

Test pumps hydraulic

■ Model CPP1000-M

■ Model CPP1000-X and CPP1600-X

■ Model CPP5000-X and CPP7000-X

WIKA Data Sheet CT 91.05

Applications

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

Special Features

- Ergonomic handling by a smooth-running precision spindle within the pump body
- Integrated oil reservoir
- Removable star handle
- Test connections, rotating (i.e. the instruments can be freely positioned)
- Proven technology from the CPB5000 pressure balance

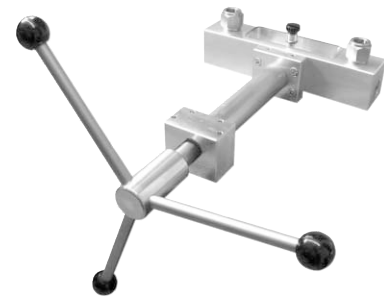
Description

Areas of application

Test pumps are used for generating pressure for the testing, adjusting and calibrating of 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 set measuring point.

Easy functioning

When the device under test and a reference measuring instrument with an adequate accuracy are connected to the test pump, the same pressure will act on both measuring instruments after actuating the pump. A calibration or an adjustment of the device under test can be carried out by comparing the two measured values at any pressure value.



Hand Spindel Pump CPP1000-M



Comparison Test Pump CPP1000-X



Comparison Test Pump CPP5000-X

CPP-X series offers high ease-of-use

The test pumps are equipped with a precision spindle to make it possible to approach measuring points exactly. They are particularly notable for the smooth running of their hand spindle, even at very high pressures. In addition the pumps of the CPP series feature a threaded spindle which only runs within the pump body. Thus there is no adverse bending moment acting on an outstanding spindle, and particularly for field use this has the advantage that the dimensions of these pumps will not change when the spindle is turned during operation.

For the CPP1000-M hand spindle pump, optional isolating test connections are available as accessories, which also allows test specimens and/or reference equipment with larger volumes to be comfortably filled by the pump. With the CPP-X models large test volumes can be easily filled and pre-compressed using the integrated initial pressure pump.

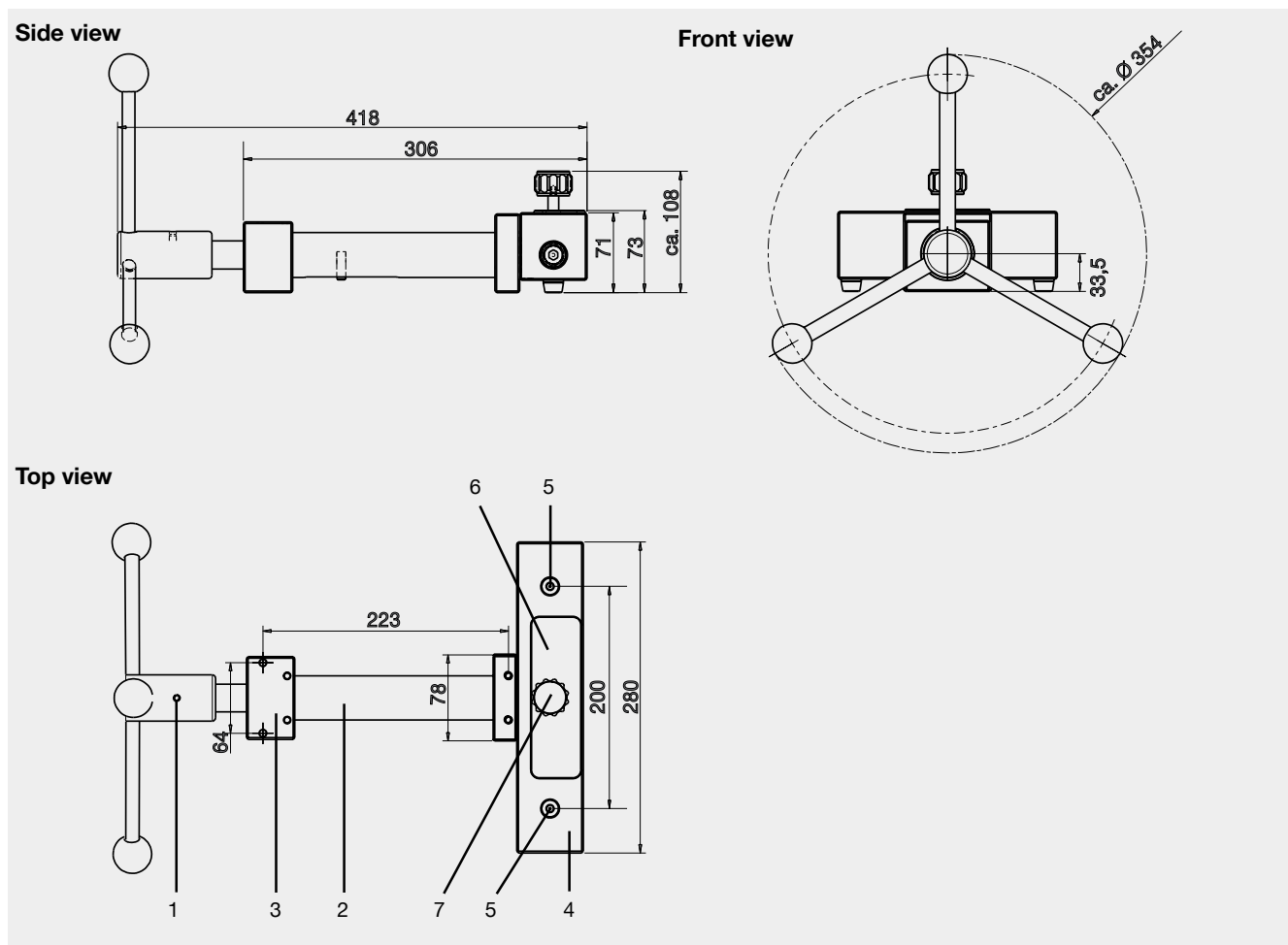
The CPP-X models are extremely solid due to the basement design and, with the proven technology from the CPB5000 pressure balance, offer exceptional ease-of-use.

