

Dead weight testers are suitable for testing and calibrating pressure gauges and other pressure instruments. The main parts are the measuring system, the built-in handpump (models PD1 and PD 2500), valve units, screw press for accurate pressure adjusting and weights.

The measuring system consists of a precise lapped-in piston/cylinder pair. The piston will be lifted upwards by the test pressure produced with the external admission pressure, respectively with the handpump (models PD 1 and PD 2500). The mass of the piston and the used additional weights pull the piston downwards.

The test pressure can be regulated by the screw press towards the equilibrium of forces in case of imbalance, i.e. when the mass affecting the piston is bigger than the produced test pressure, or the other way around, when the produced pressure is too high in reference to the masses.

When the forces acting on both sides of the piston are balanced, the piston will be floating, and the desired test pressure is exactly reached.

For simplifying the handling, the weights are already referred to each relevant determined piston area and stamped with the pressure unit (bar / kPa / MPa).

The friction between piston and cylinder is minimized by keeping piston and weights rotating while floating.

The ranges of our dead weight testers cover 30 mbar up to 2500 bar.



## Model PD 1

### Measuring Range

30 mbar up to 1 bar

### Set of Weights

bar / kPa

### Handpump

Built in

### Accuracy

Better than 0.05% (with or without certificate B according to EN 10204 respectively 0.03% (only with certificate from German gauging office or DKD<sup>1)</sup>);

max. error up to 0.1 bar = constantly  $\pm 0.05$  mbar (for accuracy 0.05% f.s.) resp.  $\pm 0.03$  mbar (for accuracy 0.03% f.s.)

### Piston Drive

Manual

### Instrument Connection

Nipples for tube connection of admission pressure and of the gauge to be tested (Prestolock 4x1)

### Medium

Compressed air or neutral gas, e.g. nitrogen

### Case

305 x 260 x 130 mm (12" x 10.24" x 5.12") [length x depth x height] wood with imitation leather, with 3 adjustable feet for accurate horizontal positioning according to the integrated bubble level

### Instrument Weights

Including set of weights approximately 9.5 kg (20.94 lb)

## Special Options

- Weights in mmHg; others upon request
- For oxygen service
- Certificate B according to EN 10204
- Certificate from German gauging office or DKD<sup>1)</sup> (Therefore the exact site has to be stated when ordering.)

<sup>1)</sup> DKD = Deutscher Kalibrierdienst  
(German Calibration Laboratory)



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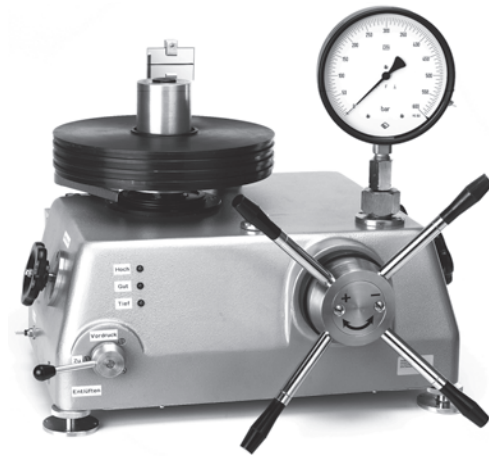
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## Models PD 6, PD 10 and PD 25

### Measuring Ranges

**PD 6** 0.1 up to 6 bar

**PD 10** 0.1 up to 10 bar

**PD 25** 0.1 up to 25 bar

### Set of Weights

In bar / kPa

### Admission Pressure

External compressed air up to the pressure to be tested on the specimen gauge is for models PD 10 and PD 25 required<sup>2)</sup>, and for model PD 6 recommended.

### Accuracy

Better than 0.05% (with or without certificate B according to EN 10204) respectively 0.03% (only with certificate from German gauging office or DKD<sup>1)</sup>);  
max. error up to 0.6 bar = constantly  $\pm 0.3$  mbar (for accuracy 0.05% f.s.) respectively  $\pm 0.18$  mbar (for accuracy 0.03% f.s.)

### Piston Drive

By electric motor (220 VAC / 50 Hz / 45 mA)

### Instrument Connection

2 union nuts, one of each 1/2" BSP and M 20 x 1,5

### Medium

Compressed air or neutral gas, e.g. nitrogen

### Case

490 x 480 x 330 mm (19.29" x 18.9" x 12.99") [length x depth x height] grey cast aluminum, with 3 adjustable feet for accurate horizontal positioning according to the integrated bubble level

### Weights (approximately)

|  | PD6   | PD10  | PD25           |
|--|-------|-------|----------------|
| Instrument   | 28 kg | 28 kg | 28 kg          |
| Set of weights   | 7 kg  | 16 kg | 31 kg          |
| Wooden transport box for instrument                        | 21 kg | 21 kg | 21 kg          |
| Wooden transport box resp. boxes (model PD 25) for weights | 2 kg  | 5 kg  | 5 kg<br>+ 2 kg |

<sup>1)</sup> DKD = Deutscher Kalibrierdienst  
(German Calibration Laboratory)

<sup>2)</sup> e.g. by using a compressed-gas bottle (nitrogen) or an air pressure amplifier

## Models PD 60, PD 100, PD 600, PD 1000

### Measuring Ranges

**PD 60** 0.25 up to 60 bar

**PD 100** 0.25 up to 100 bar

**PD 600** 10 up to 600 bar

**PD 1000** 10 up to 1000 bar

### Set of Weights

In bar / MPa

### Admission Pressure

External compressed air up to 10 bar recommended, respectively for PD 1000 required

### Accuracy

Better than 0.05% (with or without certificate B according to EN 10204) respectively 0.03% (only with certificate from German gauging office or DKD<sup>1)</sup>);  
**PD 60 and PD 100:** max. error up to 0.6 bar = constantly  $\pm 3$  mbar (for accuracy 0.05% f.s.) respectively  $\pm 1.8$  mbar (for accuracy 0.03% f.s.)  
**PD 600 and PD 1000:** max error up to 60 bar = constantly  $\pm 30$  mbar (for accuracy 0.05% f.s.) respectively  $\pm 18$  mbar (for accuracy 0.03% f.s.)

