

Hydraulic test pumps

- Model CPP1000-M and CPP1000-L
- Model CPP1000-X and CPP1600-X

- Model CPP3000-X, CPP5000-X and CPP7000-X

WIKA Data Sheet CT 91.05

Applications

- Simple pressure generation for laboratories, workshops or on site
- For testing, adjusting and calibrating all types of pressure measuring instruments
- Hydraulic pressure generation up to 7,000 bar

Special Features

- Ergonomic handling via a smooth-running precision spindle within the pump body
- Integrated oil reservoir
- Removable star handle
- Freely rotating test connections (meaning the instruments can be orientated as required)
- Proven technology from the CPB5000 pressure balance

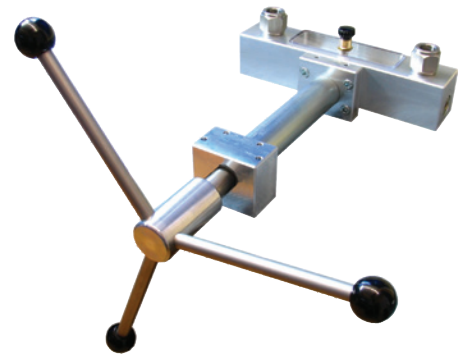
Description

Areas of application

Test pumps are used to generate pressure for testing, adjusting and calibrating mechanical and electronic pressure measuring instruments by means of comparison measurements. These pressure tests can be carried out in laboratories, workshops or on site at the measuring point.

Ease of use

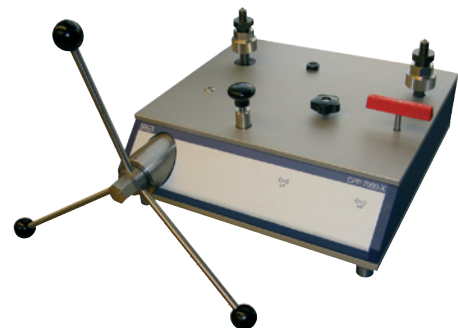
If the device under test and a sufficiently-accurate reference measuring instrument are connected to the test pump, when it is actuated, the same pressure will act on both measuring instruments. The device under test can then be calibrated or adjusted by comparing the two measured values at any pressure value.



Hand Spindle Pump CPP1000-M



Comparison Test Pump CPP1000-X



Comparison Test Pump CPP7000-X

CPP-X series offers excellent ease-of-use

The test pumps are equipped with a precision spindle, making it possible to approach measuring points precisely. In particular, the smooth-running hand spindle enables this even at very high pressures. In addition, the CPP series pumps feature a threaded spindle which only runs within the pump body. Thus there is no adverse bending moment acting on the spindle when it is fully open, and, particularly for field use, this also has the advantage that the dimen-

sions of these pumps will not change as the spindle is turned during operation.

With the CPP-X models large test volumes can be easily filled and pre-compressed using the integrated initial pressure pump.

The CPP-X models are extremely robust due to their rugged design and, with the proven technology from the CPB5000 pressure balance, they offer exceptional ease-of-use.