Model CPP1000-M hand spindle pump, up to 1,000 bar, hydraulic

With its compact dimensions and low weight, the CPP1000-M hand spindle pump is the most basic model in the CPP hydraulic test pump range. It has 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 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



- (1) Star handle with spring-loaded thrust pad
- (2) Cylinder with spindle and piston
- (3) Front flange with 2 fixing holes Ø 6.4 mm
- (4) Rear flange

- (5) Test connections G 1/2 female thread, rotating, with O-ring
- (6) Medium reservoir
- (7) Shut-off valve

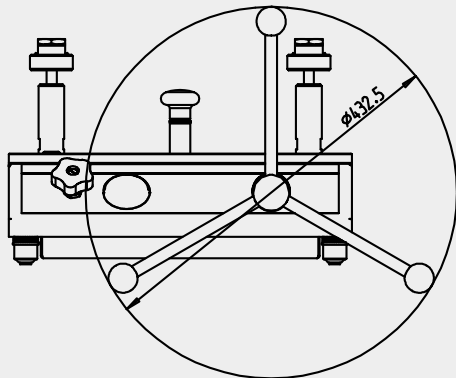
Models CPP1000-X and CPP1600-X comparison test pumps, up to 1,000 bar and 1,600 bar respectively, hydraulic

The CPP1000-X and CPP1600-X comparison test pumps have been designed around a solid basement 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.

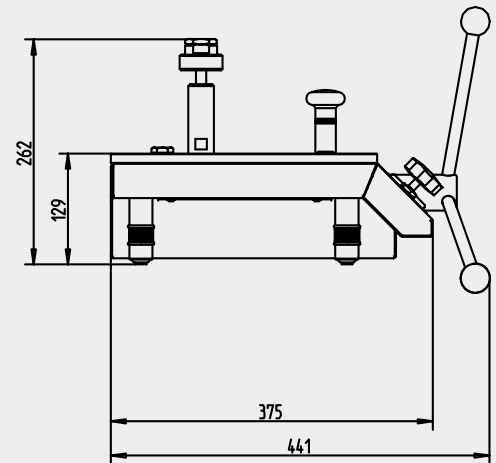
The two test connections on both pump models are equipped with quick-connectors with a knurled nut and interchangeable threaded adapters (G ½ female threads are standard). To calibrate instruments with different connection threads, appropriate threaded adapters are available (see Accessories).