### Piston Drive

By electric motor (220 VAC / 50 Hz / 45 mA)

### Instrument Connection

2 union nuts, one of each 1/2" BSP and M 20 x 1,5

### Medium

Special oil

### Case

Grey cast aluminum, with 3 adjustable feet for accurate horizontal positioning according to the integrated bubble level,  
**PD 60, PD 600:** 490 x 480 x 330 mm (19.29" x 18.9" x 12.99"),  
**PD 100, PD 1000:** 490 x 480 x 400 mm (19.29" x 18.9" x 15.75") [length x depth x height]

### Weights (approximately)

|   | PD60  | PD100    |
|---|-------|----------|
| Instrument  | 27 kg | 28 kg    |
| Set of weights  | 36 kg | 57 kg    |
| Wooden transport box for instrument                   | 21 kg | 21 kg    |
| Wooden transport box resp. boxes (PD 100) for weights | 2 kg  | 2 x 4 kg |

### Weights (approximately)

|  | PD600 | PD1000   |
|--|-------|----------|
| Instrument   | 34 kg | 36 kg    |
| Set of weights   | 36 kg | 56 kg    |
| Wooden transport box for instrument                    | 21 kg | 21 kg    |
| Wooden transport box resp. boxes (PD 1000) for weights | 4 kg  | 2 x 4 kg |



## Model PD 2500

### Measuring Range

25 up to 2500 bar

### Set of Weights

In bar / MPa

### Admission Pressure

External compressed air up to 10 bar recommended

### Handpump

Built in (max. pressure by handpump 1600 bar)

### Accuracy

Better than 0.6% (with or without certificate B according to EN 10204) respectively 0.05% (only with certificate from German gauging office or DKD <sup>1)</sup>);  
max. error up to 250 bar = constantly  $\pm 250$  mbar (for accuracy 0.06% f.s.) respectively  $\pm 125$  mbar (for accuracy 0.05% f.s.)

### Piston Drive

By electric motor (220 VAC / 50 Hz / 45 mA)

### Instrument Connection

2 union nuts, one of each  $\frac{1}{2}$ " BSP and M 20 x 1,5

### Medium

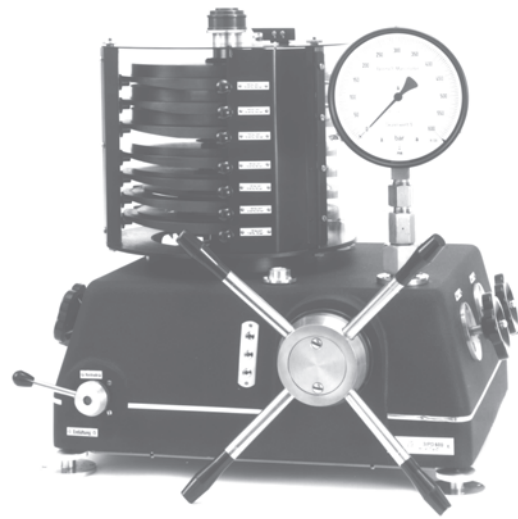
Special oil

### Case

700 x 600 x 450 mm (27.56" x 23.62" x 17.72") [length x depth x height] grey cast aluminum, with 3 adjustable feet for accurate horizontal positioning according to the integrated bubble level

### Weights (approximately)

|                                     |          |
|-------------------------------------|----------|
| Instrument                          | 48 kg    |
| Set of weights                      | 56 kg    |
| Wooden transport box for instrument | 41 kg    |
| Wooden transport boxes for weights  | 2 x 6 kg |



## Models PD 60–MSW and PD 600–MSW

### Measuring Ranges

PD 60–MSW 0.4 up to 60 bar

PD 600–MSW 24 up to 600 bar

### Set of Weights

In bar / MPa

### Admission Pressure

External compressed air up to 10 bar recommended

### Accuracy

Better than 0.05% (with or without certificate B according to EN 10204) respectively 0.03% (only with certificate from German gauging office or DKD <sup>1)</sup>);  
The constant max. error is the same as for model PD 60 resp. PD 600, please compare left side.

### Piston Drive

By electric motor (220 VAC / 50 Hz / 45 mA)

### Instrument Connection

2 union nuts, one of each  $\frac{1}{2}$ " BSP and M 20 x 1,5

### Medium

Special oil

### Case

490 x 480 x 515 mm (19.29" x 18.9" x 20.28") [length x depth x height] grey cast aluminum, with 3 adjustable feet for accurate horizontal positioning according to the integrated bubble level

### Weight

Upon request

## Special Options

for models PD 6, 10, 25, 60, 100, 600, 1000 and 2500

- Weights in  $\text{kp}/\text{cm}^2$ ; others upon request
- For oxygen service
- Certificate B according to EN 10 204
- Certificate from German gauging office or DKD <sup>1)</sup>  
(Therefore the exact site has to be stated when ordering.)

<sup>1)</sup> DKD = Deutscher Kalibrierdienst  
(German Calibration Laboratory)

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.