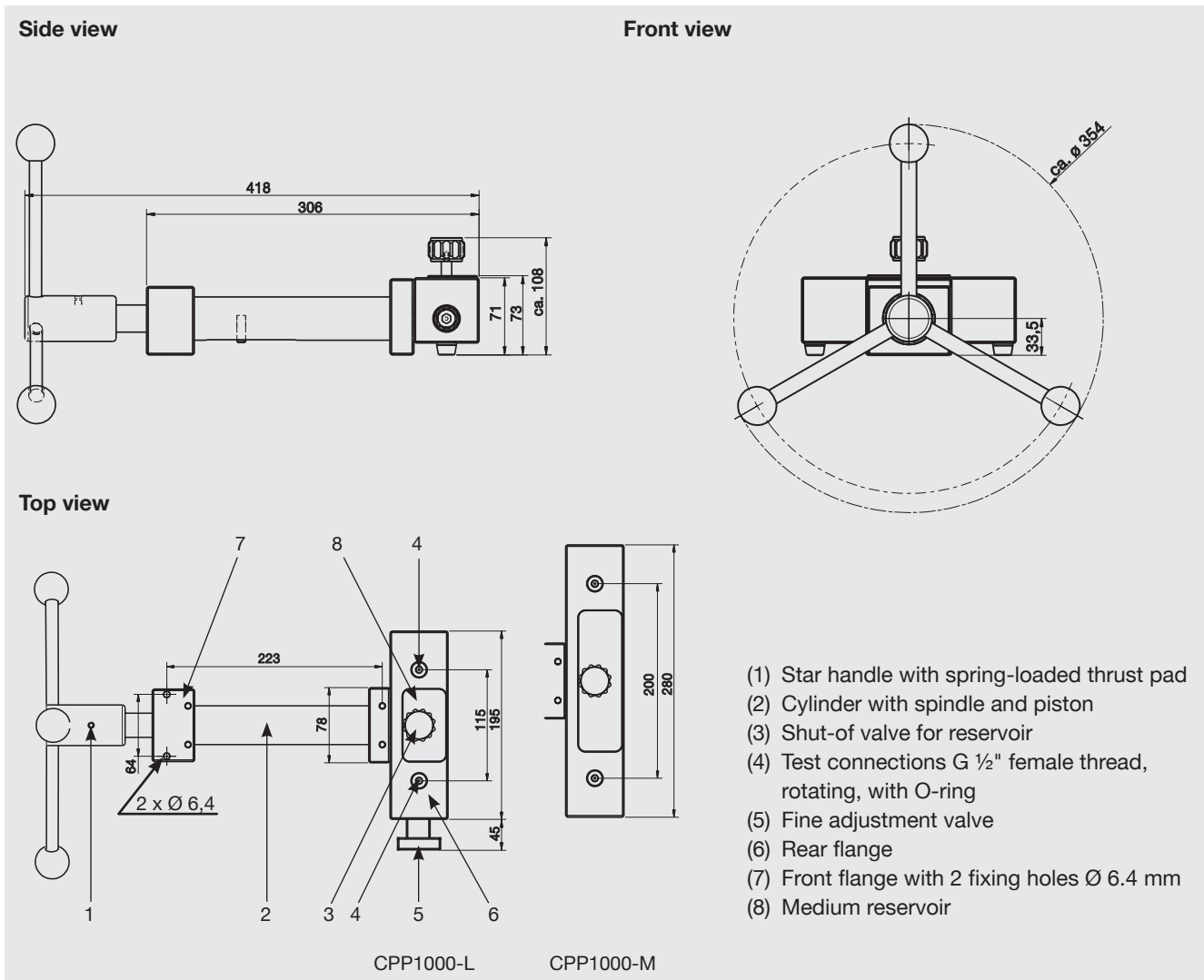
Model CPP1000-M and CPP1000-L hydraulic hand spindle pumps, up to 1,000 bar

With their compact dimensions and low weight, the CPP1000-M and CPP1000-L hand spindle pumps are the most basic models in the CPP hydraulic test pump range. They have been designed primarily for examining and calibrating gauges with small volumes. Test specimens and reference equipment with larger volumes should be pre-filled either off-line from the test pump or simply and directly from the hand spindle pump, with the help of the test connection shut-off valves (available as accessories).

The CPP1000-L is the portable version with narrow back flange, sealed reservoir and integrated fine adjustment valve as standard. For the CPP1000-M, the fine adjustment valve, available as an option, can be integrated. When the fine adjustment valve is used, only one shut-off valve can be fitted for a test connection.

