EMCO

EMCOMAT 14D / 17D / 20D

Universal lathe with toolmaker precision for industrial use

EMCOMAT 17D



/ EMCOMAT 14D WITH POSITION DISPLAY

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.



Connecting sleeve
(Steel)

1 CHUCK PROTECTION

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

2 HEADSTOCK

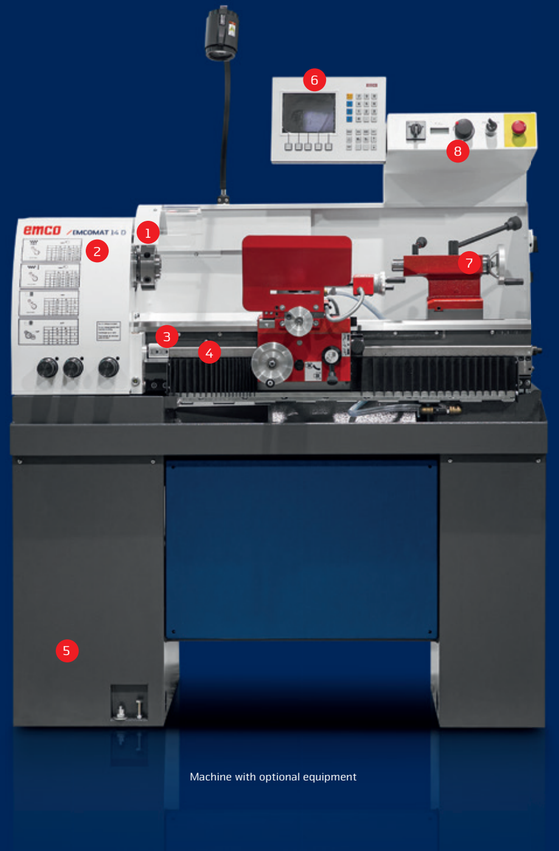
/ Electronic speed control
/ Constant cutting speed
/ 7.5 kW drive power

3 MACHINE BED

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

4 COVER

/ Covered lead screw and feed shaft



Machine with optional equipment

5 MACHINE STAND

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

6 DIGITAL DISPLAY

/ 3-axis digital display with color screen

7 TAILSTOCK

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

8 ELECTRONICS

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

TECHNICAL HIGHLIGHTS



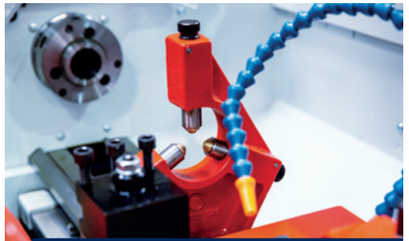
FAST-CHANGE TOOL HOLDER

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



SAFETY

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



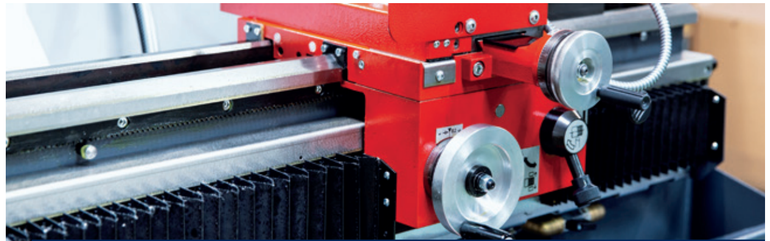
STEADY RESTS

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



POSITION DISPLAY

Swiveling position display with operating elements.



PRECISE POSITIONING

The mechanical handwheels with scale ring ensure exact feed.

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



MACHINE DRAWER

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

EMCOMAT 17D UND 20D WITH POSITION DISPLAY

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 cont-our points, constant cutting speed, and infinitely variable control.



Flange
(Steel)

1 SINGLE LEVER OPERATION

/ Single lever operation for axial feed and longitudinal feed

2 CHUCK PROTECTION

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

3 DRIVE

/ Powerful drive with infinitely variable speed control

4 COVER

/ Covered lead screw and feed shaft



Machine with optional equipment

5 DIGITAL DISPLAY

/ 3-axis digital display with color screen

6 MACHINE BED

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

7 MACHINE STAND

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

TECHNICAL HIGHLIGHTS



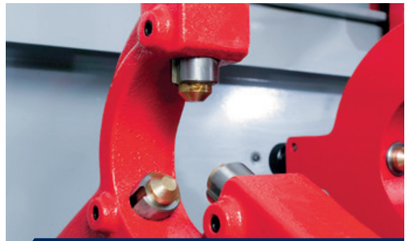
MACHINE DESIGN

The bed and cross slide are manually lubricated at a central point. The X and Y axes are equipped with safety handwheels.



