



ULTRA-PRECISION-TURNING MACHINE

MTC 350

SPECIFICATIONS:

Control:	Delta Tau Power Pmac
CNC-axis:	X, Y, Z and B, C

LINEAR AXES:

Bearing design:	Hydrostatic (oil) bearing
Drive system:	X, Y- and Z-axis linear motor, B- and C-Axis torque motor
Travel:	X- and Z-axis = 350 mm, Y-axis = 160 mm
Speed:	X-, Y- and Z-axis max. 5000 mm/min
Stiffness:	600 N/ μ m
Linear scales:	Resolution < 0,009 nm

B-AXIS:

Bearing Type:	Hydrostatic (oil) bearing
Drive system:	Brushless DC motor
Rotation angle:	360°
Speed:	max. 10 RPM

MAIN SPINDLE (C-AXIS):

Bearing Type:	Air bearing
Drive system:	DC servo motor
Speed:	Spindle max. 4000 RPM and 2300 RPM in C-axis mode Optional max. 10000 RPM and 3000 RPM in C-axis mode
\varnothing over Bed:	\varnothing 380 mm (\varnothing 700 mm with B-Axis or optional)

OPTIONS:

C-axis for out of round- / freeform-machining with dynamic axis system
Fast tool axis
Y-axis with hydrostatic (oil) bearing
Process monitoring camera
Tool measuring system
Workpiece form measuring system
Minimum quantity lubrication
B-Axis
Balancing Software
3D-touch probe
etc.

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- Hydrostatic (oil) bearings
- Granite machine base
- Active machine leveling and active vibration isolation system
- Form measuring system
- Integrated tool measuring system
- Process camera
- Form tolerance: < 150 nm within 100 mm dia.
- Roughness: < 2 nm (Ra)

The MTC series of machines (Micro Turning Center) was designed according to the needs of ultra-precision turning. By using diamond tools, optical surface quality can be achieved on a wide range of materials like crystals, metals and plastics. A lightweight construction of the moving parts enables the machine axes to be used in a dynamic mode. Thus, in combination with the C-Axis (option), allowing for the turning of non-rotationally symmetric / free-form workpieces.

The MTC 350 is based on a T-shaped natural granite bed. X- and Z-axis slides, as well as the housing of the main spindle are made of granite too. Both slides and the optional B-Axis use hydrostatic (oil) bearings. The main spindle features an air bearing and is mounted to the X-slide. In addition to the X- and Z-Axis there is the option to have an additional linear axis. This Y-axis allows to do micro milling or raster fly-cutting operations on the machine.

An optional tool setting camera can be mounted to the main spindle housing, using an industrial pallet system for the connection, to allow for an easy and accurate remounting. Tool holders and a mechanical interface for the in process camera, as well as different measuring devices like 3D-touchprobes or LVDTs can be mounted to the Z-slide.

When using the rotary table (option), its faceplate is used to mount all the tooling and measurement equipment, offering additional capabilities to the system, such as using the B-axis as a tool turret. The rotary table can also be used to keep a constant cutting point on the tool (3-axis machining). Furthermore, the rotary B-axis can be used to selectively change the cutting point if the tool is worn out.

Besides many other accessories, that make the MTC 350 an all-purpose tool, there is the possibility to make customized solutions, to adapt the machine to your needs.

Please do not hesitate to contact us.



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