The test connections have a G 1/2" female thread. To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm

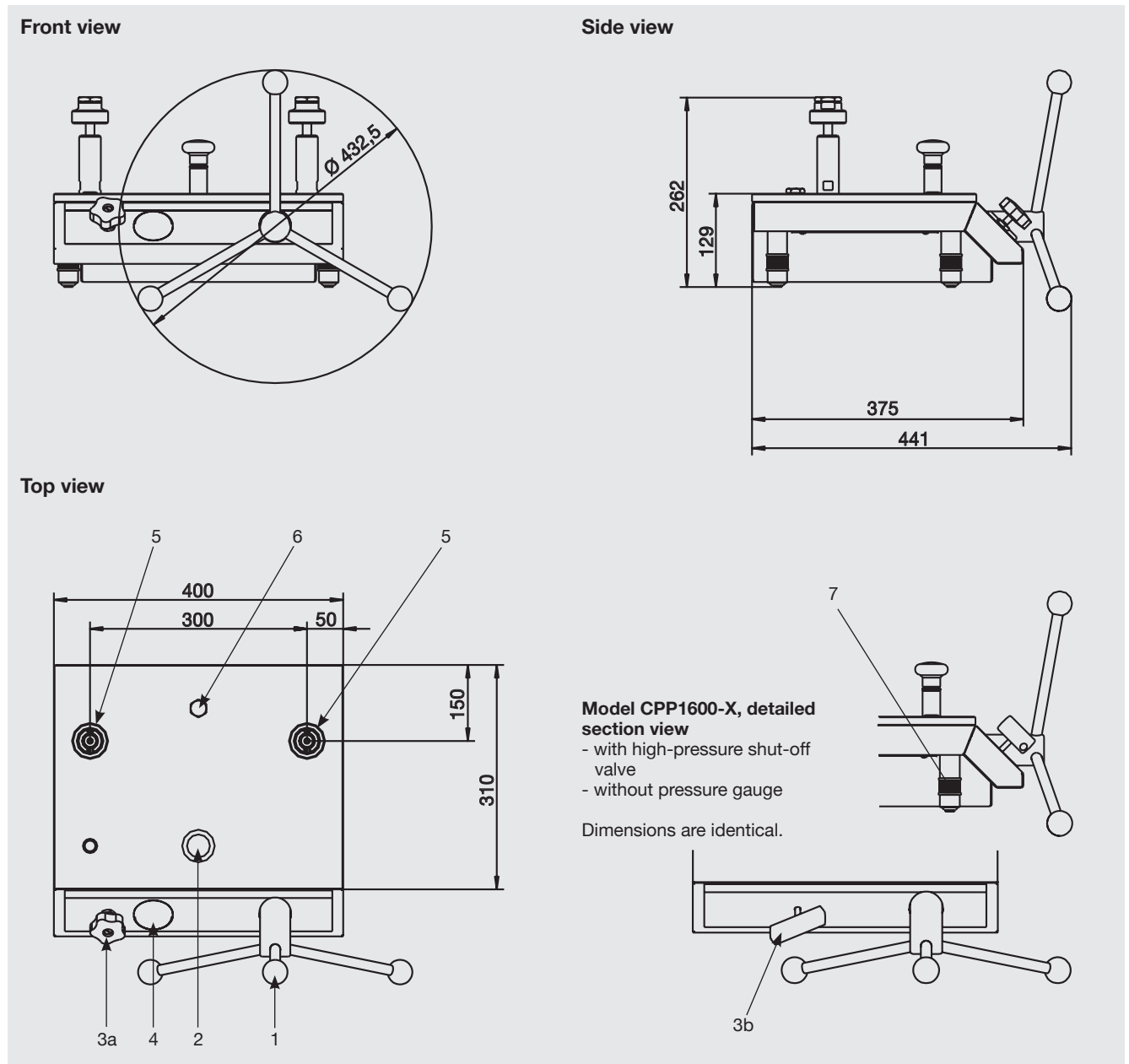


Model CPP1000-X and CPP1600-X hydraulic comparison test pumps, up to 1,000 bar and 1,600 bar respectively

The CPP1000-X and CPP1600-X comparison test pumps have been designed around a solid platform and, with the proven technology from the CPB5000 pressure balance, offer exceptional ease-of-use. With the integrated initial pressure pump and the 250 ml tank, large test volumes can also be easily filled and pre-compressed.

