

MODEL BL508 DIFFERENTIAL PRESSURE DEADWEIGHT TESTSER



The main challenge of defining ΔP at high line pressures comes from the very high ratio of the line pressure to the differential pressure, and the fact that relative small instabilities in the magnitude of line pressure are very large in comparison to the small magnitude of the differential pressure.

The BL508 differential pressure deadweight tester uses the principle of high line differential measurement with two oil lubricated / gas operated pistons allows setting and maintaining the line pressure with an uncertainty much lower than the overall measurement uncertainty on either piston. The master and slave pistons are cross-floated at the line pressure prior to making differential measurement to minimize the contribution of line pressure errors to differential pressure. High line differential mode relies upon the very high sensitivity of piston cylinder unit to set and stabilize low differential pressure relative to high line pressures. (The 60MPa use oil lubricated / oil operated piston)

FEATURES

- Measure the differential pressure under the high static pressure 60MPa
- Each piston and cylinder unit can be used separately to measure gauge pressure
- Two oil lubricated / gas operated pistons
- Over-pressure protection is integrated
- Built-in oil/gas separator

APPLICATION

- Primary pressure standards in laboratories
- Precision pressure measurement

PRESSURE RANGE SELECTABLE SHEET

Part Number	Gauge P. / Differential P.	Kn Value	Area	Master Mass	Slave Mass
GCI7	(0.1~7) MPa	0.5MPa/kg	0.2cm ²	14kg	14kg
GCI20	(0.1~20) MPa	1 MPa/kg	0.1cm ²	20kg	20kg
GCI60	(0.1~60) MPa	2 MPa/kg	0.05cm ²	30kg	30kg

SPECIFICATION

- Accuracy: 0.01%rd for gauge pressure by using single piston, or it is $(2Pa + 5 \times 10^{-7} P + 1 \times 10^{-4} \Delta P)$ for differential pressure by using dual pistons together
- Piston material: Tungsten carbide
- Cylinder material: Tungsten carbide
- Mass material: 304 stainless steel
- Hydraulic base material: Aluminum alloy
- Seal material: Buna-N, FTM, PTFE, Copper Alloy
- Medium: Pure Nitrogen (≤ 20 MPa), Sebacate (60MPa)
- Gravity: Standard 9.80665 m/s², or customize local gravity.
- Pressure units available: MPa, bar, psi (optional)
- 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

SCOPE OF DELIVERY

- BL508 Static pressure deadweight tester base
- Master piston cylinder unit
- Master 304 stainless steel mass set
- Master mass carrier
- Slave piston cylinder unit
- Slave 304 stainless steel mass set
- Slave mass carrier
- Adapter kits (1/4" NPT, 1/2" NPT, G1/4, G1/2)
- Connection hoses
- Transit case

OPTIONAL ACCESSORIES AND SERVICES

- ISO17025 accredited calibration certificate (P/N:9000-508)
- Oil-Water Separator 70 MPa (P/N:1558-70)
- Forged 316 stainless steel mass set (P/N: MS-316)

HOW TO ORDER

- Model BL508 / pressure part number / accuracy / gravity