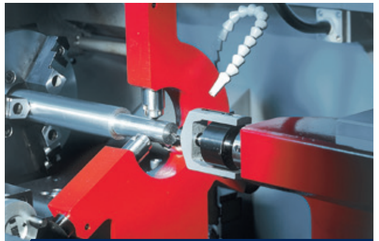
SAFETY

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



STEADY REST

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



MACHINING WITH STEADY REST

The fixed steady rest offers optimum machining of long workpieces.



CENTER DRILL ATTACHMENT FOR LIVE CENTERS

The center drill attachment enables a quick change between center and support.



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.

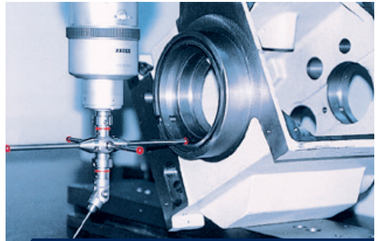


MACHINE STAND

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

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
- / Long cross slide travel
- / Infinitely variable speed control/constant cutting speed
- / Electromechanical spindle brake
- / Removable chip tray
- / 2-year EMCO quality guarantee



HEADSTOCK

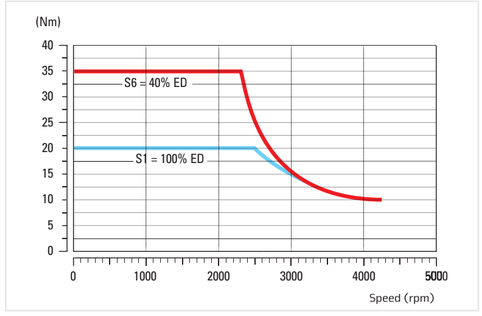
Headstock quality is checked using a 3D Zeiss gauge. The main spindle's precision bearings can be adjusted. The diameter of the front bearing is 70 mm.

DIGITAL DISPLAY

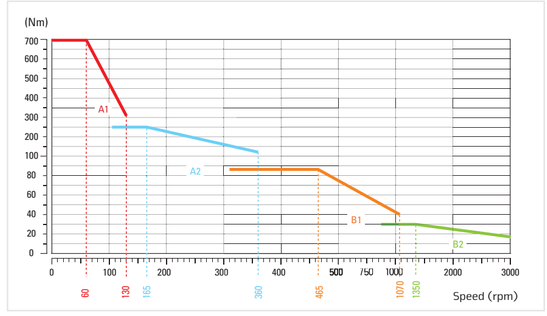


The TFT screen shows the permanent position for bed, cross slide and top slide. With an accuracy of 0.001mm, a glass scale records the position of the cross slide. The position of the bed slide is detected by a precision rack on the position encoder. This enables the diameter to be set with extremely high accuracy.
In addition, the position detection of the top slide is ensured by the direct drive of the rotary encoder via the adjustment spindle. The following functions are displayed on the 6.5'' TFT colour screen: constant cutting speed, 999 tools 999 reference points, reference point, distance-to-go, inch/metric, radius/diameter display, individual or sum display for Z and Z0.