The two test connections on both pump models are equipped with quick-connectors with a knurled nut and interchangeable threaded adapters (G 1/2" female threads are standard). To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm



- (1) Spindle pump with star handle
- (2) Initial pressure pump
- (3a) Shut-off valve 1,000 bar
- (3b) High-pressure shut-off valve 1,600 bar
- (4) Pressure gauge for test pressure

- (5) Test connections (quick-connector with G 1/2" female thread, changeable, rotating, with O-ring)
- (6) Screwed drain plug for reservoir
- (7) Rotating base

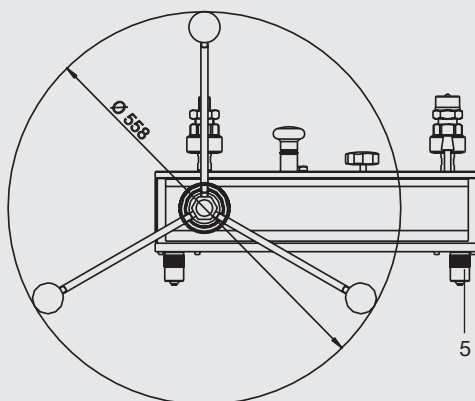
Model CPP3000-X, CPP5000-X and CPP7000-X hydraulic comparison test pumps, up to 3,000 bar, 5,000 bar and 7,000 bar respectively

The CPP3000-X, CPP5000-X and CPP7000-X comparison test pumps have been designed around a solid platform and, with the proven technology from the CPB5000-HP high-pressure balance, offer exceptional ease-of-use. With the integrated initial pressure pump and the 250 ml tank, large test volumes can also be easily filled and pre-compressed.

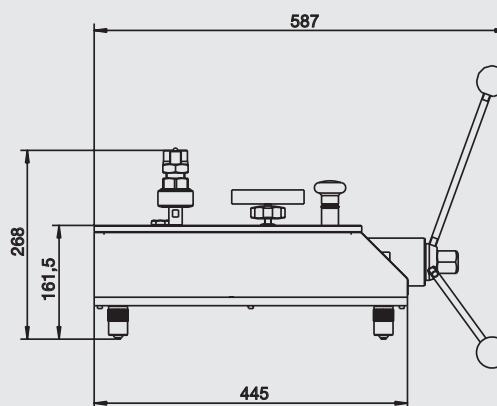
The two test connections on all 3 pump models are equipped with a knurled nut and interchangeable threaded adapters with sealing cones (M16 x 1.5 male threads are standard). To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm

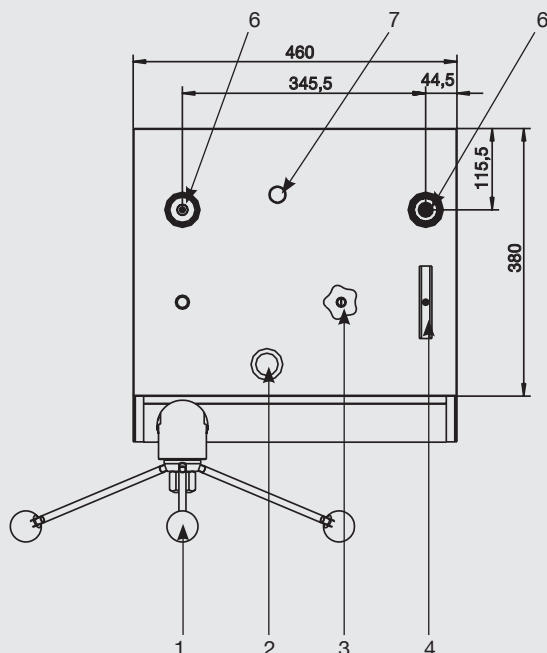
Front view



Side view



Top view



The dimensions of all 3 pump models are identical.

