

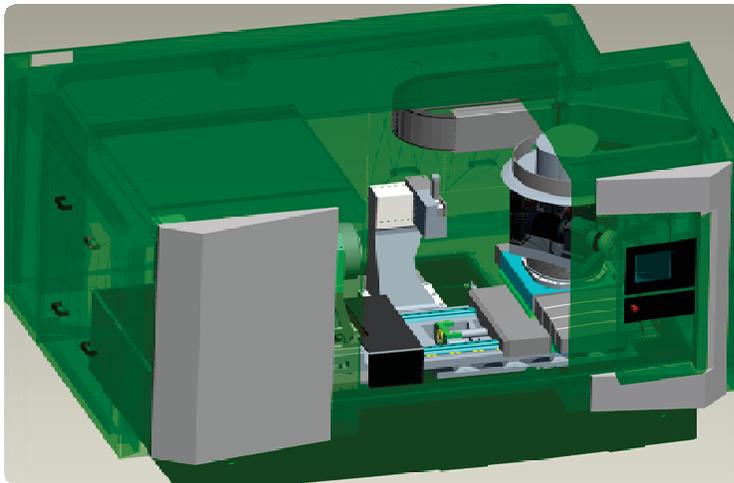
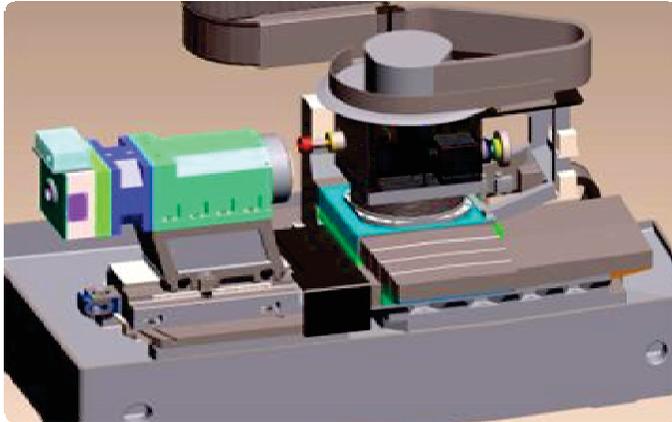
---

## Chap. 1 - MACHINE INTRODUCTION

---

1107020R1

### mt ID



The CNC universal grinding machine MT ID is particularly suitable for grinding internal concentric and non-concentric profiles. The solution is given by a cross-shaped carriage with a turret for two or more spindles, rotating on a Torque motor. Machine bed is a monobloc structure in stabilised cast-iron designed using 3D solid parametric modelling techniques and FEM analysis, and ensuring the best stiffness and accuracy. It is possible to have many optionals, like a rotating workhead (B1 axes) to execute internal profiles.

---

## Cap. 2 - MACHINE DESCRIPTION

1107020R1

---

<b>MACHINE BED</b>	Machine mainframe in stabilized Cast Iron fully ribbed, designed using 3D solid parametric modelling techniques and FEM analysis to ensure the best stiffness and accuracy.
<b>UNIVERSAL TURRET UNIT "B AXIS"</b>	Wheel head unit assembled on rotating turret with integrated Torque motor. Main characteristics: <ul style="list-style-type: none"><li>- NC programmable angular position ;</li><li>- Setting range from -20 to + 230 degrees;</li><li>- Positioning resolution 0.00017 degrees;</li><li>- Hydraulic system for turret clamping in programmed angular position.</li></ul>
<b>PREARRANGEMENT FOR HIGH FREQUENCY ID SPINDLES</b>	On the universal turret unit is possible to place up to 4 high frequency spindles, with a spindle diameter from 100 to 150 mm. The prearrangement includes: <ul style="list-style-type: none"><li>- Drives for each spindle;</li><li>- cooling system with separated circuit for each spindle;</li><li>- safety devices and defect warnings;</li><li>- automatic lubrication system; with separated circuit for each spindle;</li><li>- Software for multispindles cycles;</li><li>- Wheel constant peripheral speed.</li></ul>
<b>RADIAL MOVEMENT OF WHEEL SLIDE "X AXIS"</b>	Slide mounted on high-precision ball-recirculating linear guides. Movement of wheel slide driven by Siemens motor. Movement resolution of 0,0001 mm. Position controlled by high-accuracy Heidenhain pressurised optic scale.
<b>LONGITUDINAL MOVEMENT OF WHEEL SLIDE "Z AXIS"</b>	Slide mounted on high-precision roller-recirculating linear guides. Movement of wheel slide driven by Siemens motor. Movement resolution of 0,0001 mm. Position controlled by high-accuracy Heidenhain pressurised optic scale.
<b>WORK HEAD "C AXIS"</b>	spindle mounted on high-precision angle-contact ball bearings, rotative movement made by direct drive e incremental rotative measure system. Continuous speed regulation from NC. Work head base can manually rotate for execute cone on the piece (without accessories 23-001).
<b>DRESSING DEVICE</b>	Placed on the table, including the diamond.

