

[That's
E[M]CONOMY:]

emco industrial
training

Designed for your profit



Training on the job. CONCEPT MILL 450

CNC training with
industrial performance

Concept MILL 450

Experience machining without an equal. The Concept MILL 450 is a complete production machine for CNC milling training: with fixed 20-station tool magazine, a rapid twin-arm changer, a 11 kW and 12000 rpm main spindle, 24 m/min rapid speeds and the EMCO WinNC control, the concept of the interchangeable control.

[Tool magazine]

- Tool magazine for 20 tools
- Rapid twin-arm changer

[Work area]

- Free chip fall
- Best ergonomics
- Easy access through chip-protection door

[Control unit]

- State-of-the-art digital AC control-technology
- LCD color monitor
- Integrated industrial PC and PLC
- WinNC: all standard NC controls on one machine

[Spindle]

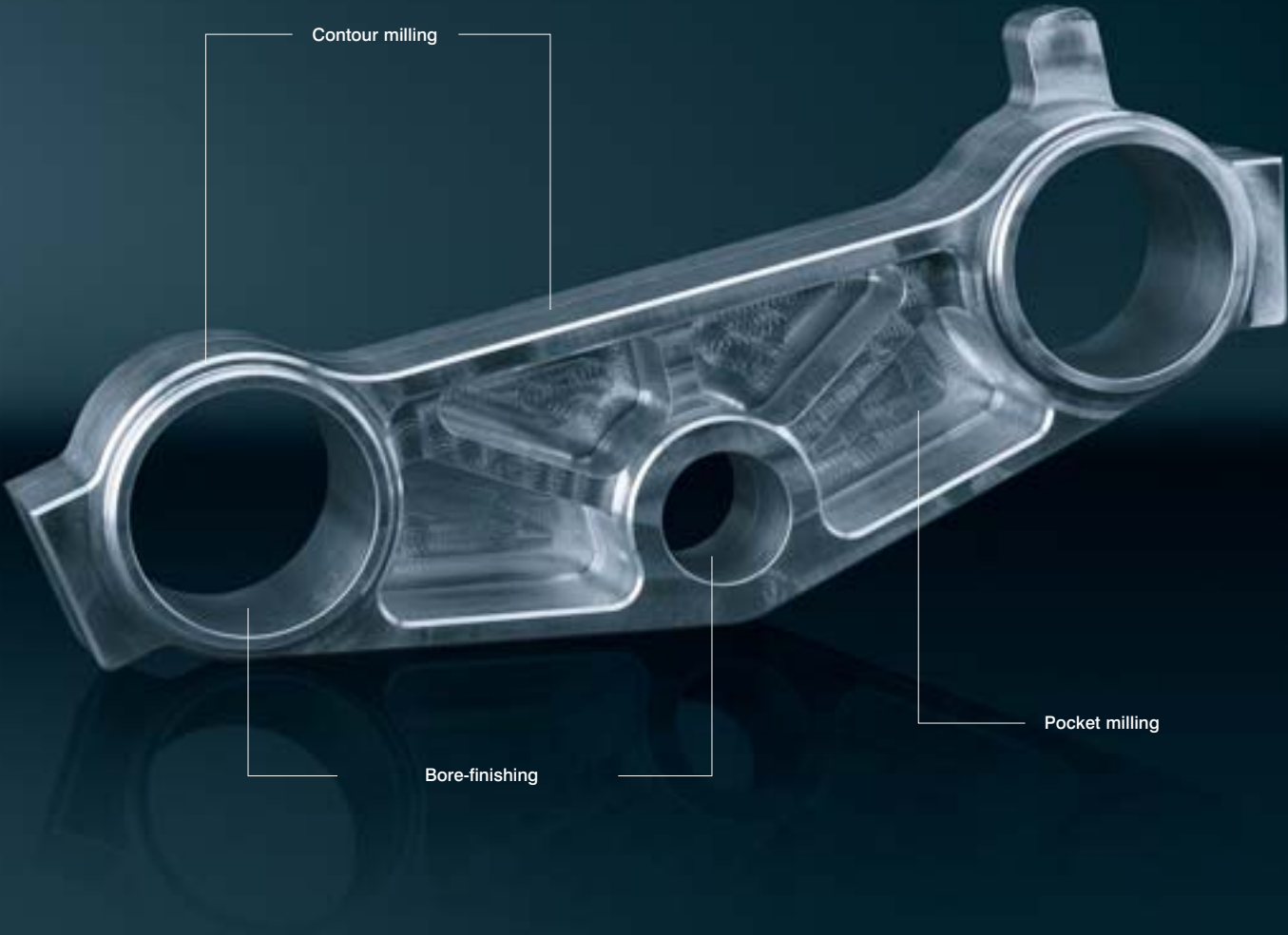
- High drive power
- Thermostable construction
- Large speed range
- Permanent lubrication