Dimensions in mm

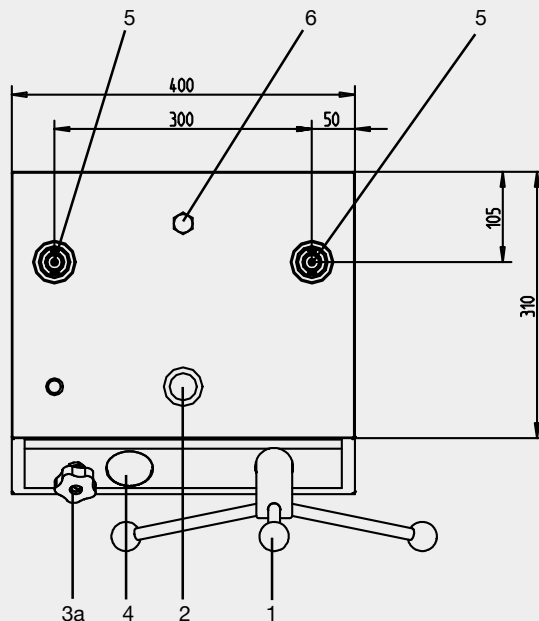
Front view



Side view



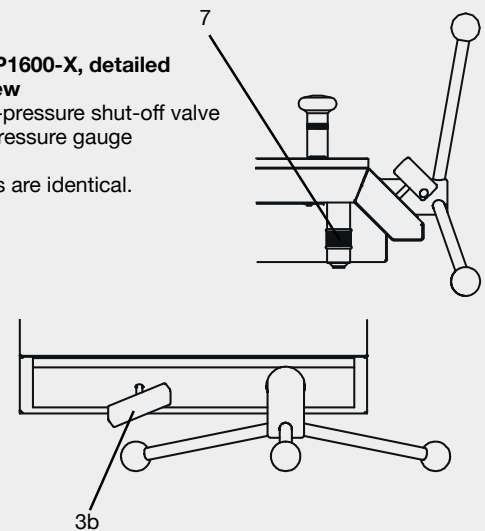
Top view



Model CPP1600-X, detailed section view

- with high-pressure shut-off valve
- without pressure gauge

Dimensions are identical.



