

emco group

Designed for your profit

[E[M]CONOMY]
means:



**Mastering big challenges
at small lot sizes easily.**

EMCOMAT-Serie FB-3 L FB-450 MC FB-600 MC

**Universal milling machines with toolmaker precision
for industrial use**

EMCOMAT FB-3 L

[Vertical milling head]

- Swivels +/-90°
- Speedy changeover to horizontal milling
- Outstanding repeat accuracy
- Quiet operation
- Adjustable precision taper roller bearings

[Guideways]

- Linear guides in all three axes
- Large
- Durable
- Low wear

[Machine stand]

- Low vibration, stress-free cast iron
- Three-point support

[Control panel]

- Control panel with ergonomically designed keypad

[Handwheels]

- Safety handwheels for X and Y
- Ergonomic design
- Excellent feed precision
- Easily legible scale rings

[Machine base]

- Rigid, welded sheet steel
- Integrated coolant system
- Removable coolant reservoir



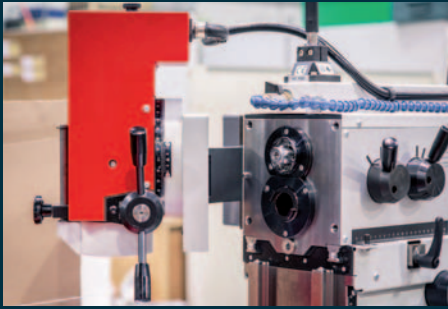
Machine with optional equipment

The EMCOMAT FB-3 L is ideal for tool and mold making, for equipment and prototype manufacturing and small-series production. It has also met with great success in schools and training workshops. As the smallest in EMCO's range of milling machines, the FB-3 L is built to meet the highest standards of precision and flexibility - and all at an unbeatable price.

[Engineering]

Highlights

- Compact, vibration-free gray cast iron machine stand
- Swiveling vertical milling head
- Vertical-head drive with palloid tooth system for quiet operation
- Mechanical safety handwheels with scale ring in X and Y axis
- Integrated safety clutch
- Adjustable, long-life precision taper roller bearings for vertical and horizontal milling spindles
- Automated stepless feed in X and Y
- Swivel-mounted digital display



Horizontal milling head. Horizontal milling spindle with DIN 2080 SK 30 tool chuck. Swivel-mounted vertical milling head. Vertical-head drive with palloid tooth system.



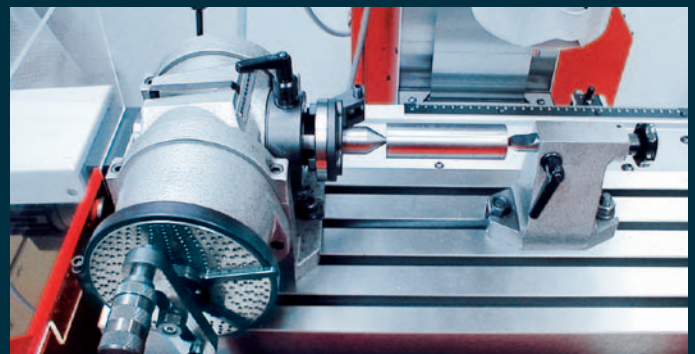
Safety handwheels (X/Y). Ergonomically placed handwheels ensure easy and safe handling in all three axes.



Control panel. Control panel with ergonomically designed keypad and a swivel mounted position display for easy operation.



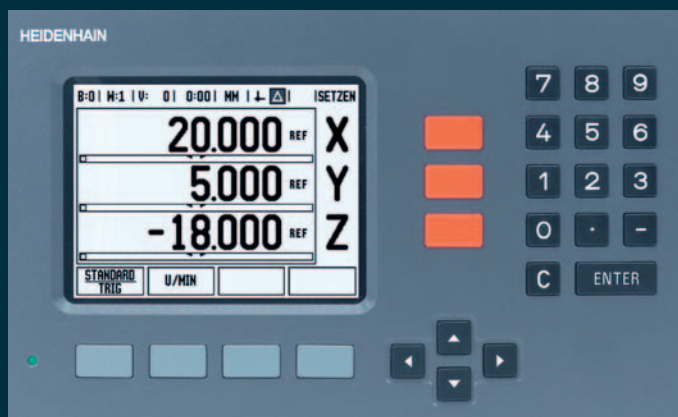
Vertical milling head. Vertical milling head with DIN 2080 SK 30 and clampable 45 mm quill travel. The vertical milling head swivels +/- 90°.



Optional: dividing head with tailstock.

Position display units.

The EMCOMAT FB-3 L milling machine can be equipped with different position display units. To meet anyone's needs.



