Well Flow Management

Well Testing | Measurement

Dead Weight Tester

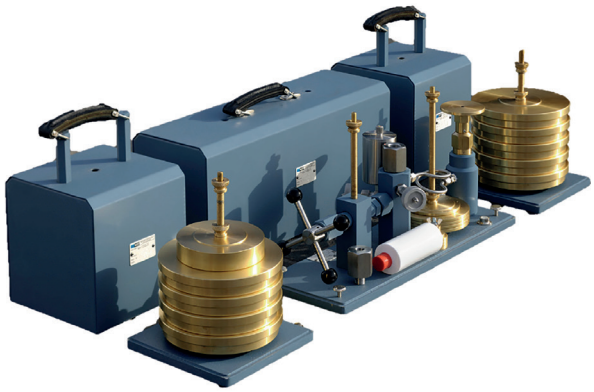
Dead Weight Testers are the primary standard for pressure measurements. Utilizing the well proven piston-gauge system consisting of a vertically mounted, precision lapped piston and cylinder assembly with accurately calibrated masses (weights).

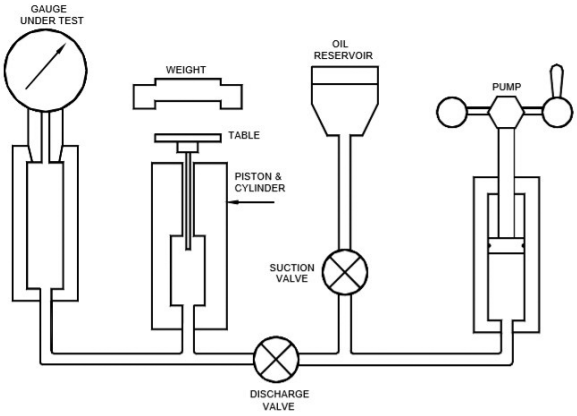
The Dead Weight Tester is the most accurate instrument available for measurement of pressures above the range where manometers may be used. This type of tester operates on the principle of balancing a known mass against the force exerted by an unknown pressure on a piston of a known area.

When an exact balance is achieved, the unknown pressure P is equal to mass M of the weights divided by the area A of the piston, according to the formula P = M/A. Numerous models are available to meet specific applications. Pressure ranges of the instruments vary from 3 to 400 psi, 50 to 15,000 psi and 100 to 30,000 psi. Dual-range instruments are also available.

A Certificate of calibration accompanies every new instrument, verifying that its accuracy will be within 0.05% of reading or better. Typically Dead Weight Testers are used in calibration laboratories to calibrate pressure transfer standards like electronic pressure measuring devices. Portable, field units are extensively utilized for well testing operations to accurately record flowing and build up pressures in wells.

They may also be used to field calibrate other instrumentation such as pressure and level controllers or during pressure testing of equipment to accurately record the applicable test pressure and indicate any drop in pressure denoting a lack of integrity.





Applications

- For calibration and test applications requiring a primary standard

Features and benefits

- Accuracy: 0.01% of reading
- Operating pressure: 15 psi to 20,000 psi
- Mounted spirit level and adjustable feet
- High quality screw press for fine pressure control

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Technical specifications	
Maximum pressure psi (MPa)	Up to 30,000 (206.8) depending on range
Minimum pressure psi (MPa)	3 to 50 (0.02 to 0.35) depending on range (table must be spinning to achieve indicated pressure)
Accuracy	0.05% of indicated pressure (optional 0.02% of indicated pressure)
Certificate of calibration	Accuracy 0.05% optional 0.02% Certificate available upon request
Calibration temperature	See calibration sheet for oil temperature at which instrument was calibrated
Gravity	Calibration based on standard gravity of 980.665 cm/sec^2 Calibration may be referenced to user specified gravity
Recommended operating temperature range °F (°C)	40 to 120 (4 to 48)
Humidity % RH	0 to 95
Vibration	Small amplitude, high frequency only
Environment	Minimize dust and corrosive atmosphere
Typical shipping weight lbs (kgs)	50 (18) to 250 (115) depending on pressure range Model 58; 120 (58) to 325 (146) depending on pressure range
Piston material	Hardened stainless steel
Pressure tubing material	Stainless steel
Weight materials	Brass or stainless steel
Pressurizing fluid	Hydraulic oil (Chandler p/n 23-0070) Standard (Chandler p/n P-1169 synthetic oil optional for special requirements)
Input connector	1/4 in. NPT
Seal material	Buna-N (other materials available)
Carrying case	Metal case with handles

Note: Other sizes, configurations and pressure ratings are available to meet most applications, for more information contact your local Expro representative or email **welltesting@expro.com**