

# V1600D & V1600



Low Pressure Standards

V1600D

- Pressure Range 0.05 to 160 mbar  
0.025 to 64inH<sub>2</sub>O
- Accuracy better than 0.02% of reading
- Traceable to International Standards
- Quick and simple to operate
- Gas operated



# LOW PRESSURE PRIMARY STANDARD V1600D & V1600

Finally, low pressure instruments can be quickly and accurately calibrated using the V1600. This unique primary pressure standard offers rapid pressure stabilisation and the facility to measure positive and negative differential pressures.

## DIFFERENTIAL MODELS

MODEL	RANGE	STATIC POINT
V1600/1D	0.05 to 160 mbar	3 mbar
V1600/2D	0.5 to 1600 mmH O <sub>2</sub>	30 mmH <sub>2</sub> O
V1600/3D	0.025 to 64 inH O <sub>2</sub>	1.5 inH <sub>2</sub> O
V1600/4D	5 to 1600 Pa	300 Pa

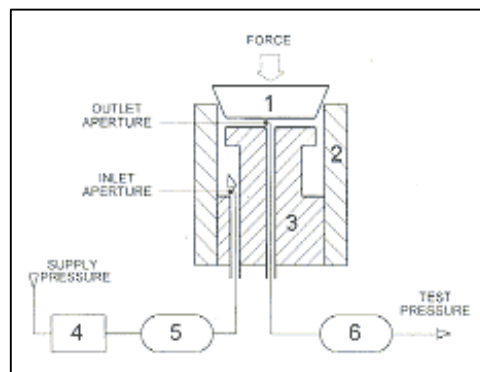
Differential models have a second piston and cylinder which produces a single static pressure allowing positive and negative differential pressures to be calibrated. Atmospheric effects are reduced and a lower starting pressure achieved.

## OPERATING PRINCIPLE

The operating principle of the V1600 is based on the dynamic interaction between a flow of gas and a non-cylindrical piston.. The diagram shows piston (1) coaxially located in the cylinder (2) transforming force (mg) into pneumatic pressure (P). The inclusion of the insert (3) and the two volumes (5 & 6) assures dynamic stability. The high accuracy of the V1600 is provided by the two cascade regulators (4) which also isolate the output pressure from supply pressure fluctuations. When air is passing between the piston and the cylinder a reactive feedback force is generated. This force does not exceed 0.0015 mg which is sufficient to self-centre the piston.

## STANDARD MODELS

MODEL	RANGE
V1600/1	0.2 to 160 mbar
V1600/2	2 to 1600 mmH O <sub>2</sub>
V1600/3	0.08 to 64 inH O <sub>2</sub>
V1600/4	20 to 16000 Pa



- 1 - Piston  
2 - Cylinder  
3 - Insert  
4 - Regulator  
5 - Volume  
6 - Volume

## SPECIFICATION

### RANGE:

Fixed points in the range below 300 Pa; Pa:

Minimum increment above 300Pa:

Gravity:

DIFFERENTIAL line pressure (V1600D):

### ACCURACY

in the range below 500 Pa:

in the range above 500 Pa:

### REPEATABILITY

in the range below 100 Pa:

in the range above 100 Pa:

For mbar equivalent multiply by 0.01  
For nominal mmH<sub>2</sub>O multiply by 0.1\*  
For nominal inH<sub>2</sub>O multiply by 0.004\*  
For nominal psi multiply by 0.00015\*

\*These are not exact conversion factors

STABILISATION TIME:

TEMPERATURE:

Reference:

Operating Range:

Coefficient:

RELATIVE HUMIDITY OPERATING RANGE:

BAROMETRIC PRESSURE OPERATING RANGE:

SUPPLY PRESSURE (instrument quality air):

FLOWRATE (at 16 kPa), Less than:

Supply Pressure Port:

Outlet Pressure Port:

### DIMENSIONS

Deadweight Tester (W x D x H)

460 x 310 x 270

Piston & Weights Cased (W x D x H)

340 x 235 x 80mm

20 to 16000 Pa

20, 30, 50, 60, 80, 100, 120, 160

200, 215, 230, 240, 250, 260

280

5 Pa

As requested on order, if unspecified then

980.665 cm/s<sup>2</sup>

300 Pa

0.1 Pa

0.02% of reading

0.02 Pa

0.005% of reading

less than 10 seconds

20°C

15°C to 35°C

0.0022% of reading / °C

30% to 80%

910 to 1400 mbar / 680 to 780 mmHg

maximum 14 bar

3.0 litre/ minute

1/4" BSP or NPT

1/4" BSP or NPT

### WEIGHT

14 kg (V1600)

17.5 kg (V1600D)

4 kg

A complete range of hydraulic, pneumatic, differential and absolute deadweight testers are available



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