 5-40UNC-3A | 12,0 | 15,0 | 5,5 | 60 | T10 | 2.0 |
| SA3T | 5-40UNC-3A | 9,5 | 12,5 | 5,5 | 60 | T10 | 2.0 |
| SA4 | 8-UNC | 11,0 | 15,0 | 7,5 | 60 | T20 | 4.0 |
| SA5 | 10-32UNF | 16,8 | 22,0 | 8,2 | 60 | T25 | 5.0 |
| SN3 | 5-40UNC-3A | 6,5 | 9,5 | 5,5 | 60 | T10 | 2.0 |
| SN4 | 8-UNC | 8,0 | 12,0 | 7,5 | 60 | T20 | 4.0 |




| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| SY3 | 5-40UNC | 4,2 | 6,9 | 5,4 | T10 | 2.0 |
| SY4 | 8-32UNC | 5,3 | 9,1 | 6,8 | T20 | 4.0 |
| SY5 | 10-32UNF | 5'8 | 9,2 | 8,4 | T25 | 5.0 |

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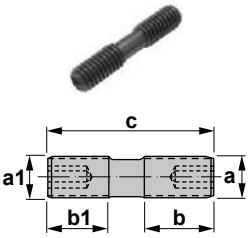
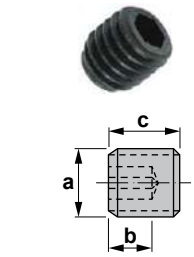
## Clamp screws / Schrauben für Pratzen



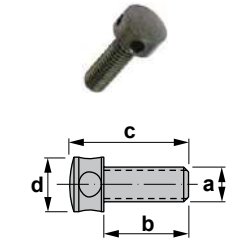

| Reference Bezeichnung | a | a1 | b | b1 | c | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1085 | M5x0.8L | M5x0.8R | 7,9 | 7,9 | 21,3 | A2.5 | 2.0 |
| 1086 | M6x1L | M6x1R | 11,4 | 11,4 | 29,4 | A3 | 3.0 |
| 1098 | M8x1L | M8x1R | 12,7 | 10,4 | 29,4 | A4 | 3.5 |
| 1186 | M6x1L | M6x1R | 7,1 | 7,1 | 20,5 | A3 | 3.0 |

## Screws / Schrauben



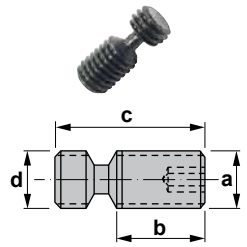

| Reference Bezeichnung | a | b | c | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|
| 1503 | M3x0.5 | 2 | 4 | A1.5 | 0.6 |
| 1504 | M4x0.7 | 2 | 4 | A2 | 1.4 |
| 1505 | M5x0.8R | 3 | 5 | A2.5 | 2.0 |
| 1506 | M6x1R | 4 | 5 | A3 | 3.0 |
| 1508 | M8x1.25R | 5 | 8 | A4 | 3.5 |

## Adjustable screws / Verstellbare Schrauben

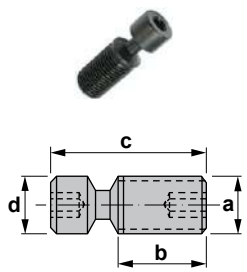



| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1403 | M3x0.5 | 6,5 | 9,5 | 4 | A4 | 3.5 |
| 1404 | M4x0.7 | 9,0 | 12,5 | 7 | A2.5 | 2.0 |
| 1405 | M5x0.8 | 10,5 | 16,5 | 9 | A2 | 1.4 |
| 1406 | M6x1 | 12,0 | 18,0 | 11 | A2.5 | 2.0 |
| 1408 | M8x1.25 | 15,0 | 21,0 | 13 | A3 | 3.0 |

## Lever lock system - Screws / Schrauben für Kniehebel-System

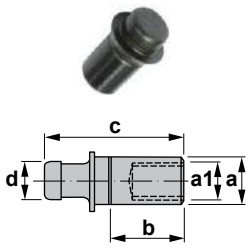



| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1605 | M5x0.8 | 6,1 | 12,0 | 5 | A2 | 1.4 |
| 1705 | M5x0.8 | 8,1 | 14,0 | 5 | A2 | 1.4 |
| 1715 | M5x0.8 | 4,3 | 9,6 | 5 | A2 | 1.4 |

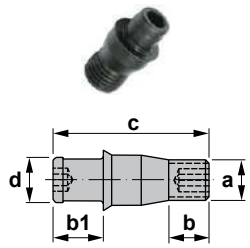



| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1606 | M6x1 | 8,6 | 16,7 | 6 | A2.5 | 2.0 |
| 1608 | M8x1 | 8,7 | 20,7 | 8 | A3 | 3.0 |
| 1610 | M10x1 | 13,3 | 27,2 | 10 | A4 | 3.5 |
| 1612 | M12x1 | 17,3 | 36,0 | 12 | A5 | 4.0 |
| 1618 | M8x1 | 11,2 | 22,5 | 8 | A3 | 3.0 |
| 1626 | M6x1 | 8,0 | 13,4 | 6 | A2.5 | 2.0 |
| 1638 | M8x1 | 10,3 | 21,1 | 8 | A3 | 3.0 |
| 1648 | M8x1 | 9,1 | 17,0 | 8 | A3 | 3.0 |
| 1706 | M6x1 | 12,6 | 20,7 | 6 | A2.5 | 2.0 |
| 1708 | M8x1 | 12,2 | 23,5 | 8 | A3 | 3.0 |
| 1710 | M10x1 | 17,3 | 30,4 | 10 | A4 | 3.5 |

## Lock pins / Rohrstifte

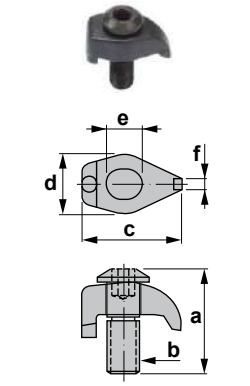



| Reference Bezeichnung | a | a1 | b | c | d |
|---|---|---|---|---|---|
| 1642 | 4,5 | M3x0.5 | 7,6 | 13,2 | 3,7 |
| 1643 | 4,5 | M3x0.5 | 3,4 | 8,5 | 3,7 |
| 1644 | 4,5 | M3x0.5 | 5,0 | 10,1 | 3,7 |
| 1647 | 6,0 | M4x0.7 | 3,1 | 8,5 | 5,0 |
| 1661 | 6,0 | M4x0.7 | 5,6 | 13,5 | 5,0 |
| 1682 | 8,0 | M6x1 | 9,2 | 16,5 | 7,7 |

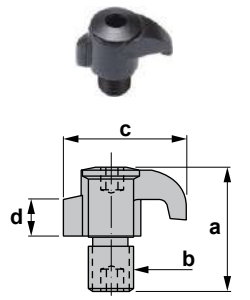



| Reference Bezeichnung | a | b | b1 | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1656 | 1/4" 26FILS | 4,0 | 5,5 | 17,2 | 4,9 | A2.5 | 2.0 |
| 1657 | M6x1 | 5,0 | 7,0 | 18,6 | 5,0 | A2.5 | 2.0 |
| 1665 | M5x0.8 | 2,3 | 5,0 | 13,0 | 3,6 | A2 | 1.4 |
| 1666 | 1/4" 26FILS | 2,9 | 6,9 | 18,6 | 5,0 | A2.5 | 2.0 |
| 1670 | 3/8" 24FILS | 4,5 | 7,8 | 21,9 | 7,4 | A4 | 3.5 |
| 1673 | M6 | 4,8 | 6,3 | 22,0 | 6,3 | A3 | 3.0 |
| 1674 | M6 | 4,5 | 6,3 | 21,9 | 7,7 | A4 | 3.5 |
| 1675 | M5x0.8 | 3,4 | 5,0 | 16,2 | 3,6 | A2 | 1.4 |
| 1686 | 1/4" 26FILS | 3,5 | 5,5 | 13,3 | 5,0 | A2.5 | 2.0 |

## Top clamp (C) system - Clamps / Obere-Klemmung-Pratzen




| Reference Bezeichnung | a | b | c | d | e | f | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|---|
| 2000 | 9,5 | M3x0.5 | 9,5 | 5,4 | 3,2 | 2 | A1.5 | 0.6 |
| 2304 | 14,0 | M4x0.7 | 13,2 | 8,0 | 5,0 | 2 | A2.5 | 2.0 |
| 2305 | 18,7 | M5x0.8 | 16,8 | 10,0 | 5,5 | 2 | A3 | 3.0 |




| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 2107 | 14,0 | M5x0.8 | 13,8 | 4,1 | A2.5 | 2.0 |
| 2109 | 16,3 | M6x1 | 16,2 | 5,0 | A3 | 3.0 |
| 2119 | 15,3 | M6x1 | 16,5 | 5,2 | A3 | 3.0 |
| 2207 | 15,8 | M5x0.8 | 13,8 | 4,1 | A2.5 | 2.0 |
| 2209 | 21,0 | M6x1 | 16,5 | 5,0 | A3 | 3.0 |
| 2211 | 24,0 | M8x1 | 20,5 | 7,6 | A4 | 3.5 |
| 2307 | 14,0 | M5x0.8 | 13,8 | 4,1 | A2.5 | 2.0 |
| 2516 | 15,8 | M5x0.8 | 14,8 | 7,3 | T15 | 3.0 |
| 2522 | 20,0 | M6x1 | 18,0 | 9,5 | T15 | 3.0 |
| 2527 | 26,0 | M8x1.25 | 24,5 | 13,0 | T25 | 5.0 |

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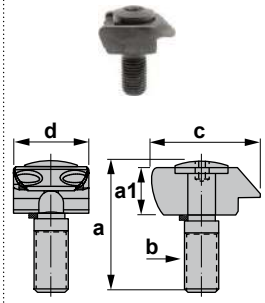
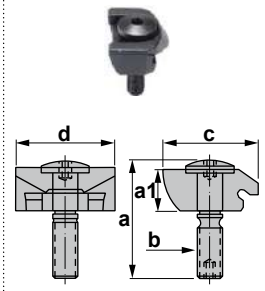
## Wedge clamp (M) system - Clamps / M-Klemmung-Pratzen

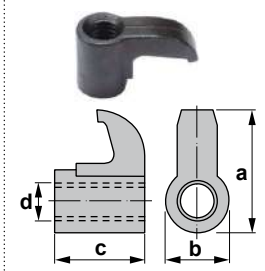



| Reference Bezeichnung | a | a1 | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 2006 | 19,5 | 6,8 | M5x0.5 | 14,7 | 11 | A2.5 | 2.0 |
| 2011 | 26,0 | 8,1 | M8x1 | 22,0 | 17 | A5 | 4.0 |
| 2014 | 26,0 | 8,3 | M8x1 | 21,4 | 15 | A5 | 4.0 |
| 2015 | 26,0 | 8,2 | M8x1 | 22,1 | 12 | A5 | 4.0 |
| 2024 | 24,0 | 9,2 | M8x1 | 22,5 | 17 | A5 | 4.0 |

## Wedge clamp (M-K) system - Clamps / M/K-Klemmung-Pratzen

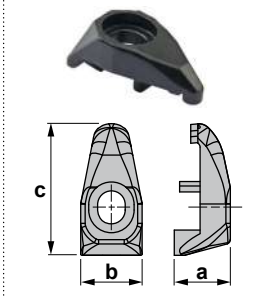



| Reference Bezeichnung | a | a1 | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 2017 | 24 | 8,0 | M5x0.8 | 15,7 | 18,6 | A2.5 | 2.0 |
| 2018 | 24 | 8,4 | M5x0.8 | 15,7 | 18,6 | A2.5 | 2.0 |
| 2023 | 24 | 7,3 | M6x1 | 15,7 | 24,4 | A3 | 3.0 |



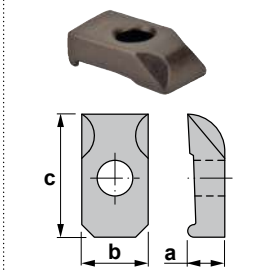

| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 2604 | 14,8 | 7,9 | 11,2 | M5x0.8L |
| 2613 | 18,5 | 9,5 | 13,5 | M6x1L |
| 2614 | 21,7 | 9,5 | 13,5 | M6x1L |
| 2616 | 24,0 | 9,5 | 13,5 | M6x1L |
| 2621 | 22,4 | 10,9 | 16,8 | M8x1L |

## Dimple lock system - Clamps / Dimple-Lock-Pratzen




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 2308 | 9,4 | 10,9 | 24,8 |
| 2312 | 12,0 | 14,0 | 28,8 |
| 2319 | 13,4 | 15,9 | 33,3 |
| 2708 | 11,3 | 12,9 | 24,2 |
| 2712 | 12,6 | 13,8 | 29,6 |
| 2716 | 14,2 | 13,8 | 33,9 |
| 2719 | 14,2 | 13,8 | 35,4 |

## Threading - Clamps / Gewindedreh-Pratzen




| Reference Bezeichnung | a | b | c | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|
| 2101 | 5,3 | 9,5 | 17,8 | T15 | 0.6 |

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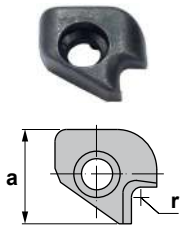
## KNUX - Clamps / KNUX-Pratzen

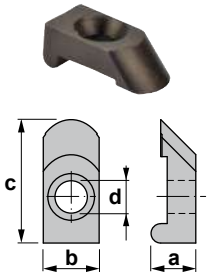



| Reference Bezeichnung | a | r |
|---|---|---|
| 2316 | 23,5 | 2,5 |

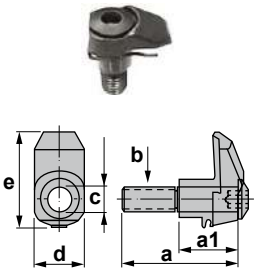



| Reference Bezeichnung | a | r |
|---|---|---|
| 2326 | 23,5 | 2,5 |

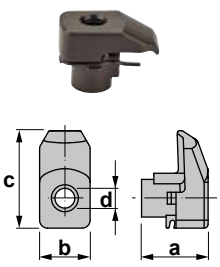
## Ceramic tools - Clamps / Keramikwerkzeug-Pratzen




| Reference Bezeichnung | a | b | c | d | θ° | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 2120 | 7,0 | 5,5 | 18,7 | 5,1 | 40 | T15 | 3.0 |
| 2121 | 6,9 | 8,6 | 19,0 | 7,5 | 45 | T20 | 4.0 |
| 2122 | 8,5 | 11,8 | 24,7 | 8,2 | 45 | T25 | 5.0 |

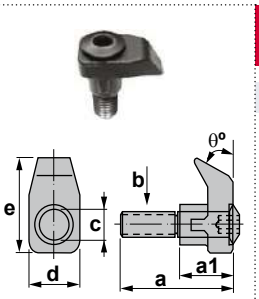



| Reference Bezeichnung | a | a1 | b | c | d | e | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|---|
| 2413 | 29,7 | 16,0 | M8x1.25 | 8,2 | 12,7 | 21,9 | A4 | 3.5 |
| 2417 | 29,7 | 17,6 | M8x1.25 | 8,0 | 12,7 | 24,6 | A4 | 3.5 |

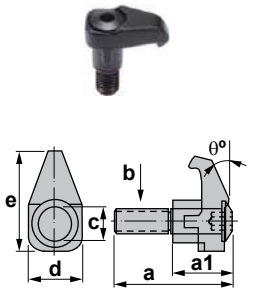



| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 2713 | 8,2 | 12,7 | 22,4 | 5,0 | A3 | 3.0 |
| 2717 | 8,1 | 12,7 | 24,6 | 5,0 | A3 | 3.0 |

## Ceramic tools - Clamps / Keramikwerkzeug-Pratzen

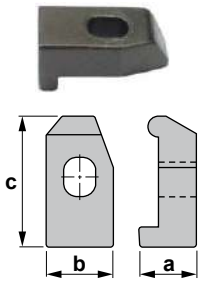



| Reference Bezeichnung | a | a1 | b | c | d | e | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|---|---|
| 2414 | 29,7 | 15,1 | M8x1.25 | 8,2 | 12,7 | 22,5 | 20 | A4 | 3.5 |

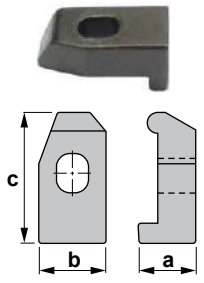



| Reference Bezeichnung | a | a1 | b | c | d | e | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|---|---|
| 2415 | 29,7 | 15,7 | M8x1.25 | 8,2 | 13 | 25,9 | 8 | A4 | 3.5 |
| 2428 | 29,7 | 15,7 | M8x1.25 | 8,2 | 13 | 28,6 | 7 | A4 | 3.5 |
| 2432 | 29,7 | 15,7 | M8x1.25 | 8,2 | 13 | 28,6 | 7 | A4 | 3.5 |
| 2471 | 29,7 | 15,7 | M8x1.25 | 8,2 | 13 | 25,9 | 8 | A4 | 3.5 |

