

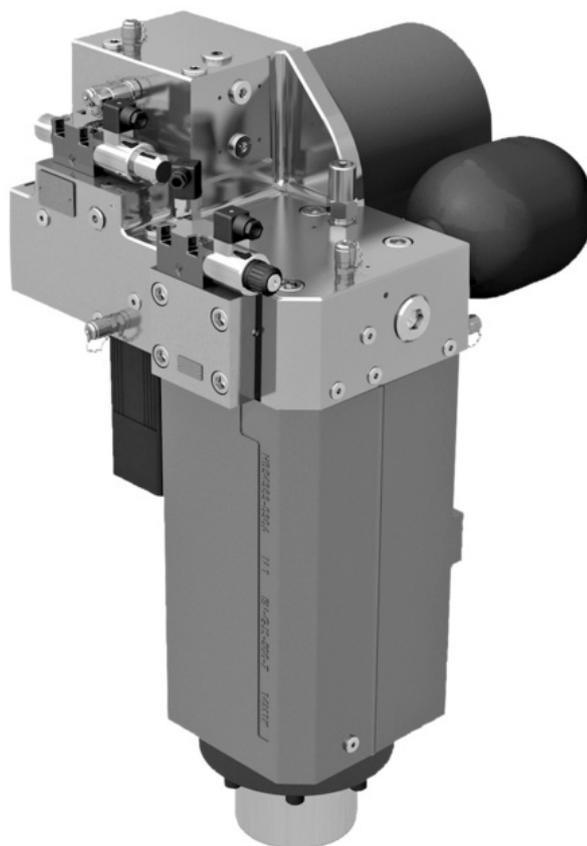
Control for CNC press brakes Type ePRAX[®] max

Product documentation



max. pressing force per actuator:
working stroke:

850 kN
280 mm



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Overview of control for CNC press brakes type ePRAX max

The patented, speed-controlled ePRAX® max is a complete electro-hydraulic drive (with cylinder) for press brakes. It is characterised by a simple mechanical and electrical connection.

Speed control takes place independently for each consumer via the ePRAX drive controller. This drive has been specially optimised for press brakes and, through the targeted use of stored drop energy for the return stroke, it provides an extremely high level of dynamics while also achieving significant energy savings. This principle enables efficient operation without additional cooling. The oil volume required here is only 10% compared to conventional drives.

Features and benefits

- nominal force per machine: 1,100 - 1,700 kN (with two ePrAX)
- rapid speed: up to 230 mm/s
- working speed: 10 mm/s
- positioning accuracy: 5 µm
- work stroke: 280 mm (standard)
- long service intervals of at least 15,000 hours
- certified for proper use in hydraulic press brakes according to DIN EN 12622
- each closed drive unit only has to be attached with 9 screws.
- high system rigidity of the closed hydraulic system ensures precise control accuracy
- complies with the applicable accident prevention regulations (UVV, Unfallverhütungsvorschriften)

