

emco group

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[E[M]CONOMY
means:]



**High precision for heavy weights.
MMV 2000**

Floor-Type Machining Center

MMV 2000

Floor-Type Machining Center for workpieces up to 2000 kg

[Spindle]

- Motor spindle with 10,000 rpm
- High dynamic
- Water-cooled

[Axes]

- X and Y axes with linear motors
- Linear guides in X, Y and Z directions
- Linear scales in X directions

[Tool magazine]

- Tool changer with 30 tools



[Rear machine compartment]

- Machine compartment partitioned by maintenance-free steel accordion way-covers

Machine with optional equipment

Floor-Type Machining Center for 3, 4 or 5 axis machining for small to medium lot sizes. Rapid travel up to 50 m/min with the utmost in precision. The super-structure is highly rigid, even for heavy work pieces weighing up to 2,000 kg.

[Workpieces]

[Control]

- State-of-the-art Heidenhain iTNC530 control technology with HSCI bus
- LCD color monitor

[Chip conveyor]

- Chip conveyor fitted as standard
- Chips removed to the left



Drive connector
(Stainless steel)



Motor cycle bracing strut
(Aluminum)



Mounting brackets for electrical
components in aircraft
(Aluminum)

[Engineering]

Highlights

- Flexible modular design
- Available as 3-, 4- or 5-axis version
- High-performance motor spindle
- Compact and attractive machine design
- Rigid design achieved through a closed box structure
- Solid machine base
- Rigid linear way system size 55
- Direct driven ball screws, quiet operation



Tool magazine: Turret configuration with dual arm grippers for fast tool changes within 2 seconds. Random tool management reduces tool changing times to a minimum.



Milling spindle: The machine is equipped with a liquid cooled motor spindle from LCM with compelling performance specs. At spindle speeds of 10,000 rpms, a power rating of 34 kW, and a torque of 135 Nm, the machine is also suited for heavy-duty machining.



Z-axis travel: In order to attain precision Z-axis rapid travel at speeds of 50 m/min, and due to its large mass, this axis is powered by two ball screw drives and two motors in a master-slave configuration.



Y-axis: The Y-axis has a ram configuration. This design uses long way guides in order to attain the required rigidity.



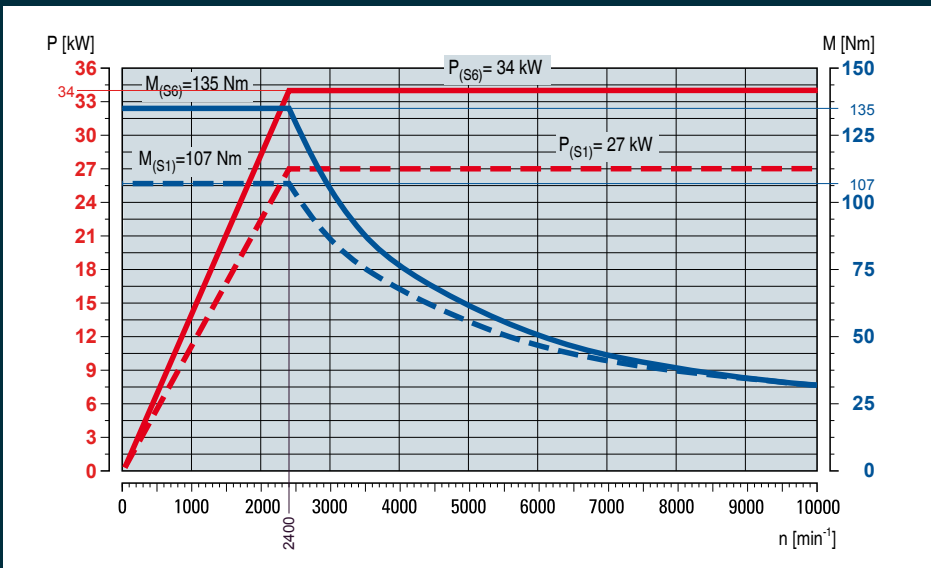
Machine frame: The machine frame is a polymer-concrete bed. This ensures the required rigidity of the machine base, and also facilitates vibration dampening.



Axis drives: Linear axes are equipped with linear guides. Long way-guides are used to attain the necessary rigidity. The drive is equipped with a ball screw drive with direct drive bellows coupling. The direct drive provides for highly dynamic axis travel, while also employing a low maintenance and smooth drive system. The X-axis linear scale is standard due to the long travel.

