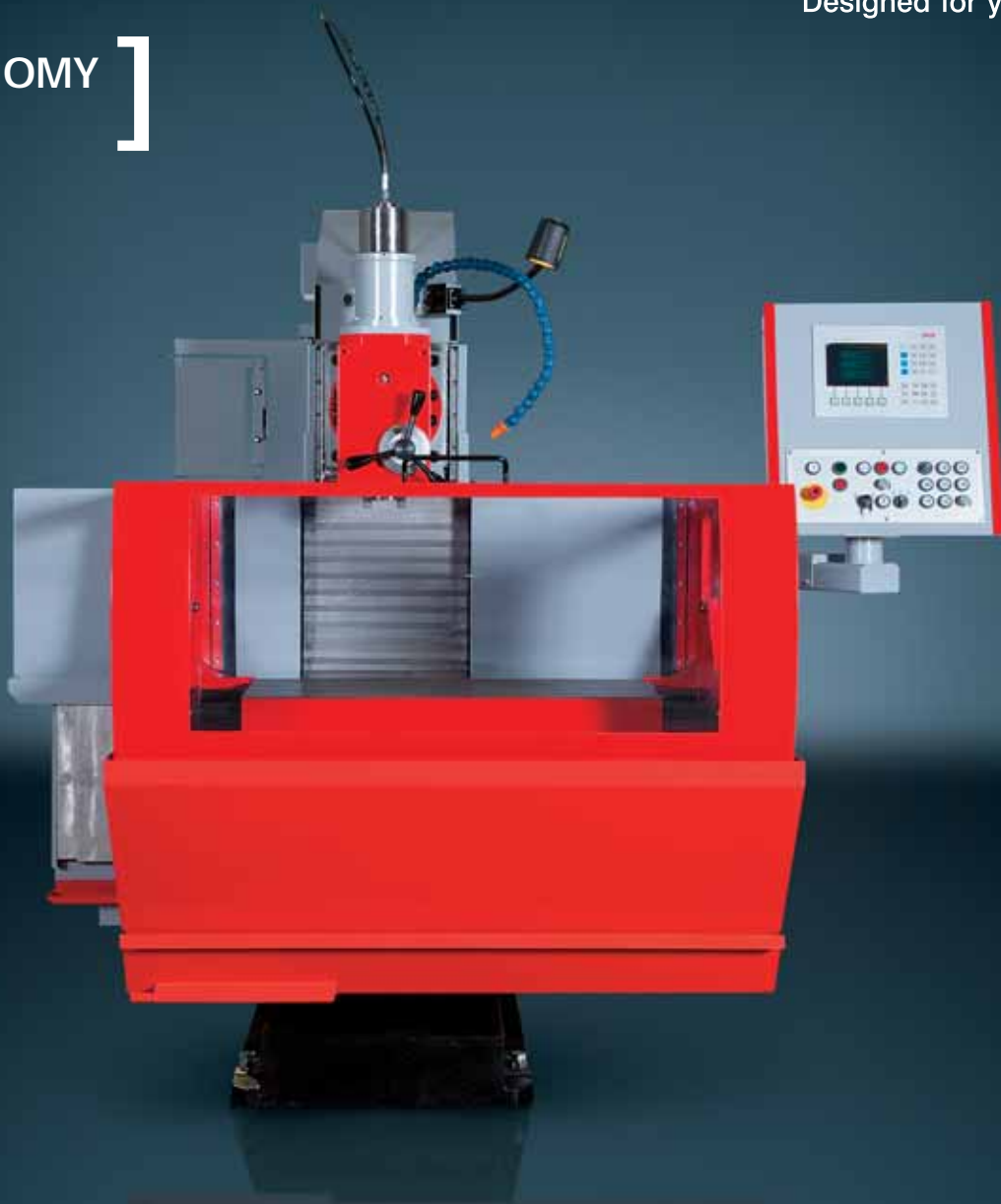


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Designed for your profit

[E[M]CONOMY]
means:



Mastering big challenges at small lot sizes easily.
EMCOMAT-Series FB-3 L FB-450 L FB-600 L

Universal milling machines with toolmaker precision
for industrial use

EMCOMAT FB-3 L

[Vertical milling head]

- Swivels $\pm 90^\circ$
- 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



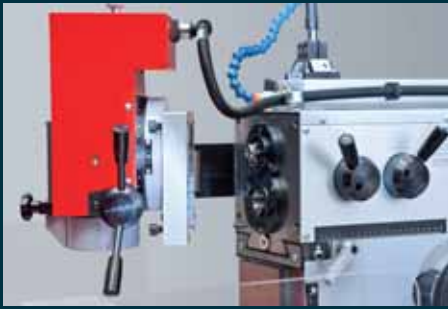
Machine with optional equipment

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 (optional)



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 (optional) 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

Basic machine equipment

- Coolant system
- Rigid angle table
- Vertical milling head with swivel arm
- Chip catcher
- Linear guides X/Y/Z
- Workspace guard
- Toolmaker precision to DIN 8615
- Operator's toolset
- Operating instructions and spare parts list

EMCOMAT FB-450 L

[Vertical milling head]

- With manual or 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 EMCO position display and ergonomic keyboard

[Coolant tank]

With coolant pump

[Workspace guard]

- With chip pan and hinged sides
- Telescopic covers

[Handwheels]

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

[Machine stand]

- Solid cast iron construction
- Easy to transport

Machine with optional equipment

The EMCOMAT FB-450 L is intended for production-oriented users. High chip-cutting power, precision and universality are the characteristic features. The generous workspace allows large workpieces to be machined. EMCO's wide range of options covers everything you need to handle even the most complicated machining projects. The EMCOMAT FB-450 L's circulating ball screw and linear guides allow precise axis positioning and higher rapid motion speeds.