Application areas

- press brakes

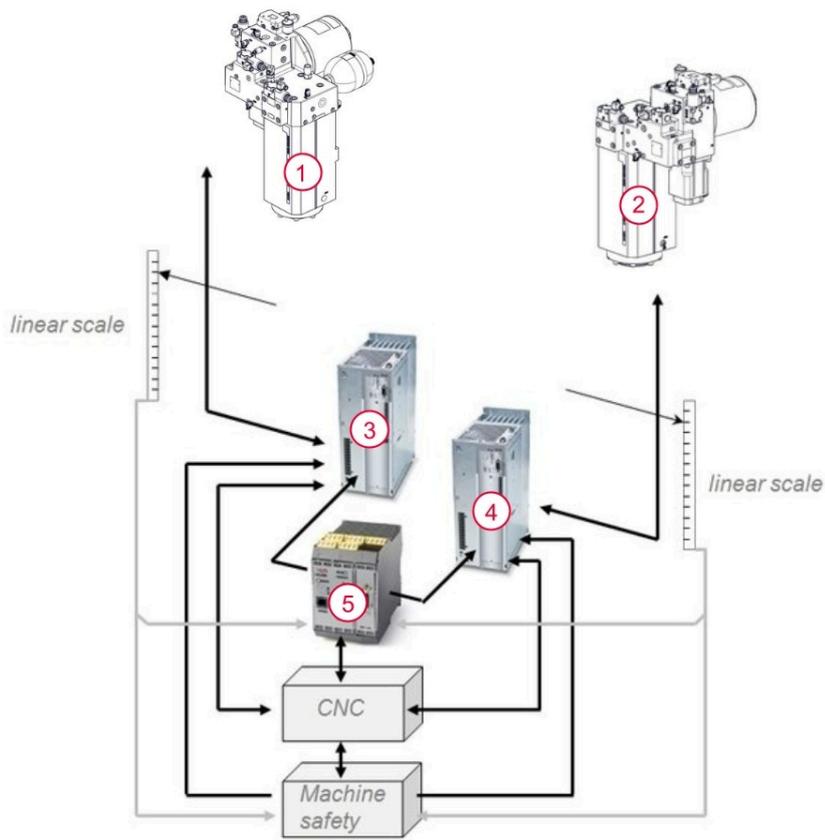
2 Available versions

Type code

ePRAX® max	15-055	-	28	-	1	-	W	S	145
									piston rod pressure e. g. 145 bar
									safety control 0: without safety control S: with safety control
									controller W wall mounting (standard)
									optional
									working speed 10 mm/s
									stroke 280 mm
									size 15-055: pressing force 550 kN per ePRAX® max 19-085: pressing force 850 kN per ePRAX® max

basic version

2.1 Structure



1	press drive, left	4	drive controller, right
2	press drive, right	5	safety control (optional)
3	drive controller, left		

3 Parameters

3.1 General data

weight per actuator	ePRAX max 15: 420 kg ePRAX max 19: 600 kg
ambient temperature	0 to +40 °C
mounting position	vertical
corrosion protection	surface protected by corrosion protection fluid
press force	ePRAX max 15: 550 kN ePrAX max 19: 850 kN
working stroke	280 mm
rapid traverse rate	max. 230 mm/s
working speed	max. 10 mm/s
permitted weight of pressing bar including tools per actuator	ePRAX max 15: 600-1100 kg ePRAX max 19: 900-1200 kg

 For two-cylinder CNC press brakes according EN 12622 the following is applicable: maximum tilting of the pressing bar must be limited mechanically through machine construction to 15 mm.

3.2 Electrical data

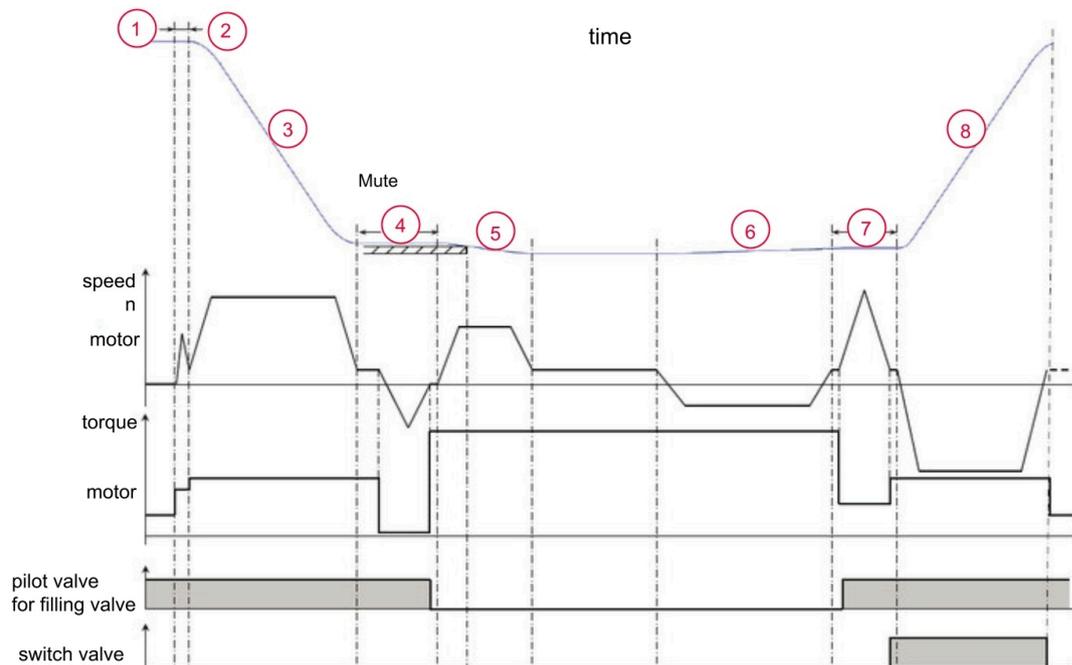
rated output	ePRAX max 15:	4.45 kW
	ePRAX max 19:	6.07 kW
voltage (controller)	ePRAX max 15:	3x400 V (-15 %)
	ePRAX max 19:	3x460 V (+10 %)
device connected load (controller)	ePRAX max 15:	9.4 kVA
	ePRAX max 19:	22.5 kVA
power loss (controller)	ePRAX max 15:	187 W
	ePRAX max 19:	330 W
interference immunity	EMV according DIN 55011 / 61000-6-2	
Protection class	IP52 (DIN 40050)	