[Machine stand]

- Easy to transport
- Cast-iron construction
- Easy to clean



[Workpieces]



Profile machining
(Aluminum)



Pump housing
(Aluminum)



Cover
(Stainless steel)



Dashboard
(Stainless steel)

[Engineering]

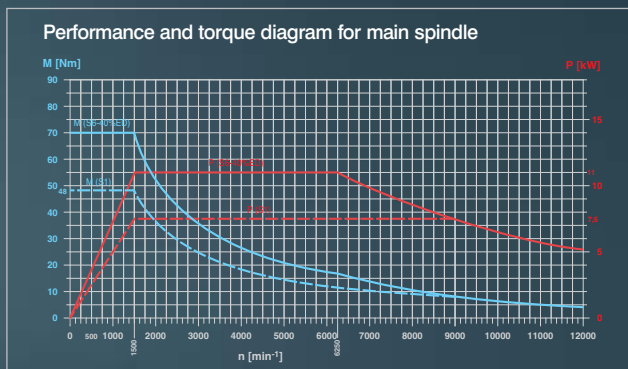
Highlights

- Extraordinary dynamics
- Optimum thermostability for maximum precision
- High cutting performance
- Large number of automation options
- Excellent price-performance ratio
- Made in the Heart of Europe

Options

- Chip conveyor
- Integration in FMS or CIM systems by means of DNC and robotic interface
- Rotating-swiveling unit as 4th-5th-axis
- Automatic doors
- Electric handwheel
- Rotoclear inspection window
- Coolant through spindle
- Workspace top cover

Performance



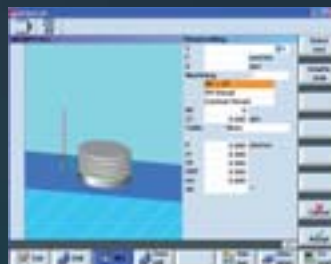
[The interchangeable control]

The unique concept of the interchangeable control can be fitted in all Concept machines. In doing so, the user is trained on all CNC industry controls that are common on the market.

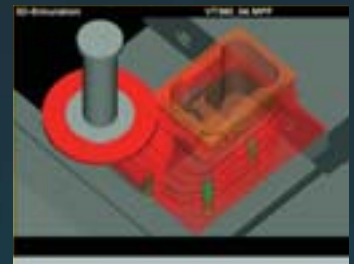
The result: All CNC technicians can be applied more flexibly. And this is a decisive plus: for the qualified employees as well as for the business.



The conversion to another control system is carried out within a minute by calling up the respective software and by simply replacing the control specific module.

