

EMCO



Universal lathe with toolmaker
precision for industrial use

EMCOMAT 17D



EMCOMAT 14D / 17D / 20D

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

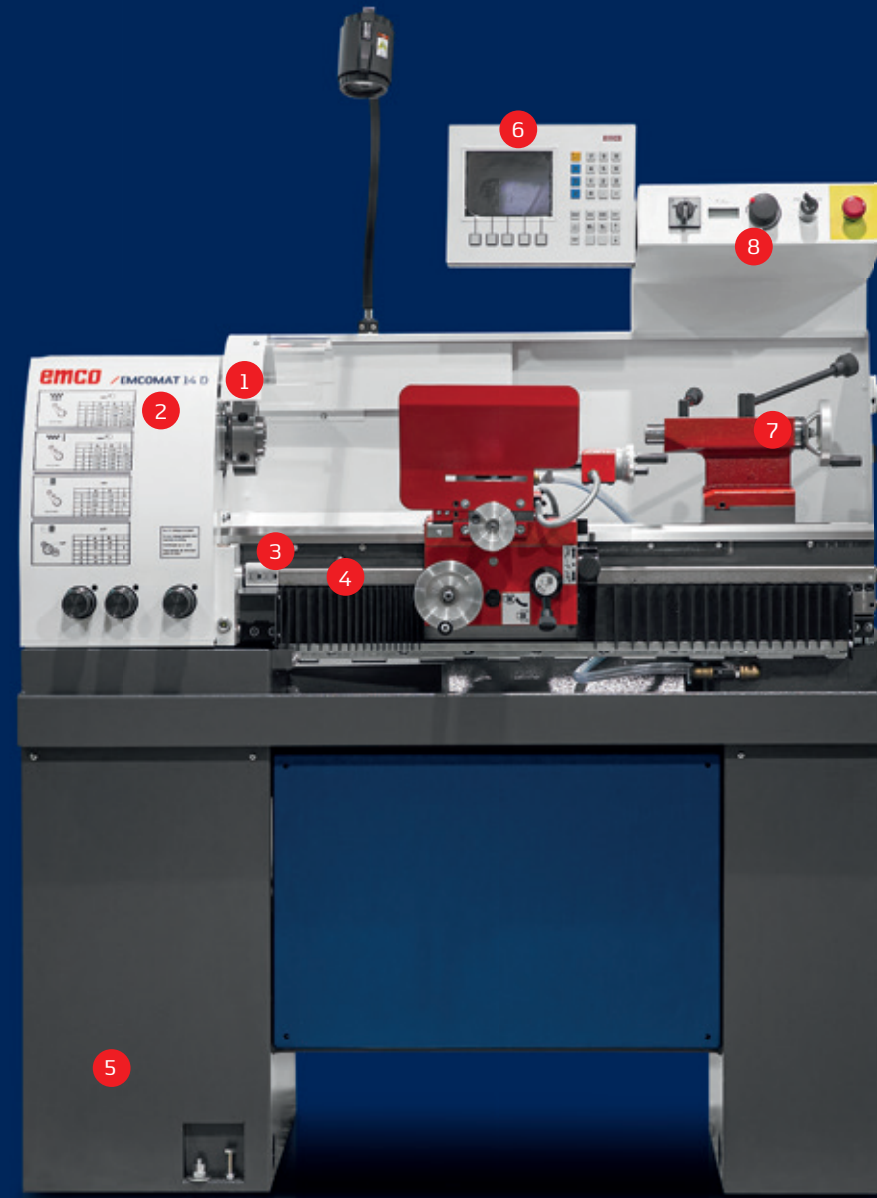
- / Electronic speed control
- / Constant cutting speed
- / 7.5 kW drive power

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.



