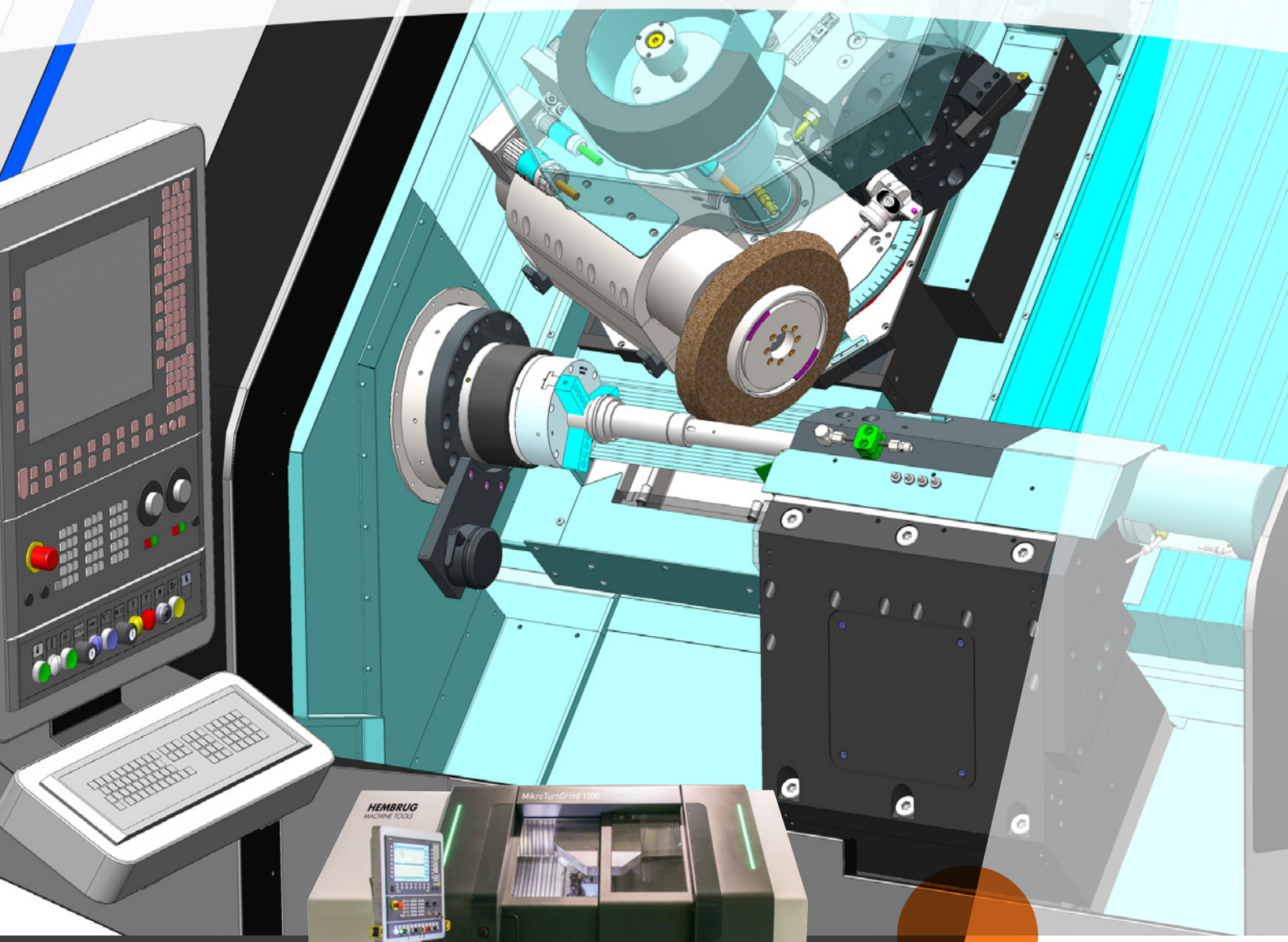
HEMBRUG
MACHINE TOOLS

THE HARD TURNING COMPANY



MikroTurnGrind 1000

The MikroTurnGrind 1000 is a flexible solution for finish hard turning and finish grinding of complex workpieces in one set-up. Ideally suited for small to medium sized workpiece series with sub-micron precision requirements.

MikroTurnGrind 1000

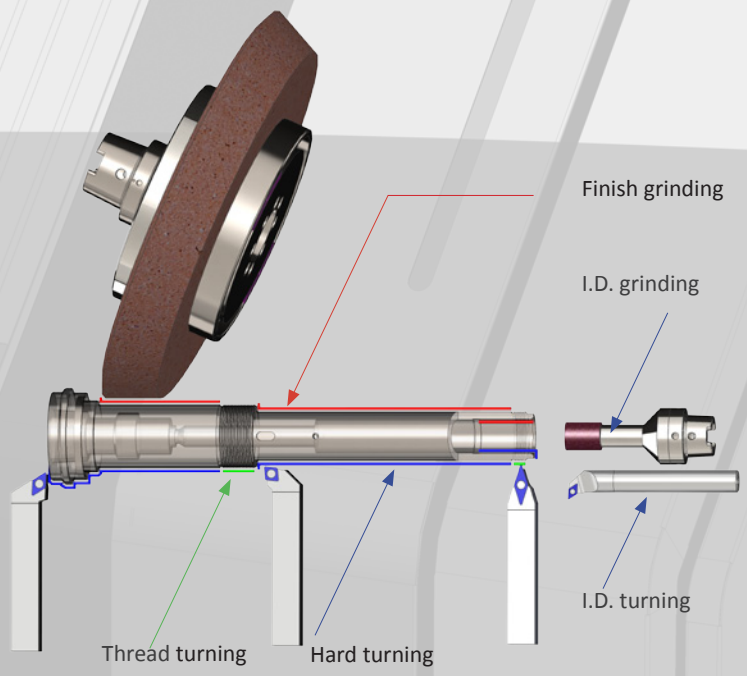
The fully hydrostatic MikroTurnGrind 1000 combines the advantages of high precision hard turning and finish grinding in a single machine. It meets the demand from manufacturers with complex workpieces that require grind-finished machining on one or more surfaces. The MikroTurnGrind 1000 makes workpieces up to Ø 380 mm or Ø 200 x 800 mm between centers with a max. hardness of 70 HRC.