The measurement* of energy consumption and the noise level of a press brake equipped with an ePRAX max 19, in comparison to a conventional press control system, provided the following values:

consumption	ePRAX max 19:	4.5 kWh
	conventional press control:	10.9 kWh
sound level	ePRAX max 19:	60.5 db(A)
	conventional press control:	72 db(A)

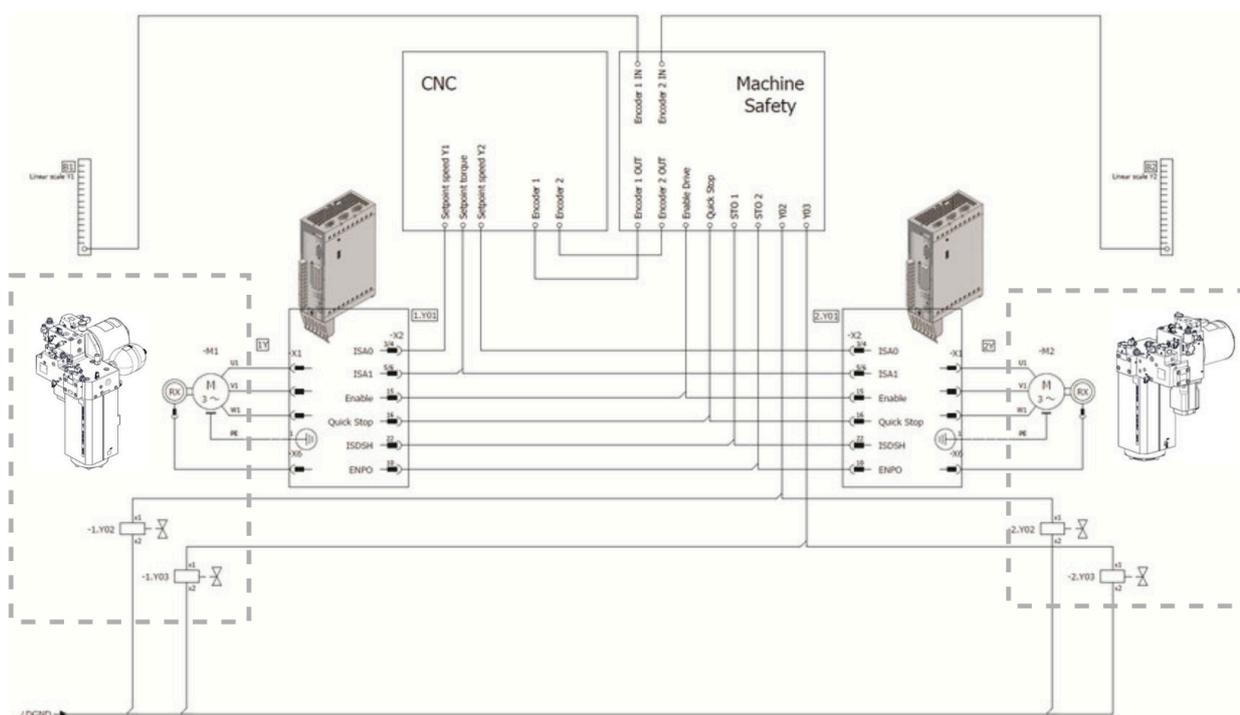
*For 500 strokes with a pressing force of 50 t and 0.5 seconds pressing time

