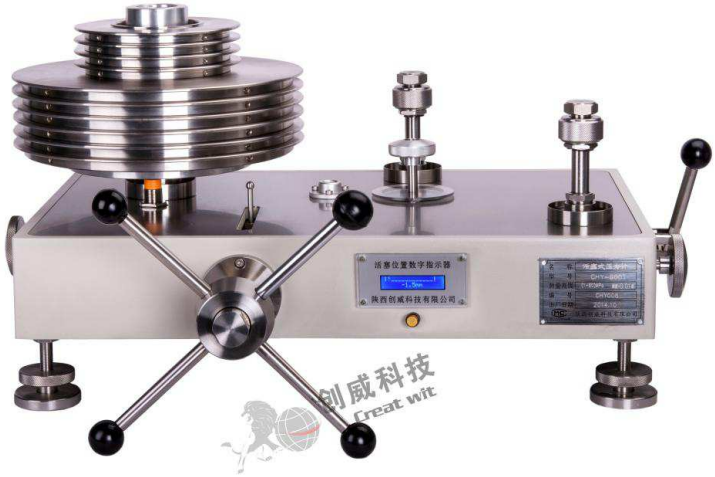
# Hydraulic dead weight tester



Working Principle:

Mechanical dead-weight testers or primary standards are the most accurate reference instruments for pressure. Their functional principle is based on the physical principle of pressure = force/area. Mass pieces placed on the top of a piston-cylinder system are the source of a precisely defined force. By producing a certain (counter) pressure inside the pressure balance equilibrium is achieved: the mass pieces, including the free-running piston of the piston-cylinder system, are floating, which will lead to a very accurate pressure at the test port.

Applications:

1. Primary standard for defining the pressure scale in a range of up to 1600bar.

2. Pressure reference for factory and calibration lab for the testing, adjustment and calibration of pressure measuring instruments.

**Specification:**

Model (optional): CW-6T CW-60T CW-250T CW-600T CW-1000T CW-1600T
Measuring range (MPa): (0.04-0.6), (0.1-6), (0.5-25), (1-60), (2-100), (2-160) or user defined
Accuracy: 0.005%; 0.01%; 0.02%; 0.05% of Readings

Materials:

Piston system (the rod and cylinder): tungsten carbide
Weight (Masses): Non-magnetic stainless steel (0.005, 0.01, 0.02);
Carbon steel (0.05)
Base: stainless steel

Working medium:

＜25 MPa : Mixed oil (transformer oil and kerosene oil)
≥25 MPa : sebacate oil
Gravity: user's local gravity

**Features:**

- Able to test two gauges synchronously; Applied the fast pressure plug; no oil leakage;
- The piston rod is anti-breakage structure.
- With priming pump, it can fill oil to large capacity gauge, several gauges or long distance calibration pipeline system.
- The tester junction with stop valve and piston stop valve, so it can be used as independent pressure source, when piston stop valve is closed.

Measurement Range and Required Weight and Quantity

| Model | CW-6T | CW-60T | CW-250T | CW-600T | CW-1000T | CW-1600T |
|---|---|---|---|---|---|---|
| Measurement range (MPa) | 0.04～0.6 | 0.1～6 | 0.5～25 | 1～60 | 2～100/1～100 | 2~160 |
| Upper nominal limit (MPa) | 0.6 | 6 | 25 | 60 | 100 | 160 |
| Lower nominal limit (MPa) | 0.04 | 0.1 | 0.5 | 1 | 2/1 | 2 |
| Upper measurement range (MPa) | 0.6 | 6 | 25 | 60 | 100 | 160 |
| Lower measurement range (MPa) | 0.04 | 0.1 | 0.5 | 1 | 2/1 | 2 |

| Nominal area of piston (cm2) | | 1 | 0.5 | 0.1 | 0.05/0.1 | 0.05 | 0.05 |
|---|---|---|---|---|---|---|---|
| Chassis and piston | Nominal mass (kg) | 0.4 | 0.5 | 0.5 | 0.5/1 | 1/0.5 | 1 |
| | Pressure produced (MPa) | 0.04 | 0.1 | 0.5 | 1 | 2/1 | 2 |
| Special weight | Nominal mass (kg) | 0.1;0.5 | 0.5;2.5 | 0.5; 2.5 | 0.5; 2.5 or 1; 5 | 0.5;1;2;5 | 0.5;1;2;5 |
| | Pressure produced (MPa) | 0.01;0.05 | 0.1;0.5 | 0.5 ; 2.5 | 1 ;5 | 1;2;4;10 | 1;2;4;10 |
| | Quantity (piece) | 6;10 | 4;11 | 4; 9 | 4;11 | 1;2;1;9 | 1;2;1;15 |
| thread specification | | M20 × 1.5 | M20×1.5 | M20 × 1.5 | M20×1.5 | M20×1.5 | M20 x1.5 |
| Total weight, including box (kg) | | 53 | 100 | 80 | 85 or 115 | 105 | 110 |
| Working medium | | The kinematic viscosity of oil mixture of 25# transformer oil and aviation kerosene is 9~12 $mm^2/s$ at 20℃, with the acid value no greater than 0.05mgKOH /g. | | The kinematic viscosity of Di (2-ethyl-hexyl) sebacate is 20~25 $mm^2/s$ at 20 ℃, with the acid value no greater than 0.05mgKOH /g. | | | |

**Specification:**

Model (optional): CW-6T CW-60T CW-250T CW-600T CW-1000T CW-1600T
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Accuracy: 0.005%; 0.01%; 0.02%; 0.05% of Readings

Materials:

Piston system (the rod and cylinder): tungsten carbide
Weight (Masses): Non-magnetic stainless steel (0.005, 0.01, 0.02);
Carbon steel (0.05)
Base: stainless steel

Working medium:

| |
|---|
| ＜25 MPa : Mixed oil (transformer oil and kerosene oil)<br>≥250 MPa : sebacate oil<br>Gravity: user's local gravity |

**Features:**

- Able to test two gauges synchronously; Applied the fast pressure plug; no oil leakage;
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- With priming pump, it can fill oil to large capacity gauge, several gauges or long distance calibration pipeline system.
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| Chassis and piston | Nominal mass (kg) | 0.4 | 0.5 | 0.5 | 0.5/1 | 1/0.5 | 1 |
| | Pressure produced (MPa) | 0.04 | 0.1 | 0.5 | 1 | 2/1 | 2 |
| Special weight | Nominal mass (kg) | 0.1;0.5 | 0.5;2.5 | 0.5; 2.5 | 0.5; 2.5 or 1; 5 | 0.5;1;2;5 | 0.5;1;2;5 |
| | Pressure produced (MPa) | 0.01;0.05 | 0.1;0.5 | 0.5 ; 2.5 | 1 ;5 | 1;2;4;10 | 1;2;4;10 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Quantity (piece) | 6;10 | 4;11 | 4; 9 | 4;11 | 1;2;1;9 | 1;2;1;15 |
| thread specification | | M20 × 1.5 | M20×1.5 | M20 × 1.5 | M20×1.5 | M20×1.5 | M20 x1.5 |
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| Working medium | | The kinematic viscosity of oil mixture of 25# transformer oil and aviation kerosene is 9~12 $mm^2/s$ at 20℃, with the acid value no greater than 0.05mgKOH /g. | | The kinematic viscosity of Di (2-ethyl-hexyl) sebacate is 20~25 $mm^2/s$ at 20 ℃, with the acid value no greater than 0.05mgKOH /g. | | | |