[Engineering]

Highlights

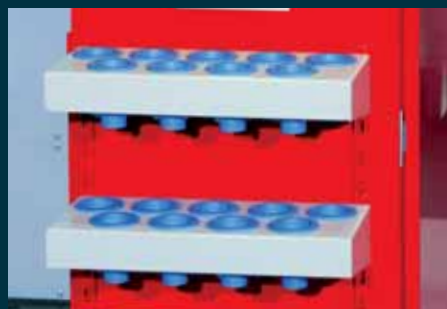
- Swivel-mounted control panel
- Reversible main spindle
- Covers eliminate the risk of injuries
- Shafts and gears hardened and ground
- Linear guides
- Main motor with spindle brake
- Milling spindle supported radially and axially in four bearings
- Coolant system



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



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



SK 40 tool storage system. The SK 40 tool storage system mounted on the machine helps with fast tool changes and keeps tools neatly stored.



Control panel. Swivel-mounted digital control panel with ergonomic keypad for simple operation. Standardly: The EMCO 3 axes digital display including linear measuring scales X/Y/Z.

Various options



Machining a die-opener disc with the boring tool



Setting up a part for milling with a 3D sensor



Vertical head with milling spindle DIN 69871 SK 40 with quill 80 mm

Basic machine equipment

- Coolant system
- Rigid angle table
- Ball screws X/Y/Z
- Linear guides X/Y/Z
- Workspace guard
- Swivel-mounted vertical milling head
- Chip-catcher tray
- Toolmaker precision to DIN 8615
- Operator tool-set
- Operating instructions and spare parts list

EMCOMAT FB-600 L

[Vertical milling head]

- With manual or 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 EMCO position display and ergonomic keyboard

[Handwheels]

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

[Workspace guard]

- With chip pan and hinged sides
- Telescopic covers

[Coolant tank]

- With coolant pump

[Machine stand]

- Solid cast iron
- Easy to transport

Machine with optional equipment

The EMCOMAT FB-600 L for the machining of bigger parts completes the conventional milling machine series. The most important features: longer travels and a main drive with more power.

[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



Swivel-mounted dividing head. The swivel-mounted dividing head with tailstock, mounted on the vertical clamping surface, enables the machining of complex parts.



Versatility. Horizontal milling for any number of machining needs. Swinging out the vertical head enables machining with the horizontal spindle.



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



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.



Swivel-mounted vertical milling head Swiveling the vertical milling head makes it possible to machine complex parts. +/- 90° swivel.



Safety cover. More safety due to the cover mounted on the hinged bracket.

Position displays

A selection can be made between different systems. For everyone the right choice.



HEIDENHAIN ND 780 position display for the EMCOMAT FB-3 L (option)

is the successor model to the ND 700. With this display, HEIDENHAIN sets new standards in user-friendliness and workshop-suited design. The ND 780 is specially designed for use on milling, drilling and turning machines and can be configured with up to three axes for incremental gauges. The monochrome flat screen monitor is an innovation for position displays of this class. It offers the operator comfortable options for navigating through a wide range of menus. Position values, dialog and input displays, graphic functions and the graphic positioning aid are shown extremely clearly. There are extensive online help topics available as well. The ND 780 was distinguished by the International Industry Forum Design in 2005 for his excellent ergonomic design and high quality.



HEIDENHAIN POSITIP PT 880 position display for the EMCOMAT FB-3 L (option)

is a position display for hand-operated machine tools. Whether you manufacture single prototypes, replacement parts or small series, the POSITIP PT 880 helps you through all steps of the process with its clear menu on a large, easy-to-read color flat screen. When milling, the POSITIP PT 880 automatically compensates for the milling radius. The graphic start-up assistant assists you visually. Especially when 2D milling, the profile monitor shows your tool movements within the pre-determined tolerance limits. The magnifier function makes this possible even for relatively strict limits, while you keep an overall view in a second window.