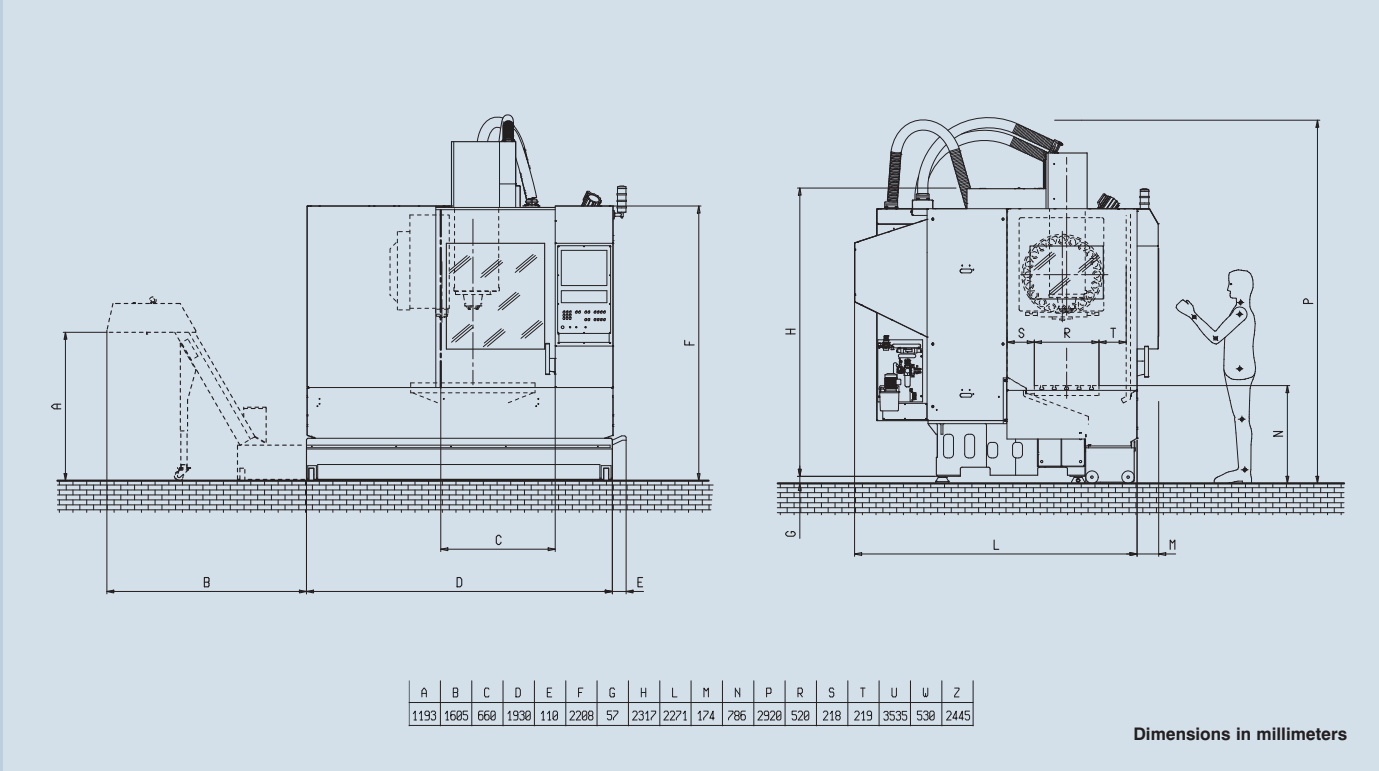


Simple to program using the EMCO WinNC control units

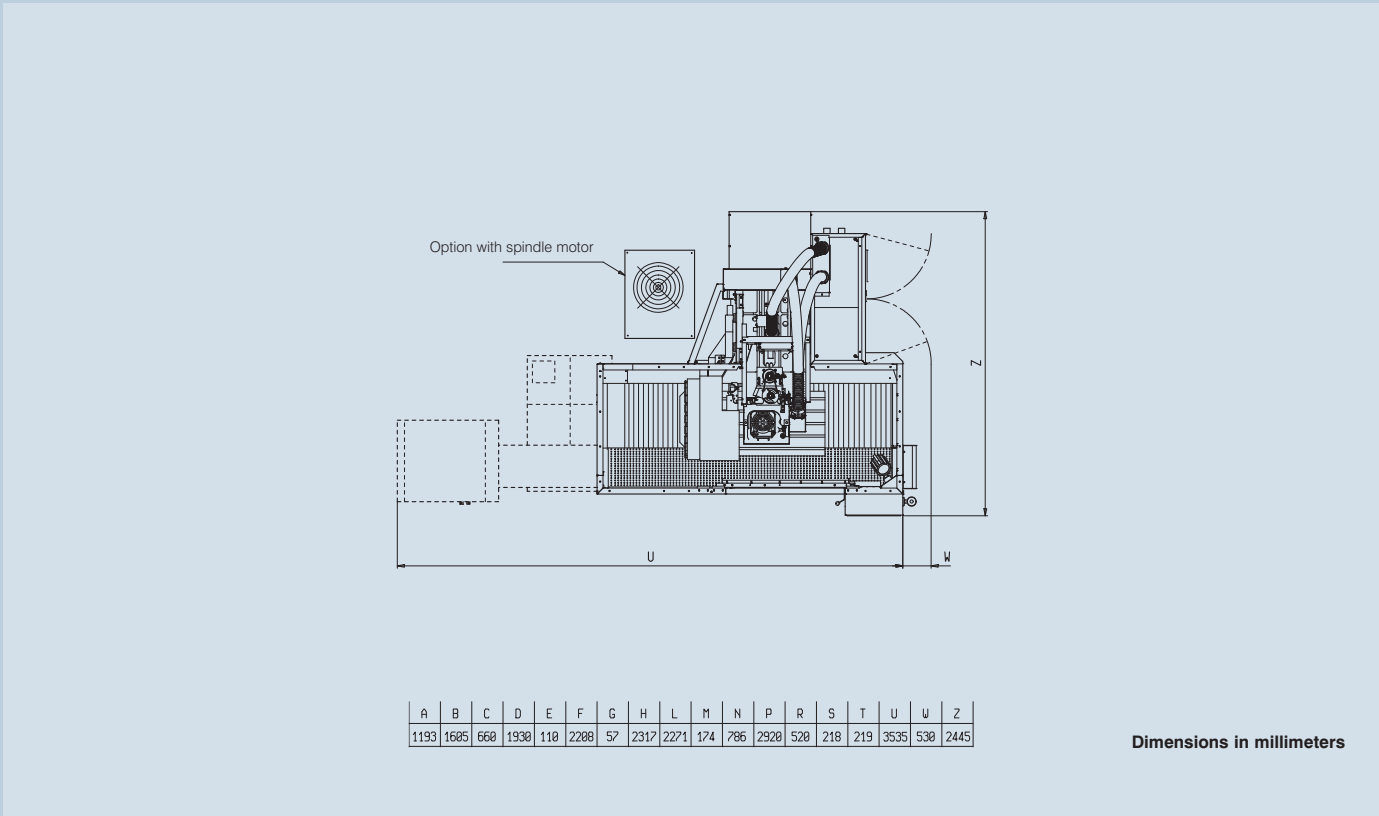


Simulation suitable for training using Win3D-View

Machine layout



Machine layout



[Technical data]



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CONCEPT MILL 450

Work area	
Travel in X longitudinal	600 mm (23.6")
Travel in Y latitudinal	500 mm (19.7")
Travel in Z vertical	500 mm (19.7")
Min. clearance spindle nose – table	100 mm (3.9")
Max. clearance spindle nose – table	600 mm (23.6")
Table	
Clamping area	700 x 520 mm (27.6 x 20.5")
T slots: number, width, spacing	5 x 18 x 100 mm (0.2 x 0.7 x 4.9")
Max. table load	500 kg (1102.3 lb)
Distance table – floor	786 mm (30.9")
Milling spindle	
Speed range	50 – 12000 r.p.m.
Motor power	11 kW (S6) (14.7 hp) (S6)
Torque (Siemens)	70 Nm (S6) (51.6 ft/lbs)
Tool taper DIN69871	ISO 40
