

emco group

Designed for your profit

[E[M]CONOMY]
means:



**Mastering big challenges with a small machine.
EMCOMAT 14D – 17D – 20D**

**Universal lathe with toolmaker precision
for industrial use**

EMCOMAT 14D

[Digital display]

- 3-axis digital display with color screen

[Chuck protection]

- With limit switch
- Main spindle with 40 mm spindle bore

[Headstock]

- Electronic speed control
- Constant cutting speed
- 7.5 kW drive power

[Machine bed]

- Diagonally ribbed
- Induction-hardened and grinded
- 3-point support

[Cover]

- Lead and draw screw partially covered

[Machine stand]

- Welded steel plate construction
- Easy to transport
- Integrated chip tray
- 3-point support eliminates vibrations

[Tailstock]

- Made from high-quality, vibration-damping gray cast iron
- Sits on its own guide prism
- The tail stock can be set off-center for cutting tapers

[Electronics]

- Electronic equipment complies with the latest technical standards (CE)



Machine with optional equipment

The EMCOMAT 14D is the smallest machine in the EMCOMAT series. The EMCOMAT 14D is a lathe for the most demanding requirements: infinitely-variable speed control, constant cutting speed and an impressive 7.5 kW of drive power (40% duty cycle). This small yet powerful machine is mainly used where highly accurate work needs to be carried out in a small space, such as in optical, electrical and automobile workshops, laboratories and even Formula 1.

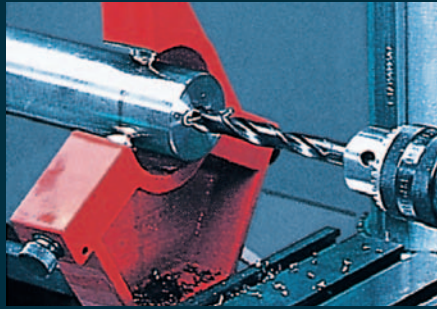
[Technical]

Highlights

- Guideways, gears and shafts are hardened and ground
- Machine bed has 3-point support
- Diagonally ribbed, induction-hardened machine bed
- Rigid, divided lead spindle cover
- Infinitely variable speed control
- Constant cutting speed
- Electromechanical spindle brake
- 2-year EMCO quality guarantee



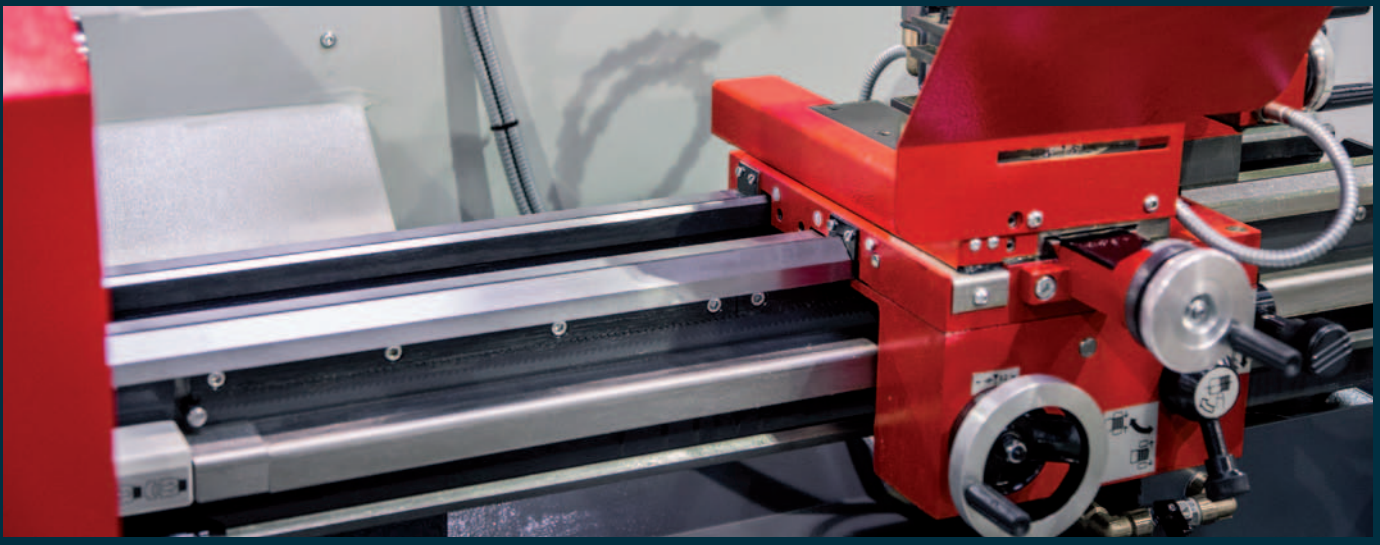
Safety. For the safety of the operator, the chuck protection and wheel caps are monitored by an electric switch. Main spindle Camlock DIN 55029 S4, 40 mm spindle bore



