

Combined processes for highest precision!

The solution that combines high precision hard turning with ultra-fine surface finishing.

Surface finish in hardened workpieces **< 0.3 micron Rz**



MIKROTURN® 100 WITH AN INTEGRATED STONE FINISH UNIT

The Mikoturn® 100 with an integrated stone finish unit is the answer to your most demanding challenges. A hybrid machining solution that offers exemplary accuracies in both hard turning and ultra-fine surface finishing, combined with great flexibility and economic advantages.

This solution offers:

- Reduced process times and process steps. One machine performs all the operations.
- Lower cost per workpiece.
- A turn free surface structure integrity.
- Improved form and surface finish accuracies up to IT1.
- Minimal set-up and change over times.

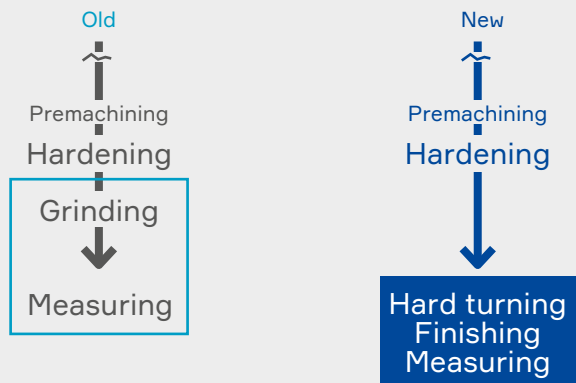
COMBINED PROCESSES FOR HIGHEST PRECISION!

Core Technology

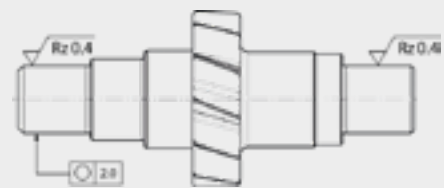
- Fully hydrostatic, high precision hard turning machine with a rigid natural granite machine base.
- Wear free hydrostatic X- and Z-slide having 0.1 micron. repeatability and 1 micron positioning accuracy.
- Wear free hydrostatic main spindle having <0.1 micron run-out.
- Siemens 840D SL CNC control having 0.01 micron resolution.
- A small GDF stone finish unit that mounts directly into the tool changer.
- The rotation of the workpiece and the movement of the stone finish unit are carried out by the hard turning machine.
- The oscillation of the stone tool and contact force are controlled by the force sensing unit.
- The process can be cooled with either oil or water soluble coolant.

Case-study: Reverse shaft 58 HRC

Process chain



Goal



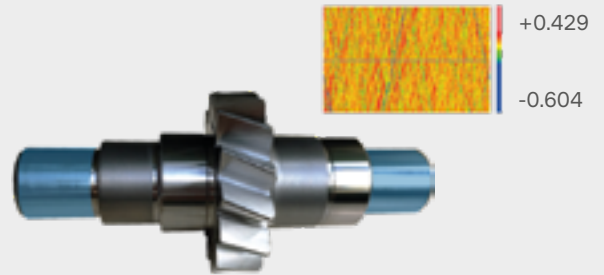
Surface roughness Rz	<0.4 μm
Roundness	<2.0 μm

Technology

Hembrug Mikroturn® 100 +stone finishing unit from PT Gold^{AU}.



Results



Surface roughness Rz	0.28 μm
Roundness	1.8 μm

Technical characteristics

Mikroturn® 100

Max. machining diameter	380 mm
Between centres	Ø130 x 350 mm
Max. part weight	50 kg / 100 kg*
Max. spindle speed	2* / 4 or 8000* rpm
Rapid travers rate	12 m/min
Max. feed rate	0-12 m/min

* Option

Hembrug Machine Tools

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DANOBTGROUP