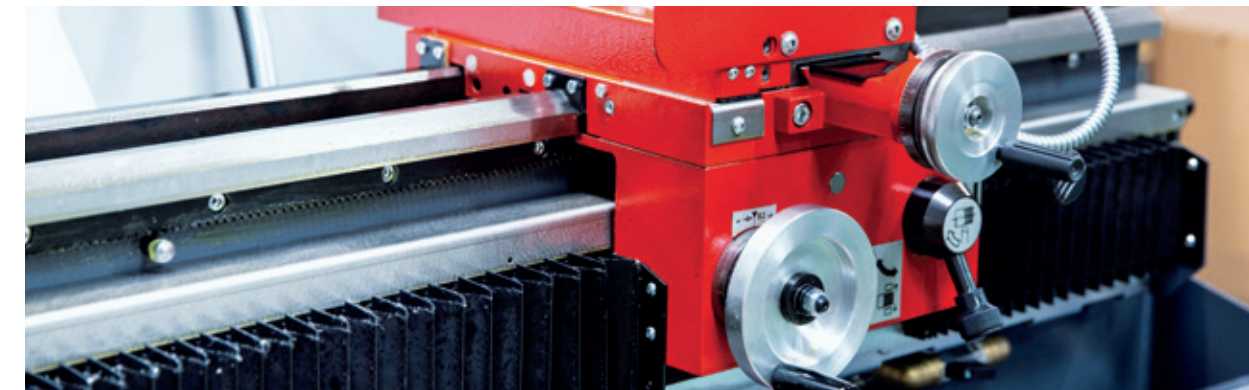
STEADY RESTS

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 contour 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



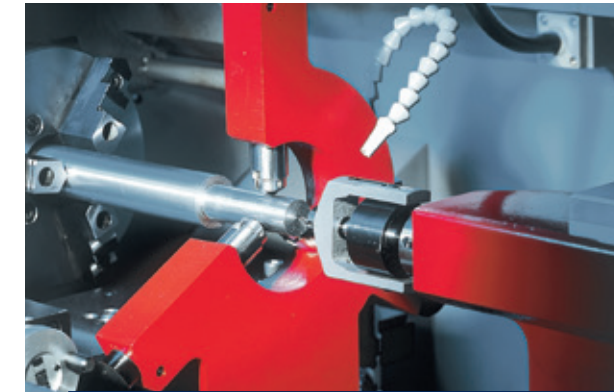
MACHINE DESIGN

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.



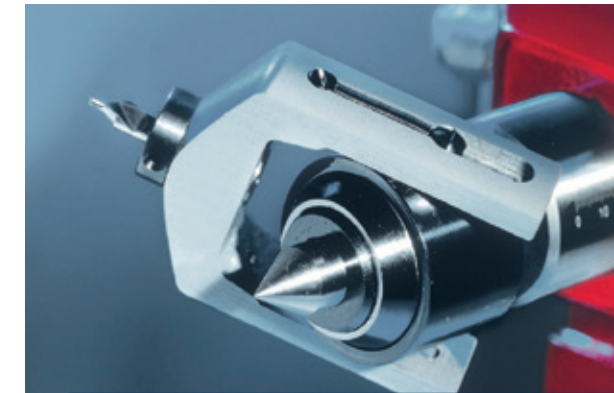
MACHINING WITH STEADY REST

The fixed steady rest offers optimum machining of long workpieces.