Steady rests. In addition to the tailstock, a wide range of steady rests is available for handling long workpieces. The picture shows a live rest.



Machine drawer. A wide variety of tool holders and other machine parts can be stored in the machine drawer.



Precise positioning using mechanical hand wheels with a graduated collar



4-position turret

The 4-position turret expands the numerous machining capabilities and speeds up the machining process.



Fast-change tool holder

To speed up the machining process, there are several tool holding systems available. This ensures that tools can be changed quickly.

EMCOMAT 17D and 20D

[Single lever operation]

- Single lever operation for axial feed and longitudinal feed

[Chuck protection]

- With limit switch
- Main spindle with 50 mm spindle bore

[Digital display]

- 3-axis digital display with color screen

[Drive]

- Powerful drive with infinitely variable speed control



[Cover]

- Lead and draw screw with cover

[Machine bed]

- Diagonally ribbed
- Induction-hardened and grinded
- 3-point support

[Machine stand]

- Welded steel plate construction
- Easy to transport
- Integrated chip tray
- 3-point support eliminates vibrations

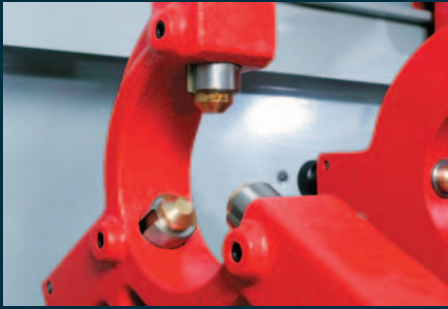
Machine with optional equipment

EMCOMAT 17D / 20D systems are popular because they are easy to operate, ergonomic and come equipped with a high-tech 3-axis digital display, 999 tool positions, 999 contour points, constant cutting speed, and infinitely variable control.

[Technical]

Highlights

- Guideways, gears and shafts are hardened and ground
- Machine bed has 3-point support
- Diagonally ribbed, induction-hardened machine bed
- Rigid, divided lead and draw screw cover
- Long cross slide travel
- Infinitely variable speed control/constant cutting speed
- Electromechanical spindle brake
- Removable chip tray
- 2-year EMCO quality guarantee



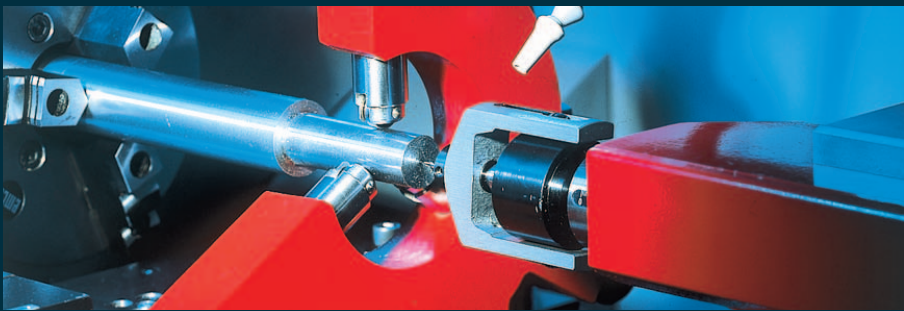
Steady rest. Rigid multi-purpose live rests can be attached to support longer workpieces.