- | | |
|--|--|
| <ul style="list-style-type: none"> (1) Spindle pump with star handle (2) Initial pressure pump (3) Low-pressure shut-off valve (LP) (4) High-pressure shut-off valve (HP) (5) Rotating base | <ul style="list-style-type: none"> (6) Test connections (knurled nut with threaded adapters M16 x 1.5 male thread, changeable, rotating, with sealing cone) (7) Screwed drain plug for reservoir |
|--|--|

Specifications		CPP1000-M	CPP1000-L	CPP1000-X / CPP1600-X
Pressure range	bar	0 ... 1,000		0 ... 1,000 resp. 0 ... 1,600
Medium		Mineral oil based hydraulic fluid/clean water, free of calcium-carbonate/scale ¹⁾		
Pressure connections		2 x G 1/2" female thread, rotating, with O-ring		2 x quick connector G 1/2" female thread, rotating changeable, with O-ring
Test connections distance	mm	200	115	300
Liquid reservoir	cm ³	110	55	250
Piston diameter	mm	8		
Swept volume per revolution	cm ³	approx. 0.1		
Overall swept volume	cm ³	approx. 3.9		
Pressure fine adjustment		optional see accessories	fine adjustment valve on the side	-
Required moment at				
250 bar	Nm	2.0		
500 bar	Nm	4.0		
1000 bar	Nm	8.0		
Material				
■ Cylinder		brass		
■ Piston		stainless steel		
■ Tubing		-		stainless steel 1.4404, 6 x 2 mm
■ Rear flange		aluminium		
■ Seals		FKM, NBR (standard) optional EPDM		
Fixed mounting		two through holes Ø 6.4 mm in the front flange		stable base
Dimensions (L x W x H)	mm	420 x 280 x 103	420 x 240 x 103	400 x 375 x 265
Weight	kg	6.3	5.6	20
CE-conformity				
■ Pressure equipment directive		97/23/EG (Modul A) only for CPP1600-X		

1) Other pressure transmission media available on request.

Specifications		CPP3000-X	CPP5000-X	CPP7000-X
Pressure range	bar	0 ... 3,000	0 ... 5,000	0 ... 7,000
Medium		Mineral oil based hydraulic fluid	Sebacate-oil	
Pressure connections		2 x M16 x 1.5 male thread rotating, changeable with sealing cone		
Test connections distance	mm	346		
Liquid reservoir	cm ³	250		
Piston diameter	mm	8.0	7.5	
Swept volume per revolution	cm ³	approx. 0.15	approx. 0.08	
Overall swept volume	cm ³	approx. 3.0	approx. 2.5	
Required moment at				
250 bar	Nm	2.0	1.5	
500 bar	Nm	4.0	3.0	
1000 bar	Nm	8.0	6.0	
3000 bar	Nm	24	18	
5000 bar	Nm	-	30	
7000 bar	Nm	-	42	
Material				
■ Cylinder		stainless steel		
■ Piston		hardened steel		
■ Tubing		stainless steel 1.4404, 6 x 2 mm		
■ Seals		PTFE	NBR	
Fixed mounting		stable base		
Dimensions (L x W x H)	mm	460 x 445 x 265		
Weight	kg	33.5	32.5	
CE-conformity				
■ Pressure equipment directive		97/23/EG (Modul A)		

Recommended reference instruments:

■ Precision digital pressure gauge Model CPG1000

Measuring range: up to 700 bar

Accuracy: 0.05 % of span

Specifications see data sheet CT 10.01



■ Hand-held pressure indicator Model CPH6200

Measuring range: up to 1,000 bar

Accuracy: 0.2 % of span

Specifications see data sheet CT 11.01



■ ProcessCalibrator Model CPH6000

Measuring range: up to 8,000 bar

Accuracy: 0.025 % of span (<1,000 bar)

0.1 % of span (>1,000 bar)

Specifications see data sheet CT 15.01



■ Hand-held pressure indicator Model CPH6400

Measuring range: up to 8,000 bar

Accuracy: 0.025 % of span (<1,000 bar)

0.1 % of span (>1,000 bar)

Specifications see data sheet CT 14.01



Calibration software

■ Calibration software EasyCal

for inspection equipment monitoring incl. generation of calibration reports and archiving of calibration data

Specifications see data sheet CT 95.01



Complete test and service cases with pressure generation



Fig. left: Calibration case, hydraulic
Fig. right: Example calibration assembly with CPP1000-M

Calibration case with Model CPH6200, CPH6000 or CPH6400 hand-held pressure indicator and Model CPP1000-L hand spindle pump consisting of:

- Transport case with digital instrument
- Hydraulic hand spindle pump Model CPP1000-L, up to 1,000 bar,
- Various seals
- Sensor cable
- Rechargeable battery and charger
- Space for different CPT reference pressure sensors

Further specifications see data sheet CT 11.01, CT 14.01 or CT 15.01.