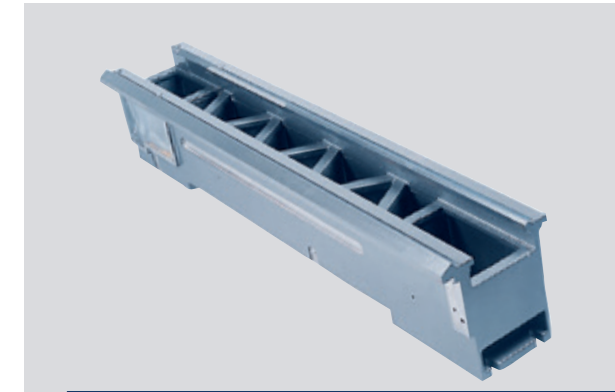
STEADY REST

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



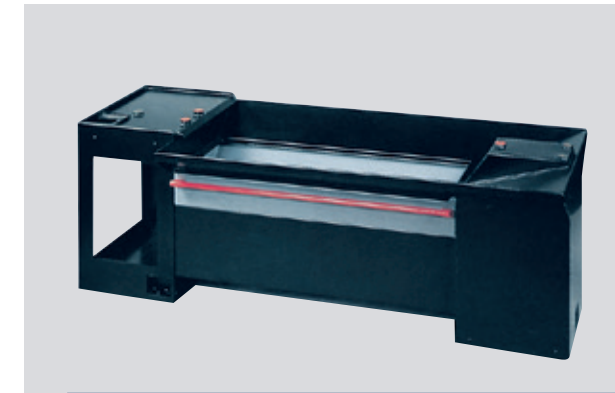
CENTER DRILL ATTACHMENT FOR LIVE CENTERS

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.

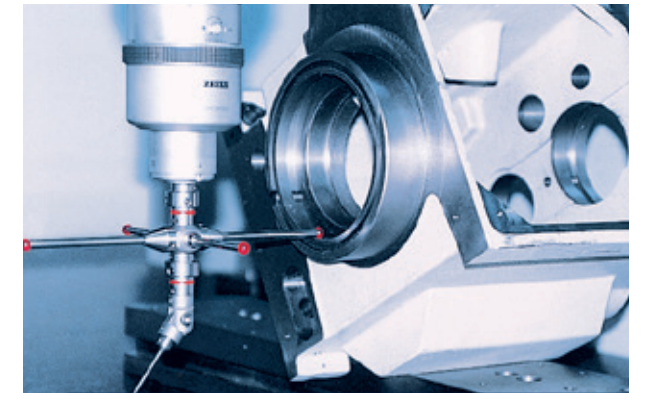


MACHINE STAND

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

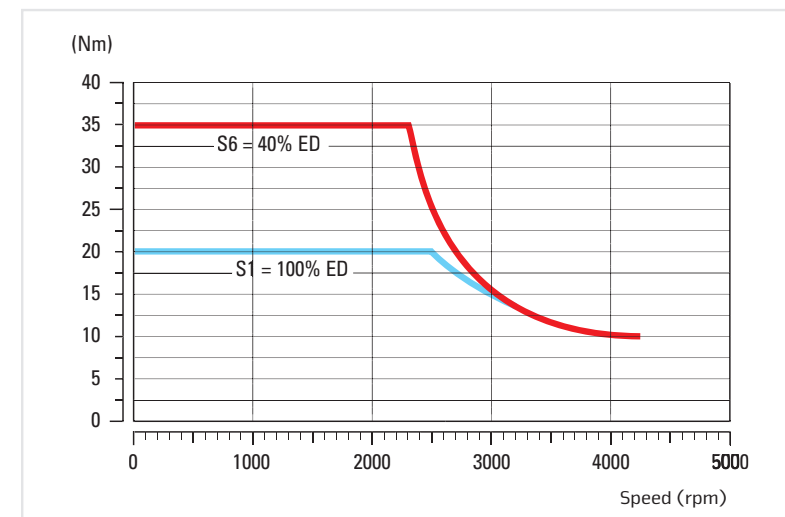
Headstock quality is checked using a 3D Zeiss gauge. The main spindle's precision bearings can be adjusted. The diameter of the front bearing is 70 mm.