4 Functional diagram



- | | | | |
|-------------------|---|----------------------|--------------------|
| ① top dead center | ③ approach speed | ⑤ slow closing speed | ⑦ pre-opening |
| ② pre-closing | ④ change point for slow speed (switchover point) / Mute | ⑥ decompression | ⑧ withdrawal speed |

Electrical functionality

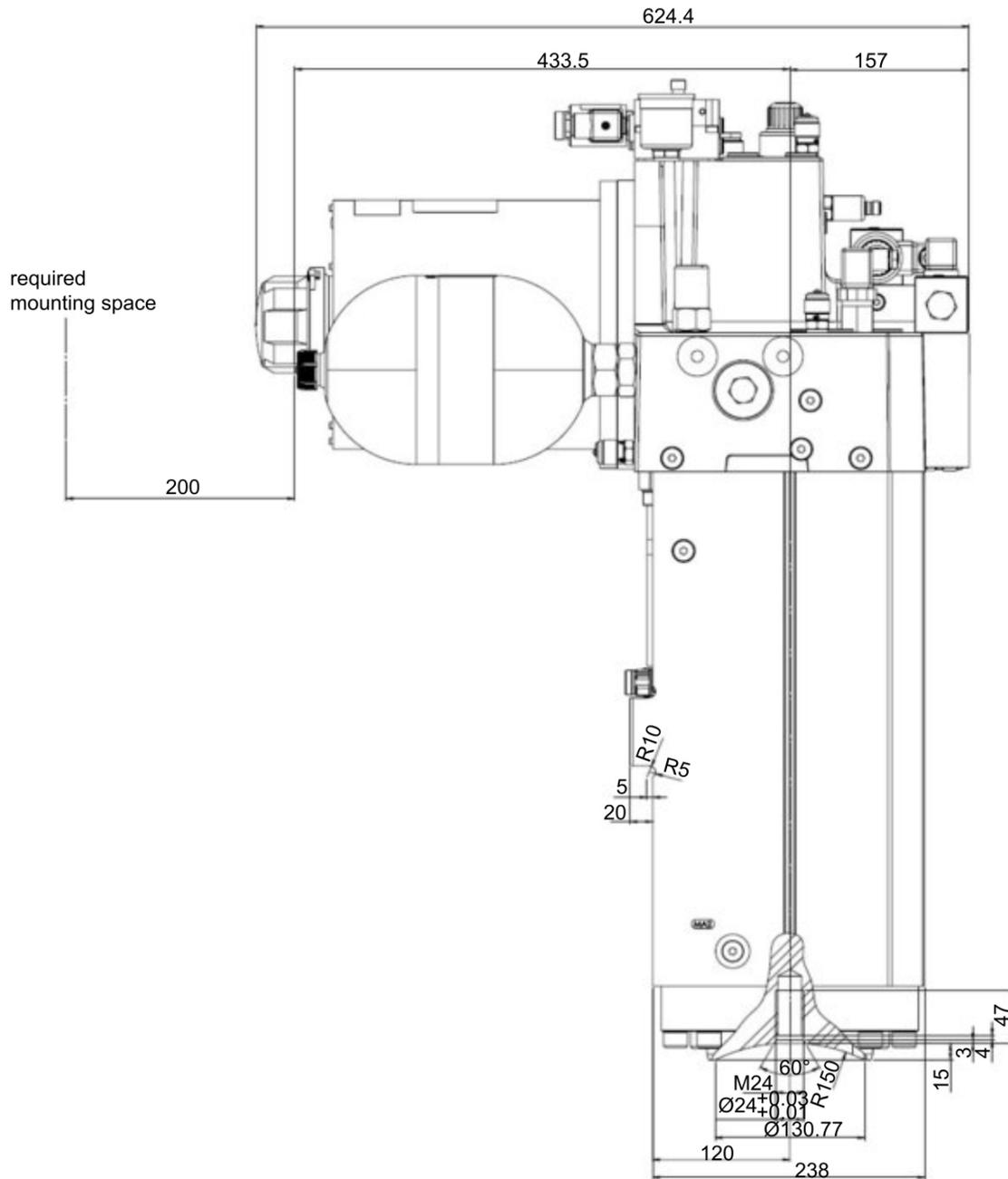


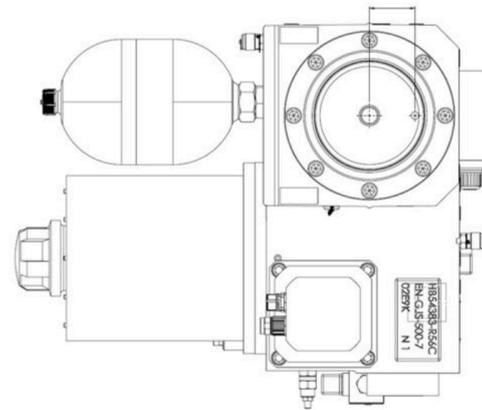
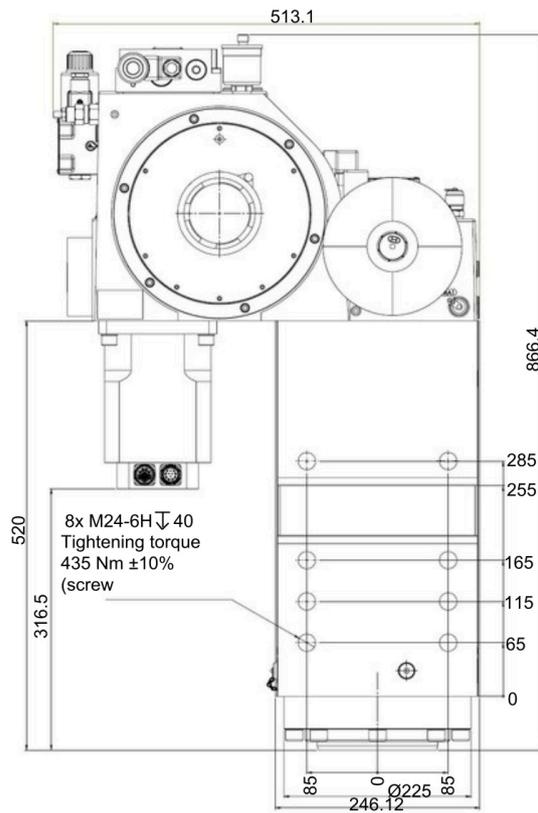
5 Dimensions

All dimensions in mm, subject to change.

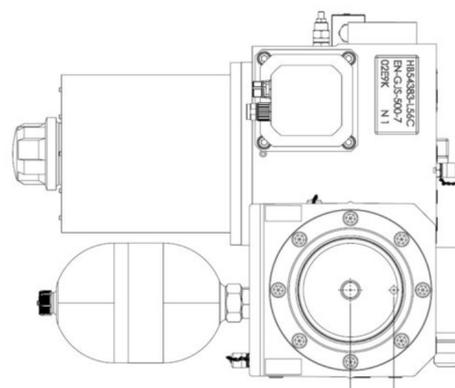
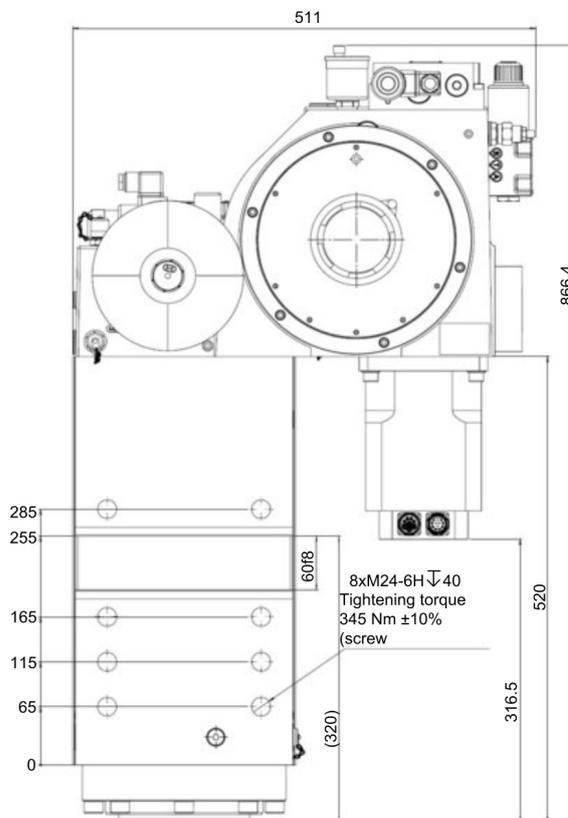
ePRAX max 15