Drive	Direct drive
Axes	
Rapid speeds X, Y, Z	24 m/min (944.9 ipm)
Feed rate X, Y, Z	10 m/min (393.7 ipm)
Axis acceleration X, Y, Z	2 m/s ² (50.8"/s ²)
Feed force X, Y, Z	5000 N (1124 lbs)
Precision	
Positioning accuracy over entire X, Y, Z stroke range	± 8 µm
Positioning repeatability X, Y, Z	± 8 µm

Tool system	
Number of tool stations	20
Tool administration	Fixed
Max. tool diameter (excluding adjacent tools)	80 mm (125 mm) (3.1") (4.9")
Max. tool length	250 mm (9.8")
Max. tool weight	8 kg (17.6 lb)
Tool changing time (tool/tool)	approx. 8.2 s
General data	
Power supply	20 kVA
Dimensions W x D x H (80.3 x 96.3 x 114.9")	2040 x 2445 x 2920 mm
Weight	4000 kg (8818.4 lb)
Compressed air	6 bar

EMCO WinNC Controls

Sinumerik 810D/840D	Heidenhain TNC 426
Sinumerik 820	Sinumerik 810
Sinumerik Operate	GE FANUC Series 0
GE FANUC Series 21	EMCOTRONIC TM02
Fagor 8055 MC	



www.emco-world.com