HEIDENHAIN ND 780



HEIDENHAIN POSITIP PT 880

EMCOMAT FB-450 MC

The EMCOMAT FB-450 MC and FB-600 MC universal milling machines are characterised by a wide range of universal application possibilities, be it one-off or small-batch production, simple or complex workpieces: EMCOMAT FB-450 MC and FB-600 MC with Sinumerik 828D including „manual machine“ or Heidenhain TNC620 convince with high cutting performance and top precision. CNC skills are not required. The new EMCOMAT FB-450 MC / FB-600 MC offers a retractable workspace guard ensuring better access to the machine table. The machine may be operated manually with the door open or using the control with the workspace guard closed. EMCOMAT FB-450 MC / 600 MC is now ready for machining up to a maximum table load of 300 kg.

[Vertical milling head]

- With hydraulic tool clamping for Y and Z milling spindles DIN 69871 SK 40

[Control panel]

- Swivel-mounted
- With Sinumerik 828D or Heidenhain TNC620

[Guideways]

- Linear guides in all three axes
- Large
- Durable
- Low wear

[Coolant tank]

- External coolant tank with coolant pump

[Handwheels]

- Safety handwheels in all three axes
- Ergonomic design
- Excellent feed precision
- Easily legible scale rings

[Machine stand]

- Massive cast construction
- For easy transport

[Workspace guard]

- Retractable with large chip shield
- Telescopic covers

Machine EMCOMAT FB-450 MC with Sinumerik 828D



Dashboard
(Steel)



Pneumatic distributor
(Steel)



Milling flange
(Steel)

EMCOMAT FB-600 MC

EMCOMAT FB-600 MC with a travel in X of 600 mm and a travel in Y/Z of 400 mm completes the conventional and/or cycle-controlled milling machine series for the machining of larger workpieces. EMCOMAT FB-600 MC is available with Sinumerik 828D control including „manual machine“ or Heidenhain TNC620.

Programming is performed with user guidance and graphic simulation of the machining steps, thus enabling user-friendly and at the same time efficient programming. The highlights: larger travels and stronger main motor.

[Vertical milling head]

- With hydraulic tool clamping for Y and Z milling spindles
- DIN 69871 SK 40

[Guideways]

- Linear guides in all three axes
- Large
- Durable
- Low wear

[Control panel]

- Swivel-mounted
- With Sinumerik 828D or Heidenhain TNC620

[Coolant tank]

- External coolant tank with coolant pump

[Handwheels]

- Safety handwheels in all three axes
- Ergonomic design
- Excellent feed precision
- Easily legible scale rings

[Machine stand]

- Massive cast construction
- For easy transport

[Workspace guard]

- Retractable with large chip shield
- Telescopic covers



Machine EMCOMAT FB-600 MC with Heidenhain TNC620

[Engineering]

Highlights

- Swivel-mounted control panel
- Reversible main spindle
- Covers eliminate the risk of injuries
- Shafts and gears hardened and ground
- Linear guides
- Main motor with spindle brake
- Milling spindle supported radially and axially in four bearings
- Coolant system



Changeover to horizontal milling. Horizontal milling spindle DIN 69871 SK 40



Swiveling device. Swivel-mounted vertical milling head. Controlled by end switch.



Sinumerik 828D with „Manual Machine“

The Manual Machine operating area provides you with machining capabilities as for a cycle milling machine. All important machining actions can be performed without an associated part program needing to be created.

The following functions are available:

- Measure tool
- Traverse axes
- Set zero offset (ZO)
- Drill, such as centered drilling, centering, deep-hole drilling
- Mill, such as face milling, pocket milling, multi-edge stud milling
- Mill contour

User-friendly input screens with help screens and animated elements are available for parameterizing the cycles.

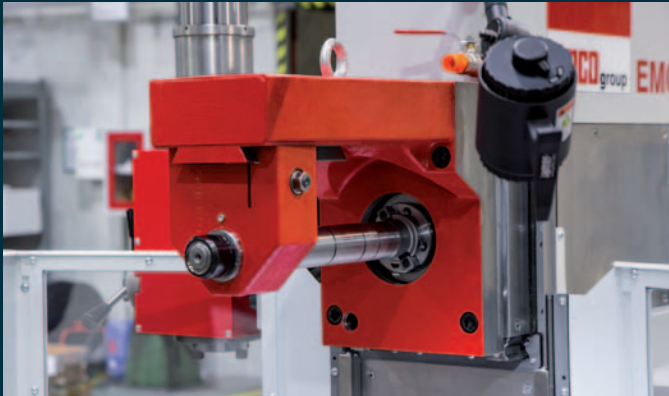


The TNC 620 from Heidenhain is a compact, versatile contouring control with three controlled axes and closed-loop spindle.