- Rotary table and B-axis with torque motors
- Pneumatic weight balance, highly dynamic
- Simple and solid axis cover system
- Flexible configuration of tool magazine systems
- State-of-the-art Heidenhain iTNC530 control technology with HSCI bus
- Ideal value for money
- Made in the Heart of Europe

Power



Control unit: The operator panel for the Heidenhain iTNC530 control with HSCI-Bus can travel and also rotate in the direction of the work space. This ergonomic design provides ideal working conditions for the operator.



B-axis: The B-axis is driven by a torque motor, therefore achieving highly dynamic axis travel within the pivoting range of +/- 100 degrees.



Hinge type conveyor: The chip rinsing system washes chips into the hinge type conveyor, which then automatically transports the chips from the machine into the customer provided container.

Options

- Workpiece and tool measurement
- Coolant through the spindle
- Automatic doors
- Hydraulic device for clamping systems
- Linear scales in Y and Z direction
- Air cooled spindle
- Belt filter system
- Rotary union through the round table



Coolant through the spindle

The spindle can be optionally flooded with high-pressure coolant (20 to 70 bar [290 to 1,015 psi]). This ensures reliable chip removal from holes and pockets and reduces cycle times for this type of machining.



Measurement systems

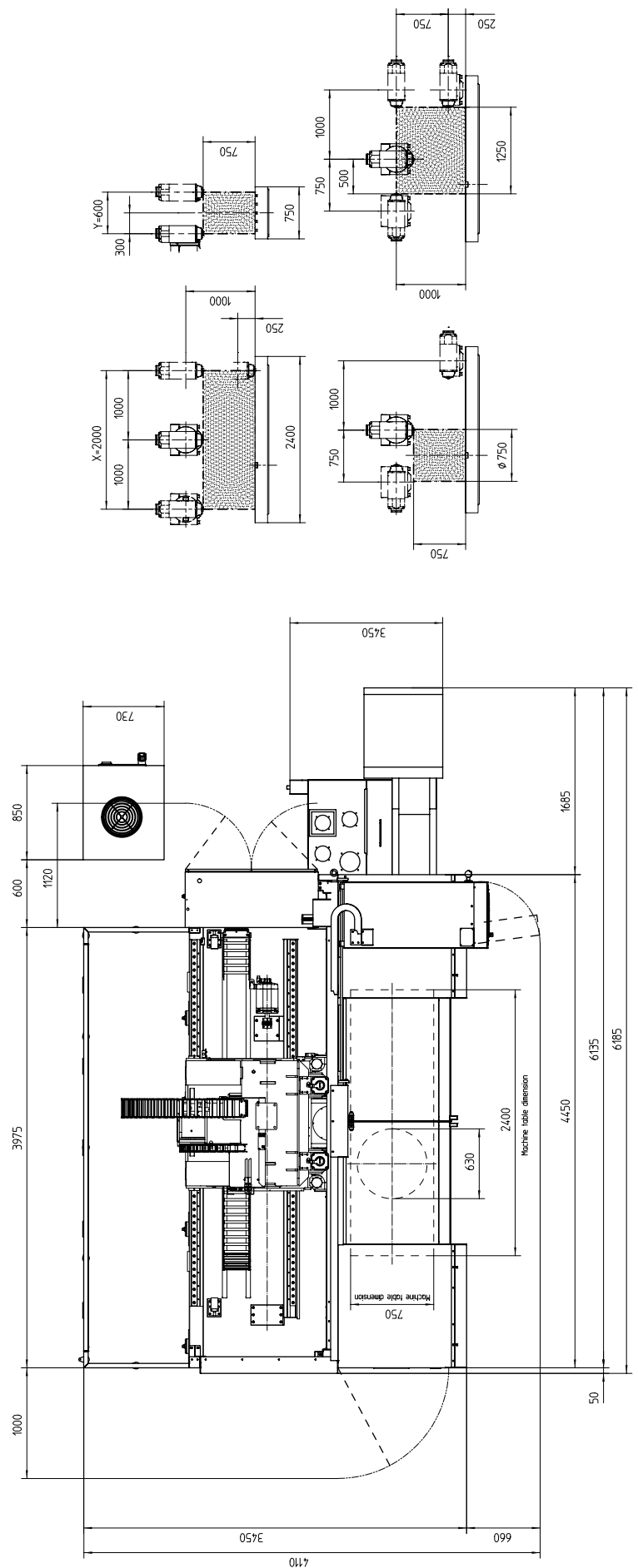
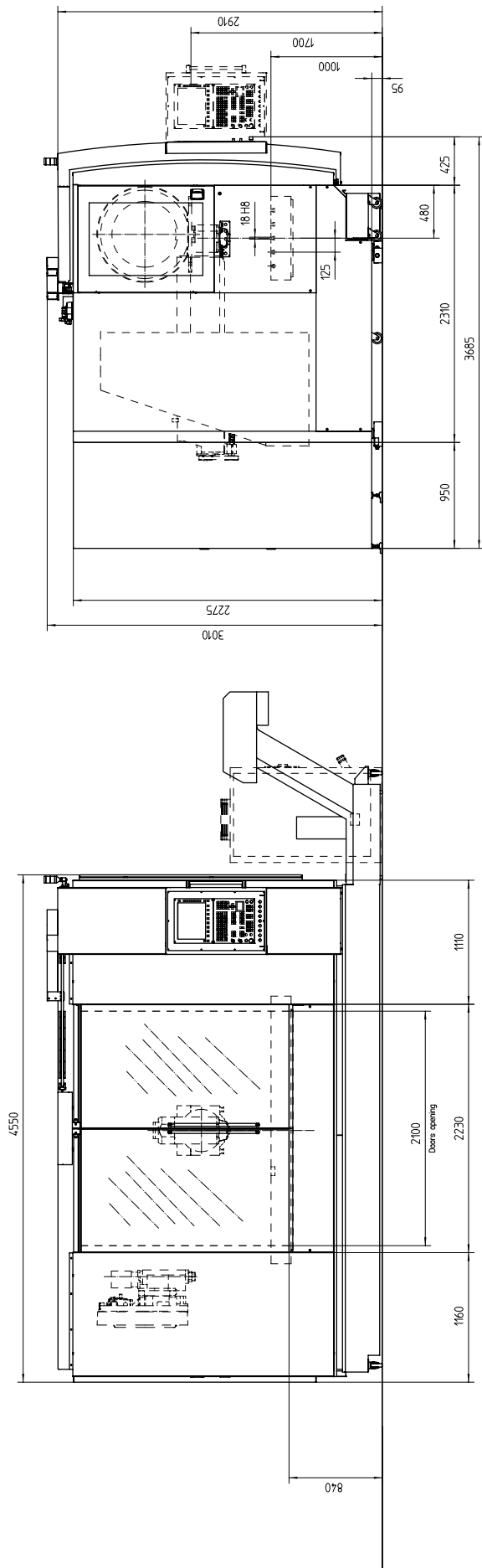
Tools measurements to reduce setup times during tool changes, as well as work piece measurements to verify dimensions or to find zero locations – both are possible within the machine using infrared sensors.