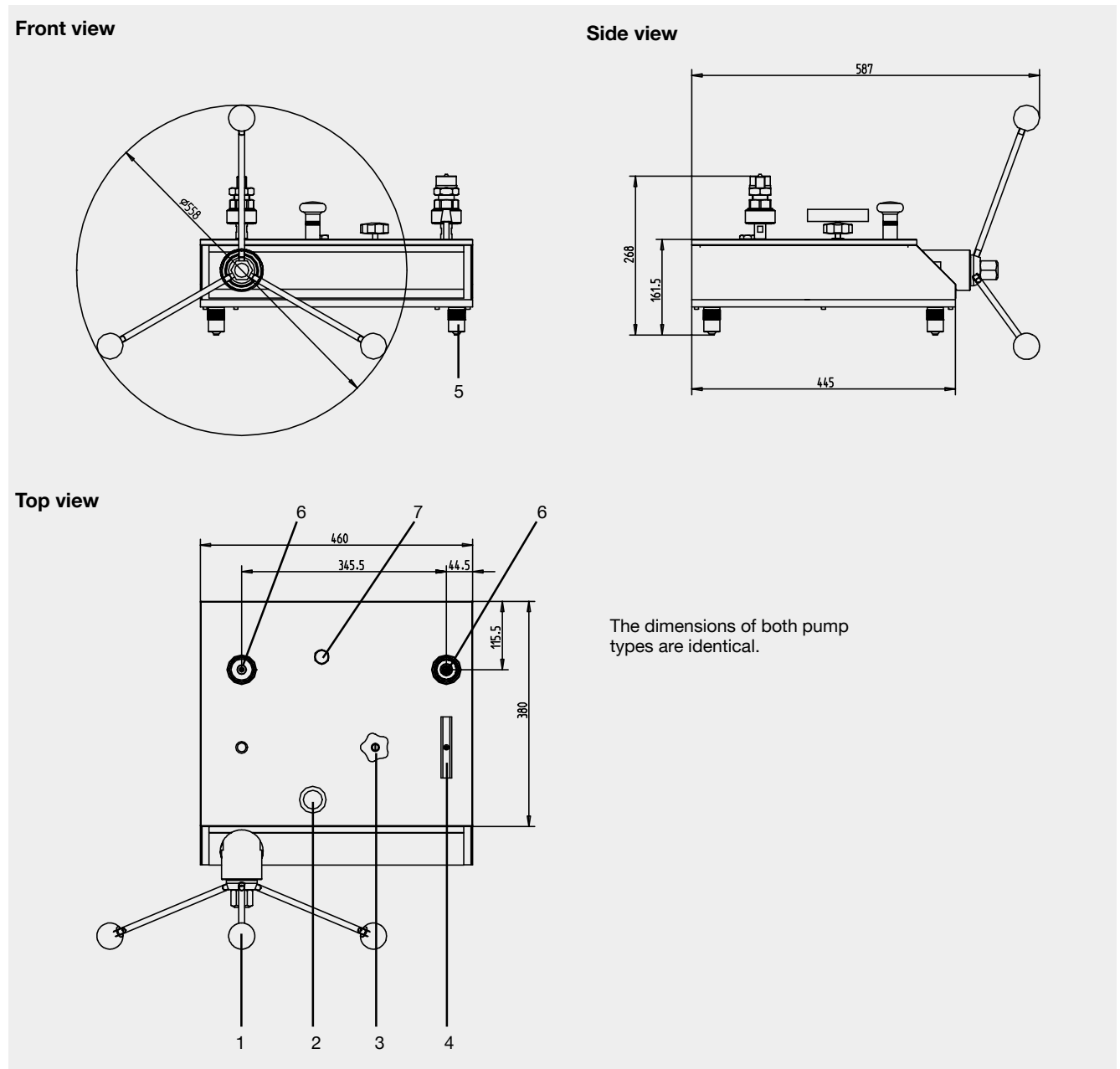
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|--|---|
| <ul style="list-style-type: none"> (1) Spindle pump with star handle (2) Initial pressure pump (3a) Shut-off valve 1,000 bar (3b) High-pressure shut-off valve 1,600 bar (4) Pressure gauge for test pressure | <ul style="list-style-type: none"> (5) Test connections (quick-connector with G ½ female thread, changeable, rotating, with O-ring) (6) Screwed drain plug for reservoir (7) Rotating base |
|--|---|

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

The CPP5000-X and CPP7000-X comparison test pumps have been designed around a solid basement 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 both 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



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|--|--|
| <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-X CPP1600-X	CPP5000-X CPP7000-X
Pressure range	bar	0 ... 1,000	0 ... 1,000 resp. 0 ... 1,600	0 ... 5,000 resp. 0 ... 7,000
Medium		Oil / distilled water ¹⁾	Oil / distilled water ¹⁾	Oil
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	2 x M16 x 1.5 male thread rotating, changeable with sealing cone
Test connections distance	mm	200	300	346
Liquid reservoir	cm ³	110	250	250
Piston diameter	mm	8	8	7.5
Swept volume per revolution	cm ³	approx. 0.1	approx. 0.1	approx. 0.08
Overall swept volume	cm ³	approx. 3.9	approx. 3.9	approx. 2.5
Required moment at				
250 bar	Nm	2.0	2.0	1.5
500 bar	Nm	4.0	4.0	3.0
1,000 bar	Nm	8.0	8.0	6.0
2,500 bar	Nm	-	-	15
5,000 bar	Nm	-	-	30
7,000 bar	Nm	-	-	42
Material				
- Cylinder		Brass	Brass	Stainless steel
- Piston		Stainless steel	Stainless steel	Hardened steel
- Tubing		-	Stainless steel 1.4404, 6 x 2 mm	Stainless steel 1.4404, 6 x 2 mm
- Rear flange		Aluminium	Aluminium	-
- Sealings		FKM, NBR (standard) optional EPDM	FKM, NBR (standard) optional EPDM	NBR
Stationary fastening		Two through holes Ø 6.4 mm in the front flange	solid basement	solid basement
Dimensions	mm	420 (L) x 280 (W) x 103 (H)	400 (W) x 375 (D) x 265 (H)	460 (W) x 445 (D) x 265 (H)
Weight	kg	6.3	20	32.5

¹⁾ Other pressure transmitting media on request.