## Notch tools - Clamps / “Notch” Werkzeug-Pratzen




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| TF-146 | 5,5 | 9,0 | 13,7 |
| TF-72 | 9,7 | 11,3 | 22,0 |
| TF-74 | 7,2 | 9,0 | 13,7 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| TF-147 | 5,5 | 9,0 | 13,7 |
| TF-73 | 9,7 | 11,3 | 22,0 |
| TF-75 | 7,2 | 9,0 | 13,7 |

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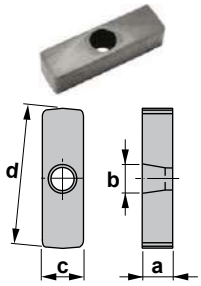
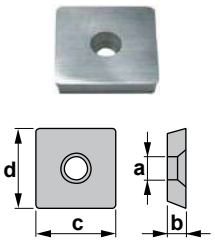
## Shim seat / Unterlegplatten

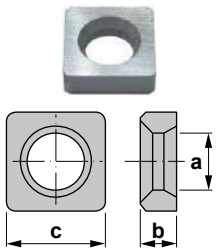



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3521 | 4,76 | 4,2 | 6,3 | 22,2 |

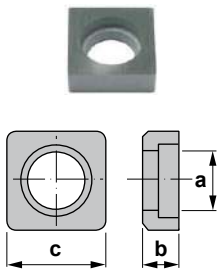
## Square shim seats / Vierkantige Unterlegplatten




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3109 | 2,3 | 3,18 | 8,14 | 8,14 |
| 3112 | 2,3 | 3,18 | 11,3 | 11,3 |
| 3119 | 3,3 | 3,18 | 17,3 | 17,3 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3509 | 4,9 | 3,18 | 8,5 |
| 3512 | 6,4 | 3,18 | 11,6 |
| 3515 | 7,9 | 4,76 | 14,6 |
| 3519 | 9,6 | 4,76 | 17,8 |
| 3525 | 12,8 | 6,35 | 24,2 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3514 | 6,6 | 3,96 | 11,4 |
| ISSN-422 | 8,0 | 3,15 | 12,4 |
| ISSN-432 | 7,4 | 4,76 | 12,4 |
| ISSN-434 | 7,4 | 4,76 | 12,4 |
| ISSN-442 | 7,4 | 6,35 | 12,4 |
| ISSN-454 | 7,4 | 7,92 | 12,4 |
| ISSN-533 | 9,3 | 4,76 | 15,6 |
| ISSN-534 | 9,6 | 4,80 | 15,7 |
| ISSN-633 | 11,3 | 4,76 | 18,8 |

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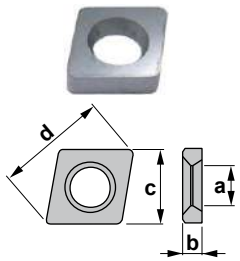
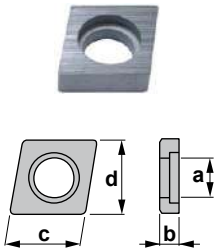
## 80º Rhombic shim seats / 80º rhombische Unterlegplatten

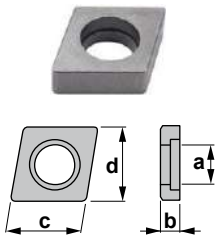



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3609 | 4,8 | 3,18 | 8,5 | 12,4 |
| 3612 | 6,4 | 3,18 | 11,6 | 17,1 |
| 3616 | 7,9 | 4,76 | 14,6 | 20,9 |
| 3619 | 9,6 | 4,76 | 17,8 | 26,0 |
| 3625 | 12,8 | 6,35 | 24,2 | 36,0 |



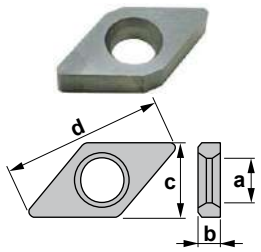

| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3614 | 6,5 | 3,95 | 11,4 | 11,4 |
| ICSN-332 | 6,2 | 5,00 | 9,0 | 9,0 |
| ICSN-422 | 7,2 | 3,00 | 12,5 | 12,5 |
| ICSN-432 | 7,4 | 4,76 | 12,4 | 12,4 |
| ICSN-434 | 7,4 | 4,76 | 12,4 | 12,4 |
| ICSN-442 | 7,4 | 6,35 | 12,4 | 12,4 |
| ICSN-443 | 7,7 | 6,40 | 12,4 | 12,4 |
| ICSN-454 | 7,4 | 7,94 | 12,4 | 12,4 |
| ICSN-523 | 9,9 | 3,18 | 15,6 | 15,6 |
| ICSN-533 | 9,9 | 4,76 | 15,6 | 15,6 |
| ICSN-623 | 11,3 | 3,18 | 18,8 | 18,8 |
| ICSN-633 | 11,3 | 4,76 | 18,8 | 18,8 |

## 75º Rhombic shim seats / 75º rhombische Unterlegplatten

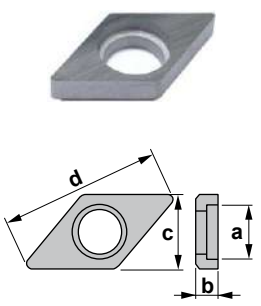



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| IESN-432 | 7,4 | 4,76 | 12,4 | 12,4 |

## 55º Rhombic shim seats / 55º rhombische Unterlegplatten



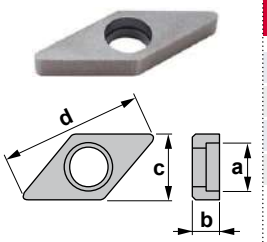

| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3711 | 4,9 | 2,70 | 8,5 | 17,0 |
| 3715 | 6,4 | 3,18 | 11,6 | 23,4 |
| 3725 | 6,5 | 4,77 | 11,7 | 23,4 |




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3714 | 6,6 | 3,18 | 8,50 | 17,4 |
| IDSN-322 | 6,4 | 3,18 | 9,39 | 18,2 |
| IDSN-334 | 6,8 | 4,76 | 9,95 | 17,8 |
| IDSN-354 | 6,8 | 7,92 | 9,95 | 17,8 |
| IDSN-422 | 8,2 | 4,76 | 12,60 | 25,6 |
| IDSN-432 | 8,2 | 4,76 | 12,50 | 25,6 |
| IDSN-434 | 8,2 | 4,76 | 12,50 | 23,4 |

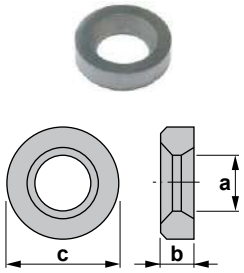
J

## 35º Rhombic shim seats / 35º rhombische Unterlegplatten

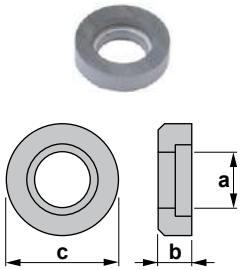



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3718 | 6,7 | 3,18 | 8,4 | 26,0 |
| 3722 | 8,1 | 3,97 | 11,0 | 27,3 |
| IVSN-322 | 6,6 | 3,18 | 9,4 | 25,9 |
| IVSN-342 | 6,6 | 6,35 | 9,2 | 26,9 |

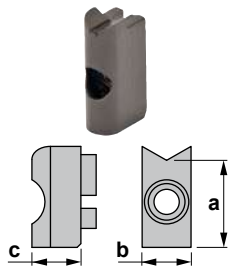
## Round shim seats / Runde Unterlegplatten



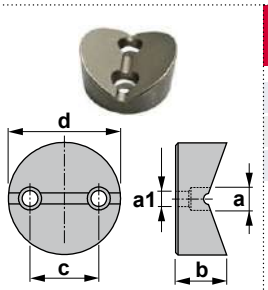

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3810 | 4,9 | 3,18 | 8,34 |
| 3812 | 4,9 | 3,18 | 9,90 |
| 3816 | 6,4 | 4,76 | 13,55 |
| 3820 | 8,0 | 4,76 | 17,25 |
| 3825 | 9,6 | 6,35 | 21,90 |
| 3832 | 12,6 | 6,35 | 28,00 |
| 3909 | 4,9 | 3,18 | 8,80 |
| 3912 | 6,4 | 3,18 | 11,60 |
| 3915 | 8,0 | 4,76 | 15,20 |
| 3919 | 9,6 | 4,76 | 18,40 |
| 3925 | 12,9 | 6,35 | 24,80 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3811 | 5,3 | 3,18 | 8,80 |
| 3814 | 5,3 | 3,18 | 10,60 |
| IRSN-42 | 7,4 | 2,38 | 12,45 |
| IRSN-43 | 7,4 | 4,76 | 12,45 |
| IRSN-44 | 7,3 | 6,40 | 12,45 |
| IRSN-45 | 7,4 | 7,92 | 12,45 |
| IRSN-53 | 9,8 | 4,76 | 15,60 |
| IRSN-63 | 11,3 | 4,76 | 18,80 |
| IRSN-84 | 14,5 | 6,35 | 25,15 |



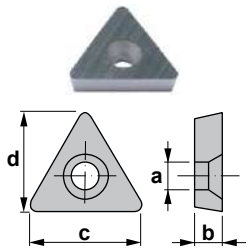

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3806 | 13,95 | 5,0 | 8,6 |
| 3807 | 15,55 | 5,0 | 8,6 |
| 3808 | 17,15 | 5,0 | 8,6 |
| 3849 | 13,75 | 7,7 | 7,7 |
| 3852 | 15,20 | 11,1 | 10,8 |



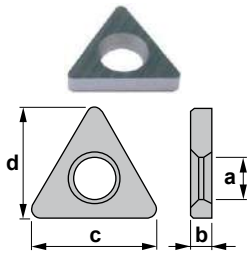

| Reference Bezeichnung | a | a1 | b | c | d |
|---|---|---|---|---|---|
| 3817 | 4,5 | 3 | 7,75 | 7,0 | 13,55 |
| 3819 | 4,5 | 3 | 8,51 | 8,4 | 16,55 |
| 3835 | 4,5 | 3 | 10,04 | 13,5 | 22,00 |

J

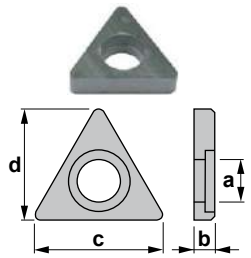
## Triangular shim seats / Dreikantige Unterlegplatten




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3116 | 2,3 | 3,18 | 13,03 | 11,5 |
| 3122 | 3,3 | 3,18 | 17,19 | 15,1 |

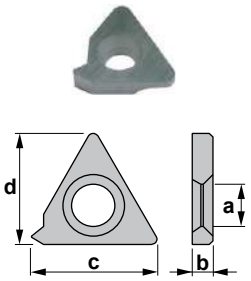



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3416 | 4,9 | 2,76 | 13,52 | 11,9 |
| 3422 | 6,3 | 3,18 | 18,92 | 16,6 |
| 3427 | 8,0 | 4,76 | 24,60 | 24,6 |
| 3433 | 9,8 | 4,76 | 28,50 | 27,8 |

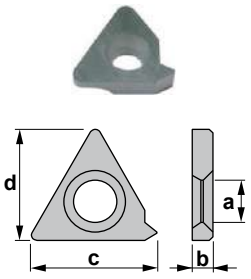



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3414 | 5,30 | 3,18 | 13,55 | 11,9 |
| ITSN-322 | 5,90 | 3,18 | 14,60 | 12,9 |
| ITSN-324 | 5,70 | 3,30 | 14,25 | 12,8 |
| ITSN-342 | 5,90 | 6,35 | 14,90 | 13,1 |
| ITSN-433 | 7,40 | 4,76 | 19,70 | 17,3 |
| ITSN-443 | 7,65 | 6,35 | 20,20 | 17,8 |

## Shim seats for threading / Unterlegplatten für Gewindedrehwerkzeuge




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3424+1° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3424+2° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3424+3° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3424-1° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3424-2° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3424-3° | 3,95 | 3,2 | 12,8 | 12,8 |
| YE3 | 3,95 | 3,2 | 12,7 | 12,4 |
| YE4 | 5,30 | 4,0 | 17,3 | 17,3 |
| YE5 | 6,30 | 5,8 | 23,6 | 22,3 |




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3425+1° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3425+2° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3425+3° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3425-1° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3425-2° | 3,95 | 3,2 | 12,8 | 12,8 |
| 3425-3° | 3,95 | 3,2 | 12,8 | 12,8 |
| YI3 | 3,95 | 3,2 | 12,8 | 12,8 |
| YI4 | 5,30 | 4,0 | 17,3 | 17,3 |
| YI5 | 6,30 | 5,8 | 23,6 | 22,3 |

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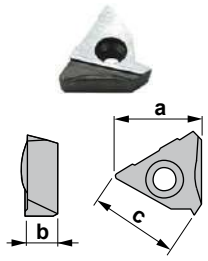
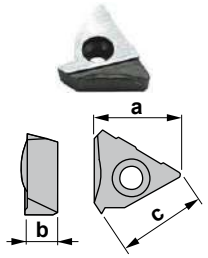
## Threading shim seats / Unterlegplatten für Gewindedrehwerkzeuge

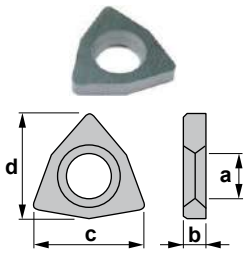



| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3126R | 12,8 | 4,76 | 11,2 |
| 3132R | 16,9 | 4,76 | 14,0 |

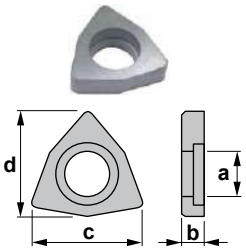



| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 3132L | 16,9 | 4,76 | 14,0 |

## Trigon shim seats / Trigon Unterlegplatten

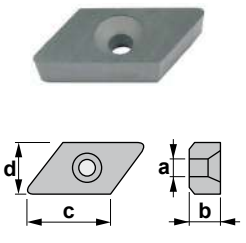



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3007 | 4,9 | 3,18 | 11,3 | 10,8 |
| 3008 | 6,4 | 3,18 | 15,8 | 15,2 |




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3006 | 5,1 | 3,18 | 11,3 | 10,8 |
| IWSN-322 | 5,7 | 3,18 | 11,9 | 11,4 |
| IWSN-433 | 7,3 | 4,76 | 16,0 | 15,3 |

## KNUX - Shim seats / KNUX - Unterlegplatten




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3226 | 3,3 | 4,76 | 14,5 | 9,25 |

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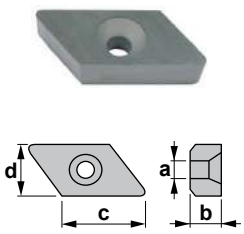
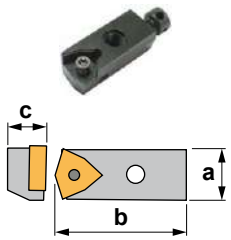
## KNUX - Shim seats / KNUX - Unterlegplatten

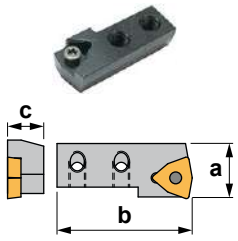



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3236 | 3,3 | 4,76 | 14,5 | 9,25 |

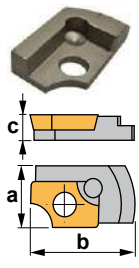
## Seats / Kassetten



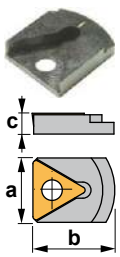

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6806 | 12,8 | 32 | 10,7 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6816 | 16,3 | 40 | 10,7 |

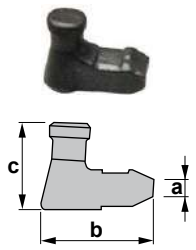



| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6925 | 12,7 | 22 | 4,8 |

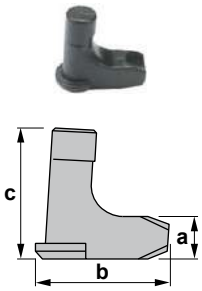



| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6926 | 16 | 19,5 | 4,8 |

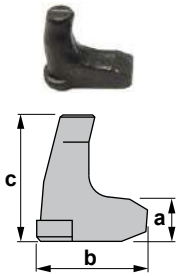
# Levers / Kniehebel



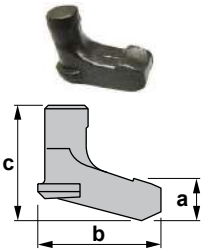

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8005 | 2,3 | 10,1 | 7,8 |



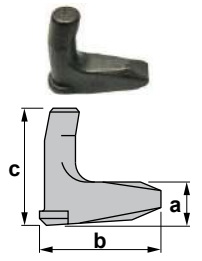

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8009 | 3,4 | 10,2 | 12,0 |
| 8012 | 4,2 | 13,5 | 13,1 |
| 8015 | 5,3 | 19,2 | 17,2 |
| 8016 | 5,4 | 16,5 | 17,1 |
| 8019 | 8,2 | 20,6 | 21,0 |
| 8025 | 8,2 | 25,7 | 25,2 |