Machine design. The bed and cross slide are manually lubricated at a central point. The X and Y axes are equipped with safety hand wheels.



Safety. For the safety of the operator, the chuck protection and wheel caps are monitored by an electric switch.



Machining with steady rest

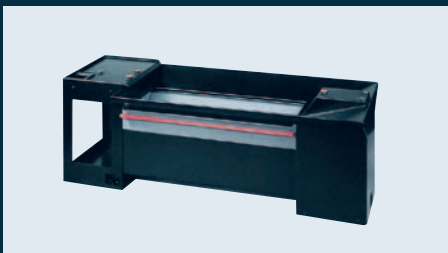


Center drill attachment for live centers



Machine bed

The machine bed's diagonal ribbing ensures optimal dropping of the chips and that the machines are rigid. The guideways are hardened and grinded. Machine bed has 3-point support.



Machine stand

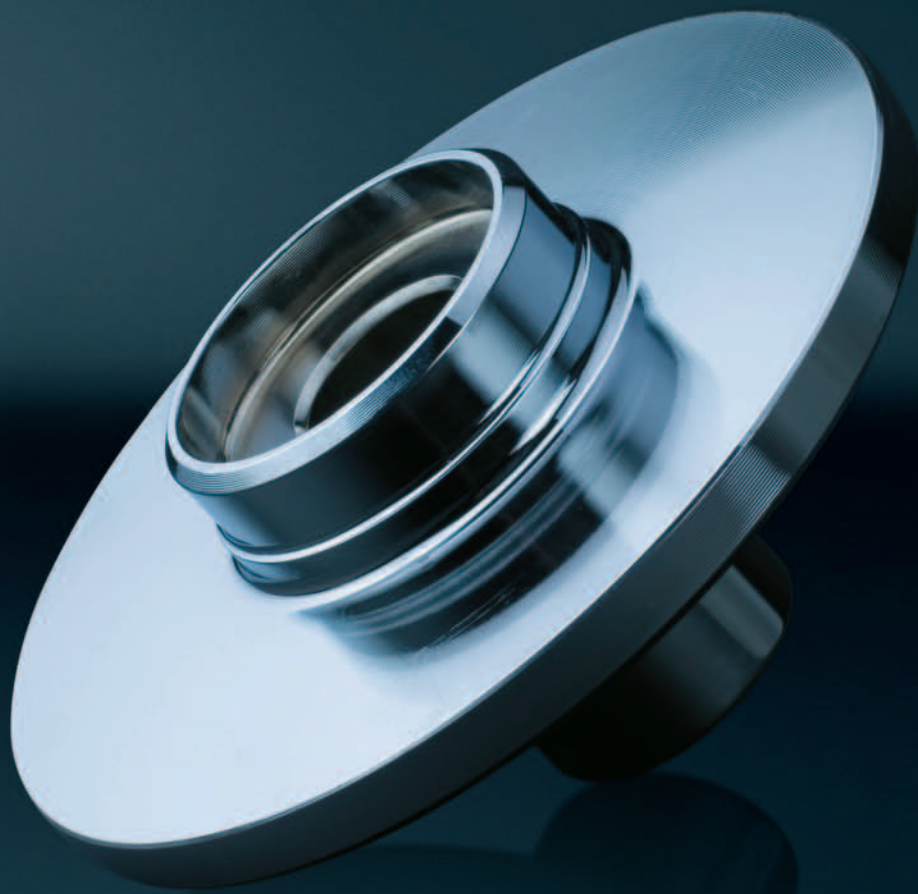
The machine stand absorbs vibrations. Slanted collection plates make cleaning easy and allow coolant to drain quickly.



Headstock

Headstock quality is checked using a 3D Zeiss gauge. The main spindle's precision bearings can be adjusted. The diameter of the front bearing is 70 mm.