Glass scales

Due to its length, the X-axis is always equipped with glass scales. X- and Y-axes can be equipped with glass scales on demand.

Machine layout and work area



[Technical Data]



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Travel	
Travel in X – axis	2000 mm (78.7")
Travel in Y – axis	600 mm (23.6")
Travel in Z – axis	750 mm (29.5")
Minimum distance spindle nose – table	0 mm (0")
Maximum distance spindle nose – table	750 mm (29.5")
Table	
Length	2400 mm (94.5")
Width	750 mm (29.5")
Slot size	18 mm (0.7")
Number of slots	5
Slot spacing	125 mm (4.9")
Maximum table load (equally distributed)	2000 kg (4410 lb)
Rotary table	
Diameter	630 mm (24.8")
Maximum table load	500 kg (1102 lb)
Drive	Torque Motor
Main spindle	
Speed range	50 – 10000 rpm
Torque	135 Nm (99.5 ft/lbs)
Spindle power	34 kW (45.6 hp)
Tool taper DIN 69871 / option	ISO40 / BT40
Pull stud	ISO 7388/2-B
Drive type	Motor spindle
Tool magazine	
Number of tool stations	30
Changeover principle	S - Arm
Tool management	random
Max. tool diameter	75 mm (2.9")
Max. tool diameter (with empty location)	150 mm (5.9")
Max. tool length	300 mm (11.8")
Max. tool weight	10 kg (22 lb)
Max. tool magazin weight	120 kg (264.6 lb)

Feed drives	
X / Y / Z rapid motion speeds	50 / 50 / 50 m/min (1970 / 1970 / 1970 ipm)
Acceleration in X-/ Y- /Z-axis	2 / 4 / 4 m/s ²
Coolant system	
Coolant pressure	4 bar (58.0 PSI)
Outlet at spindle	4 nozzles
Pneumatic supply	
Supply pressure	6 bar (87.0 PSI)
Lubrication	
Guides	Automatic central lubrication with oil
Feed spindles	Automatic central lubrication with oil
Dimensions/weight	
Overall height	2880 mm (113.4")
Dimensions w x d (without chip conveyor)	4500 x 3300 mm (177.2" x 129.9")
Total weight of machine	17000 kg (37,486 lb)

* Values measured at a temperature of 22° C with a basic machine bolted on the floor, without linear scales.



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