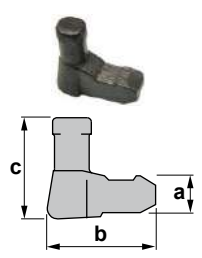

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8110 | 4,0 | 11,0 | 11,6 |
| 8112 | 4,2 | 13,0 | 13,1 |
| 8120 | 6,8 | 20,4 | 18,4 |
| 8125 | 7,6 | 23,7 | 22,9 |
| 8132 | 9,0 | 30,2 | 26,7 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8212 | 4,7 | 13,4 | 12,1 |
| 8219 | 7,2 | 20,5 | 20,2 |



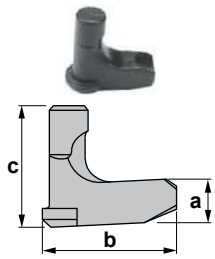

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8116 | 6,7 | 18,6 | 17,7 |
| 8312 | 4,2 | 13,5 | 13,2 |



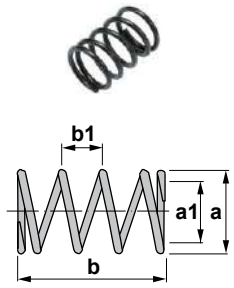

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8216 | 3,4 | 10,1 | 9,5 |

J

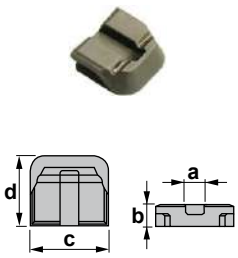
# Levers and others / Kniehebel und Andere



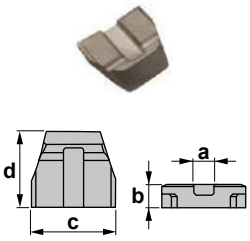

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 8415 | 5,9 | 16,2 | 14,7 |



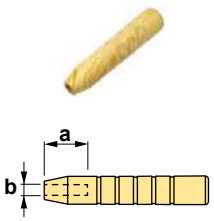

| Reference Bezeichnung | a | a1 | b | b1 |
|---|---|---|---|---|
| 4294 | 6,9 | 5,3 | 12,5 | 2,5 |
| 4295 | 9,5 | 7,0 | 16,5 | 3,5 |



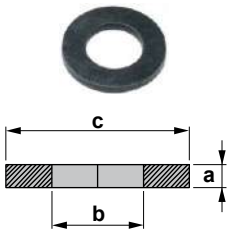

| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 9414 | 2,6 | 2 | 12,6 | 11 |




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 9416 | 3 | 3,5 | 12,6 | 11 |



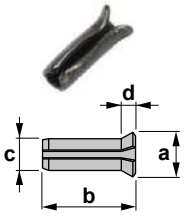

| Reference Bezeichnung | a | b |
|---|---|---|
| 0009 | 15 | 4,0 |
| 0012 | 15 | 5,0 |
| 0015 | 15 | 6,3 |
| 0019 | 12 | 8,5 |
| 0025 | 14 | 12,0 |



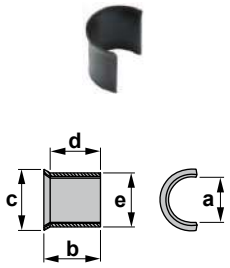

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 2803 | 0,5 | 3,2 | 6,8 |
| 2804 | 0,8 | 4,3 | 9,0 |
| 2806 | 1,5 | 6,4 | 12,0 |
| 2808 | 1,6 | 8,4 | 16,0 |
| 2810 | 2,5 | 10,5 | 21,0 |

J

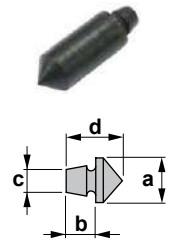
# Others / Andere



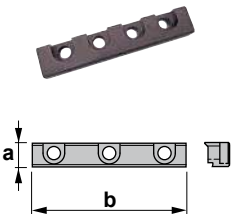

| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 4002 | 2,7 | 10 | 2,1 | 1,1 |
| 4012 | 3,6 | 10 | 3,0 | 1,5 |
| 4022 | 4,5 | 10 | 4,0 | 1,5 |




| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 4109 | 4,4 | 5,2 | 5,7 | 4,6 | 4,9 |
| 4110 | 4,4 | 6,8 | 5,6 | 6,1 | 4,9 |
| 4112 | 5,5 | 5,9 | 7,0 | 5,2 | 6,6 |
| 4115 | 7,0 | 9,2 | 9,0 | 7,7 | 8,2 |
| 4116 | 5,4 | 9,2 | 6,8 | 8,5 | 6,5 |
| 4119 | 8,5 | 11,3 | 10,5 | 9,8 | 9,7 |
| 4125 | 10,0 | 11,9 | 15,2 | 9,7 | 13,2 |
| 4129 | 8,3 | 9,2 | 10,5 | 8,4 | 9,8 |
| 4133 | 8,3 | 9,2 | 10,4 | 8,4 | 9,8 |
| 4135 | 5,5 | 7,7 | 7,2 | 6,8 | 6,6 |

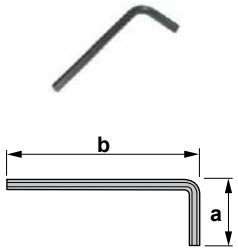



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 4201 | 4,8 | 3,1 | 2,5 | 5,9 |
| 4202 | 4,8 | 3,1 | 2,5 | 8,1 |
| 4203 | 4,8 | 3,1 | 2,5 | 12,5 |
| 4204 | 4,8 | 3,1 | 2,5 | 14,5 |



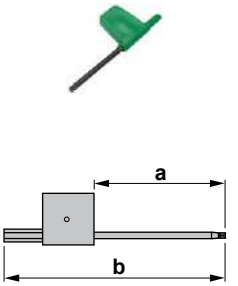

| Reference Bezeichnung | a | b |
|---|---|---|
| 2916 | 10,0 | 64 |
| 2920 | 16,2 | 75 |
| 2930 | 19,3 | 84 |
| 2935 | 19,3 | 94 |
| 2942 | 19,3 | 104 |
| 2950 | 21,0 | 110 |

## Wrenches (Allen) / Schlüssel (Imbus)



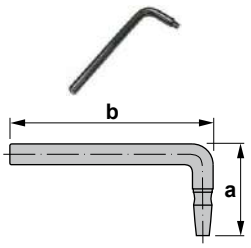

| Reference Bezeichnung | a | b | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|
| 5002 | 18,0 | 51,5 | A2 | 1.4 |
| 5003 | 22,2 | 64,4 | A3 | 3.0 |
| 5004 | 27,6 | 72,6 | A4 | 3.5 |
| 5005 | 32,0 | 83,0 | A5 | 4.0 |
| 5006 | 37,0 | 96,0 | A6 | - |
| 5015 | 14,4 | 45,5 | A1.5 | 0.6 |
| 5025 | 19,0 | 57,3 | A2.5 | 2.0 |

## Wrenches (Torx) / Schlüssel (Torx)

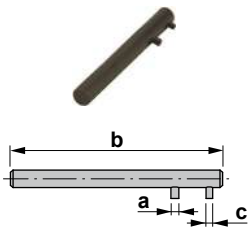



| Reference Bezeichnung | a | b | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|
| 5506 | 34,5 | 62,0 | T6 | 0.6 |
| 5507 | 35,0 | 63,0 | T7 | 0.9 |
| 5508 | 44,0 | 72,0 | T8 | 1.2 |
| 5509 | 38,0 | 74,0 | T9 | 1.4 |
| 5510 | 38,0 | 74,0 | T10 | 2.0 |
| 5515 | 45,5 | 82,5 | T15 | 3.0 |
| 5516 | 42,7 | 86,7 | T15 / A3.5 | 3.0 / - |
| 5517 | 45,7 | 95,7 | T15 / A4 | 3.0 / 3.5 |
| 5520 | 45,9 | 80,0 | T20 | 4.0 |
| 5525 | 53,0 | 92,0 | T25 | 5.0 |

## Wrenches for blades / Schlüssel (Stechschwerter)




| Reference Bezeichnung | a | b |
|---|---|---|
| 5732 | 27,5 | 81 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 5735 | 3 | 80 | 2,5 |

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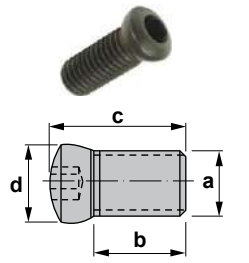
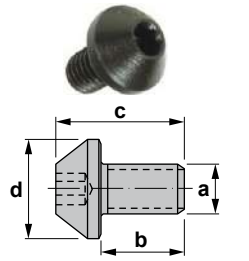
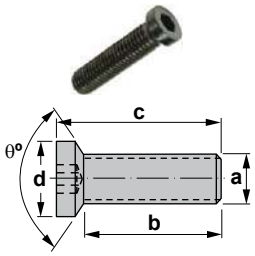
# Screws (Allen) / Schrauben (Imbus)



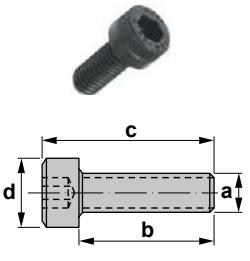

| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1004 | M4x0.7 | 6,8 | 10,0 | 5,6 | - | A2 | 1.4 |
| 1005 | M5x0.8 | 8,7 | 12,0 | 6,8 | - | A2.5 | 2.0 |
| 1006 | M6x1 | 11,2 | 17,0 | 9,0 | - | A4 | 3.5 |
| 1006L | M6x1L | 11,2 | 17,0 | 9,0 | - | A4 | 3.5 |
| 1008 | M8x1.25 | 16,6 | 22,0 | 11,0 | - | A5 | 4.0 |
| 1016 | M6x1 | 6,6 | 12,4 | 9,0 | - | A4 | 3.5 |




| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1025 | M5x0.8 | 8,0 | 12,5 | 9,8 | - | A3 | 3.0 |




| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1058 | M8x1.25 | 29,0 | 35,0 | 11,0 | 45 | A5 | 4.0 |
| 1175 | M5x0.8 | 9,7 | 14,7 | 8,6 | 88 | A4 | 3.5 |




| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1076 | M6x1 | 30,0 | 36,0 | 10,0 | - | A5 | 4.0 |
| 1095 | M5x0.8 | 8,2 | 11,8 | 8,4 | - | A4 | 3.5 |
| 1195 | M5x0.8 | 6,0 | 10,8 | 8,3 | - | A4 | 3.5 |
| 1296 | M6x1 | 10,0 | 14,0 | 9,8 | - | A5 | 4.0 |
| 1396 | M6x1 | 16,0 | 21,9 | 9,75 | - | A5 | 4.0 |
| 912.10 | M10x1.5 | 25,0 | 35,0 | 16,0 | - | A8 | - |
| 912.11 | M10 | 25,0 | 31,0 | 16,0 | - | A7 | - |
| 912.12 | M12x1.7 | 30,0 | 42,0 | 18,0 | - | A10 | - |
| 912.16 | M16x2 | 35,0 | 51,0 | 24,0 | - | A14 | - |
| 912.17 | M16x2 | 35,0 | 44,0 | 24,0 | - | A12 | - |
| 912.20 | M20x2.5 | 39,5 | 51,0 | 30,0 | - | A14 | - |
| 912.52 | M12 | 50,0 | 62,0 | 18,0 | - | A10 | - |
| 912.56 | M16x2 | 47,0 | 63,0 | 24,0 | - | A14 | - |



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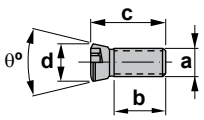
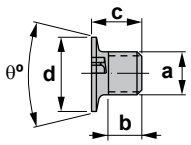
# Screws (Torx) / Schrauben (Torx)





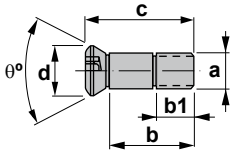

| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1182 | M8x1 | 9,5 | 13,5 | 10,5 | 60 | T25 | 5.0 |
| 1222 | M2.2x0.45 | 3,5 | 6,0 | 3,3 | 55 | T6 | 0.6 |
| 1225 | M2.5x0.45 | 4,0 | 7,0 | 3,3 | 55 | T7 | 0.9 |
| 1230 | M3x0.5 | 5,6 | 9,0 | 4,4 | 55 | T8 | 1.2 |
| 1235 | M3.5 | 6,5 | 9,5 | 5,3 | 55 | T15 | 3.0 |
| 1240 | M4x0.7 | 6,2 | 11,0 | 5,3 | 55 | T15 | 3.0 |
| 1240-IP | M4x0.7 | 6,5 | 10,0 | 5,3 | 60 | T15-IP | 3.5 |
| 1244 | M4x0.7 | 8,0 | 12,0 | 7,0 | 55 | T20 | 4.0 |
| 1245 | M4.5x0.75 | 7,4 | 11,4 | 6,4 | 55 | T15 | 3.0 |
| 1250 | M5x0.8 | 6,0 | 12,0 | 7,0 | 55 | T20 | 4.0 |
| 1261 | M6x1 | 8,5 | 13,0 | 7,9 | 55 | T25 | 5.0 |
| 1335 | M3.5x0.6 | 10,2 | 15,0 | 5,3 | 55 | T15 | 3.0 |
| 1425 | M2.5x0.45 | 3,0 | 5,5 | 3,3 | 55 | T7 | 0.9 |
| 1430 | M3x0.5 | 2,8 | 5,8 | 4,4 | 55 | T8 | 1.2 |
| 1430-IP | M3x0.5 | 4,0 | 6,7 | 3,9 | 60 | T10-IP | 2.5 |
| 1435 | M3.5 | 3,1 | 7,0 | 5,3 | 55 | T15 | 3.0 |
| 1440 | M4x0.7 | 3,2 | 7,5 | 5,3 | 55 | T15 | 3.0 |
| 1440-IP | M4x0.7 | 4,2 | 8,0 | 5,3 | 60 | T15-IP | 3.5 |
| 1445 | M4.5x0.75 | 5,4 | 9,0 | 6,3 | 55 | T15 | 3.0 |
| 1550 | M5x0.8 | 5,9 | 11,0 | 6,4 | 43 | T20 | 4.0 |
| 1622 | M2.2x0.45 | 4,0 | 6,0 | 3,4 | 60 | T7 | 0.9 |
| 1625 | M2.5x0.45 | 3,6 | 6,5 | 3,8 | 60 | T8 | 1.2 |
| 1630 | M3x0.5 | 5,2 | 8,3 | 4,3 | 60 | T9 | 1.4 |
| 1635 | M3.5x0.6 | 5,5 | 9,0 | 4,7 | 60 | T10 | 2.0 |
| 1640 | M4 | 7,0 | 10,5 | 5,5 | 60 | T15 | 3.0 |
| 1840 | M4 | 3,2 | 7,5 | 5,0 | 40 | T15 | 3.0 |
| 1845 | M4.5x0.75 | 6,9 | 9,0 | 6,5 | 90 | T15 | 3.0 |
| 1846 | M4.5x0.75 | 6,5 | 11,2 | 6,5 | 90 | T15 | 3.0 |
| 1847 | M4.5x0.75 | 8,0 | 11,0 | 6,7 | 90 | T15 | 3.0 |
| 1908 | M8x1 | 13,0 | 20,0 | 10,4 | 60 | T15 | 3.0 |
| 1910 | M10x2.5 | 17,5 | 25,0 | 15,0 | 60 | T15 | 3.0 |





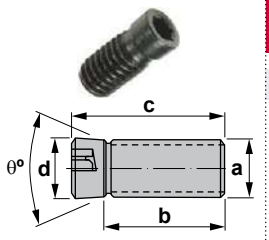

| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1735 | M3.5 | 1,0 | 3,0 | 5,2 | 90 | T7 | 0.9 |
| 1745 | M4.5x0.75 | 3,8 | 5,2 | 6,7 | 100 | T15 | 3.0 |
| 1835 | M3.5x0.6 | 2,0 | 4,0 | 5,2 | 90 | T7 | 0.9 |





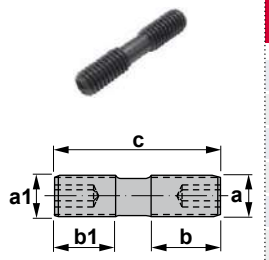

| Reference Bezeichnung | a | b | b1 | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|---|
| 1353 | M3x0.35 | 6,0 | 2,8 | 7,9 | 3,7 | 40 | T8 | 1.2 |
| 1354 | M3.5x0.6 | 7,2 | 3,7 | 9,6 | 4,7 | 40 | T10 | 2.0 |
| 1359 | M4x0.5 | 6,8 | 3,2 | 8,8 | 5,8 | 62 | T15 | 3.0 |
| 1509 | M5x0.5 | 7,9 | 3,6 | 9,5 | 6,7 | 62 | T20 | 4.0 |
| 1519 | M5x0.5 | 10,0 | 4,5 | 12,8 | 7,5 | 62 | T20 | 4.0 |
| 1529 | M5x0.5 | 12,7 | 4,7 | 15,5 | 7,5 | 62 | T20 | 4.0 |
| 1609 | M6x0.75 | 17,6 | 7,1 | 20,6 | 9,5 | 62 | T30 | 7.0 |
| 1619 | M4x0.7 | 10,4 | 5,6 | 13,6 | 5,7 | 42 | T15 | 3.0 |
| 1629 | M5x0.8 | 13,5 | 6,0 | 16,8 | 6,9 | 40 | T20 | 4.0 |
| 1649 | M8x1 | 21,2 | 8,0 | 26,4 | 11,9 | 60 | T30 | 7.0 |
| 1809 | M8x0.75 | 21,5 | 8,8 | 26,2 | 11,9 | 62 | T30 | 7.0 |