Recommended reference instruments:

■ Hand-Held Pressure Indicator Model CPH6200

Measuring range: up to 1,000 bar
Accuracy: 0.2 % of span
Specifications according data sheet CT 11.01

■ ProcessCalibrator Model CPH6000

Measuring range: up to 1,000 bar
Accuracy: 0.025 % of span
Specifications according data sheet CT 15.01

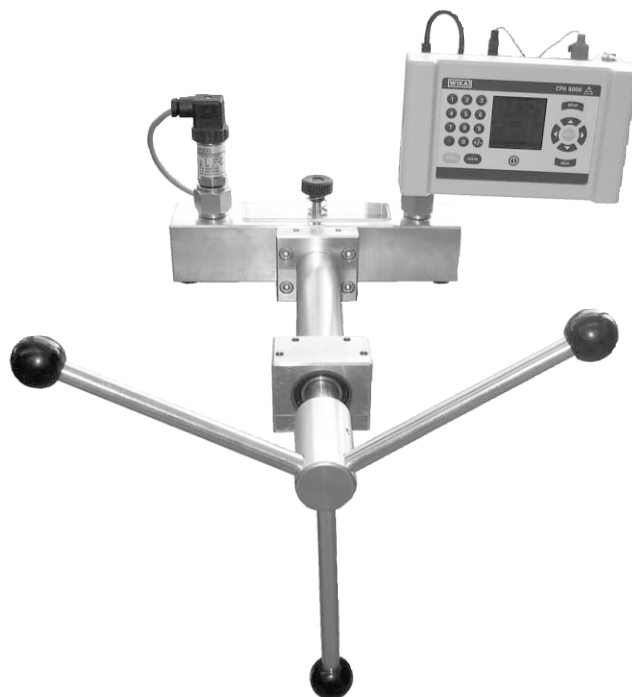
■ High-pressure Transmitter Model HP-1

Measuring range: up to 8,000 bar
Accuracy: 0.5 % of span
Specifications according data sheet PE 81.29

Calibration software:

■ Calibration software EasyCal

For inspection equipment monitoring incl. generation of calibration reports and archiving of calibration data
Specifications according data sheet CT 95.01



Example: Calibration assembly for the CPP1000-M with a CPH6000 as the reference instrument and a pressure transmitter for the test specimen.

Accessories for CPP1000-M

Order data accessories for CPP1000-M	Order No.
Operating fluid for CPP1000 and CPP1600 test pump series in plastic bottle, content 1 litre	2099882
Shut-off valve for test connection for an easy filling of instruments with a large volume with pressure transmitting medium directly on 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.	12424536
Blind plug G 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 ⅙ 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

Order data accessories for CPP1000-X and CPP1600-X	Order No.
Operating fluid for CPP1000 and CPP1600 test pump series in plastic bottle, content 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, ¾ NPT and M20 x 1.5 for adaptation to the knurled nut	2036941
Angle connection 90° for test specimens with back mounting connection	1564838

Accessories for CPP5000-X and CPP7000-X

Order data accessories for CPP5000-X and CPP7000-X	Order No.
Operating fluid for CPP5000 and CPP7000 test pump series in plastic bottle, content 1 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

Products and Services within our Testing and Calibration Technology Program

- DKD calibration services for pressure
- Repair of calibration units of all makes
- Portable pressure measuring devices for testing and calibration tasks
- Precision pressure measuring units and pressure controllers
- Primary standards for pressure
- Testing technology system solutions
- DKD calibration services for temperature
- Temperature dry well calibrators
- Calibration baths and furnaces
- Temperature measuring instruments for testing and calibrating tasks
- Precision thermometers
- Primary standards for temperature
- Consulting and training

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.