[Engineering]

Highlights

- Compact, vibration-free cast iron machine stand
- Swiveling vertical milling head
- Mechanical safety handwheels with scale ring
- Automated stepless feed in X, Y and Z axes
- Coolant device
- Linear guides in X/Y/Z



Horizontal milling. Horizontal milling with long milling arbor for clamping several milling tools. The overarm for supporting long milling arbors is mounted instead of the vertical milling head.



Safety handwheels (X). Ergonomically placed handwheels ensure easy and safe handling in all three axes.



Vertical milling head. Drilling large diameters with the vertical milling head. Quill travel up to 80 mm.



Retractable workspace guard with vertical clamping area.



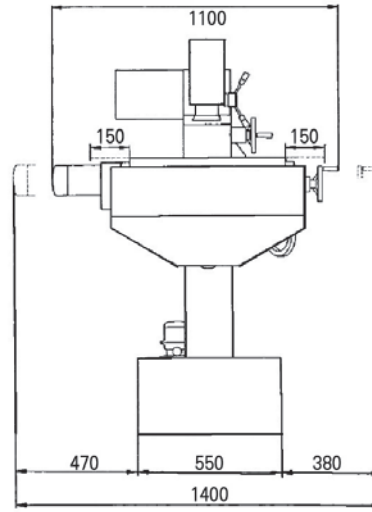
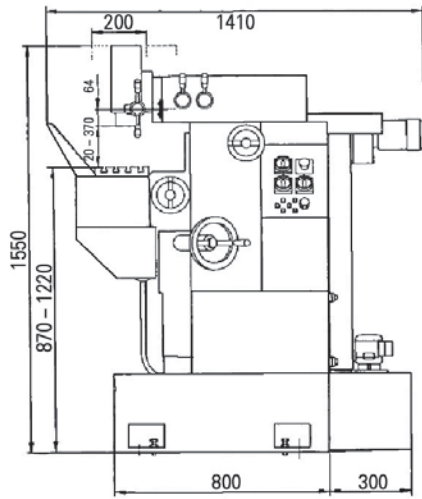
A large **chip shield** at the front of the machine allows for trouble-free chip disposal.



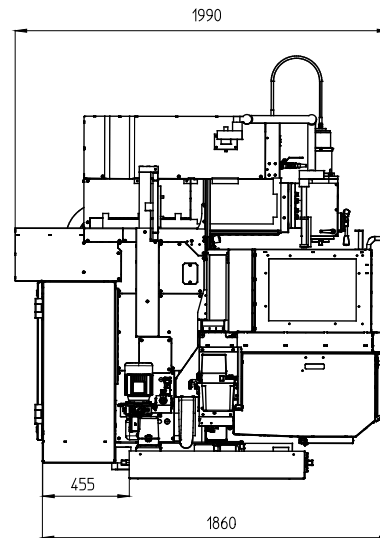
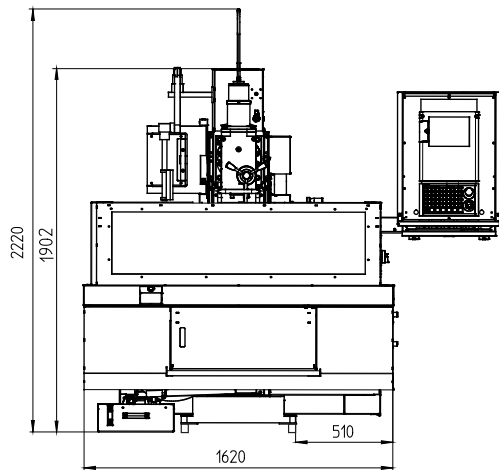
Swivel-mounted vertical milling head with quill for manual drilling operations. Thanks to a swivel range of $\pm 90^\circ$, even difficult machining can be performed easily.

Floor plans

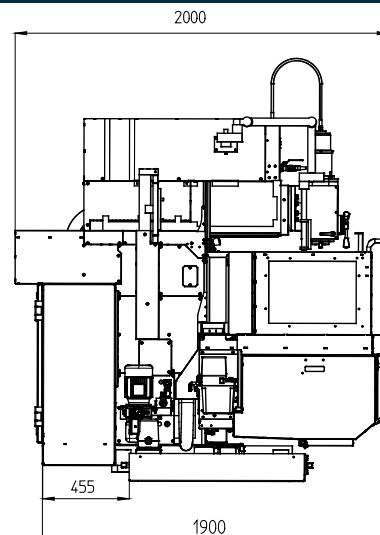
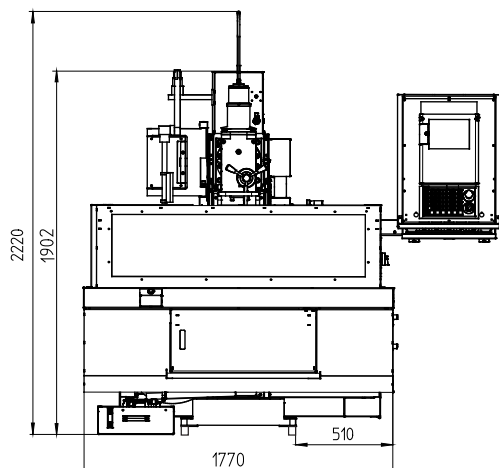
Floor plan EMCOMAT FB-3 L