POWER AND TORQUE



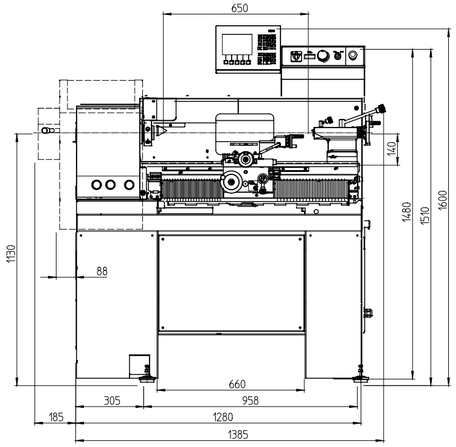
EMCOMAT 14D

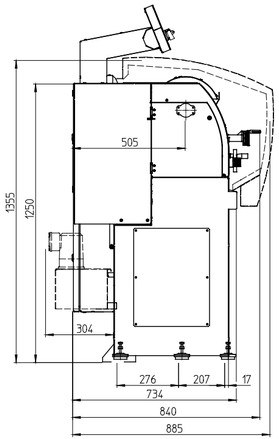


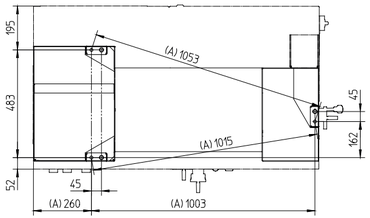
EMCOMAT 17D / 20D

MACHINE LAYOUT

EMCOMAT 14D



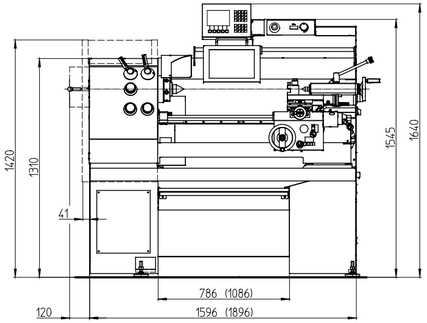


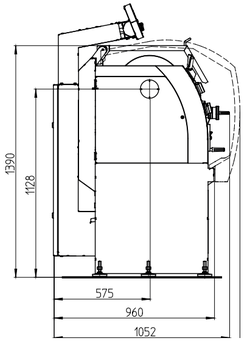


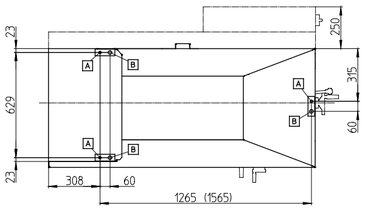
Indications in millimetres

MACHINE LAYOUT

EMCOMAT 17D / 20D







Indications in millimetres

TECHNICAL DATA

Working area	EMCOMAT 14D	EMCOMAT 17D	EMCOMAT 20D
Distance between centers	650 mm	700 mm	1000 mm
Height of centers	140 mm	170 mm	200 mm
Swing over bed	280 mm	340 mm	400 mm
Swing over cross slide	170 mm	190 mm	250 mm
Longitudinal slide	550 mm	600 mm	900 mm
Longitudinal slide over cross slide	135 mm	220 mm	220 mm
Longitudinal slide of upper slide	100 mm	110 mm	110 mm
Cross section of cutting tool	12 x 12 mm	20 x 20 mm	20 x 20 mm

Main spindle			
Spindle nose	CAMLOCK DIN 55029 S4	CAMLOCK DIN 55029 S5	CAMLOCK DIN 55029 S5
Spindle bore	Ø 40 mm	Ø 50 mm	Ø 50 mm
Face plates diameter max.	152 mm	200 mm	260 mm
Chuck diameter max.	140 mm	200 mm	200 mm
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	40 – 130, 110 – 360	40 – 130, 110 – 360
	2000 – 4000 rpm	310 – 1070, 870 – 3000 rpm	310 – 1070, 870 – 3000 rpm

Drive motor			
Power	7,5 kW	5,3 kW	5,3 kW

Feed range			
Longitudinal feed*	0,03 – 0,3 mm/r	0,045 – 0,787 mm/r	0,045 – 0,787 mm/r
Cross feed*	0,015 – 0,15 mm/r	0,023 – 0,406 mm/r	0,023 – 0,406 mm/r

Cutting speeds	EMCOMAT 14D	EMCOMAT 17D	EMCOMAT 20D
Metric threads (basic elements)	14 (0,25 – 2,5 mm)	20 (0,4 – 7,0 mm)	20 (0,4 – 7,0 mm)
Metric threads*	13 (0,125 – 5 mm)	28 (0,4 – 7 mm)	28 (0,4 – 7 mm)
Imperial threads*	38 (96 – 4 Gg/inch)	32 (4 – 56 Gg/inch)	32 (4 – 56 Gg/inch)
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 (112 – 8)	32 (112 – 8)

Tailstock			
Quill diameter	30 mm	50 mm	50 mm
Inner quill taper	MK 2	MK 3	MK 3
Quill stroke	80 mm	120 mm	120 mm
Lateral displacement	+10 / –8 mm	+ / –13 mm	+ / –13 mm

Noise levels			
Max. noise level DIN 45635	77 dB(A)	79 dB(A)	79 dB(A)

Tool weight permitted			
Floating	45 kg	50 kg	50 kg
With tailstock	80 kg	150 kg	150 kg

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	1280 x 730 x 1480 mm	1650 x 1060 x 1635 mm	1950 x 1060 x 1635 mm
Moving spindle above ground	1100 mm	1103 mm	1103 mm
Total weight	420 kg	755 kg	865 kg

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

EMCO

beyond standard

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

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