The MikroTurnGrind 1000 offers

- Reduced cycle times with minimal material removal during the grinding cycle. Longer wheel life is achieved and fewer dressing cycles are required.
- Lower costs per workpiece through the integration of two technologies in one machine. The need for a multistep process and multiple machines is eliminated.
- Superb part geometry by both hard turning and grinding workpieces in a single chucking. Re-clamping errors are avoided.
- Minimal set up times. Therefore ideally suited for small to medium sized workpieces series where you often change workpieces.

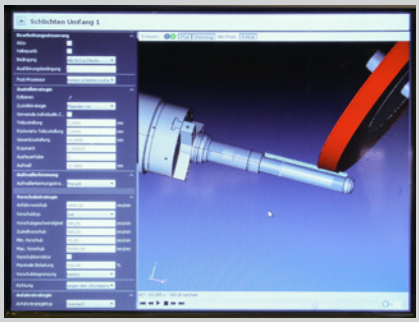
Key features of the MikroTurnGrind 1000

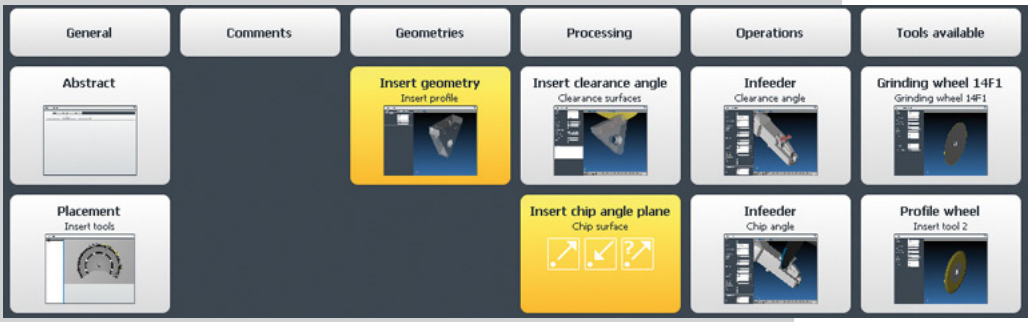
- Rigid natural granite machine base with an integrated system of vibration dampers
- Workhead housing of natural granite for improved static and dynamic stiffness and thermal stability
- Hydrostatic X- and Z-slide with a ± 0.1 µm repeatability
- Hydrostatic main spindle with a 0.1 µm run-out and integrated torque motor
- B-axis mounted with hirth coupling on the x-slide for the tool turret and the internal and external grinding spindle.
- Low footprint with the service unit integrated in the machine
- All the heat and vibration generating elements are fully isolated from the machine
- Siemens 840D control with a 0.01 micron resolution



Technologies

- Finish grinding
- Hard turning
- Thread turning
- I.D. grinding
- I.D. turning





The software: advanced architecture with a simple navigation

The hard turning and grinding software on the MikroTurnGrind 1000 is an intuitive, geometry-based high performance program that is user-friendly and transparent. The start screen features a clear chess board design and from there the user can create a grinding program step by step, using the software's simple navigation structure and standardized controls. All the important parameters are shown: blank, clamping system, contour, geometry, grinding and turning operations, grinding wheels and the machine.

The analytical software and the user interface are separate, so you'll benefit from ongoing graphic feedback to all your parameters. The open interfaces and the modular system enable you to individually adjust your manufacturing environment.

Process simulation

The software can produce four different simulations:

1. Machining simulation in real time on the calculated object – visible after the entry of every parameter
2. Status simulation on the position of the workpiece in the machine
3. Material removal simulation
4. Process visualization, which shows a 3D display of data from the machine's control unit

Specifications MikroTurnGrind 1000

Max. turning diameter without Tail stock (mm)	Ø380
Max. workpiece size between center (mm)	Ø 200 x 800
Spindle speed(rpm)	4000 (50 Nm)
Max. part weight including clamping (Kg)	100
Spindle run out(radial & axial)	0,1 µm
Z axis travel (mm)	1180
X axis travel (mm)	355
Rapid feed rate (m/min)	12
Max. feed rate (m/min)	0-12
CNC resolution	0,01 µm
Positioning accuracy-linear axis	1 µm
repeatability-linear axis	± 0,1 µm
B-axis	270° steps 3°

Wheelhead

Wheelhead mounting	on B-axis
Wheelholding fixture	HSK 63
Drive power	17 kW
Grinding wheelhead	Ø 300/40x76,2 mm

Internal grinding attachment

Wheelholding fixture	HSK 50
Drive power	6,5 kW

Standard equipment

Water cooled hydraulic unit
Precision tailstock
Automatic machine door opening
Siemens 840D Solution Line CNC control

Options

Main spindle 4,000 rpm with 100 Nm
Air or magnetic operated clamping units
Tool setting probe
Part probing system
8 or 12 pos. Tool turret with non driven tooling
Automated part handling
Post process measuring system
Fanuc 31i CNC control

Dealer

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