Floor plan EMCOMAT FB-450 MC



Floor plan EMCOMAT FB-600 MC



[Technical data]

EMCOMAT FB-3 L, FB-450 MC, FB-600 MC

	FB-3 L	FB-450 MC	FB-600 MC
Work area			
Horizontal longitudinal feed (X)	300 mm (11.8")	450 mm (17.7")	600 mm (23.6")
Vertical table feed (Z)	350 mm (13.8")	400 mm (15.7")	400 mm (15.7")
Horizontal cross feed (Y)	200 mm (7.9")	350 mm (13.8")	400 mm (15.7")
Table			
Clamping area vertical table (LxW)	600 x 180 mm (23.6 x 7.1")	400 x 270 mm (15.7 x 10.6")	400 x 270 mm (15.7 x 10.6")
Width/number of T-grooves	12 x 21 mm/2 pieces (0.5 x 0.8")	14 mm (H 8)/5 pieces (0.6" (H8))	14 mm (H 8)/5 pieces (0.6" (H8))
Permissible workpiece weight	50 kg (110.2 lb)	450 kg (992.1 lb)	450 kg (992.1 lb)
Clamping area rigid anlage table (LxW)	600 x 200 mm (23.6 x 7.9")	800 x 400 mm (31.5 x 15.7")	800 x 400 mm (31.5 x 15.7")
Width/number of T-grooves	12 x 21 mm (4 pieces)	14 mm (H 8 / 8 pieces)	14 mm (H 8 / 8 pieces)
Permissible workpiece weight	50 kg (110.2 lb)	300 kg (661.4 lb)	300 kg (661.4 lb)
Horizontal milling spindle			
Tool chuck	DIN 2080 SK 30	DIN 69871 SK 40	DIN 69871 SK 40
Mechanical speeds	8	continuous	continuous
Speed range	80 – 2200 r.p.m.	10 – 5000 r.p.m.	10 – 5000 r.p.m.
Clearance above table	80 – 430 mm (3.2 – 16.9")	230 – 630 mm (9.1 – 24.8")	230 – 630 mm (9.1 – 24.8")
Vertical milling head			
Tool chuck	DIN 2080 SK 30	DIN 69871 SK 40	DIN 69871 SK 40
Quill travel	45 mm (1.8")	80 mm (3.1")	80 mm (3.1")
Swiveling vertical milling head	+/-90°	+/-90°	+/-90°
Mechanical speeds	8	continuous	continuous
Speed range	80 – 2200 r.p.m.	10 – 5000 r.p.m.	10 – 5000 r.p.m.
Clearance above table	35 – 385 mm (1.4 – 15.2")	40 – 440 mm (1.6 – 17.3")	40 – 440 mm (1.6 – 17.3")
Power			
Nominal speed motor	1400 r.p.m.	1500 r.p.m.	1500 r.p.m.
Power	100% / 60% ED, 1.1 / 1.4 kW 100% / 60% ED, (1.5/1.9 hp)	100% / 40% ED, 7 / 10 kW 100% / 40% ED, (9.4/13.4 hp)	100% / 40% ED, 9 / 13 kW 100% / 40% ED(12.1/17.4 hp)
Feed drive			
Power feed motor 100% ED	0.55 kW(0.7 hp)	1 kW (1.3 hp)	1 kW (1.3 hp)
Feed range X/Y/Z axis	50 – 550 mm/min/manually	10 – 2000 mm/min	10 – 2000 mm/min
Rapid motion speed in X/Y/Z	1200 mm/min/manually	5000 mm/min	5000 mm/min
Feed force X/Y/Z	8 kN	10/15 kN	10/15 kN
Coolant system			
Coolant in tank	30 liters (7.9 gal)	40 liters (10.6 gal)	40 liters (10.6 gal)
Max. pump capacity	15 l/min	25 l/min	25 l/min
Machine dimensions			
Overall length	1410 mm (55.5")	1980 mm (78.0")	2100 mm (82.7")
Overall width	1150 mm (45.3")	2030 mm (79.9")	2190 mm (86.2")
Overall height	1550 mm(61.0")	1990 mm (78.3")	1990 mm (78.3")
Weight of machine	500 kg (1102.3 lb)	2200 kg (4850,2 lb)	2200 kg (4850,2 lb)



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