emco group

Designed for your profit

SMALL VOLUME. GREAT PERFORMANCE. CONCEPT MILL 105

CNC training with industrial performance

MILLING

EMCO-WORLD.COM

Concept MILL 105

Slides and load-bearing elements are manufactured from gray cast iron for the Concept MILL 105 to ensure maximum precision. Equipped with infinitely variable main drive, 10-station tool changer, pneumatic vise and NC indexing device as optional fourth axis, this compact machine in table format is optimally suitable for teaching of sophisticated function and manufacturing technologies. The control for the Concept MILL 105 is connected via PC, on which the interchangeable WinNC control from EMCO can be installed.

1 TOOL MAGAZINE

- Tool magazine with directional logic
- For 10 tools
- Engraving spindle attachment

2 WORK AREA

- Generous view of work area
- Best ergonomics

3 MACHINE BASE

- With extensible drawer
- Provides space for PC tower

4 MACHINE COVERS

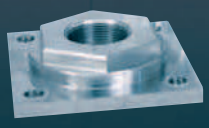
- All-round protection against chips
- 100% coolant retention
- Optimum view of working area
- Large safety glass window in door

5 SWIVEL TABLE

- Extensible drawer for PC keyboard
- Arranged ergonomically

Machine with optional equipment

Camshaft-housing



Milled part

Milled part

[Engineering]

Highlights

- Stable, gray cast-iron construction, suitable for industrial use
- 10 station tool changer with directional logic
- Backlash-free bearings for working spindle in precision, lifetime-lubricated, angular ball bearings
- Infinitely variable main and feed drives
- Realistic execution of all essential milling operations

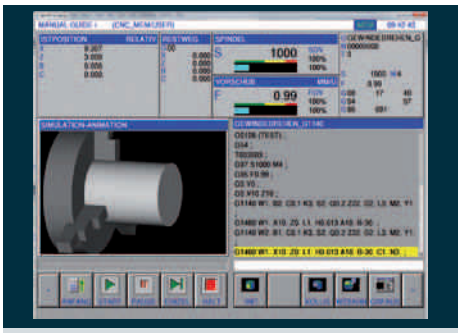
Options

- NC indexing device (fully functioning fourth axis) with tailstock, three-jaw chuck and live center
- Engraving spindle attachment
- Automatic clamping device
- Electronic handwheel
- Coolant system
- Minimum quantity lubrication
- Machine base with swivel table
- Easy2operate

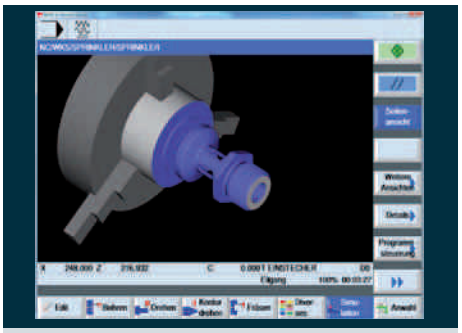
[The interchangeable control]

The unique concept of the interchangeable control can be fitted to 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 qualified employees as well as for the business.

The change to a different control system is carried out within a minute by calling up the respective software



Simple to program using the EMCO WinNC control units



Simulation suitable for training using Win3D-View

[Easy2control: New operating concept]

Optional it is possible to equip the machine with the latest software of the interchangeable control, with which control specific and machine keyboards of the WinNC can be displayed on a 16:9 Full-HD screen – Easy2control.
The different panels for machine, control and quick access can be switched via tabs.
The buttons and rotary knobs can either be operated by using the mouse or in case a Full HD touchscreen is used directly on the keys and switches on the monitor. To operate the software on the Concept machine a license dongle and a small machine control panel - „Easy2operate“ – is required.

Easy2control with Easy2operate

Concept MILL 105
Technical data

Work area	
Travel in X longitudinal	200 mm (7.9“)
Travel in Y latitudinal	150 mm (5.91“)
Travel in Z vertical	250 mm (9.84“)
Min. distance spindle nose - table	95 mm (3.74“)
Max. distance spindle nose - table	245 mm (9.65“)

Table	
Clamping area (L x W)	420 x 125 mm (16.54x4.92“)
T-slots: quantity, width, spacing	2 x 11 x 90 mm (2x0.43x3.54“)
Max. table load	10 kg (22 lb)

Milling spindle	
Speed range	150 - 5000 rpm
Motor power 3 phase asynchronous motor	1.1 kW (1.48 hp)
Max. torque	4.2 Nm

Axis data	
Rapid motion speed X / Y / Z	5 m/min (196.85 ipm
Max. feed rate X / Y / Z	0 – 5 m/min (0 – 196.85 ipm)
Feed power X / Y	2000 N
Feed power Z	2400 N

Accuracy	
Step resolution (X / Y / Z)	0.0015 – 0.001 mm
3 phase step motors	(0.00006 – 0.0004“)
Average positioning variation in X / Y (VDI/DGQ 3441	5 µm (0.0002“)
Average positioning variation in Z (VDI/DGQ 3441)	5 µm (0.0002“)

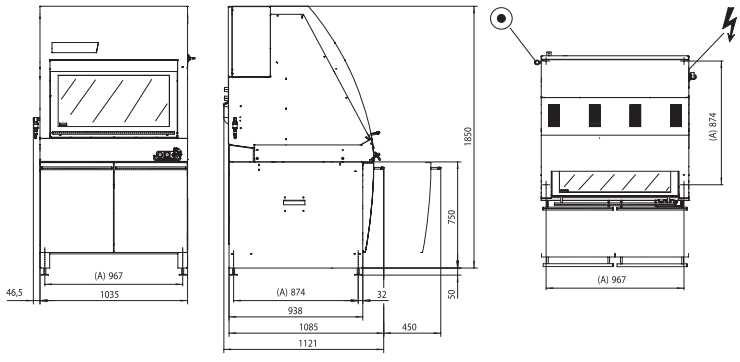
Tool change	
No. of tool stations	10
Tool selection	Directional logic
Max. tool diameter	55 mm (2.17“)
Max. tool length	50 mm (1.97“)
Max. tool weight	0.7 kg (1.54 lb)
Tool changing time T1 / T2 / T3	9/7.5/7.5 s

Power consumptions	
Power supply	1.4 kW (1.88 hp)

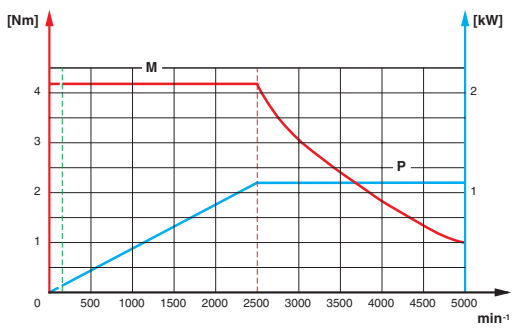
Dimensions	
Dimensions W x D x H	1135 x 1100 x 1100 mm (44.69 x 43.31 x 43.31)
Total weight	400 kg
Compressed air	6 bar

EMCO WinNC Controls
Sinumerik Operate 840D sl / 828D
Fanuc Series 31i
Heidenhain TNC 640
Heidenhain TNC 426/430
Fagor 8055
CAMConcep

Machine layout



Power



EMCO GmbH
Salzburger Str. 80 · 5400 Hallein-Taxach · Austria
T +43 6245 891-0 · F +43 6245 86965 · info@emco.at · www.emco-world.com