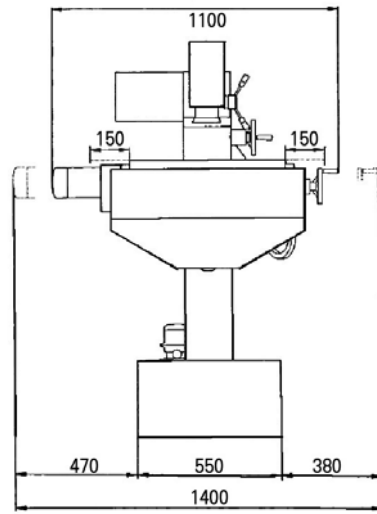
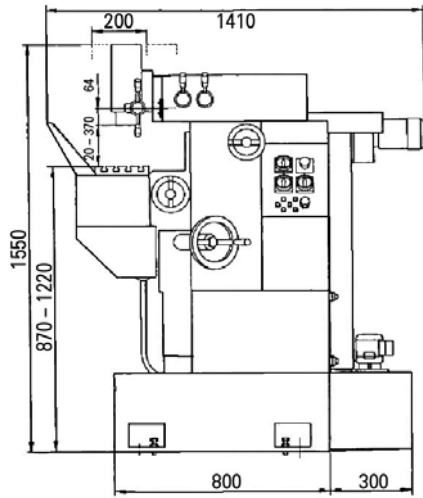
EMCO three axes position display for EMCOMAT FB-450 L and FB-600 L (standardly included)

offers a permanent display of the position of the X, Y and Z axis on a TFT screen. The axes positions are determined by using linear scales with a precision of 0.001 mm. Functions: permanent display X/Y/Z, revolution speed, feed, 999 tool points, 999 contour points, reference point, remaining path, metric/imperial, tool-radius correction, drill template support.

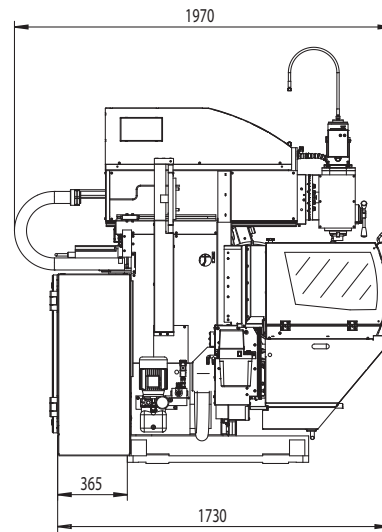
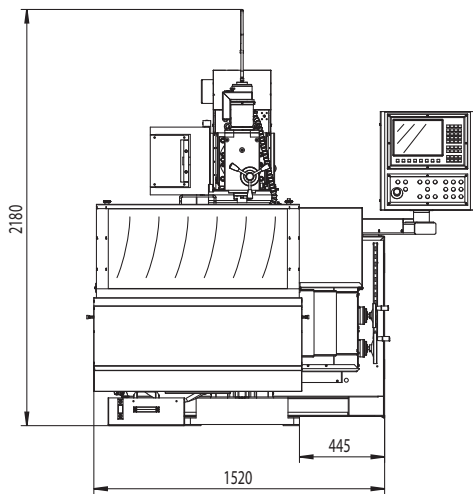
Languages: German, English, Spanish, Italian, Dutch, French, Czech; Screen size: 6.5" color TFT, resolution 640 x 480 (VGA)

Floor plans

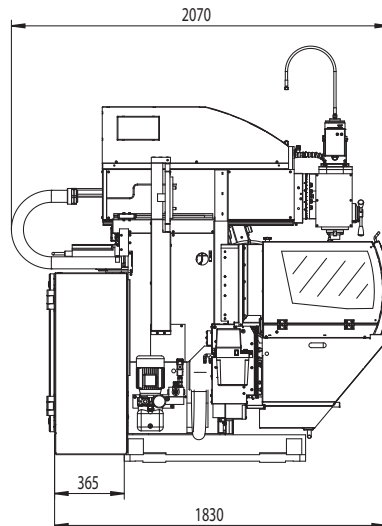
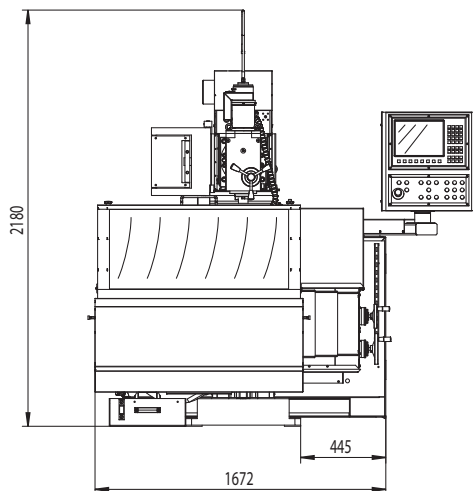
Floor plan EMCOMAT FB-3 L



Floor plan EMCOMAT FB-450 L



Floor plan EMCOMAT FB-600 L



[Technical data]

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EMCOMAT FB-3 L FB-450 L FB-600 L

FB-3 L

FB-450 L

FB-600 L

	FB-3 L	FB-450 L	FB-600 L
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)	300 kg (661.4 lb)	300 kg (661.4 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)	150 kg (330.7 lb)	150 kg (330.7 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")	260 – 620 mm (10.2 – 24.4")	260 – 620 mm (10.2 – 24.4")
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")	60 – 415 mm (2.4 – 16.3")	60 – 415 mm (2.4 – 16.3")
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	0 – 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)	2000 kg (4409.2 lb)	2100 kg (4629.7 lb)