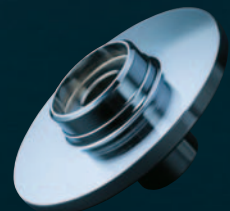
[Workpieces]



Connecting sleeve
(Steel)



Drive shaft
(Steel)



Flange
(Steel)

Digital display EMCOMAT 14D - 17D - 20D

The EMCOMAT 14D - 17D - 20D have a permanent position display for the bed-, cross- and top slide on the TFT screen. The position of the bed slide is monitored by a high-precision rack on the encoder. The position of the cross slide is measured by a glass scale with an accuracy of 0.001 mm. This allows diameters to be set with extremely high precision. The position of the top slide is measured by the direct driven encoder. Functions: Constant cutting speed, 999 tools, 999 reference points, home position, remaining path, imperial/metric, radius/diameter display, single or total display for Z and Z0; Languages: German, English, Spanish, Italian, Dutch, French, Czech
Screen size: 6.5" color TFT, 640 x 480 (VGA)



Basic elements

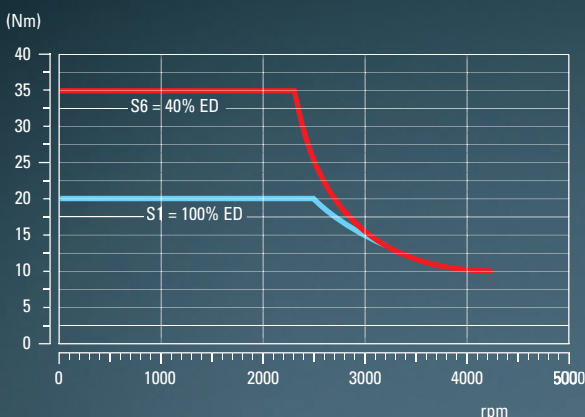
- Machine stand
- Single steel holder (clamp)
- Electronically monitored chuck guard and wheel cover
- Belt drive for feed gear box
- 3 shear pins
- 1 fixed center as for the main spindle as for tailstock
- Operating and maintenance tools
- Documentation

Options

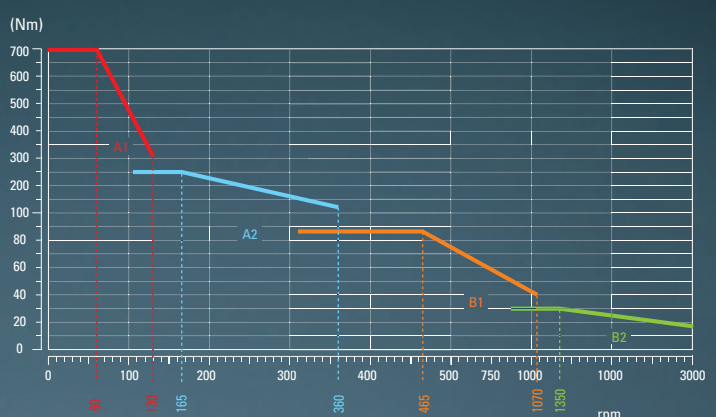
- Quickly changeable tool holder systems
- Footbrake
- Tapered rod chuck
- Tool cupboard
- Chip guard door
- Machine lamp
- Coolant system
- Collet chuck
- Steady rests
- And much more

Main spindle performance diagram

EMCOMAT 14D



EMCOMAT 17D / 20D



[Technical Data]