## Screws (Torx) / Schrauben (Torx)



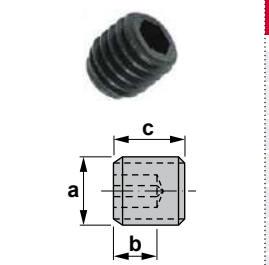

| Reference Bezeichnung | a | b | c | d | θº | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1460 | M6x1 | 8,7 | 13,6 | 6,3 | 120 | T20 | 4.0 |

## Clamp screws / Schrauben für Pratzen



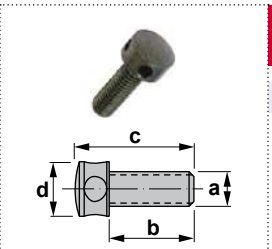

| Reference Bezeichnung | a | a1 | b | b1 | c | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|---|
| 1066 | M6x1R | M6x1L | 8,0 | 9,0 | 21 | T15 | 3.0 |
| 1077 | M7x0.75R | M7x0.75L | 7,5 | 7,5 | 18 | T20 | 4.0 |
| 1088 | M8x1.25R | M8x1.25L | 10,0 | 10,0 | 24 | A4 | 3.5 |
| 1166 | M6x1R | M6x1L | 4,5 | 4,5 | 13 | T15 | 3.0 |
| 1188 | M8x1R | M8x1L | 7,0 | 7,2 | 18 | A4 | 3.5 |
| 1266 | M6x1R | M6x1L | 6,0 | 6,0 | 16 | T15 | 3.0 |
| 1888 | M8x1R | M8x1L | 9,5 | 9,5 | 22 | A4 | 3.5 |

## Set screws / Schrauben



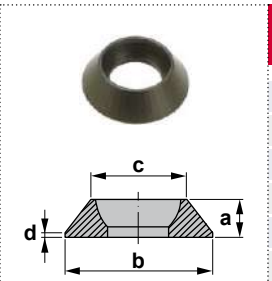

| Reference Bezeichnung | a | b | c | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|
| 1503 | M3x0.5 | 2,0 | 4 | A1.5 | 0.6 |
| 1504 | M4x0.7 | 2,0 | 4 | A2 | 1.4 |
| 1505 | M5x0.8 | 3,0 | 5 | A2.5 | 2.0 |
| 1506 | M6x1 | 4,0 | 5 | A3 | 3.0 |
| 1508 | M8x1.25 | 5,0 | 8 | A4 | 3.5 |
| 1515 | M5x0.8 | 4,0 | 8 | A4 | 3.5 |
| 1517 | M5x0.8 | 3,5 | 12 | A2.5 | 2.0 |
| 1518 | M5x0.8 | 3,5 | 16 | A2.5 | 2.0 |
| 1534 | M4x0.7 | 3,5 | 8 | A2 | 1.4 |

## Adjustable screws / Verstellbare Schrauben




| Reference Bezeichnung | a | b | c | d | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|---|---|
| 1405 | M5x0.8 | 10,5 | 16,5 | 9 | A2 | 1.4 |

## Washers / Unterlegscheiben




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 2009 | 3,0 | 9 | 6,2 | 0,4 |
| 2010 | 3,2 | 10 | 7,2 | 0,6 |
| 2054 | 3,7 | 14 | 7,2 | 0,6 |
| 2063 | 4,2 | 14 | 10,2 | 0,6 |
| 2064 | 4,2 | 14 | 10,2 | 0,6 |
| 2066 | 4,2 | 16 | 10,2 | 0,6 |
| 2088 | 5,2 | 18 | 12,2 | 1,4 |

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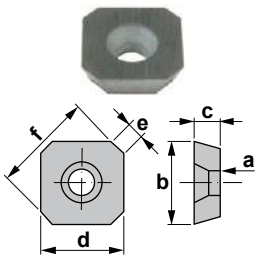
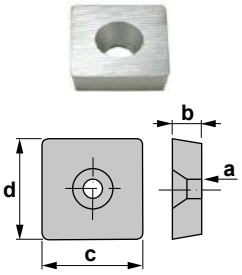
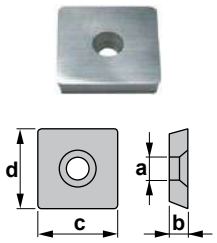
## Square shim seats / Vierkantige Unterlegplatten




| Reference Bezeichnung | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| 3010 | 3,2 | 10,35 | 3,18 | 10,3 | 2,44 | 12 |

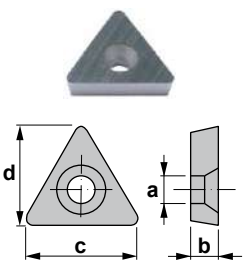



| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3012 | 3,3 | 3,18 | 11,2 | 11,2 |




| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3212 | 3,3 | 3,18 | 12,5 | 12,5 |

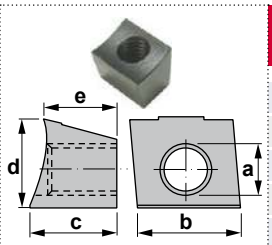
## Triangular shim seats / Dreikantige Unterlegplatten



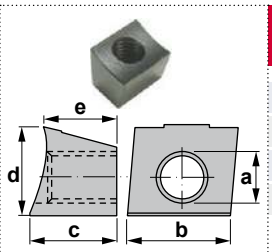

| Reference Bezeichnung | a | b | c | d |
|---|---|---|---|---|
| 3016 | 3,3 | 3,18 | 13,00 | 11,5 |
| 3022 | 4,3 | 3,18 | 17,19 | 15,1 |

J

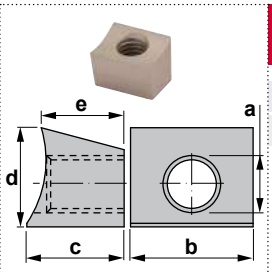
# Wedges and seats / Keile und Kassetten



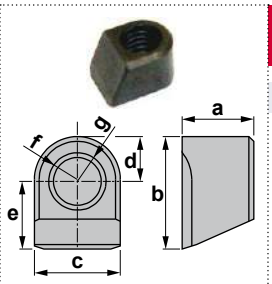

| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6031 | M6x1L | 13,0 | 6,0 | 8,3 | 4,8 |
| 6032 | M6x1L | 13,0 | 6,0 | 8,5 | 4,8 |
| 6055 | M8x1L | 14,6 | 10,0 | 13,5 | 10,0 |
| 6434 | M7x0.75L | 15,0 | 10,0 | 11,8 | 10,0 |
| 6437 | M7x0.75L | 13,8 | 8,5 | 11,8 | 8,5 |



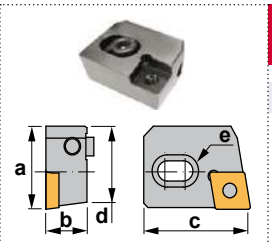

| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6432 | M7x0.75L | 12,3 | 8,5 | 14,0 | 8,5 |
| 6433 | M7x0.75L | 15,0 | 8,5 | 11,8 | 8,5 |
| 6488 | M7x0.75L | 12,0 | 8,0 | 12,4 | 8,0 |
| 6490 | M7x0.75L | 10,7 | 8,0 | 11,9 | 8,0 |



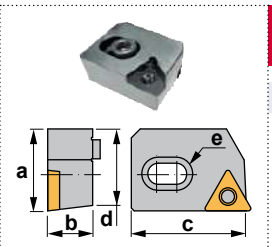

| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6112 | M6x1L | 10,2 | 10,0 | 10,2 | 8,5 |
| 6113 | M8x1L | 13,2 | 10,5 | 13,0 | 8,5 |



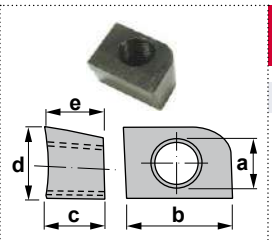

| Reference Bezeichnung | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| 6226 | 7,5 | 11,8 | 9 | 4,7 | 7,1 | R4,5 | M6 |




| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6412 | 27,8 | 15,3 | 38,2 | 25,9 | R5.5 |




| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6416 | 27,8 | 17,5 | 38,5 | 25,9 | R5.5 |




| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6435 | M7x0.75L | 15,0 | 8,5 | 11,8 | 8,5 |

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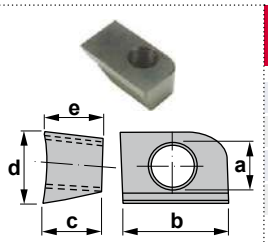
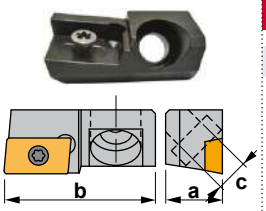
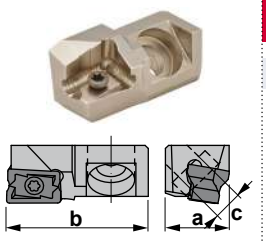
# Seats and cartridges / Kassetten



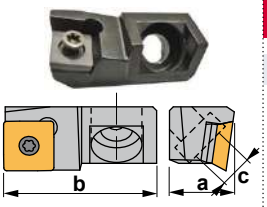

| Reference Bezeichnung | a | b | c | d | e |
|---|---|---|---|---|---|
| 6436 | M7x0.75L | 15,5 | 10,0 | 11,8 | 10,0 |
| 6438 | M7x0.75L | 18,0 | 8,5 | 11,8 | 8,5 |
| 6489 | M7x0.75L | 21,8 | 8,0 | 12,5 | 8,0 |
| 6491 | M7x0.75L | 21,0 | 8,0 | 12,6 | 8,0 |



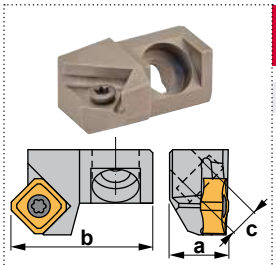

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6230 | 15 | 40 | 8,3 |



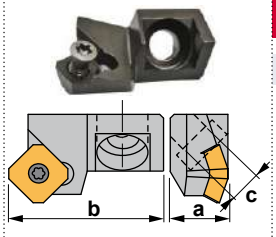

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6232 | 15 | 40 | 8,3 |



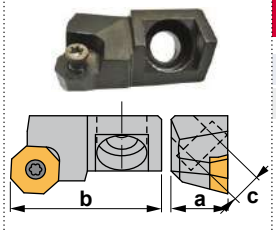

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6255 | 15 | 40 | 8,3 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6742 | 15 | 40 | 8,3 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6748 | 15 | 40 | 8,3 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6845 | 15 | 40 | 8,3 |
| 6846 | 15 | 40 | 8,3 |

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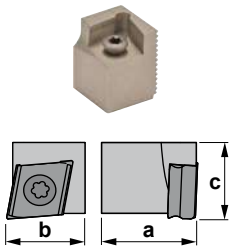
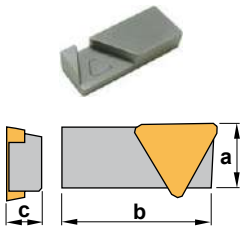
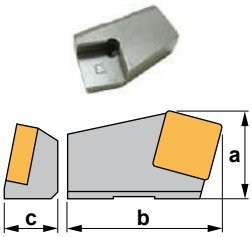
# Seats and cartridges / Kassetten



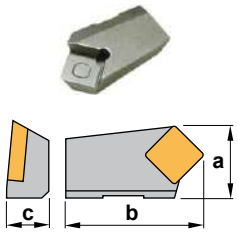

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6938 | 17,5 | 14 | 13,0 |
| 6939 | 17,5 | 14 | 13,0 |
| 6940 | 19,0 | 18 | 16,2 |
| 6941 | 19,0 | 18 | 16,2 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6526 | 11,5 | 27 | 5,93 |



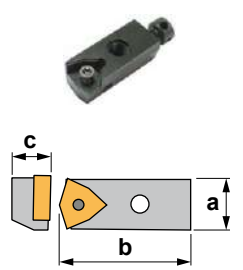

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6912 | 18,9 | 33,2 | 12 |
| 6914 | 19,0 | 32,6 | 12 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6918 | 19,2 | 35 | 11,2 |
| 6920 | 20,6 | 35 | 11,3 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6927 | 15,5 | 33,2 | 11,8 |
| 6942 | 18,1 | 31,2 | 12,5 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6806 | 12,8 | 32 | 10,7 |

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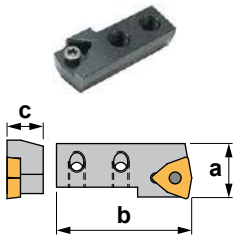
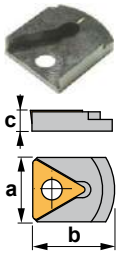
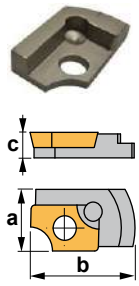
# Seats and cartridges / Kassetten



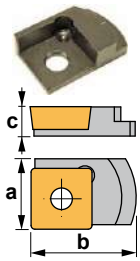

| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6816 | 16,3 | 40 | 10,7 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6921 | 11 | 12,9 | 2,9 |
| 6926 | 16 | 19,5 | 4,8 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6925 | 12,7 | 22 | 4,8 |




| Reference Bezeichnung | a | b | c |
|---|---|---|---|
| 6944 | 14,3 | 21,7 | 5,9 |

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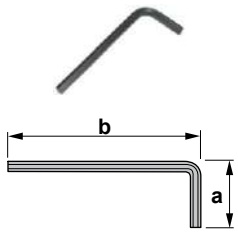
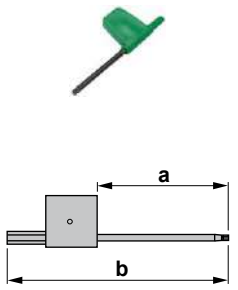
## Wrenches (Allen) / Schlüssel (Imbus)

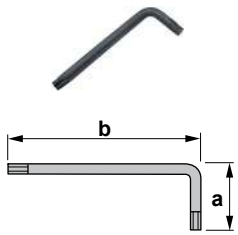



| Reference Bezeichnung | a | b | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|
| 5002 | 18,0 | 51,5 | A2 | 1.4 |
| 5003 | 22,2 | 64,4 | A3 | 3.0 |
| 5004 | 27,6 | 72,6 | A4 | 3.5 |
| 5005 | 32,0 | 83,0 | A5 | 4.0 |
| 5006 | 37,0 | 96,0 | A6 | - |
| 5015 | 14,4 | 45,5 | A1.5 | 0.6 |
| 5025 | 19,0 | 57,3 | A2.5 | 2.0 |

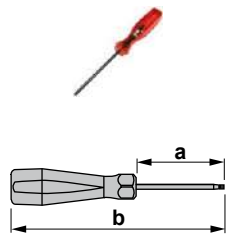
## Wrenches (Torx) / Schlüssel (Torx)




| Reference Bezeichnung | a | b | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|
| 5506 | 34,5 | 62,0 | T6 | 0.6 |
| 5507 | 35,0 | 63,0 | T7 | 0.9 |
| 5508 | 44,0 | 72,0 | T8 | 1.2 |
| 5509 | 38,0 | 74,0 | T9 | 1.4 |
| 5510 | 38,0 | 74,0 | T10 | 2.0 |
| 5510-IP | 38,0 | 74,0 | T10-IP | 2.5 |
| 5515 | 45,5 | 82,5 | T15 | 3.0 |
| 5515-IP | 45,5 | 82,5 | T15-IP | 3.5 |
| 5520 | 45,9 | 80,0 | T20 | 4.0 |
| 5525 | 53,0 | 92,0 | T25 | 5.0 |

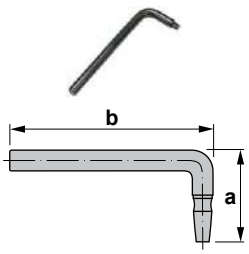



| Reference Bezeichnung | a | b | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|
| 5530 | 27,6 | 77,6 | T30 | 7.0 |




| Reference Bezeichnung | a | b | Wrench Schlüssel | Torque (N.m) Drehmoment (N·m) |
|---|---|---|---|---|
| 5607 | 50,8 | 129,3 | T7 | 0.9 |
| 5608 | 59,0 | 136,0 | T8 | 1.2 |
| 5610 | 79,2 | 177,0 | T10 | 2.0 |
| 5615 | 66,6 | 99,0 | T15 | 3.0 |
| 5620 | 100,0 | 207,7 | T20 | 4.0 |
| 5625 | 100,0 | 208,0 | T25 | 5.0 |