/ DIGITAL DISPLAY

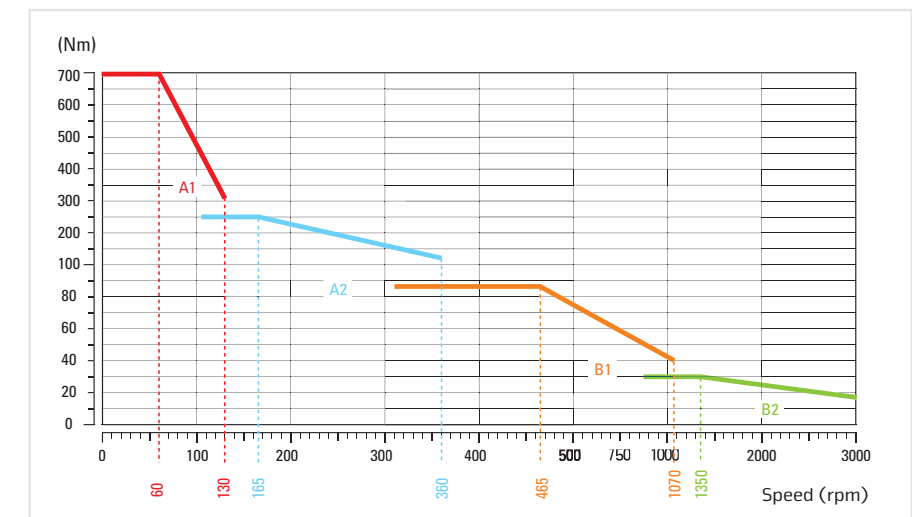


The TFT screen shows the permanent position for bed, cross slide and top slide. With an accuracy of 0.001mm, a glass scale records the position of the cross slide. The position of the bed slide is detected by a precision rack on the position encoder. This enables the diameter to be set with extremely 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