Installation drawings show right actuator:



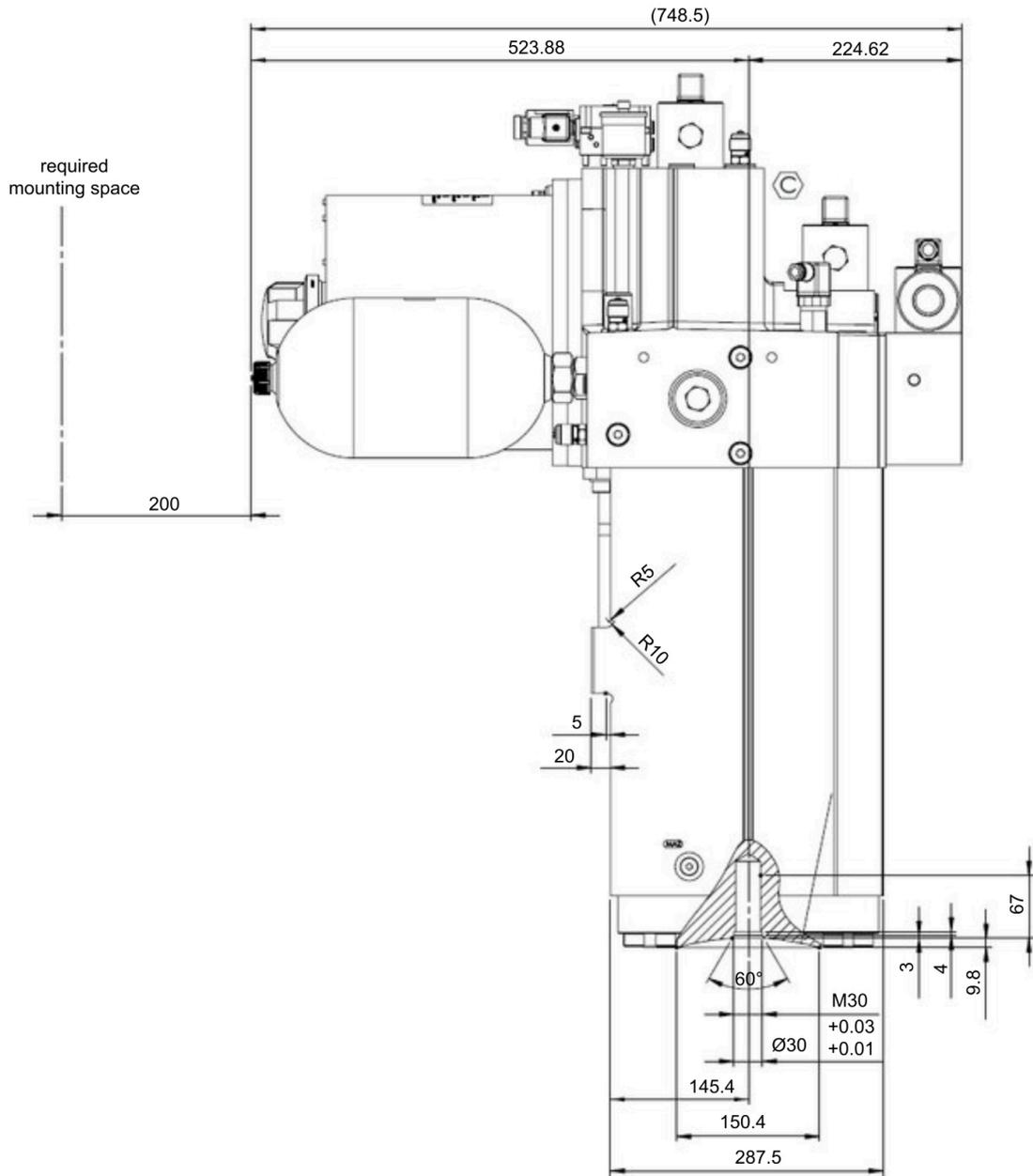