## Wrenches for blades / Schlüssel (Stechschwerter)




| Reference Bezeichnung | a | b |
|---|---|---|
| 5732 | 27,5 | 81 |

J

# TECHNICAL INFORMATION
# TECHNISCHE AUSKÜNFTE

Reference list of materials K02-07
Werkstoffliste

Alphanumeric index K08-15
Alphanumerischer Inhalt

General information K16
Allgemeine Auskunft

Safety regulations K17-18
Sicherheitsvorschriften

## *Reference list of materials (Steels)*
## *Werkstoffliste (Stähle)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| P Unalloyed steel Unlegierter Stahl | 1.0038 | RSt.37-2 | A570.36 | STKM 12A;C | - | 4360 40 C | - | 1311 | E 24-2 Ne | - |
| | 1.0038 | GS-CK16 | 1115 | - | - | 030A04 | 1A | 1325 | - | - |
| | 1.0116 | St.37-3 | A573-81 65 | - | F.111 | 4360 40 B | - | 1312 | E 24-U | Fe37-3 |
| | 1.0401 | C15 | 1015 | - | F.112 | 080M15 | - | 1350 | CC12 | C15C16 |
| | 1.0402 | C22 | 1020 | - | 11SMn28 | 050A20 | 2C/2D | 1450 | CC20 | C20C21 |
| | 1.0715 | 9SMn28 | 1213 | SUM22 | 11SMnPb28 | 230M07 | - | 1912 | S250 | CF9SMn28 |
| | 1.0718 | 9SMnPb28 | 12L13 | SUM22L | 10SPb20 | - | - | 1914 | S250Pb | CF9SMnPb28 |
| | 1.0722 | 10SPb20 | - | - | 12SMn35 | - | - | - | 10PbF2 | CF10Pb20 |
| | 1.0736 | 9SMn36 | 1215 | - | 12SMnPb36 | 240M07 | 1B | - | S300 | CF9SMn36 |
| | 1.0737 | 9SMnPb36 | 12L14 | - | C15K | - | - | 1926 | S300Pb | CF9MnPb36 |
| | 1.1141 | Ck15 | 1015 | S15C | - | 080M15 | 32C | 1370 | XC12 | C16 |
| | 1.1158 | Ck25 | 1025 | S25C | - | - | - | - | - | - |
| | 1.8900 | StE 380 | A572-60 | - | - | 4360 55 E | - | 2145 | - | FeE390KG |
| | - | 17 MnV 6 | A572-60 | - | - | 4360 55 E | - | 2142 | NFA 35-501 E36 | - |
| | 1.0501 | C35 | 1035 | - | F.113 | 060A35 | - | 1550 | CC35 | C35 |
| | 1.0503 | C45 | 1045 | - | F.114 | 080M46 | - | 1650 | CC45 | C45 |
| | 1.0726 | 35S20 | 1140 | - | F210G | 212M36 | 8M | 1657 | 35MF4 | - |
| | 1.1157 | 40Mn4 | 1039 | - | - | 150M36 | 15 | - | 35M5 | - |
| | 1.1167 | 36Mn5 | 1335 | SMn438(H) | 36Mn5 | - | - | 2120 | 40M5 | - |
| | 1.1170 | 28Mn6 | 1330 | SCMn1 | - | 150M28 | 14A | - | 20M5 | C28Mn |
| | 1.1183 | Cf35 | 1035 | S35C | - | 060A35 | - | 1572 | XC38TS | C36 |
| | 1.1191 | Ck45 | 1045 | S45C | C45K | 080M46 | - | 1672 | CX42 | C45 |
| | 1.1213 | Cf53 | 1050 | S50C | - | 060A52 | - | 1674 | XC48TS | C53 |
| | 1.0535 | C55 | 1055 | - | - | 070M55 | - | 1655 | - | C55 |
| | 1.0601 | C60 | 1060 | - | - | 080A62 | 43D | - | CC55 | C60 |
| | 1.1203 | Ck55 | 1055 | S55c | C55K | 070M55 | - | - | XC55 | C50 |
| | 1.1221 | Ck60 | 1060 | S58C | - | 080A62 | 43D | 1678 | XC60 | C60 |
| | 1.1274 | CK 101 | 1095 | - | F-5117 | 060A96 | - | 1870 | XC100 | - |
| | 1.1545 | C105W1 | W 1 | SK 3 | F-5118 | BW1A | - | 1880 | Y105 | C36KU |
| | 1.1545 | C105W1 | W210 | SUP4 | F.515 | BW2 | - | 2900 | Y120 | C120KU |
| P Low alloyed steel Niedriglegierter Stahl | 1.0144 | St.44-2 | A573-81 | SM400A;B;C | - | 4360 43C | - | 1412 | E28-3 | - |
| | 1.0570 | St.52-3 | - | SM490A;B;YA;YB | - | 4360 50B | - | 2132 | E36-3 | Fe52BFN/Fe52CFN |
| | 1.0841 | St.52-3 | 5120 | - | F-431 | 150 M 19 | - | 2172 | 20 MC 5 | Fe52 |
| | 1.0904 | 55Si7 | 9255 | - | 56Si7 | 250A53 | 45 | 2085 | 55S7 | 55Si8 |
| | 1.0961 | 60SiCr7 | 9262 | - | 60SiCr8 | - | - | - | 60SC7 | 60SiCr8 |
| | 1.3505 | 100Cr | 52100 | SUJ2 | F.131 | 534A99 | 31 | 2258 | 100C6 | 100Cr6 |
| | 1.5415 | 15Mo3 | ASTM A204Gr.A | - | 16Mo3 | 1501-240 | - | 2912 | 15D3 | 16Mo3KW |
| | 1.5423 | 16Mo5 | 4520 | - | 16Mo5 | 1503-245-420 | - | - | - | 16Mo5 |
| | 1.5622 | 14Ni6 | ASTM A350LF5 | - | 15Ni6 | - | - | - | 16N6 | 14Ni6 |
| | 1.6523 | 21NiCrMo2 | 8620 | SNCM220(H) | 20NiCrMo2 | 805M20 | 362 | 2506 | 20NCD2 | 20NiCrMo2 |
| | 1.6546 | 40NiCrMo22 | 8740 | SNCM240 | 40NiCrMo2 | 311-Type7 | - | - | - | 40NiCrMo2(KB) |
| | 1.6587 | 17CrNiMo6 | - | - | 14NiCrMo13 | 820A16 | - | - | 18NCD6 | - |
| | 1.7015 | 15Cr3 | 5015 | SCr415(H) | - | 523M15 | - | - | 12C3 | - |
| | 1.7045 | 42Cr4 | 5140 | SCr440 | 42Cr4 | - | - | 2245 | - | - |
| | 1.7176 | 55Cr3 | 5155 | SUP9(A) | - | 527A60 | 48 | - | 55C3 | - |
| | 1.7262 | 15CrMo5 | - | SCM415(H) | 12CrMo4 | - | - | 2216 | 12CD4 | - |
| | 1.7335 | 13CrMo4 4 | ASTM A182F11;F12 | - | 14CrMo45 | 1501-620Gr27 | - | - | 15CD3.5 | 14CrMo4 5 |
| | 1.7380 | 10CrMo9 10 | ASTM A182F.22 | - | TU.H | 1501-622Gr31;45 | - | 2218 | 12CD9, 10 | 12CrMo9, 10 |

## *Reference list of materials (Steels)*
## *Werkstoffliste (Stähle)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| P Low alloyed steel Niedriglegierter Stahl | 1.7715 | 14MoV6 3 | - | - | 13MoCrV6 | 1503-660-440 | - | - | - | - |
| | 1.8515 | 31 CeMo 12 | - | - | F-1712 | 722 M 24 | - | 2240 | - | 30CrMo12 |
| | 1.8523 | 39CrMoV13 9 | - | - | - | 897M39 | - | - | 30 CD 12 | 36CrMoV12 |
| | 1.7039 | 34MoCrS4 G | L1 | - | - | 524A14 | 40C | 2092 | - | 105WCR 5 |
| | 1.5419 | 20MoCrS4 | 8620 | - | F520.S | 605A32 | - | 2108 | - | - |
| | 1.7228 | 55NiCrMoV6G | - | - | - | 823M30 | - | 2512 | - | 653M31 |
| | 1.7139 | 16MnCr5 | - | - | - | - | 33 | 2127 | - | - |
| | - | 31NiCrMo134 | - | - | F-1270 | 830M31 | - | 2534 | - | - |
| | 1.271 | 50NiCr13 | L6 | - | F-528 | - | - | 2550 | 55NCV6 | - |
| | 1.5710 | 36NiCr6 | 3135 | SNC236 | - | 640A35 | 111A | - | 35NC6 | - |
| | 1.5732 | 14NiCr10 | 3415 | SNC415(H) | 15NiCr11 | - | - | - | 14NC11 | 16NiCr11 |
| | 1.5752 | 14NiCr14 | 3415;3310 | SNC815(H) | - | 655M13;A12 | 36A | - | 12NC15 | - |
| | 1.0904 | 55Si7 | 9255 | - | - | - | - | 2090 | 55S7 | - |
| | 1.6511 | 36CrNiMo4 | 9840 | - | 35NiCrMo4 | 816M40 | 110 | - | 40NCD3 | 38NiCrMo4(KB) |
| | 1.6582 | 35CrNiMo6 | 4340 | - | - | 817M40 | 24 | 2541 | 35NCD6 | 35NiCrMo6(KB) |
| | 1.7033 | 34Cr4 | 5132 | SCr430(H) | 35Cr4 | 530A32 | 18B | - | 32C4 | 34Cr4(KB) |
| | 1.7035 | 41Cr4 | 5140 | SCr440(H) | 42Cr4 | 530A40 | 18 | - | 42C4 | 41Cr4 |
| | 1.7131 | 16MnCr5 | 5115 | - | 16MnCr5 | (527M20) | - | 2511 | 16MC5 | 16MnCr5 |
| | 1.7218 | 25CrMo4 | 4130 | SCM420;SCM430 | 55Cr3 | 1717CDS110 | - | 2225 | 25CD4 | 25CrMo4(KB) |
| | 1.7220 | 34CrMo4 | 4137;4135 | SCM432;SCCRM3 | 34CrMo4 | 708A37 | 19B | 2234 | 35CD4 | 35CrMo4 |
| | 1.7223 | 41CrMo4 | 4140;4142 | SCM440 | 42CrMo4 | 708M40 | 19A | 2244 | 42CD4TS | 41CrMo4 |
| | 1.7225 | 42CrMo4 | 4140 | SCM440(H) | 42CrMo4 | 708M40 | 19A | 2244 | 42CD4 | 42CrMo4 |
| | 1.7361 | 32CrMo12 | - | - | F.124.A | 722M24 | 40B | 2240 | 30CD12 | 32CrMo12 |
| | 1.8159 | 50CrV4 | 6150 | SUP10 | 51CrV4 | 735A50 | 47 | 2230 | 50CV4 | 50CrV4 |
| | 1.8509 | 41CrAlMo7 | - | - | 41CrAlMo7 | 905M39 | 41B | 2940 | 40CAD6,12 | 41CrAlMo7 |
| | 1.2067 | 100Cr6 | L3 | - | 100Cr6 | BL3 | - | - | Y100C6 | - |
| | 1.2419 | 105WCr6 | - | SKS31,SKS2,SKS3 | 105WCr5 | - | - | 2140 | 105WC13 | 10WCr6 |
| | 1.2713 | 55NiCrMoV6 | L6 | SKT4 | F.520.S | - | - | - | 55NCDV7 | - |
| P High alloyed steel Hochlegierter Stahl | 1.5662 | X8Ni9 | ASTM A353 | - | XBNi09 | 1501-509;510 | - | - | - | X10Ni9 |
| | 1.5680 | 12Ni19 | 2515 | - | - | - | - | - | Z18N5 | - |
| | 1.6657 | 14NiCrMo134 | - | - | 14NiCrMo131 | 832M13 | 36C | - | - | 15NiCrMo131 |
| | 1.2.080 | X210Cr12 | D3 | SKD1 | X210Cr12 | BD3 | - | - | Z200C12 | X210Cr13KU |
| | 1.2083 | - | - | - | - | - | - | 2314 | - | X250Cr12KU |
| | 1.2344 | X40CrMoV5 1 | H13 | SKD61 | X40CrMoV5 | BH13 | - | 2242 | Z40CDV5 | X35CrMoV05KU |
| | 1.2363 | X100CrMoV5 1 | A2 | SKD12 | X100CrMoV5 | BA2 | - | 2260 | Z100CDV5 | X40CrMoV511KU |
| | 1.2436 | X210CrW12 | - | SKD2 | X210CrW12 | - | - | 2312 | - | X100CrMoV51KU |
| | 1.2542 | 45WCrV7 | S1 | - | 45WCrSi8 | BS1 | - | 2710 | - | X215CrW12 1KU |
| | 1.2581 | X30wCrV9 3 | H21 | SKD5 | X30WCrV9 | BH21 | - | - | Z30WCV9 | 45WCrV8KU |
| | 1.2601 | X165CrMoV 12 | - | - | X160CrMoV12 | - | - | 2310 | - | X28W09KU |
| | 1.4718 | X45GrSi93 | HW3 | SUH1 | F322 | 401S45 | 52 | - | Z45CS9 | X160CrMoV12 |
| | 1.3343 | S6-5-2 | D3 | SUH3 | - | 4959BA2 | - | 2715 | Z40CSD10 | F322 |
| | 1.3343 | S6/5/2 | M 2 | SKH 51 | F-5603 | BM 2 | - | 2722 | Z 85 WDCV | - |
| | 1.3243 | S6/5/2/5 | M 35 | SKH 55 | F-5613 | BM 35 | - | 2723 | 6-5-2-5 | F-5603 |
| | 1.3348 | S2/9/2 | M 7 | - | F-5607 | - | - | 2782 | - | F-5607 |
| | 1.2379 | X210Cr12 G | HNV3 | - | - | - | - | 2736 | - | - |
| P Steel castings Stahlguß | - | - | - | - | - | - | - | 2223 | - | - |
| | 1.3401 | G-X210Mn12 | - | SCMnH/1 | X120Mn12 | Z120M12 | - | - | Z120M12 | XG120Mn12 |
| | 1.3401 | - | - | SEMn H1 | F-8251 | BW 10 | - | 2183 | 2120 M12 | Gx120 Mn12 |

## *Reference list of materials (Stainless steels)*
## *Werkstoffliste (Rostfreie Stähle)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| M Stainless steel (Ferritic / martensitic) Rostfreier Stahl (Ferritisch / Martensitisch) | 1.4000 | X7Cr13 | 403 | SUS403 | F.3110 | 403S17 | - | 2301 | Z6Cr13 | X6Cr13 |
| | 1.4001 | X7Cr14 | - | - | F.8401 | - | - | - | - | - |
| | 1.4005 | X12CrS13 | 416 | SUS416 | F-3411 | 416 S 21 | - | 2380 | Z11CF13 | X12 CrS 13 |
| | 1.4016 | X8Cr17 | 430 | SUS430 | F3113 | 430S15 | 960 | 2320 | Z8C17 | X8Cr17 |
| | 1.4006 | X10Cr13 | 410 | SUS410 | F.3401 | 410S21 | 56A | 2302 | Z10C14 | X12Cr13 |
| | - | X8Cr17 | 430 | SUS430 | F.3113 | 430S17 | 60 | 2320 | Z8C17 | X8Cr17 |
| | 1.4034 | X46Cr13 | - | SUS420J2 | F.3405 | 420S45 | 56D | 2304 | Z40CM | X40Cr14 |
| | - | - | - | - | - | - | - | - | Z38C13M | - |
| | 1.4003 | - | 405 | - | - | 405S17 | - | - | Z8CA12 | X6CrAl13 |
| | 1.4021 | - | 420 | - | - | 420S37 | - | 2303 | Z20C13 | X20Cr13 |
| | 1.4057 | X22CrNi17 | 431 | SUS431 | F.3427 | 431S29 | 57 | 2321 | Z15CNi6.02 | X16CrNi16 |
| | 1.4104 | X12CrMoS17 | 430F | SUS430F | F.3117 | - | - | 2383 | Z10CF17 | X10CrS17 |
| | 1.4113 | X6CrMo17 | 434 | SUS434 | - | 434S17 | - | 2325 | Z8CD17.01 | X8CrMo17 |
| | 1.4313 | X5CrNi13 4 | CA6-NM | SCS5 | - | 425C11 | - | 2385 | Z4CND13.4M | (G)X6CrNi304 |
| | 1.4724 | X10CrA113 | 405 | SUS405 | F.311 | 403S17 | - | - | Z10C13 | X10CrA112 |
| | 1.4742 | X10CrA118 | 430 | SUS430 | F.3113 | 430S15 | 60 | - | Z10CAS18 | X8Cr17 |
| | 1.4747 | X80CrNiSi20 | HNV6 | SUH4 | F.320B | 443S65 | 59 | - | Z80CSN20.02 | X80CrSiNi20 |
| | 1.4762 | X10CrA124 | 446 | SUH446 | - | - | - | 2322 | Z10CAS24 | X16Cr26 |
| | 1.4871 | X53CrMnNiN21 9 | EV8 | SUH35, SUH36 | - | 349S54 | - | - | Z52CMN21.09 | X53CrMnNiN219 |
| | 1.4521 | X1CrMoTi18 2 | S44400 | - | - | - | - | 2326 | - | - |
| | 1.4922 | X20CrMoV12-1 | - | - | - | - | - | 2317 | - | X20CrMoNi 12 01 |
| | 1.4542/ 1.4548 | - | 630 | - | - | - | - | - | Z7CNU17-04 | - |
| M Stainless steel (Austenitic) Rostfreier Stahl (Austenitisch) | 1.4306 | - | 304L | - | - | 304S11 | - | 2352 | Z2CrNi18 11 | X2CrNi18 11 |
| | 1.4350 | X5CrNi189 | 304 | SUS304 | F.3551 | 304S31 | 58E | 2332/2333 | Z6CN18.09 | X5CrNi18 10 |
| | - | - | - | - | F.3541 | - | - | - | - | - |
| | - | - | - | - | F.3504 | - | - | - | - | - |
| | 1.4305 | X12CrNiS18 8 | 303 | SUS303 | F.3508 | 303S21 | 58M | 2346 | Z10CNF 18.09 | X10CrNiS 18.09 |
| | 1.4301 | X5CrNi189 | 304 | SUS304 | F.3551 | 304S15 | 58E | 2332 | Z6CN18.09 | X5CrNi18 10 |
| | - | - | - | SUS304L | - | 304C12 | - | 2333 | Z3CN19.10 | - |
| | 1.4306 | X2CrNi18 9 | 304L | SCS19 | F.3503 | 304S12 | - | 2352 | Z2CrNi18 10 | X2CrNi18 11 |
| | 1.4310 | X12CrNi17 7 | 301 | SUS301 | F.3517 | - | - | 2331 | Z12CN17.07 | X12CrNi17 07 |
| | 1.4311 | X2CrNiN18 10 | 304LN | SUS304LN | - | 304S62 | - | 2371 | Z2CN18.10 | - |
| | 1.4401 | X5CrNiMo18 10 | 316 | SUS316 | F.3543 | 316S16 | 58J | 2347 | Z6CND17.11 | X5CrNiMo17 12 |
| | 1.4429 | X2CrNiMoN18 13 | 316LN | SUS316LN | - | - | - | 2375 | Z2CND17.13 | - |
| | 1.4404 | - | 316L | - | - | 316S13 | - | 2348 | Z2CND17-12 | X2CrNiMo1712 |
| | 1.4435 | X2CrNiMo18 12 | 316L | SCS16 | - | 316S13 | - | 2353 | Z2CND17.12 | X2CrNiMo17 12 |
| | - | - | - | SUS316L | - | - | - | - | - | - |
| | 1.4436 | - | 316 | - | - | 316S33 | - | 2343 | Z6CND18-12-03 | X8CrNiMo1713 |
| | - | - | - | - | - | - | - | 2347 | - | - |
| | 1.4438 | X2CrNiMo18 16 | 317L | SUS317L | - | 317S12 | - | 2367 | Z2 NCDU25-20 | X2CrNiMo18 16 |
| | 1.4539 | X1NiCrMo | UNS V 0890A | - | - | - | - | 2562 | Z6CNT18.10 | - |
| | 1.4541 | X10CrNiTi18 9 | 321 | SUS321 | F.3553 | 321S12 | 58B | 2337 | - | X6CrNiTi18 11 |
| | - | - | - | - | F.3523 | - | - | - | Z6CNNb18.10 | - |
| | 1.4550 | X10CrNiNb18 9 | 347 | SUS347 | F.3552 | 347S17 | 58F | 2338 | - | X6CrNiNb18 11 |
| | - | - | - | - | F.3524 | - | - | - | - | - |
| | 1.4571 | X10CrNiMoTi18 10 | 316Ti | - | F.3535 | 320S17 | 58J | 2350 | Z6NDT17.12 | X6CrNiMoNb17 13 |
| | 1.4583 | X10CrNiMoNb 18 12 | 318 | - | - | - | - | - | Z6CNDNb17 13B | - |
| | 1.4828 | X15CrNiSi20 12 | 309 | SUH309 | - | 309S24 | - | - | Z15CNS20.12 | X6CrNi25 20 |

