CHANDLER ENGINEERING®
AMETEK®

HPHT APPLICATIONS

DEADWEIGHT TESTERS

Primary Standard

Deadweight Testers are the basic primary standard for the accurate measurement of pressure. Chandler Testers are used to measure the pressure exerted by a gas or liquid and can also generate a test pressure for the calibration of pressure gauges, electronic pressure calibrators, transducers, transmitters, recorders, etc. No other device can match the stability, repeatability and accuracy of the Deadweight Tester.

High Sensitivity

When the weights are applied to the piston, the entire assembly is rotated slowly. This rotation minimizes frictional effects and permits vertical motion of the piston with extremely small variations in pressure. Measurements to 1/10 psi (1 kPa) can be made.

Operation

The Chandler Engineering Deadweight Tester utilizes the well proven piston system consisting of a vertically mounted precision lapped stainless steel piston and sleeve with a metal to metal seal. This superior design eliminates friction and oil leakage created by o-ring seals used in lower cost testers. A bubble level and adjustable feet are provided to enable the operator to level the instrument.

High Accuracy

Deadweight Testers blend ruggedness with high accuracy. Variations over time typical of strain gauges or spring gauges are eliminated. Their operation depends only on balancing known weights against the force exerted by an unknown pressure acting on a piston of precisely known area. The weights are applied manually until the piston is floating with no net vertical movement. Each piston's area is determined by comparison against a piston of known area traceable to the National Institute of Standards and Technology. The mass of the balancing weights is also traceable to NIST.

FEATURES

- ✔ Accurate - 0.05% of Indicated Pressure, Traceable to the National Institute of Standards and Technology (NIST), 0.02% Available
- ✔ Reliable - Hardened Stainless Steel Pistons and Corrosion Resistant Materials.
- ✔ Screw Pump - Allows Fine Pressure Adjustments
- ✔ Certificate of Calibration
- ✔ Gas or Liquid Pressure Measurement
- ✔ Repair Service - Spare Parts Available.

2001 North Indianwood Avenue, Broken Arrow, OK 74012 • Tel: 918-250-7200 • Fax: 918-459-0165

CHANDLER ENGINEERING / AMETEK®

DEADWEIGHT TESTERS

SPECIFICATIONS

Accuracy
0.5% of Indicated Pressure

Certificate of Calibration
Furnished for 0.05%

Calibration Temperature
77°F / 25°C
Calibration Based on Std Gravity of 980.665

Calibration Meets
MIL-C-45662A

Temperature Limits
40 to 120°F / 4 to 50°C

Humidity
0 to 95% RH

Vibration
Small Amplitude, High Frequency Only

Environment
Minimize Dust and Corrosive Atmosphere

Piston Material
Hardened Stainless Steel

Pressure Tubing Material
Stainless Steel

Weight Material
Brass

Fill Fluid
Non-toxic ISO Grade 68 Premium Oil, Standard. Synthetic Fluid Optional

Options
- Stainless Steel Weights
- Dual Range Piston/Cylinder
- 0.02% Certificate of Calibration
- Oxygen Service Cleaning
- Oil Water Separator
- Metric Adapters
- Synthetic Operating Fluid for O2, Water or Steam Service
- Local Gravity Calibration

Furnished with Every Deadweight
- Carrying Case with Instruction Manual
- Set of Weights
- Operating Fluid
- Gauge Pointer Remover
- Gauge Pointer Driver
- 1/4 in and 1/2 in NPT adapters
- Certificate of Calibration for 0.05% accuracy
- One Year Guarantee

Furnished with Precision Pressure STD Tester
- Vinyl dust Cover in Lieu of Carrying Case
- Wrench Set
- Spare-o-rings and Seals
- Electric Motor to spin Weights

Oil Water Separators
Model 02-0071 – Rated for pressure of 5,000 psi (34,500 kPa) designed for use with Models 02-001 and Models 23-001 Deadweight Testers.

Model 05-0194 – Rated for pressure of 5,000 psi (34,500kPa) is a stand-alone unit. It can be used with the Chandler Deadweight Gauge or Tester. It come complete with inlet, outlet and drain valves. Also included is 10 ft of 1/8 in diameter SS tubing for connection.

Model 05-0202 – Rated for 10,000 psi (69,000 kPa). It is similar to the Model 05-0194 and supplied complete with valves and SS tubing for connection.

Model 55-0036 – Rated for 6,000 psi (41,400 kPa) designed especially for use with the Model 55-100 Tester.

	Standard		
Series	23	23	55
Max Pressure PSI	2,000	5,000	20,000
Min Pressure PSI	5	50	50
Dual Range Option	No	Yes	Yes
Motor Drive Option	No	No	No
Size inches	19x6x13	22x8x14	22x14x8
Size cm	48x15x33	55x20x35	55x35x45
Weight lbs **	32-85	60-90	114-250
Weight Kg **	15-38	27-40	50-110

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DEADWEIGHT GUAGES

SPECIFICATIONS

Gauges are used to measure the pressure exerted by a gas or liquid and cannot generate a test pressure. The are accurate to 0.1% of indicated pressure. This is a significant improvement over gauges that are accurate to 0.1% of full scale. Their portability means that they can be conveniently used to check line pressure, gas pressures at well heads, static pressures on orifice meters, and to measure pressures in many other industrial applications. They have been used for turbine testing in power generation plants.

Accuracy
0.1% of Indicated Pressure

Certificate of Calibration
Furnished for 0.05%

Calibration Temperature
77°F / 25°C
Calibration Based on Std Gravity of 980.665

Calibration Meets
MIL-C-45662A

Temperature Limits
40 to 120°F / 4 to 50°C

Humidity
0 to 95% RH

Vibration
Small Amplitude, High Frequency Only

Environment
Minimize Dust and Corrosive Atmosphere

Piston Material
Hardened Stainless Steel

Pressure Tubing Material
Stainless Steel

Weight Material
Brass

Fill Fluid
Non-toxic ISO Grade 68 Premium Oil, standard (Synthetic fluid optional)

Options
- Stainless Steel Weights
- Dual Range Piston/Cylinder
- 0.02% Certificate of Calibration
- Oxygen Service Cleaning
- Oil Water Separator
- Metric Adapters
- Synthetic Operating Fluid for O2, Water or Steam Service
- Local Gravity Calibration

Furnished with Every Deadweight
- Carrying Case with Instruction Manual
- Set of Weights
- Operating Fluid
- Gauge Pointer Remover
- Gauge Pointer Driver
- 1/4 in and 1/2 in NPT adapters
- Certificate of Calibration for 0.05% accuracy
- One Year Guarantee

Motor Driven Models 05-125 and 05-155

Principles of Operation

The unknown liquid or gas pressure is measured by connecting the gauge to the unknown and then balancing the force that the unknown exerts against a piston with a known area. Weights are applied manually as the vertical movement of the piston is observed while rotating. When no net vertical piston motion is seen, the pressure is determined by counting the calibrated weights used and adding the fixed weight.

Manufacturer's specifications subject to change without notice

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View more product information on our website:
WWW.CHANDLERENG.COM/PRODUCTS

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