

# Model BL508 High Static Differential Deadweight Tester

## SPECIFICATION



The model BL508 high static differential pressure deadweight tester ideal primary standard for defining the static pressure up to 60MPa.

Both the piston and cylinder are manufactured from tungsten carbide. This pairing of materials, in comparison to other materials, has very low pressure and temperature coefficients of expansion, which results in a very good linearity for the effective area of the piston and a very high accuracy. Over-pressure protection is integrated, which prevents the piston from being forced out vertically and avoids damage to the piston-cylinder system in the event of masses removal under pressure.

## FEATURES

- Static pressure ranges 0.1MPa to 60MPa; Differential pressure is (0.05~1000) kPa
- Accuracy is 0.01% rdg for single piston, or (2Pa + 5x10<sup>-7</sup>\*P + 1x10<sup>-4</sup>\*ΔP) for dual pistons
- Traceable to International Standards.
- The piston and cylinder is made of the high intensity, extreme hardness and lowest thermal expansion tungsten carbide
- Piston/cylinder design provides stability and repeatability
- Lowering speed of differential piston is 0.5mm per minute with 5 kg loading
- Sensitivity threshold at zero is 10mg.

## APPLICATION

- Primary pressure standards in laboratories
- Precision pressure measurement

- Accuracy: When use one of two piston gauges, accuracy is 0.01%rdg; When test static pressure, accuracy is (2Pa + 5x10<sup>-7</sup>\*P + 1x10<sup>-4</sup>\*ΔP), where P= Static Pressure Pa, ΔP = differential pressure value
- Piston material: Tungsten carbide
- Cylinder material: Tungsten carbide
- Mass material: Forged 316 stainless steel
- Hydraulic base material: Casting iron
- Seal material: Buna-N, FTM, PTFE, Copper Alloy
- Medium: Mineral oil lubricated and pure nitrogen operated (built in oil-gas separator)
- Gravity: Standard 9.80665 m/s<sup>2</sup>, or customize local gravity.
- Pressure units available: MPa, bar, psi (optional)
- Pressure range selectable sheet:

P/N	Pressure	Kn Value	Area	Mass
GCY7	(0.1~7)MPa	0.5MPa/kg	0.2cm <sup>2</sup>	14kg+14kg
GCY20	(0.1~20)MPa	1 MPa/kg	0.1cm <sup>2</sup>	20kg+20kg
GCY60	(0.1~60)MPa	2 MPa/kg	0.05cm <sup>2</sup>	30kg+30kg

- Pressure connector: Metric, (NPT and BSP is optional)
- Base dimension: 540 mm (H) x 625 mm (L) x 480 mm (D)
- Base weight: Appro.35kg
- Warranty: 2 years

## SCOPE OF DELIVERY

- BL508 Static pressure deadweight tester base
- Piston cylinder module
- “MPa” 316SS increment mass sets
- Adapter kits (1/4” NPT, 1/2” NPT, G1/4, G1/2)
- Factory calibration report
- Operating manual

## OPTIONAL ACCESSORIES AND SERVICES

- Customized “psi” unit 316SS mass set (P/N: IMS-PSI)
- Oil-Water Separator, 40 MPa, no diaphragm (P/N: 1556-40)
- Oil-Water Separator, 70 MPa, no diaphragm (P/N: 1556-70)
- CNAS accredited calibration certificate (P/N:9000-502)

## HOW TO ORDER

- Model BL508 / pressure range part number / accuracy / pressure units / gravity value