## *Reference list of materials (Stainless steels)*
## *Werkstoffliste (Rostfreie Stähle)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| M Stainless steel (Austenitic) Rostfreier Stahl (Austenitisch) | 1.4845 | X12CrNi25 21 | 310S | SUH310 | F.331 | 310S24 | - | 2361 | Z12CN25 20 | - |
| | 1.4406 | X10CrNi18.08 | 308 | SCS17 | F.8414 | 301S21 | 58C | 2370 | Z1NCDU25.20 | - |
| | 1.4418 | X4 CrNiMo16 5 | - | - | - | - | - | 2387 | Z6CND16-04-01 | X2CrNiMo1712 |
| | 1.4568/ 1.4504 | - | 17-7PH | - | - | 316S111 | - | - | Z8CNA17-07 | - |
| | 1.4563 | - | NO8028 | - | - | - | - | 2584 | Z1NCDU31-27-03 | - |
| | - | - | S31254 | - | - | - | - | 2378 | Z1CNDU20-18-06AZ | - |
| M Stainless steel (Austenitic / ferritic (duplex)) Rostfreier Stahl (Austenitisch / Ferritisch (duplex)) | 1.4417 | X2CrNiMoSi19 5 | S31500 | - | - | - | - | 2376 | - | - |
| | - | X8CrNiMo27 5 | S32900 | - | - | - | - | 2324 | - | - |
| | - | X2CrNiN23 4 | S322304 | - | - | - | - | 2327 | Z2CN23-04AZ | - |
| | - | - | - | - | - | - | - | 2328 | - | - |
| | - | X2CrNiMoN22 53 | S31803 | - | - | - | - | 2377 | Z2CND22-05-03 | - |

## *Reference list of materials (Castings)*
## *Werkstoffliste (Stahlguß)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| K Malleable cast iron Temperguß | - | - | - | FCMB310 | - | 8 290/6 | - | 0814 | MN 32-8 | - |
| | - | GTS-35 | 32510 | FCMW330 | - | B 340/12 | - | 0815 | MN 35-10 | - |
| | 0.8145 | GTS-45 | 40010 | FCMW370 | - | P 440/7 | - | 0852 | Mn 450 | GMN 45 |
| | 0.8155 | GTS-55 | 50005 | FCMP490 | - | P 510/4 | - | 0854 | MP 50-5 | GMN 55 |
| | - | GTS-65 | 70003 | FCMP540 | - | P 570/3 | - | 0858 | MP 60-3 | - |
| | 0.8165 | GTS-65-02 | A220-70003 | FCMP590 | - | P570/3 | - | 0856 | Mn 650-3 | GMN 65 |
| | 0.8170 | GTS-70-02 | A220-80002 | FCMP690 | - | P690/2 | - | 0862 | Mn700-2 | GMN 70 |
| K Cast iron Grauguß | - | - | - | - | - | - | - | 0100 | - | - |
| | - | GG10 | No 20 B | FC100 | - | - | - | 0110 | Ft 10 D | - |
| | 0.6015 | GG15 | No 25 B | FC150 | FG 15 | Grade 150 | - | 0115 | Ft 15 D | G 15 |
| | 0.6020 | GG20 | No 30 B | FC200 | - | Grade 220 | - | 0120 | Ft 20 D | G 20 |
| | 0.6025 | GG25 | No 35 B | FC250 | FG25 | Grade 260 | - | 0125 | Ft 25 D | G 25 |
| | - | - | No 40 B | - | - | - | - | - | - | - |
| | 0.6030 | GG30 | No 45 B | FC300 | FG30 | Grade 300 | - | 0130 | Ft 30D | G 30 |
| | 0.6035 | GG35 | No 50 B | FC350 | FG35 | Grade 350 | - | 0135 | Ft 35 D | G 35 |
| | 0.6040 | GG40 | No 55 B | - | - | Grade 400 | - | 0140 | Ft 40 D | - |
| | 0.6660 | GGL-NiCr202 | A436 Type 2 | - | - | L-NiCuCr202 | - | 0523 | L-NC 202 | - |
| K Nodular SG iron Kugelgraphitguß SG | 0.7040 | GGG 40 | 60-40-18 | FCD400 | FGE 38-17 | SNG 420/12 | - | 0717-02 | FCS 400-12 | GS 370-17 |
| | - | GGG 40.3 | - | - | - | SNG 370/17 | - | 0717-12 | FGS 370-17 | - |
| | 0.7033 | GGG 35.3 | - | - | - | - | - | 0717-15 | - | - |
| | 0.7050 | GGG 50 | 80-55-06 | FCD500 | FGE 50-7 | SNG 500/7 | - | 0727-02 | FGS 500-7 | GS 500 |
| | 0.7660 | GGG-NiCr202 | A43D2 | - | - | Grade S6 | - | 0776 | S-NC 202 | - |
| | - | GGG 60 | - | FCD600 | - | SNG 600/3 | - | 0732-03 | FGS 600-3 | - |
| | 0.7070 | GGG 70 | 100-70-03 | FCD700 | FGS 70-2 | SNG 700/2 | - | 0737-01 | FGS 700-2 | GS 700-2 |

## *Reference list of materials (Non ferrous materials)*
## *Werkstoffliste (Nichteisen-Metalle)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| N Non ferrous materials Nichteisen-Metalle | 3.2373 | G-AlSi9MgWA | SC64D | C4BS | - | - | - | 4251 | A-STG | - |
| | - | G-ALMG5 | GD-AlSi12 | AC4A | - | LM5 | - | 4252 | A-SU12 | - |
| | - | - | 356.1 | A5052 | - | LM25 | - | 4244 | - | - |
| | - | GD-AlSi12 | A413.0 | A6061 | - | - | - | 4247 | - | - |
| | - | GD-AlSi8Cu3 | A380.1 | A7075 | - | LM24 | - | 4250 | - | - |
| | - | G-AlSi12(Cu) | A413.1 | ADC12 | - | LM20 | - | 4260 | - | - |
| | - | G-AlSi12 | A413.2 | - | - | LM6 | - | 4261 | - | - |
| | - | G-AlSi10Mg(Cu) | A360.2 | - | - | LM9 | - | 4253 | - | - |

## *Reference list of materials (Heat resistant super-alloys)*
## *Werkstoffliste (Hitzebeständige Super-Legierungen)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| S Heat resistant super-alloys Hitzebeständige Super-Legierungen | 1.4864 | X12NiCrSi36 16 | 330 | SUH330 | - | - | - | - | Z12NCS35.16 | F-3313 |
| | 1.4865 | G-X40NiCrSi38 18 | - | SCH15 | - | 330C11 | - | - | - | XG50NiCr39 19 |
| | 2.4603 | - | 5390A | - | - | - | - | - | NC22FeD | - |
| | 2.4856 | NiCr22Mo9Nb | 5666 | - | - | - | - | - | NC22FeDNB | - |
| | 2.4630 | NiCr20Ti | - | - | - | HR5,203-4 | - | - | NC20T | - |
| | LW2.4662 | NiFe35Cr14MoTi | 5660 | - | - | - | - | - | ZSNCDT42 | - |
| | LW2.4670 | S-NiCr13A16MoNb | 5391 | - | - | 3146-3 | - | - | NC12AD | - |
| | LW2.4668 | NiCr19Fe19NbMo | 5383 | - | - | HR8 | - | - | NC19eNB | - |
| | 2.4375 | NiCu30Al | 4676 | - | - | 3072-76 | - | - | - | - |
| | 2.4631 | NiCr20TiAk | - | - | - | Hr401,601 | - | - | NC20TA | - |
| | 2.4973 | NiCr19Co11MoTi | AMS 5399 | - | - | - | - | - | NC19KDT | - |
| | LW2.4668 | NiCr19Fe19NbMo | AMS 5544 | - | - | - | - | - | NC20K14 | - |
| | LW2.4674 | NiCo15Cr10MoAlTi | AMS 5397 | - | - | - | - | - | - | - |
| | LW2.4964 | CoCr20W15Ni | 5537C | - | - | - | - | - | KC20WN | - |
| | - | CoCr22W14Ni | AMS 5772 | - | - | - | - | - | KC22WN | - |
| S Titanium alloys Titanium-Legierungen | - | TiAl5Sn2.5 | AMS R54520 | - | - | TA14/17 | - | - | T-A5E | - |
| | - | TiAl6V4 | AMS R56400 | - | - | TA10-13/TA28 | - | - | T-A6V | - |
| | - | TiAl6V4ELI | AMS R56401 | - | - | TA11 | - | - | - | - |
| | - | TiAl4MoSn4Si0.5 | - | - | - | - | - | - | - | - |

## *Reference list of materials (Hardened materials)*
## *Werkstoffliste (Gehärtete Materialien)*

| ISO | Germany Deutschland | | U.S.A | Japan | Spain Spanien | U.K. | | Sweden Schweden | France Frankreich | Italy Italien |
|---|---|---|---|---|---|---|---|---|---|---|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| H Hardened materials Gehärtete Materialien | 1.4108 | X100CrMo13 | 440A | C4BS | - | - | - | - | - | - |
| | 1.4111 | X110CrMoV15 | 610 | AC4A | - | - | - | - | - | - |
| | - | X65CrMo14 | 0-2 | AC4A | - | - | - | - | - | - |

### *Turning inserts*
### *Drehwendeschneidplatten*


| Reference / Bez. | Page / Seite |
|---|---|
| ADMT-R | A30 |
| CCGT-AL | A30 |
| CCGT-AP | A31 |
| CCMT | A31 |
| CCMW | A31 |
| CNGP | A32 |
| CNMA | A32 |
| CNMG-CC | A32 |
| CNMG-FC | A32 |
| CNMG-FMC | A32 |
| CNMG-KC | A33 |
| CNMG-MC | A33 |
| CNMG-MFC | A33 |
| CNMG-MHC | A33 |
| CNMG-RC | A33 |
| CNMG-TC | A34 |
| CNMM | A34 |
| DCGT-AL | A35 |
| DCGT-AP | A35 |
| DCMT | A35 |
| DCMW | A35 |
| DNGP | A36 |
| DNMA | A36 |
| DNMG-FC | A36 |
| DNMG-FMC | A36 |
| DNMG-KC | A36 |
| DNMG-MC | A37 |
| DNMG-MFC | A37 |
| DNMG-MHC | A37 |
| DNMG-TC | A37 |
| DNMX | A37 |
| KNUX | A38 |
| RCGT-AL | A38 |
| RCGT-AP | A38 |
| RCMT | A39 |
| RNMG | A39 |
| SCGT-AL | A40 |
| SCMT | A40 |
| SCMT-39 | A40 |
| SCMW | A40 |
| SNMG-FMC | A41 |
| SNMG-KC | A41 |
| SNMG-MHC | A41 |
| SNMG-RC | A41 |
| SNMG-TC | A42 |
| SNMM | A42 |
| SPMR | A43 |
| SPUN | A43 |
| TCGT-AL | A44 |
| TCMT | A44 |
| TCMW | A44 |
| TNMA | A45 |
| TNMG-CC | A45 |
| TNMG-FC | A45 |


### *Turning inserts*
### *Drehwendeschneidplatten*


| Reference / Bez. | Page / Seite |
|---|---|
| TNMG-FMC | A45 |
| TNMG-KC | A45 |
| TNMG-MC | A46 |
| TNMG-MFC | A46 |
| TNMG-MHC | A46 |
| TNMG-TC | A46 |
| TNMX | A46 |
| TPMN | A47 |
| TPMR | A47 |
| TPUN | A47 |
| TPUX | A47 |
| VBMT | A48 |
| VCGT-AL | A48 |
| VCGT-AP | A48 |
| VCMT | A48 |
| VNGP | A49 |
| VNMG | A49 |
| VNMG-TC | A49 |
| WNMA | A50 |
| WNMG-FC | A50 |
| WNMG-FMC | A50 |
| WNMG-KC | A50 |
| WNMG-MC | A50 |
| WNMG-MFC | A51 |
| WNMG-MHC | A51 |
| WNMG-TC | A51 |


### *Ceramic inserts*
### *Keramik-Wendeplatten*


| Reference / Bez. | Page / Seite |
|---|---|
| CNGA | A54 |
| CNGN | A54 |
| CNGX | A54 |
| DNGA | A54 |
| DNGN | A54 |
| DNGX | A55 |
| GWG | A55 |
| RCGX | A55 |
| RNGN | A55 |
| RPGN | A56 |
| SNGA | A56 |
| SNGN | A56 |
| SNGX | A57 |
| TNGA | A57 |
| TNGN | A57 |
| VNGA | A57 |
| WNGA | A58 |


### *CBN/PCD inserts*
### *CBN/PCD Wendeschneidplatten*


| Reference / Bez. | Page / Seite |
|---|---|
| CCMW | A59 |
| CNGA | A59 |
| DCMW | A59 |
| DNGA | A59 |
| SNGA | A59 |
| TCMW | A60 |
| TNGA | A60 |
| TPMN | A60 |


### *Inserts for parting and grooving*
### *Ab- und Einstechwendeplatten*


| Reference / Bez. | Page / Seite |
|---|---|
| GIGP | B06 |
| GIGW | B06 |
| GISG | B06 |
| GIST | B06 |
| LS/RS *Microturn* | B11-15 |
| MRCN | B08 |
| NG | B09 |
| NR | B10 |
| NT | B10 |
| PTNT | B08 |
| WDMG | B07 |
| WDMP | B07 |
| WDMR | B07 |
| WDMT | B07 |


### *Threading inserts*
### *WSP zum Gewindedrehen*


| Reference / Bez. | Page / Seite |
|---|---|
| EL-60°/55° | C03 |
| EL-ISO | C05 |
| EL-LG | C10 |
| EL-W | C08 |
| ER-60°/55° | C03 |
| ER-60°/55° TD | C03 |
| ER-ISO | C05 |
| ER-LG | C10 |
| ER-W | C08 |
| NL-60°/55 | C04 |
| NL-ISO | C07 |
| NL-W | C10 |
| NR-60°/55° | C04 |
| NR-60°/55° TD | C04 |
| NR-ISO | C06 |
| NR-W | C09 |
| TNMC | C10 |
| TPMC | C10 |