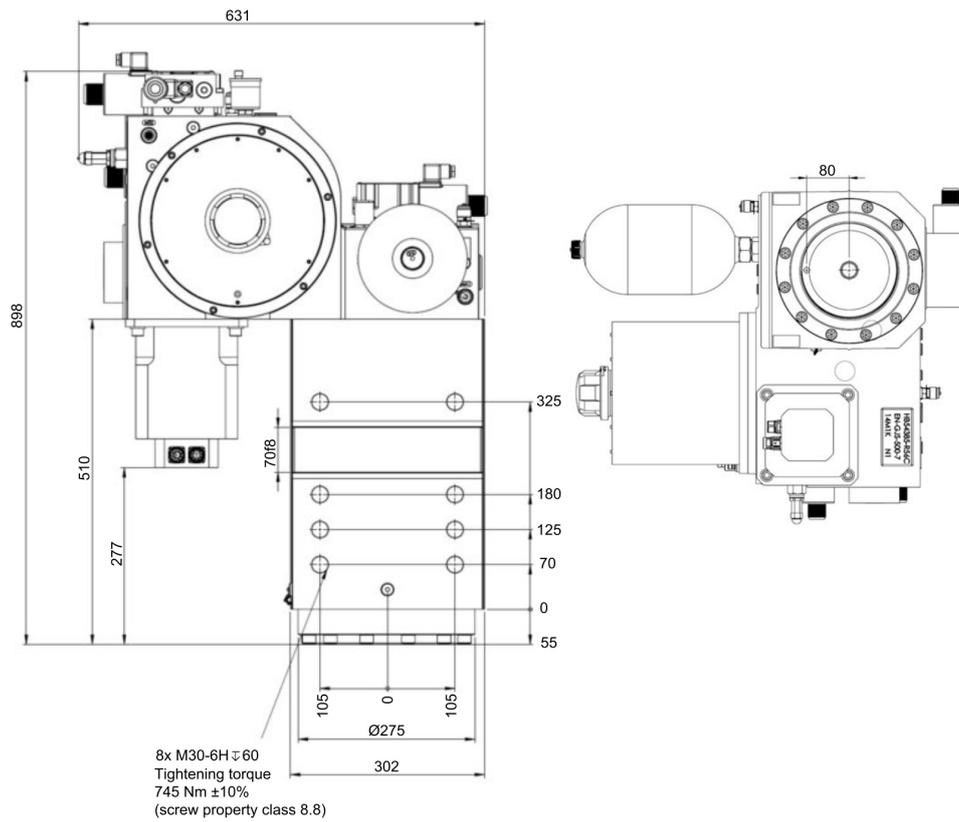
Installation drawings show left actuator:



