

MICRON MACRO-I



FLEXIBLE CNC GRINDING CENTER FOR CREEP FEED-, PROFILE-, AND HEDG GRINDING



THE MACRO PHILOSOPHY

The "Macro" machine range is based on the innovative Moving-Wheel-Head (MWH) concept. All linear movements when positioning and grinding are performed by the grinding head. Compared to conventional moving column and moving table concepts this design arranges the axes in a very compact way, which results in optimum force distribution and minimal thermal variation, properties which result in best possible process control over a long lifespan.

THE MOST DIVERSE RANGE OF AREAS OF APPLICATION

"Macro" machines are used in almost every industrial sector in which precision mechanical components are found. Wherever there is a need for accurate profiles or slots and/or close finish requirements MICRON equipment offers excellent, economical results. In the aircraft engine and stationary turbine industries, components with poor

machinability, such as turbine blades and vanes, can be ground efficiently. Further applications are the highly efficient production of linear guide components, saw tooth profiles, gear racks, gear rings, guides, work holding details, cutting tools, broaches and highly dense ceramic parts. Steering system components and rocker arms are machined in the automotive industry. Stators and rotors in the hydraulic industry are other areas of application.

The "Macro-I" is a high production grinding center with an X-travel up to 900 mm long. The enhanced X-travel allows grinding of large sized work pieces. This machine offers an index table so that loading and unloading can be done during the grind cycle. The index table needs only a few seconds to transport the newly clamped work piece into the grinding area with a simple rotation. Long dwell times are therefore eliminated. This makes the equipment very suitable for multiple machine operation as well as automation.

CUSTOMER BENEFITS

- Based on the innovative Moving-Wheel-Head (MWH) concept, all linear movements when positioning and grinding are performed by the grinding head
- Used in almost every industrial sector in which precision mechanical components are found. Wherever there is a need for accurate profiles or slots and /or close finish requirements MICRON equipment offers excellent, economical results
- Torque tube design
- Polymer concrete-filled machine bed
- Tool slides of the machine are made from cast iron
- Efficient vibration damping
- High thermal stability
- Water-cooled spindles and spindle drives
- Different rotary speeds and power levels available
- Stable temperature during grinding
- Consistently high part quality

Software Characteristics:

- State-of-the-art CNC technology. Siemens 840D with multi-channel structure and interpolation of up to 5 axes
- Pre-installed programs and grinding cycles
- Option: Acoustical Emission Monitoring System. Sensor in spindle nose with inductive signal transmission in back of spindle
- Further options: Integrated Balancing System for fully automated wheel balancing, high pressure cleaner, automatic nozzle adjustment, etc.

Software Benefits:

- Simple operation. Ideal for machining complex grinding applications
- Comfortable and fast adaption of different grinding operations
- Useable for collision monitoring, first detection of work piece and dressing. Increases production safety and reduces operating costs
- Best tailored to the customer's needs

TECHNICAL DATA

Dimensions H × W × D (mm / inch)

Weight (kg / lbs)

X-travel (mm / inch)

Y-travel (mm / inch)

Z-travel (mm / inch)

Spindle technology (KW)

Spindle speed (rpm)

Max. Grinding wheel diameter (mm / inch)

Max. Grinding wheel width (mm / inch)

MICRON MACRO-I

approx. 2400 × 2600 × 2400 mm
approx. 94.488" × 102.362" × 94.488"

approx. 11000 kg / 24251 lbs

900 mm* / 35.4330"

approx. 350 mm* / 13.7795"

approx. 300 mm* / 11.8110"

11–37

3200 / 4500 / 16000

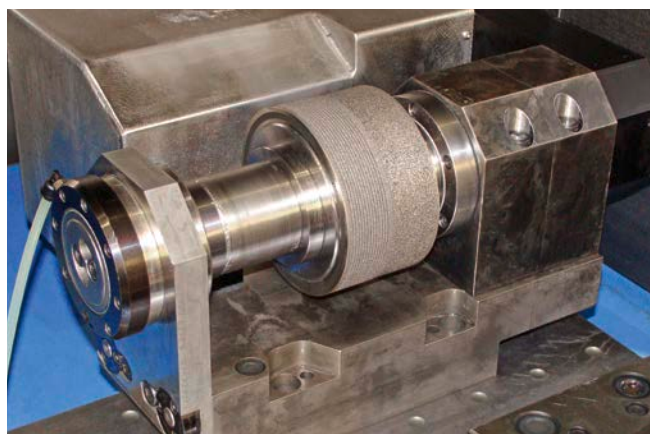
400 mm* / 15.7480"

150 mm / 5.9055"

* Maximum grinding wheel diameter and travel can change due to work piece and fixture size



Processing chamber with clamping device



Dresser with profile roller

THE MICRON RANGE

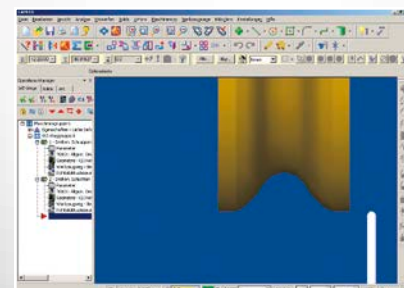
All MICRON machines are modular CNC grinding centers. They are compact, reliable, and especially designed for Creep Feed-, Profile-, and HEDG grinding. Compared to conventional surface grinding, these processes allow high stock removal rates. MICRON machines, therefore, offer a high level of dynamic rigidity.

MICRON machines are used in almost every industrial sector in which precision mechanical components are found. Wherever there is a need for accurate profiles or slots and / or close finish requirements MICRON equipment offers excellent, economical results.

MICRON machines feature precision linear guide ways, ball screws, and digital drives in all axes. The state of the art SIEMENS 840D CNC control allows precision contour dressing and grinding and offers up to 5-axis interpolation.

THE MICRON DRESSING SYSTEMS

The dressing of the wheel is a controlling factor for a successful grinding application. For best possible process flexibility MICRON machines can be equipped with a variety of dressing systems ranging from a tiltable table mounted disc dresser to an overhead diamond roll system with or without continuous dress capability. Also available are highly rigid crushing devices. Software is available for CAD assisted creation of disc dressing programs.



Software and post-processor for the machine

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