### *Toolholders*
### *Klemmhalter*


| Reference / Bez. | Page / Seite |
|---|---|
| CKJN 93º | A114 |
| CKNN 63º | A115 |
| CSBP 75º | A116 |
| CSDP 45º | A117 |
| CSKP 75º | A118 |
| CSSP 45º | A119 |
| CSTP 60º | A120 |
| CTBP 75º | A121 |
| CTCPN 90º | A122 |
| CTCP 90º | A123 |
| CTDP 45º | A124 |
| CTFP 90º | A125 |
| CTGP 90º | A126 |
| CTTP 60º | A127 |
| DCLN 95º-A | A69 |
| DCLN 95º-N | A68 |
| DDJN 93º-A | A71 |
| DDJN 93º-N | A70 |
| DSSN 45º-A | A73 |
| DSSN 45º-N | A72 |
| DTGN 90º-N | A74 |
| DTJN 93º-A | A75 |
| DVJN 93º-A | A77 |
| DVJN 93º-N | A76 |
| DWLN 95º-A | A79 |
| DWLN 95º-N | A78 |
| MCLN 95º | A80 |
| MCLN-K 95º | A81 |
| MDJN-K 93º | A82 |
| MSSN 45º | A84 |
| MSSN-K 45º | A83 |
| MTEN 60º | A85 |
| MTJN 93º | A86 |
| MTJN-K 93º | A87 |
| MTNN 63º | A88 |
| MVJN-K 93º | A89 |
| MVQN-K 117º30’ | A90 |
| MVVN-K 72º30’ | A91 |
| MWLN 95º | A92 |
| MWLN-K 95º | A93 |
| PCBN 75º | A94 |
| PCFN 90º | A95 |
| PCKN 75º | A96 |
| PCLN 95º | A97 |
| PCMN 50º | A98 |
| PCSN 45º | A99 |
| PDJN 93º | A100 |
| PDNN 63º | A101 |
| PRDC | A102 |
| PRSC | A103 |
| PRSN | A104 |
| PSBN 75º | A105 |
| PSDN 45º | A106 |
| PSKN 75º | A107 |


### *Toolholders*
### *Klemmhalter*


| Reference / Bez. | Page / Seite |
|---|---|
| PSSN 45º | A108 |
| PTDN 90º | A109 |
| PTFN 90º | A110 |
| PTGN 90º | A111 |
| PTTN 60º | A112 |
| PWLN 95º | A113 |
| SAGD 90º | A129 |
| SCAC 90º | A130-131 |
| SCLC 95º | A132,134 |
| SCLC 95º-A | A133 |
| SDAC 90º | A135 |
| SDHC 107,5º | A136 |
| SDJC 93º | A137,139 |
| SDJC 93º-A | A138 |
| SDNC 62º30’ | A140-141 |
| SRDC | A142 |
| SSBC 75º | A143 |
| SSDC 45º | A144 |
| SSSC 45º | A145 |
| STAC 90º | A146 |
| STDC 45º | A147 |
| STFC 90º | A148 |
| STGC 90º | A149 |
| STHE | A128 |
| STJC 93º | A150-151 |
| STTC 60º | A152 |
| STXC 10º-80º | A153 |
| SVAC 90º | A154 |
| SVHC 107º30’ | A155 |
| SVJB 93º | A156 |
| SVJC 93º | A157,159 |
| SVJC 93º-A | A158 |
| SVLC 95º | A160 |
| SVVB 72º30’ | A161 |
| SVVC 72º30’ | A162-163 |
| SVXC 113º | A164 |
| SVZC 100º | A165 |


### *Boring bars*
### *Bohrstangen*


| Reference / Bez. | Page / Seite |
|---|---|
| A-PCLN 95º | A189 |
| A-PDUN 93º | A191 |
| A-PSKN 75º | A194 |
| A-PSSN 45º | A195 |
| A-PTFN 90º | A197 |
| A-PWLN 95º | A199 |
| A-SCLC 95º | A208 |
| A-SDQC 107º30’ | A214 |
| A-SDUC 93º | A218 |
| A-SDUC 93º-EX | A222 |
| A-SSSC 45º | A224 |
| A-STFC 90º | A226 |
| A-SVJC 93º | A230 |


### *Boring bars*
### *Bohrstangen*


| Reference / Bez. | Page / Seite |
|---|---|
| A-SVQC 107º30’ | A233 |
| A-SVUC 93º | A236 |
| A..X-MTUN 93º-N | A238 |
| A..X-PCLN 95º-N | A239 |
| A..X-PDUN 93º-N | A240 |
| A..X-PWLN 95º-N | A241 |
| A..X-SCLC 95º-N | A242 |
| A..X-SDUC 93º-N | A243 |
| A..X-STFC 90º-N | A244 |
| A..X-SXFN 90º-N | A245 |
| CKUN 93º | A200 |
| CSKP 75º | A201 |
| CTFP 90º | A202 |
| CTUP 93º | A203 |
| DCLN 95º-N | A176 |
| DDUN 93º-N | A177 |
| E-SCLC 95º | A210 |
| E-SDQC 107º30’ | A216 |
| E-SDUC 93º | A220 |
| E-STFC 90º | A228 |
| J.. / J..-A.. | A237,246 |
| MCLN-K 95º | A178 |
| MDUN-K 93º | A179 |
| MSKN-K 75º | A180 |
| MTFN 90º | A181 |
| MTFN-K 90º | A182 |
| MTUN 93º | A183 |
| MVUN-K 93º | A184 |
| MWLN 95º | A185 |
| MWLN-K 95º | A186 |
| PCKN 75º | A187 |
| PCLN 95º | A188 |
| PDUN 93º | A190 |
| PDUN 93º-EX | A192 |
| PSKN 75º | A193 |
| PTFN 90º | A196 |
| PWLN 95º | A198 |
| SCLC 95º | A207 |
| SCLCN 95º | A212 |
| SDQC 107º30’ | A213 |
| SDUC 93º | A217 |
| SDUC 93º-EX | A221 |
| SET SCLC 95º | A209 |
| SET SDQC 107º30’ | A215 |
| SET SDUC 93º | A219 |
| SET STFC 90º | A227 |
| SSKC 75º | A223 |
| STFC 90º | A225 |
| STUC 93º | A229 |
| SVQC 107º30’ | A232 |
| SVUB 93º | A234 |
| SVUC 93º | A235 |
| 00.30 | A204 |
| 608.00 | A206 |

### *Cartridges*
### *Kurzklemmhalter*


| Reference / Bez. | Page / Seite |
|---|---|
| CSKP 75º | A259 |
| CSSP 45º | A259 |
| CTFP 90º | A260 |
| CTGP 90º | A260 |
| CTSP 45º | A261 |
| CTTP 60º | A261 |
| CTWP 30º | A262 |
| PCFN 90º | A254 |
| PCLN 95º | A254 |
| PSKN 75º | A255 |
| PSRN 75º | A255 |
| PSSN 45º | A256 |
| PTFN 90º | A256 |
| PTGN 90º | A257 |
| PTSN 45º | A257 |
| PTTN 60º | A258 |
| PTWN 30º | A258 |
| SCFC 90º | A263 |
| SCLC 95º | A263 |
| SSKC 75º | A264 |
| SSSC 45º | A264 |
| STFC 90º | A265 |
| STGC 90º | A265 |
| STSC 45º | A266 |
| STTC 60º | A266 |
| STWC 60º | A267 |


### *Brazed tools*
### *HM-Gelötete Werkzeuge*


| Reference / Bez. | Page / Seite |
|---|---|
| ISO 2 45º | A272 |
| ISO 6 90º | A272 |
| ISO 7 90º | A273 |
| ISO 9 90º | A275 |
| ISO 351 80º | A273 |
| UI 30 60º | A274 |
| UI 40 60º | A275 |
| UI 50 90º | A276 |


### *Parting and grooving*
### *Ab- und Einstechdrehen*


| Reference / Bez. | Page / Seite |
|---|---|
| CPTS | B48 |
| CRCFN | B49 |
| CZCB | B41 |
| CZCD | B21 |
| CZDP | B20 |
| CZDPN | B48 |
| CZFD | B25 |
| CZFD *Modular blades / Modularare Stechschwerter* | B23-24 |
| CZGB | B47 |
| CZGD | B22 |
| DPTS | B48 |


### *Parting and grooving*
### *Ab- und Einstechdrehen*


| Reference / Bez. | Page / Seite |
|---|---|
| NE 93º | B54 |
| NNTO 93º | B57 |
| NR 45º | B55 |
| NS 93º | B56 |
| STHE | B18 |
| XLCF | B43 |
| XLCFN | B51 |
| XLCTN | B52 |
| XLCTN-HSS | B53 |
| 00.30 | B44 |
| 608.00 | B46 |


### *Threading*
### *Gewindedrehen*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|---|---|
| CTAN 90º | C12 |
| CTXN 90º | C13 |
| STAN 90º | C14 |
| STCN 90º | C16 |
| STXN 90º | C15 |
| S.. CTXN 90º | C17 |
| S.. STGN 90º | C19 |
| S.. STGP 90º | C20 |
| S.. STXN 90º | C18 |


### *Ceramic milling cutters*
### *Fräser für Keramik-WSP*


| Reference / Bez. | Page / Seite |
|---|---|
| 1242.90 88º | D10 |
| 1442.90 75º | D11 |
| 5540.90 | D12 |
| $55\frac{2}{4}0.06$ | D13 |
| 5542.90 | D14 |


### *Ceramic tools*
### *Werkzeuge für Keramik-WSP*


| Reference / Bez. | Page / Seite |
|---|---|
| CCBN 75º | D16 |
| CCKN 75º | D17 |
| CCLN 95º | D18 |
| CDJN 93º | D19 |
| CELN 97º30’ | D20 |
| CRDC | D21 |
| CRDN | D22 |
| CRSN | D23 |
| CSDN 45º | D24 |
| CSKN 75º | D25 |
| CSRN 75º | D26 |
| CSSN 45º | D27 |
| CSXN 85º | D28 |
| CSYN 85º | D29 |
| CTFN 90º | D30 |


### *Ceramic tools*
### *Werkzeuge für Keramik-WSP*


| Reference / Bez. | Page / Seite |
|---|---|
| CTGN 90º | D31 |
| CVJN 93º | D32 |
| CVVN 62º30’ | D33 |
| S.. CCLN 95º | D34 |
| S.. CDQN 107º30’ | D35 |
| S.. CDUN 93º | D36 |
| S.. CELN 97º30’ | D37 |
| S.. CSKN 75º | D38 |
| S.. CSSN 45º | D39 |
| S.. CSYN 85º | D40 |


### *PSC Ceramic*
### *PSC Keramikhalter*


| Reference / Bez. | Page / Seite |
|---|---|
| CCKN 75º | D42 |
| CCLN 95º | D43 |
| CCRN 75º | D44 |
| CDHN 107º30’ | D45 |
| CDJN 93º | D46 |
| CDNN 63º | D47 |
| CDUN 93º | D48 |
| CRSN | D49 |
| CSDN 45º | D50 |
| CSKN 75º | D51 |
| CSRN 75º | D52 |
| CSSN 45º | D53 |

### *PSC Toolholders*
### *PSC Klemmhalter*


| Reference / Bez. | Page / Seite |
|---|---|
| DCKN 75º | E06 |
| DCLN 95º | E07 |
| DCMN 50º | E08 |
| DCRN 75º | E09 |
| DDHN 107º30' | E10 |
| DDJN 93º | E11 |
| DDMN 48º | E12 |
| DDNN 63º | E13 |
| DDUN 93º | E14 |
| DRSN | E15 |
| DSDN 45º | E16 |
| DSKN 75º | E17 |
| DSRN 75º | E18 |
| DSSN 45º | E19 |
| DTFN 90º | E20 |
| DTGN 90º | E21 |
| DVJN 93º | E22 |
| DVVN 72º30' | E23 |
| DWLN 95º | E24 |
| MCKN 75º | E25 |
| MCLN 95º | E26 |
| MCRN 75º | E27 |
| MDJN 93º | E28 |
| MDNN 63º | E29 |
| MDUN 93º | E30 |
| MSDN 45º | E31 |
| MSKN 75º | E32 |
| MSRN 75º | E33 |
| MSSN 45º | E34 |
| MTFN 90º | E35 |
| MTGN 90º | E36 |
| MTJN 93º | E37 |
| MVJN 93º | E38 |
| MVVN 72º30' | E39 |
| MWLN 95º | E40 |
| PCLN 95º | E41 |
| PCRN 75º | E42 |
| PDJN 93º | E43 |
| PDUN 93º | E44 |
| PRDC | E45 |
| PRSC | E46 |
| PSDN 45º | E47 |
| PSKN 75º | E48 |
| PSRN 75º | E49 |
| PSSN 45º | E50 |
| SCLC 95º | E51 |
| SDJC 93º | E52 |
| SDNC 62º30' | E53 |
| SRDC | E54 |
| SRSC 45º | E55 |
| SSRC 75º | E56 |
| STGC 90º | E57 |
| STJC 93º | E58 |
| SVHB 107º30' | E59 |


### *PSC Toolholders*
### *PSC Klemmhalter*


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|---|---|
| SVHC 107º30' | E60 |
| SVJB 93º | E61 |
| SJVC 93º | E62 |
| SVMB 50º | E63 |
| SVVB 72º30' | E64 |
| SVVC 72º30' | E65 |


### *PSC Adaptor*
### *PSC Adapter*


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|---|---|
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### *PSC Boring bars*
### *PSC Bohrstangen*


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|---|---|
| DCLN 95º | E67 |
| DDUN 93º | E68 |
| DWLN 95º | E69 |
| MTFN 90º | E70 |
| MVUN 93º | E71 |
| MWLN 95º | E72 |
| PCLN 95º | E73 |
| PDUN 93º | E74 |
| PSKN 75º | E75 |
| SCLC 95º | E76 |
| SDUC 93º | E77 |
| SDUC-X 93º | E78 |
| SSKC 75º | E79 |
| STFC 90º | E80 |
| SVQB 107º30' | E81 |
| SVQC 107º30' | E82 |


### *PSC Threading*
### *PSC Gewindedrehen*


| Reference / Bez. | Page / Seite |
|---|---|
| SE 90º | A83 |
| SI 90º | A84 |


### *PSC Parting and grooving*
### *PSC Ab- und Einstechdrehen*


| Reference / Bez. | Page / Seite |
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| CZCD | E85 |
| CZFD | E86 |
| CZGD | E87 |
| NE 93º | E88 |
| NNTO 93º | E91 |
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### *PSC Drills*
### *PSC Bohrer*


| Reference / Bez. | Page / Seite |
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| 45.. | E92-94 |


### *PSC Arbors and adaptors*
### *PSC Aufnahmen*


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| 16.218 | E120 |
| 18.160 | E100 |
| 18.180 | E101 |
| 18.215 | E102 |
| 18.218 | E121-122 |
| 18.296 | E103 |
| 18.306 | E104 |
| 18.315 | E105 |
| 18.400 | E106 |
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| 18.453 | E108 |
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| 18.500 | E111 |
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| 18.530 | E114 |
| 18.540 | E115 |
| 18.550 | E116 |
| 18.620 | E117 |
| 18.700 | E124 |
| 18.999 | E118 |
| 23.218 | E123 |
| AC | E125 |
| MC | E125 |

### *Milling inserts*
### *Fräswendeschneidplatten*


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|---|---|
| ADKT | F10 |
| ADMT | F10 |
| ADMT-R | F10 |
| ADMW | F10 |
| ADMW-C | F10 |
| APHT-AL | F11 |
| APKT | F11 |
| APLT | F11 |
| APMT | F11 |
| APMW | F11 |
| CCGT-AL | F12 |
| CCKT | F12 |
| CCMT | F12 |
| CCMW | F12 |
| ENHQ | F13 |
| FRC | F13 |
| FRCR | F13 |
| HPKW | F14 |
| HPR | F14 |
| LNMM | F14 |
| NNMU | F15 |
| ODMT | F15 |
| ODMW | F15 |
| RDHW | F15 |
| RDMT | F16 |
| RDMW | F16 |
| RPMT | F16 |
| RPMW | F16 |
| RPR | F16 |
| SCGT-AL | F17 |
| SCMT-39 | F17 |
| SCMW | F17 |
| SDMT | F17 |
| SEHT | F17 |
| SEHT-AL | F17 |
| SEHW | F17 |
| SEKN | F18 |
| SEKR | F18 |
| SEMT | F18 |
| SNHX | F18 |
| SNKN | F18 |
| SNMX | F19 |
| SNUN | F19 |
| SPKN | F19 |
| SPKR | F19 |
| SPMT | F19 |
| SPMW | F20 |
| SPMX | F20 |
| SPUN | F20 |
| TCGT-AL | F21 |
| TCMT-39 | F21 |
| TCMW | F21 |
| TCMX | F21 |
| TPKN | F21 |


### *Milling inserts*
### *Fräswendeschneidplatten*


| Reference / Bez. | Page / Seite |
|---|---|
| TPKR | F21 |
| TPUN | F22 |
| VCGT-AL | F22 |
| VCGT-AP | F22 |