---

---

<b>MACHINE FULL ENCLOSURE</b>	Complete enclosure of work area, with L-shaped sliding door on operator's side, with electromagnetic safety interlock to prevent cycle start when the door is open and door opening while machine in operation.
-------------------------------	---

---

<b>ELECTRICAL PLANT</b>	according to DIN EN 60204-VDE 0113 standards. Electrical cabinet attached to machine base and swivelling control panel on right side of operator. <ul style="list-style-type: none"><li>- Standard operating voltage: 400 V three-phases AC;</li><li>- Control devices and solenoid valves voltage: 24 VDC;</li><li>- Frequency: 50 Hz.</li><li>- Control cabinet cooler with air/air heat exchanger mounted in electric cabinet doors.</li></ul>
-------------------------	--

---

<b>ELECTRICAL CABINET</b>	Siemens continuous-path control Sinumerik 840D. CNC unit providing independent and/or coordinated control of all machine axes positioning and wheel peripheral speed according to actual wheel diameter. CNC-controlled axes in basic machine: <ul style="list-style-type: none"><li>- Radial movement of wheel head - X Axis;</li><li>- Longitudinal movement of wheel head - Z Axis;</li><li>- Work head rotation - C Axis;</li><li>- Wheel heads rotating turret - B Axis;</li><li>- Work head base rotation - B1 Axis (option);</li></ul> All axes are digitally controlled. <ul style="list-style-type: none"><li>- Auxiliary functions controlled by PLC unit S7-300 integrated into machine NC.</li><li>- 19" operator panel with 12" plasma colour monitor.</li><li>- Communication between peripheral devices by Profibus.</li><li>- Safety controls by dedicated systems.</li></ul>
---------------------------	--

---

<b>TELE SERVICE</b>	CNC Remote Diagnostic Service. Using dedicated hardware inside the electric cabinet it is possible to activate an interaction between the CNC and our after-sales service for different purposes: <ul style="list-style-type: none"><li>- CNC data access and uploading through a phone or Ethernet line;</li><li>- Quick Analysis of CNC problems;</li><li>- Possibility to adjust some parameters of the CNC;</li><li>- Knowledge of the configuration of the CNC without requiring the visit of one of our engineers to your site;</li><li>- Fast diagnosis for the majority of problems.</li></ul> The use of the service is provided free of charge for the duration of the guarantee, after which it may be renewed through a service contract agreed with our After Sales Service Department (the service will be disabled otherwise). The responsibility and cost of telephone connection shall be borne by the customer, as well as possible connection different from the basic analog supported by the system.
---------------------	---

---

**GRINDING SOFTWARE** Dialogue programme in different languages with graphic interface, permits user-friendly and simple programming by manual entry of most significant data.

---

**HANDWHEEL** portable electronic handwheel which permits movement of the axes in manual cycle and complete with the “hold-to-run” safety push-button and pushbuttons with customized functions..

---

**HYDRAULIC AND LUBRICATION SYSTEMS** Hydraulic and lubrication system with independent reservoir on rear side of the machine. Automatic lubrication of all guide ways. Hydraulic valves in accordance with DIN, CETOP, ISO standards. Compressor cooler for linear motors cooling (water circulation).

---

**STANDARD PAINTING** Standard painting of the machine:

- RAL 3003,
- RAL 9007,
- RAL 7043.



Alternative colours sets:

- RAL 9010
- RAL 9007
- RAL 7043



- RAL 7042
- RAL 9007
- RAL 7043




---

**MISCELLANEOUS** Set of vibration absorbing and levelling units, for machine positioning. Flange for clampig device (diameter to be defined)

---

**PRE-ACCEPTANCE TEST** in our factory, for 1 day, at the presence of the buyer’s technicians, machining a single piece according to ISO 2433 and ISO 2047

Different pieces must be agreed previously with the seller and must be sent at least one month before the date foreseen for the testing (board and lodging expenses of the technicians are chargeable to the buyer).

**Note:**

*Fixtures and wheels for the test and/or the start up are not included in the standard supply. They can be supplied only on request.*

---

**DOCUMENTATION** - 2 Sets of operator’s and programming manuals;  
- 2 Sets of electrical, hydraulic and lubrication documents.

## Chap. 3 - TECHNICAL FEATURES

1107020R1

<b>GENERAL DATA</b>	<b>MT 250 ID</b>		
Maximum rotating diameter	250		mm.
Maximum piece length	200		mm.
Maximum grindable length	100		mm.
Internal wheel maximum diameter / length	60 / 30		mm.
Max.weight of chucked work (with tool) at 100mm.	200		daN
Machine weight including accessories	7500		Kg.
<b>X Axis</b>			
Maximum stroke	200		mm.
Motor type		Siemens Brushless	mm.
Maximum speed		12	m/min.
Axis resolution		0,0001	mm.
Standard transducer		linear scale	
<b>Z Axis</b>			
Maximum stroke	340		mm.
Motor type		Siemens Brushless	Nm
Maximum speed		12	m/min.
Axis resolution		0,0001	mm.
Standard transducer		linear scale	
<b>Work head</b>			
Mounting taper	5		Morse
Taper for chucked type grinding	5		ASA
Speed range		1-700	rpm
Spindle torque output (constant)	78	95	Nm
Peak torque (at 415 rpm)		180	Nm
Manual angular position		- 5 / + 20	°