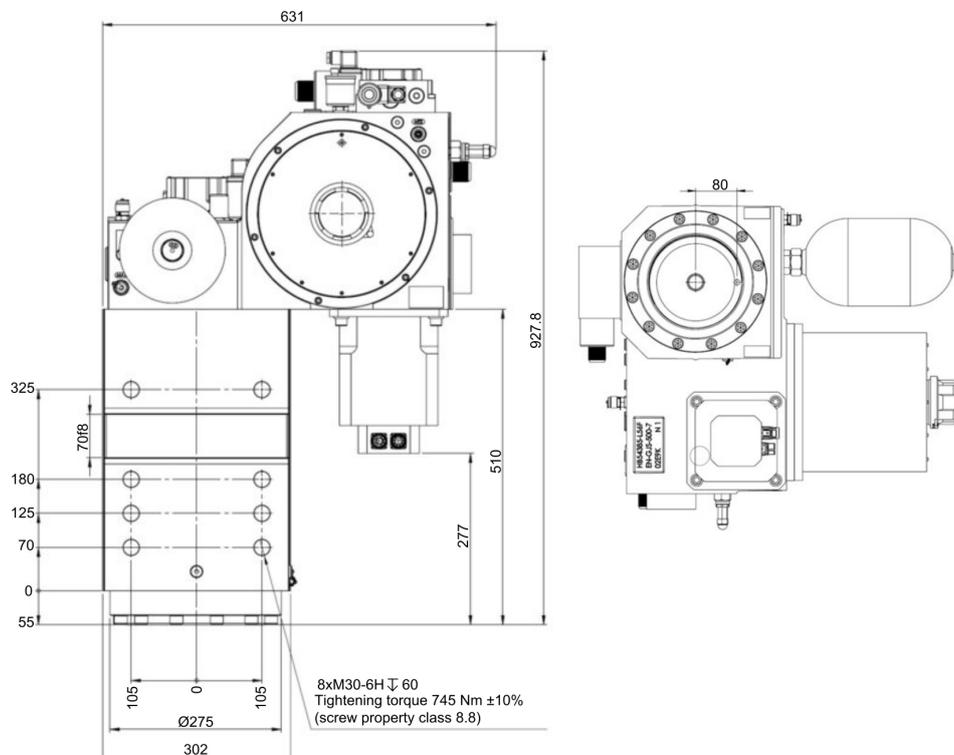
ePRAX max 19

Installation drawings show right actuator:





Installation drawings show left actuator:



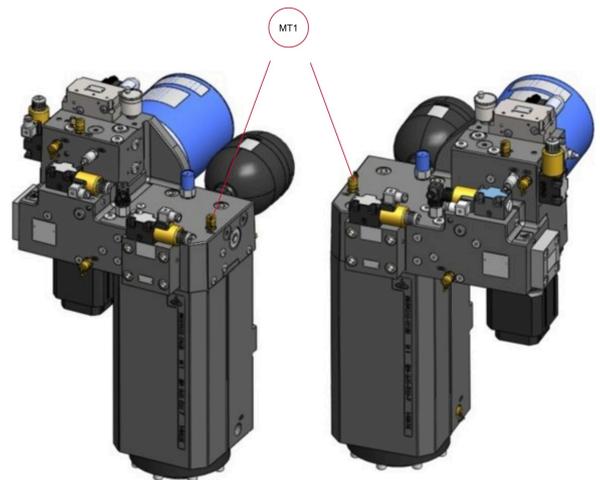
6.1 Taking a sample**Maintenance interval**

After 15000 operating hours.

i NOTE

- ☑ Perform three long travel strokes (> 200 mm) with the ram so that the hydraulic fluid is mixed through and free of bubbles at every point in the system.
- ☑ Cylinder piston has been retracted at the mechanical top end stop.
- ☑ Temperature of the hydraulic fluid is < 45 °C.
- ☑ System has been initialised.

1. Switch off the hydraulic system and secure it from being unintentionally switched on again.
2. Measure the pressure reducer dimensions of the right and left press drive.
3. Attach a short hose with a closable throttle to measurement fitting MT1.



4. Open the throttle at the applicable press drive:
 - Allow 10 – 20 ml of hydraulic fluid to run to flush the hose/throttle valve.
 - Fill 100 ml of hydraulic fluid into a clean and sealable container (e.g. wide-neck bottle).
5. Repeat the process on the opposite press drive.

6. Seal the containers and label with the following:
 - Fill date
 - Number of operating hours
 - Date of delivery/initial commissioning of the press brake
 - Identification number and production date (from the type plate)
7. Fill the press drives using measurement fitting MT1 until the same pressure reducer dimension is reached again as before a sample was taken.

! DAMAGE

The measurement and filling process is described in the operating instructions for the ePRAXmax service case in Chapter 7 from page 40 (dimension of the pressure reducer depends on the ambient temperature, see p. 47). If the pressure reducer dimension deviates greatly from this, add or remove hydraulic fluid until the table values are approximately reached.

8. Send the samples to:
HAWE Hydraulik SE
Andreas Socher
Karl-Heilmeier-Straße 1
87600 Kaufbeuren
Germany

HAWE Hydraulik SE

Einsteinring 17 | 85609 Aschheim/Munich | P.O. Box 11 55 | 85605 Aschheim | Germany
Phone +49 89 379100-1000 | info@hawe.de | www.hawe.com