### *Face and chamfering*
### *Plan- und Anfasfräser*


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|---|---|
| 0440.90 75º | F42 |
| 0440.99 75º | F43 |
| 0624.07 45º | F50 |
| 0630.00 45º | F53 |
| 0630.07 45º | F53 |
| 0630.30 45º | F54 |
| 0634.37 45º | F51 |
| 0640.90 45º | F41 |
| 0724.07 60º | F50 |
| 0735.03 45º | F46 |
| 0740.00 45º | F47 |
| 0740.07 45º | F47 |
| 0740.30 45º | F48 |
| 0744.90 45º | F31 |
| 0748.90 45º | F38 |
| 0748.99 45º | F39 |
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| 1235.01 | F55 |
| 1235.07 | F56 |
| 1345.06 | F59 |
| 1345.07 | F58 |
| 1430.90 75º | F37 |
| $16\frac{2}{3}4.\frac{0}{2}7$ | F52 |
| $1725.\frac{0}{2}7$ | F57 |
| 1742.93 45º | F26 |
| 1742.99 45º | F27 |
| $1744.\frac{0}{2}7$ | F49 |
| 1745.93 15º-75º | F44-45 |
| 1748.07 45º | F30 |
| 1748.93 45º | F28 |
| 1748.99 45º | F29 |
| 1845.93 42º | F32 |
| 1845.99 42º | F33 |
| 1852.93 45º | F36 |
| 1855.93 42º | F34 |
| 1855.99 42º | F35 |


### *Facing square shoulder cutters*
### *Eckfräser*


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| 0120.00 90º | F90 |
| 0130.00 90º | F91 |
| 0130.30 90º | F91 |
| 0130.90 90º | F92 |
| 0130.99 90º | F93 |
| 0140.90 90º | F94 |
| 0140.99 90º | F95 |
| 0235.03 90º | F84 |
| 0235.06 90º | F84 |
| 0235.93 90º | F85 |
| 0255.93 90º | F86 |
| 0255.99 90º | F87 |
| 1135.01 | F88 |
| 1220.02 90º | F73 |
| 1220.03 90º | F72 |
| 1220.06 90º | F75 |
| 1220.07 90º | F74 |
| 1220.93 90º | F76 |
| 1222.06 | F66 |
| 1222.37 | F66 |
| 1222.93 | F67 |
| 1230.02 90º | F78 |
| 1230.06 90º | F79 |
| 1230.07 90º | F77 |
| 1230.93 90º | F81 |
| 1230.99 90º | F82 |
| 1232.06 | F69 |
| 1232.37 | F68 |
| 1232.93 90º | F70 |
| 1232.99 90º | F71 |
| 1245.93 90º | F83 |
| $22\frac{2}{3}0.07$ 90º | F80 |
| $3314.0\frac{0}{1}$ | F89 |
| 3314.06 | F89 |


### *Slot cutters*
### *Nutenfräser*


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| $13\frac{1}{4}4.07$ | F104 |
| $13\frac{1}{4}4.\frac{30}{34}$ | F105 |
| 1520.90 | F110 |
| 1530.90 | F111 |
| 1549.90 | F112 |
| 1942.90 | F109 |
| 2942.07 | F108 |
| 2942.90 | F107 |
| 3942.95 | F106 |
| M | F113 |
| MN | F113 |

### *Profile milling*
### *Profilfräsen*


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| 0344.06 | F136 |
| 0344.90 | F137 |
| $16\frac{2}{4}$9.03 | F120 |
| $16\frac{2}{4}$9.06 | F121 |
| 1639.93 | F122 |
| 1649.93 | F123 |
| 55_5 | F128 |
| 55_5.06 | F129 |
| $55\frac{4}{5}$5.93 | F130 |
| 5549.90 | F131 |
| 85_0 | F139 |
| 85_3 | F140 |
| 85_06 | F141 |
| 88_0 | F142 |
| 88_3 | F143 |
| 88_06 | F144 |


### *Porcupine cutters*
### *Igelfräser*


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| $23\frac{2}{3}$0.07 | F150 |
| 2330.$\frac{47}{48}$ | F151 |
| 2330.$\frac{49}{50}$ | F152 |


### *Solid carbide*
### *Vollhartmetall*


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| 6020 | G50 |
| 6021 | G52 |
| 6022 | G26 |
| 6023 | G28-29 |
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| 6040 | G60 |
| 6041 | G62 |
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### *Solid carbide*
### *Vollhartmetall*


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| 6610 | G45 |
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| 7320 | G73-75 |
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### *Drills*
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## *EINES CANELA, S.A.*

### *Conditions of sale*
All sales are made in accordance with our standard conditions of sale, current at the time orders are accepted. Specifications and prices subject to change without notice.

### *Product warranty*
Eines Canela will repair or replace any of its products, which in its judgement, are found to be defective in material of workmanship. All claims must be made in writing within thirty days after receipt of product. No claims for labor or damages will be allowed. In no event shall Eines Canela be liable for consequential or special damages of any kind.

### *Special tool quotation*
Orders for special tools must be confirmed in writing before manufacturing can begin. Special items and non-stock standard items cannot be cancelled or returned for exchange or credit.

### *Delivery terms*
Full transportation costs will be charged to the buyer. Specify shipment to be made by other than regular means of transportation.

### *Claims*
Claims for loss in transit must be made against the transportation company. The foregoing shall constitute the sole and exclusive remedies of the customer and are in lieu of all other warranties, expressed, implied or statutory, including but not limited to any implied warranty of merchantability or fitness.

### *Returns*
No merchandise will be accepted for return after 30 days of shipment. All returns must be pre-paid and must be accompanied by our Return Goods Authorization (RGA) number. This number must appear on the outside of the box. Merchandise must be received in good condition or will be refused.

***Conditions, terms, and prices are subject to change without notice.***
***Any typographical or other error in this catalogue is subject to correction.***

### *Verkaufsbedingungen*
Alle Verkäufe werden in Übereinstimmung mit unseren Standard-Lieferbedingungen gemacht, die gültig waren als die Bestellungen akzeptiert worden sind. Spezifizierungen und Preise können ohne Benachrichtigung geändert werden.

### *Produktgarantie*
Eines Canela wird die Produkte ersetzen oder reparieren, die ihrer Meinung nach, einen Materialdefekt oder ein Herstellungsfehler haben. Alle Ansprüche müssen schriftlich innerhalb von dreißig Tagen nach der Annahme des Produktes erhoben werden. Kein Garantieanspruch leisten wir für Werkstückbeschädigungen. In keinem Fall wird Eines Canela für Folgeschäden jeder Art verantwortlich sein.

### *Angebote für Sonderwerkzeuge*
Die Bestellungen von Sonderwerkzeuge müssen schriftlich bestätigt werden, bevor die Herstellung beginnen kann. Sonderwerkzeuge und nicht auf Lager liegende Standardwerkzeuge können nicht storniert, im Austausch oder zur Gutschrift zurückgegeben werden.

### *Liefersbedingungen*
Alle Transportkosten sind vom Käufer zu bezahlen. Der Käufer muß den Verkäufer informieren, wenn eine Sendung durch ein anderes Transportmittel gemacht werden soll, das nicht das normale ist.

### *Einsprüche*
Ansprüche auf den Verlust während der Sendung müssen gegen die Transport-Gesellschaft erhoben werden. Das Vorstehende ersetzt die alleinigen und exklusiven Einkaufsbedingungen des Kunden und wird anstatt aller anderen Garantien angewendet.

### *Rückgaben*
Keine Waren werden für die Rückgabe 30 Tagen nach dem Versanddatum akzeptiert. Alle Rückgaben müssen frei Haus geschickt werden und mit unserer Rückgabe-Genehmigungsnummer (RGA) begleitet werden. Diese Nummer muss auf der Außenseite des Kartons erscheinen. Waren müssen in gutem Zustand sein, sonst wird die Annahme verweigert.

***Bedingungen, Fristen und Preise sind Änderungen vorbehalten.***
***Irgendwelcher typografischer oder anderer Fehler in diesem Katalog ist der Korrektur unterworfen.***

## *EINES CANELA, S.A.*

This catalogue contains information and specifications concerning cutting tools sold by Eines Canela. Although some of the cutting tools made from carbides are very tough and resist breakage, most are brittle and special safety precautions are required when using them.

Small fragment and chips may be thrown from a cutting tool when a fracture occurs. Since these fragments or chips are thrown at very high speeds and are very hot, contact with the skin or eyes could cause severe injury. Also, the grinding of these cutting tools will produce fine carbide and cobalt or nickel dust which may be harmful to the lungs. Listed below are some suggestions on how to minimize the potential for injury while using cutting tools.

For more information about the product hazards and safety precautions that must be taken to minimize the possibility of injury while using cutting tools, please call your Eines Canela Sales Engineer.

Eines Canela has no control over use of these cutting tools. The user must determine the suitability of these tools in its particular application.

***WARNING: Very hot chip fragments may be thrown from cutting tools at very high speeds. These chips can cause severe burns, cuts or punctures to the skin, or damage to the eyes. The following are some of the safety precautions that must be followed by operators and observers while using cutting tools:***

1. Make sure that the insert size and shape are adequate for use to which it is being cut.
2. Chip control is necessary to prevent a continuous chip catching in the workpiece.
3. Chips are very hot and have sharp edges and should not be removed by hand.
4. Turn off the machine whenever chips are removed or when the cutting tools are changed.
5. Do not use air hoses to blow chips away from the machine.
6. To prevent tool breakage use the correct size toolholder.
7. Make sure that the overhang on the toolholder is as short as possible. Too much overhang can result in chatter and tool breakage.
8. To prevent the workpiece from coming loose during use, be sure the workpiece is tight and secure in its holder.
9. Overloading of tungsten carbide cutting tools may cause fractures of these tools.
10. A slug may be ejected at high speeds during drilling.

To protect the operator and observer from possible flying objects which could result in severe injury, the following protective devices should be worn or used while using cutting tools:

1. Wear hard hats.
2. Wear safety glasses with side shields.
3. Wear closed shoes with steel toes.
4. Keep protective enclosure on machine in place during operation.

***WARNING: Grinding or finishing carbide produces fine carbide and cobalt or nickel dust. This dust may cause injury to the lungs.***
***Operators and observers must take the following safety precautions to minimize the possibility of such injury:***

1. Use with adequate ventilation.
2. Maintain the dust or mist level below recommended levels.
3. Avoid breathing dust or mist. If not possible, wear appropiate respirators, particularly when grinding tungsten carbide.
4. Minimize prolonged skin contact.
5. Wash hands thoroughly after handling.

***WARNING: Use of cutting fluids and work materials create hazards. Be careful at all times.***

1. Keep the cutting fluid clean so no particles can be carried back across the workpiece and possibly scratch it.
2. Cutting fluids may catch on fire when exposed to high temperatures generated during cutting.
3. Work materials such as aluminium, magnesium, uranium and titanium are flammable and could catch on fire.
4. Cutting fluids should be treated or replaced to reduce bacterial levels which may cause illness.

***- WARNING -***

Speeds, Feeds and Grade information within this catalogue are for reference only. If the operator does not feel safe using our speeds, feeds and grades, then the operator should use what is comfortable to him or her. Eines Canela is not responsible for any damage or injury that occurs using the speeds, feeds and grades information within catalogue.

## *EINES CANELA, S.A.*

Dieser Katalog enthält Information und Spezifizierungen bezüglich Schneidwerkzeugen, die durch Eines Canela verkauft sind. Obwohl einige der aus Hartmetall gemachten Schneidwerkzeuge sehr zäh sind und Brechung widerstehen, sind die meisten spröde, und spezielle Sicherheitsvorsichtsmaßnahmen sind erforderlich, wenn man sie verwendet.

Kleine Bruchstücke und Späne können von einem Schneidwerkzeug geworfen werden, wenn ein Bruch vorkommt. Da diese Bruchstücke oder Späne mit sehr hohen Geschwindigkeiten geschleudert werden und sehr heiß sind, können sie ernste Verletzungen verursachen wenn sie mit der Haut oder mit den Augen in Verbindung kommen. Außerdem erzeugt das Schleifen dieser Schneidwerkzeuge feines Karbid- und Kobalt- oder Nickel-Staub, der für die Lungen schädlich sein kann. Unten sind einige Vorschläge verzeichnet, wie man das Potenzial für Verletzungen minimiert, wenn man die Schneidwerkzeugen verwendet.

Für mehr Information über die Produktgefahren und Sicherheitsmaßnahmen, die vorgenommen werden müssen, um die Möglichkeit der Verletzung zu minimieren, wenn Sie Schneidwerkzeugen verwenden, rufen Sie bitte Ihren Eines Canela Verkaufsspezialisten an.

Eines Canela hat keine Kontrolle über den Gebrauch dieser Schneidwerkzeuge. Der Anwender hat die Verantwortung für den sachgemäßen Einsatz dieser Werkzeuge.

***WARNUNG: Sehr heiße Span-Bruchstücke können von den Schneidwerkzeugen mit sehr hohen Geschwindigkeiten geworfen werden. Diese Späne können ernste Brandwunden, Schnitte oder Verletzungen der Haut verursachen, oder die Augen beschädigen. Folgend sind einige der Sicherheitsmaßnahmen, die von Maschinenbedienern und Beobachtern gefolgt werden müssen, wenn sie Schneidwerkzeugen verwenden:***

1. Stellen Sie sicher, daß die Größe und Form der Wendeschneidplatte für den Gebrauch entsprechend sind, zu dem sie bestellt worden sind.
2. Span-Kontrolle ist notwendig, um zu verhindern, daß die Späne dauernd im Kontakt mit dem Werkzeug kommen.
3. Späne sind sehr heiß und haben scharfe Ränder und sollten nicht mit der Hand berührt werden.
4. Schalten Sie die Maschine ab, immer wenn die Späne entfernt werden, oder wenn die Schneidwerkzeuge gewechselt werden.
5. Verwenden Sie keine Druckluft, um die Späne von der Maschine wegzublasen.
6. Um Werkzeug-Bruch zu verhindern, verwenden Sie die richtigen Größe des Werkzeughalters.
7. Stellen Sie sicher, daß die Auskragung auf dem Werkzeughalter so kurz wie möglich ist. Zuviele Auskragslänge kann Schwingungen und Werkzeug-Bruch verursachen.
8. Um zu vermeiden, daß das Werkstück während der Bearbeitung lose wird, überprüfen Sie die sichere und feste Spannung des Werkstücks.
9. Die Überbelastung von Hartmetall-Schneidwerkzeugen kann Brüche dieser Werkzeuge verursachen.
10. Eine Scheibe kann mit hohen Geschwindigkeiten während des Bohrens geschleudert werden.

Um den Maschinenbediener und Beobachter von möglichen fliegenden Gegenständen zu schützen, die Verletzungen verursachen konnten, sollten die folgenden Schutzgeräte getragen oder verwendet werden, wenn man Schneidwerkzeuge verwendet:

1. Tragen Sie Schutzhelme.
2. Tragen Sie Sicherheitsbrille mit Seitenschildern.
3. Tragen Sie Sicherheitsschuhe.
4. Verwenden Sie Schutzwände zur Abdeckung der Maschine während der Bearbeitung.

***WARNUNG: Hartmetall schleifen oder fertigen erzeugt feines Karbid- und Kobalt- oder Nickel-Staub. Dieser Staub kann Verletzungen zu den Lungen verursachen. Maschinenbediener und Beobachter müssen die folgenden Sicherheitsmaßnahmen nehmen, um die Möglichkeit solcher Verletzung zu minimieren:***

1. Verwenden Sie geeignete Absaugungen.
2. Senken Sie den Staub oder das Nebel-Niveau unter des empfohlenen Niveaus.
3. Vermeiden Sie, den Staub oder das Nebel zu atmen. Wenn nicht möglich, dann verwenden Sie Atemschutzmasken, besonders wenn Sie Karbid schleifen.
4. Minimieren Sie den Hautkontakt.
5. Waschen Sie sich die Hände gründlich nach dem Berühren.

***WARNUNG: Der Gebrauch von Schneidtflüssigkeiten und Arbeitsmaterialien schafft Gefahren. Seien Sie zu jeder Zeit sorgfältig im Umgang damit.***

1. Halten Sie die Schneidflüssigkeit sauber, sodaß keine Partikeln das Werkstück verkratzen können.
2. Schneidflüssigkeiten können im Brand geraten, wenn sie zu den hohen Temperaturen ausgesetzt werden, die beim Schneiden erzeugt werden.
3. Arbeitsmaterialien wie Aluminium. Magnesium, Uran und Titan sind feuergefährlich und können im Brand geraten.
4. Schneidflüssigkeiten sollten behandelt oder ersetzt werden, um das Bakterienniveau zu reduzieren, das Krankheiten verursachen kann.

***- WARNUNG -***

Informationen über Geschwindigkeiten, Vorschübe und Sorten innerhalb dieses Katalogs sind nur als Richtwerte zu benutzen. Wenn sich der Maschinenbediener nicht sicher ist, ob diese Geschwindigkeiten, Vorschübe und Sorten richtig sind, dann sollte der Maschinenbediener die Werte entsprechend der Bearbeitung anpassen. Eines Canela ist nicht für Schaden oder Verletzungen verantwortlich, die vorkommen können, wenn man die Informationen über Geschwindigkeiten, Vorschübe und Sorten verwendet, die in diesem Katalog genannt werden.