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	EMCOMAT 14D	EMCOMAT 17D	EMCOMAT 20D
Working area			
Distance between centers	650 mm (24.6")	700 mm (27.6")	1000 mm (39.4")
Height of centers	140 mm (5.5")	170 mm (6.7")	200 mm (9.7")
Swing over bed	280 mm (11.0")	340 mm (13.4")	400 mm (15.7")
Swing over cross slide	170 mm (6.7")	190 mm (7.5")	250 mm (9.8")
Longitudinal slide	590 mm (23.2")	600 mm (23.6")	900 mm (35.4")
Longitudinal slide over cross slide	135 mm (5.3")	220 mm (8.7")	220 mm (8.7")
Longitudinal slide of upper slide	100 mm (3.9")	110 mm (3.9")	110 mm (3.9")
Cross section of cutting tool	12 x 12 mm (0.5 x 0.5")	20 x 20 mm (0.8 x 0.8")	20 x 20 mm (0.8 x 0.8")
Main spindle			
Spindle nose	CAMLOCK DIN 55029 S4	CAMLOCK DIN 55029 S5	CAMLOCK DIN 55029 S5
Spindle bore	Ø 40 mm (1.6")	Ø 50 mm (2")	Ø 50 mm (2")
Face plates diameter max.	152 mm (5.9")	200 mm (7.9")	260 mm (10.2")
Chuck diameter max.	140 mm (5.5")	200 mm (7.9")	200 mm (7.9")
Spindle speed	60 – 4000 rpm	40 – 3000 rpm	40 – 3000 rpm
Rotational speeds	stepless	stepless	stepless
Speed ranges	2	4	4
Speed ranges	60 – 2000 2000 – 4000 rpm	40 – 130, 110 – 360 310 – 1070, 870 – 3000 rpm	40 – 130, 110 – 360 310 – 1070, 870 – 3000 rpm
Drive motor			
Power	7.5 kW (10.1 hp)	5.3 kW (7.1 hp)	5.3 kW (7.1 hp)
Feed range			
Longitudinal feed*	0,03 – 0,3 mm/rev (0.001 – 0.01"/rev)	0,045 – 0,787 mm/rev (0.002 – 0.031"/rev)	0,045 – 0,787 mm/rev (0.002 – 0.031"/rev)
Cross feed*	0,015 – 0,15 mm/rev (0.0006 – 0.006"/rev)	0,023 – 0,406 mm/rev (0.0009 – 0.016"/rev)	0,023 – 0,406 mm/rev (0.0009 – 0.016"/rev)
Cutting speeds			
Metric threads (basic elements)	15 (0,25 – 2,5 mm / 0.010 – 0.098")	20 (0,4 – 7,0 mm / 0,0157 – 0,2755")	20 (0,4 – 7,0 mm / 0,0157 – 0,2755")
Metric threads*	13 (0,125 – 5 mm / 0.005–0.2")	28 (0,4 – 7 mm / 0.02–0.3")	28 (0,4 – 7 mm / 0.02 – 0.3")
Imperial threads*	29 (96 – 4 Gg/Zoll)	32 (4 – 56 Gg/Zoll)	32 (4 – 56 Gg/Zoll)
Module screw threads*	12 (0.25 – 2.5)	28 (0.2 – 3.5)	28 (0.2 – 3.5)
Diam. pitch threads*	25 (96 – 11)	32 (8 – 112)	32 (8 – 112)
Tailstock			
Quill diameter	30 mm (1.2")	50 mm (2")	50 mm (2")
Inner quill taper	MK 2	MK 3	MK 3
Quill stroke	80 mm (3.1")	120 mm (4.7")	120 mm (4.7")
Lateral displacement	+10/–8 mm (+0.4/–0.3")	+/-13 mm (+/-0.5")	+/-13 mm (+/-0.5")
Noise levels			
Max. noise level DIN 45635	77 dB(A)	79 dB(A)	79 dB(A)
Tool weight permitted			
Floating	45 kg (92.2 lb)	50 kg (110.2 lb)	50 kg (110.2 lb)
With tailstock	80 kg (176.4 lb)	150 kg (330.7 lb)	150 kg (330.7 lb)
Power supply			
Power supply	400 V/3 PE/50(60) Hz	400–440 V/3 PE/50(60) Hz	400 – 440 V/3 PE/50(60) Hz
General data			
L x H x B of the machine	1364 x 885 x 1480 mm (52.4 x 32.9 x 61.8")	1650 x 1060 x 1635 mm (65 x 41.7 x 64.4")	1950 x 1060 x 1635 mm (77 x 41.7 x 64.4")
Moving spindle above ground	1100 mm (43.3")	1103 mm (43.4")	1103 mm (43.4")
Total weight	420 kg (926 lb)	755 kg (1664 lb)	865 kg (1907 lb)

*The feed range and the number of threading methods can be extended using the change gears (optional).



EN3381 · 10/16 · Subject to change due to technical progress. Errors and omissions excepted.

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