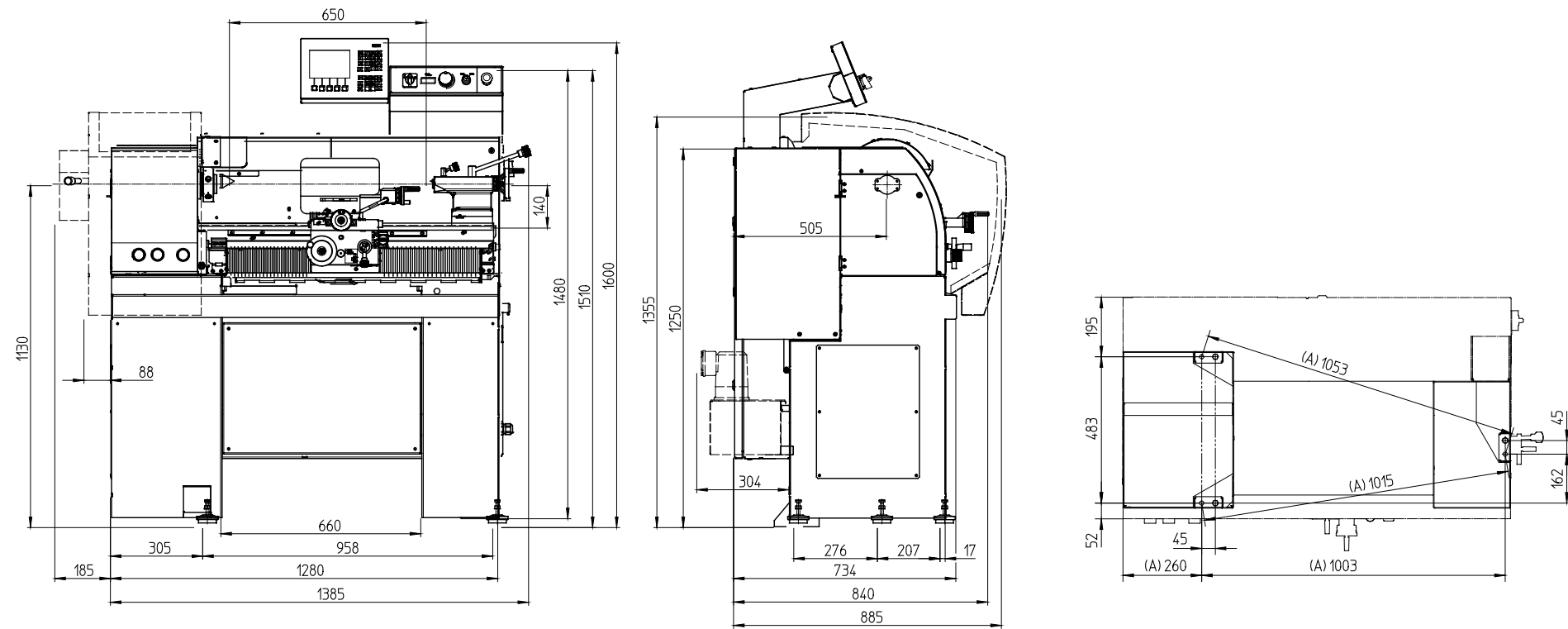
EMCOMAT 14D



EMCOMAT 17D / 20D

MACHINE LAYOUT

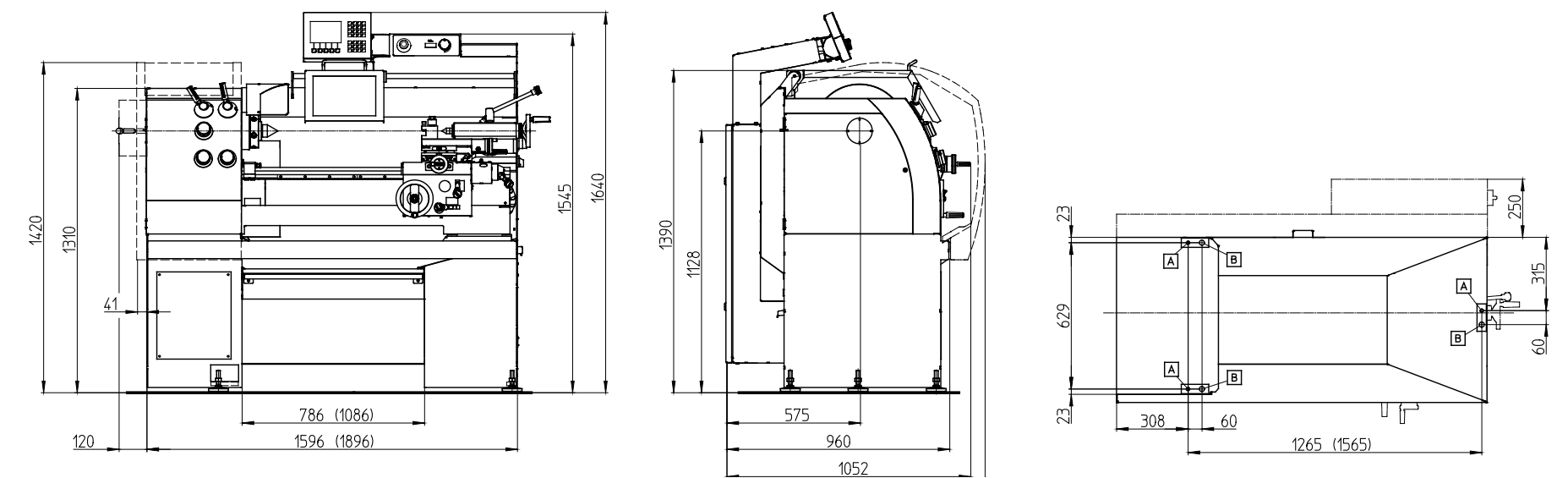
EMCOMAT 14D



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 – 4 000 rpm | 40 – 3 000 rpm | 40 – 3 000 rpm |
| Rotational speeds | stepless | stepless | stepless |
| Speed ranges | 2 | 4 | 4 |
| Speed ranges | 60 – 2 000 2 000 – 4 000 rpm | 40 – 130, 110 – 360 310 – 1 070, 870 – 3 000 rpm | 40 – 130, 110 – 360 310 – 1 070, 870 – 3 000 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).

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