

PDWT

Hydraulic Pressure Balance

Accuracy: up to 0.008% reading

The dead-weight tester PDWT is designed to calibrate pressure instruments: pressure transducers, transmitters, pressure gauges and switches. They consist of a pressure generator, a piston cylinder unit including a given “A” section and a set of weights with an accurate given value “m”. The dead-weight testers PDWT is easy to operate.



General

The input gas should be clean and dry air or nitrogen. It is equipped with two valves: one for pressurized gas inlet (or through a vacuum pump) and one for outlet. The volume adjuster allows adjustment of the pressure bringing in equilibrium piston and weights. The pressure generated on the instrument is proportional to the value of the applied weights.

Technical Data:

Calibration fluid

- Clean and dry air or nitrogen (lubricated piston for measuring ranges > 30 bar) Vacuum or pressure port: 1/4” BSP female

Type of material

- Tube and fittings:
- Measuring ranges \leq 120 bar (copper/brass)
- Measuring ranges > 120 bar (stainless steel 1.4404 (316L))

Frame: aluminium alloy

Case: polished stainless steel

Volume adjuster

Fixed with thrust-bearing (wearing rings and needle thrust bearings)

Levelling

A spirit level indicator and four adjustable integrated feet

Operating pressure port

1/2” BSP female with quick manual fastening (other options available)

Power rotation unit

Self-propelled spinning belt drive, optional rest point indicator

Floating position indicator

optional contactless height control with sensors, LED display

Piston-cylinder unit

Type of material

- Pressure ranges < 10 bar: Stainless steel
- Pressure ranges \geq 10 bar: tempered special steel

Repeatability

$2 \cdot 10^{-6} \times p$

Set of weights

Type of material

- >100 mbar: Stainless steel
- < 100 mbar: light metal

Division

0.040 kg to 8 kg

Set of weights' value

4 kg to 80 kg

Marking & Engineering Units

bar, mbar, kPa, mmH₂O, kg/cm², inH₂O, psi (please contact us for others)

Set of fractional weights

Type of material

light metal

Division

4 kg to 160 g

Scope of delivery

- pressure generator
- piston cylinder unit
- set of weights
- calibration report
- instruction manual

Options

- Intermediate set of weights
- Motor driven weights (power supply 110 V or 220 V to be specified)
- Indicator for point of rest, contactless sensors with LED
- Other measuring units (please contact us)
- Other measuring ranges (please contact us)
- Calibration certificate by our EA authorized laboratory (Accredia, DAkkS, Cofrac, etc.)

Accessories

Higher accuracy (deluxe) 0.01% or 0.008% of reading

Weight adjustments according to local gravity

- Accessory kit including:

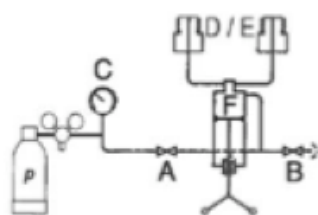
- 1 bag containing spare seals
 - 1 adapter (bow)
 - 1 set of quick-mount fittings (1/2" BSP; 1/4" BSP, 1/2" NPT, 1/4" NPT)
 - 1 open-end wrench 27/30
 - 1 Allen wrench
 - 1 hammer
 - 1 pointer punch
 - 1 needle remover with two needles (0.8 mm and 1.5 mm)
- Carrying case for pressure generator (base) and piston cylinder unit
- Carrying cases for set of weights set of adapters (15 adapters with their seals)

Model	Measuring range in bar	Maximum permissible error* (better than)	Overall Weight	bar or kg-cm ² /kPa/psi	
				Minimum No. of steps	No. of weights
PDWT-10	0.15 - 10	$1.5 \times 10^{-4} \times P$	16 kg	0.05/5/0.5	12/12/11
PDWT-30	0.5 - 30	$1.5 \times 10^{-4} \times P$	48 kg	0.25/25/2.5	10/10/12
PDWT-60	1 - 60	$1.5 \times 10^{-4} \times P$	48 kg	0.5/50/5	10/10/12
PDWT-120	1 - 120	$1.5 \times 10^{-4} \times P$	48 kg	1/100/10	10/10/12
PDWT-300	5 - 200	$1.5 \times 10^{-4} \times P$	48 kg	0.25/25/2.5	12/12/14

* Option: $\pm 0.008\%$ rdg. (over 10% of each range)

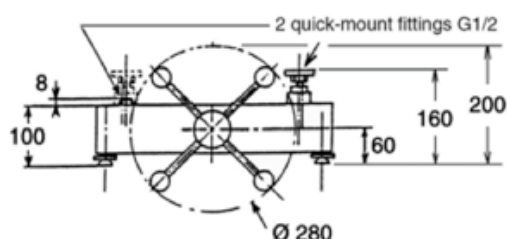
Principle of the base

Air pressure generator

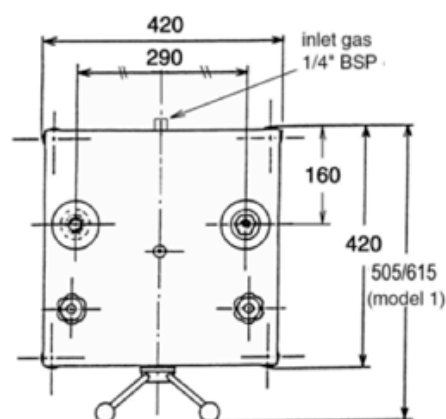


The pressure generator should be used with nitrogen or alternatively with CLEAN and DRY gas (p). It has been fitted with two needle-valves: one for inlet pressure (A) or vacuum pressure (with a vacuum pump) and the other for outlet (B). Two fittings (D/E) are designed to mount the devices to be compared. The variable volume (F) varies by turning the volume adjuster and allows a fine pressure setting. The pressure setting is made in addition through inlet and outlet needle valves adjustment A and B). The input pressure is controlled with a pressure gauge (C).

Drawings



$\Delta_{10} \Delta - 20 \text{ Kg}$



WHITE PAGE