Calibration case, hydraulic

Calibration case with Model CPG1000 precision digital pressure gauge and Model CPP700-H hydraulic hand test pump for pressures from 0 up to 700 bar consisting of:

- Plastic service case with foamed insert
- Precision digital pressure gauge Model CPG1000
- Hydraulic hand test Pump Model CPP700-H, 0 ... 700 bar

Further specifications see data sheet CT 91.07 or CT 10.01.



Calibration case, pneumatic; example with CPH6400

Calibration case with Model CPH6200, CPH6000 or CPH6400 hand-held pressure indicator and Model CPP30 hand test pump for pressures from -0.95 up to +35 bar consisting of:

- Transport case with foamed insert
- Hand-held pressure indicator
- Pneumatic hand test pump Model CPP30, -0.95 ... +35 bar
- Various seals
- Sensor cable
- Rechargeable battery and charger
- Space for different CPT reference pressure sensors

Further specifications see data sheet CT 91.06, CT 11.01, CT 14.01 or CT 15.01.

Accessories for CPP1000-M and CPP1000-L

Ordering data; accessories for CPP1000-M and CPP1000-L	Order No.
Operating fluid for CPP1000, CPP1600 and CPP3000 test pump series in plastic bottle, contents 1 litre	2099882
Shut-off valve for test connection, enabling instruments with a large volume to be easily filled with pressure transmitting medium directly at the hand spindle pump. Max. permissible pressure: 1,000 bar For devices under test and reference instruments with a large volume we recommend 2 shut-off valves.	11208384
Optional fine adjustment valve for fitting to CPP-1000-M; enables a precise approach to the measuring point	11248351
Blind plug G ½ male thread, mat.: brass	11155230
Set of O-rings consisting of 10 spare sealings for pressure ports, mat.: FKM	12422487
Threaded adapter G ½" male thread on G ⅝" female thread, mat.: brass	9090207
Threaded adapter G ½" male thread on G ¼" female thread, mat.: brass	9090231
Threaded adapter G ½" male thread on G ⅜" female thread, mat.: brass	9090266
Threaded adapter G ½" male thread on M20 x 1.5 female thread, mat.: brass	9090355
Threaded adapter G ½" male thread on ¼ NPT female thread, mat.: brass	0187119
Threaded adapter G ½" male thread on ½ NPT female thread, mat.: brass	0187143
Angle connection 90° for test specimens with back mounting connection	1564838

Accessories for CPP1000-X and CPP1600-X

Ordering data; accessories for CPP1000-X and CPP1600-X	Order No.
Operating fluid for CPP1000, CPP1600 and CPP3000 test pump series in plastic bottle, contents 1 litre	2099882
Set of O-rings consisting of: 5 pieces 8 x 2 and 5 pieces 4 x 2.2	12328562
Set of adapters for the quick-connector in a case with threaded inserts G ¼", G ⅜", ½ NPT, ¼ NPT and M20 x 1.5 for mounting to the knurled nut	2036941
Angle connection 90° for test specimens with back mounting connection	1564838

Accessories for CPP3000-X, CPP5000-X and CPP7000-X

Ordering data; accessories for CPP3000-X, CPP5000-X and CPP7000-X	Order No.
Operating fluid for CPP1000, CPP1600 and CPP3000 test pump series in plastic bottle, contents 1 litre	2099882
Operating fluid for CPP5000 and CPP7000 test pump series in plastic bottle, contents 0.5 litre	11123150
Threaded adapter M16 x 1.5 male thread with sealing cone, mat.: hardened stainless steel	11093740
Threaded adapter M20 x 1.5 male thread with sealing cone, mat.: hardened stainless steel	11093901
Threaded adapter 9/16-18 UNF male thread with sealing cone, mat.: hardened stainless steel	11093871
Threaded adapter G ½" female thread with O-ring, max. 1,600 bar, mat.: 1.4571	11095912

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.

