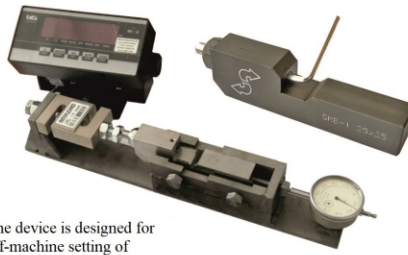


ST-8



Diamond burnishing tool ST-8 for surface treatment of balls and spheres. Burnishing with intersecting axis method. The tool is made for one ball diameter. Processing is made on lathes and milling machines. Natural diamond inserts are used

SENSOR-TUNE



The device is designed for off-machine setting of Sensor-tool diamond burnisher. The adjustment range is from 50 to 1000N in increments of 10N.

ST-10



ST-10 burnishing tool with an increased tool life Cubic boron nitride (CBN) exchangeable insert is used for machining cylindrical and face surfaces. Can be used 10 times longer than general burnishing tool

ST-12

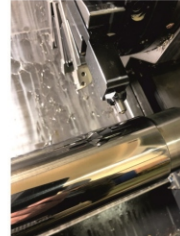
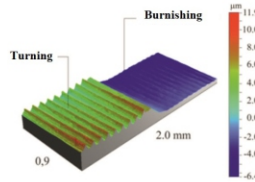


ST-12 diamond burnishing tool for holes is used for smoothing out through holes. Finishing is done in 2 passes only. The length of the hole is not limited. It is possible to produce tools with longer length of treatment (up to 1000 mm and more) is possible. Versions for machining diameters: $\Phi 30$, and larger. Internal coolant supply

ST-11



Diamond burnishing mill is used for mirror-finishing flat surfaces of parts on CNC milling machines. The shank $\Phi 20$ is cylindrical for fastening in a chuck. Diamond Smoothing Jig for planar finish. Burnishing in one setup with finishing milling. Obligatory plentiful supply of coolant. Roughness achieved $Ra = 0,05 \mu m$



Russia, Kurgan City, Omskaya str 78A +7 906 8846097
www.sensor-tool.ru 310182@kst45.ru

SENSOR TOOL



	Material hardness HRC	Initial roughness Ra, μm	Roughness Ra, μm after diamond burnishing
1	≥ 50	0,4...0,2	0,10...0,05
2	35 ... 50	0,8...0,4	0,10...0,05
3	≤ 35	1,6...0,8	0,40...0,20

SENSOR TOOL

Diamond burnishing tools «Sensor Tool» are used for obtaining mirror surface up to $Ra = 0.02 \mu m$. The indenters made of natural diamond and synthetic diamond Materials of machining: steel, stainless steel, heat-resistant steel, non-ferrous materials, cast iron, alloys. Hardness of processed materials: up to HRC 65. Burnishing force: adjustable by loading a spring. Recommended roughness before burnishing: $Ra = 1.25 \mu m$. To achieve a consistent stable surface micro-profile we recommend using the ST-1 on machines that can provide finishing turning! During machining the roughness is smoothed to $Ra = 0.2...0.05 \mu m$ in one or two passes.

ST-4

ST-5



ST-4 and ST-5 tools are available with round shanks $\Phi 25$, $\Phi 32$, $\Phi 40$ and square shanks 16x16, 20x20, 25x25, 32x32. Inserts made of natural diamond and ultrafine grained cubic boron nitride (DBN). Burnishing force: adjustable on the tool. Tools can achieve roughness level of $Ra = 0.05 \mu m$ and a significant increase in surface hardness. Tools ST-4 and ST-5, are used for finishing, hardening and nano-structuring burnishing. It is used on CNC and general-purpose machines capable of finishing turning. The ST-4 tool uses a system of internal machine coolant feed. The ST-5 internal coolant system is supplied in a several unit. Depth of hardness layer after nano-burnishing - 0,05 mm Properties of the nanostructured surface. Very good bone growth to the nanostructured material. Nanostructuring gives very high hardness combined with increased elasticity. The hardness of the file and the elasticity of the rubber. It is not brittle like other superhard coatings.

ST6-20 ST6-40



Diamond Smoothing Machines ST6-20 and ST6-40 are used for finishing and hardening of internal surfaces of bodies of rotation of holes, tubes, sleeves. Minimal hole diameter - 25 mm Maximum machining depth - unlimited Machining limitation - holes at least 25mm Supplied with round shank $\Phi 20$, $\Phi 32$, $\Phi 40$. Example of details - hydraulic cylinders, mounting bearing surfaces in bearing housings. Internal coolant supply. Can achieve surface roughness up to $Ra = 0.05 \mu m$

ST-1 ST-2 ST-21



Toolholders: 16x16, 20x20, 25x25, 32x32. Example parts - hydraulic cylinder rods, gate valve spindle, shaft, shaft surfaces for bearings.

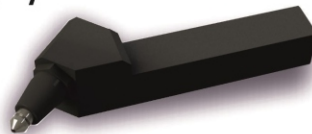
ST3-32



HRC
>65

The ST3-32 is used for burnishing on small-sized machine tools. Example parts - hydraulic cylinder rods, gate valve spindle, shaft, shaft surfaces for bearings. Round toolholders: $\Phi 25$, $\Phi 32$, $\Phi 40$.

ST-7



ST-7 diamond burnishing tool is used for machining steplike shafts and corner joints Best achieved surface: $Ra = 0,02 \mu m$ Minimum radius at an angle 3 degrees. Workpiece hardness range: 1...65 HRC Available with square shanks 16x16, 20x20, 25x25, or as per customer's request. Example parts: shafts, stepped rods of hydraulic and pneumatic cylinders, internal combustion engine inlet valve, etc.

ST9-20



Diamond burnishing tool for holes ST 9-20 "GORGOTS-1" Tool used for finishing smoothing through holes Tool type: damped Processing method: plastic surface deformation, diamond smoothing The tool is capable of achieving ultra-high surface cleanliness due to its two contact points. Processing is performed only in 2 passes (forward and backward). Achievable roughness: $Ra 0.02 \mu m$ Standard hole length $L = 200 mm$ Shank type: round $\Phi 16 mm$ Coolant supply: through the tool. It is possible to produce tools with increased length of machining (up to 1000 mm and more). Standard tool designs for machining diameters: 20, 21, 22, 23, 24 It is also possible to design and manufacture tools for your specific size and tolerance.

ST-13



The ST-13 boring bar together with the ST3-32 tool can be used for burnishing of deep holes from $\Phi 60 mm$ and depth up to 500 mm.