

KDQ Series Pneumatic 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.

Pneumatic dead weight tester is pressure reference instrument with high accuracy, which media is air and can measure and calibrate gauge pressure, absolute pressure and vacuum.

Pneumatic dead weight tester is superior to hydraulic dead weight tester in perdurability, sensitivity, repeatability, accuracy.



Specification

| | |
|-----------------|--|
| Model | KDQ-6/ KDQ -6/ KDQ -25/ KDQ -40/ KDQ -60/ KDQ -70/ KDQ -100 |
| Measuring range | (-0.1-0.25) MPa (at least 5kPa)、(-0.1-0.4) MPa、(-0.1-0.6) MPa |
| Accuracy | 0.005%、0.01%、0.02%、0.05% of Reading |
| Applications | dead weight tester traceable, digital pressure gauge, pressure gauge, pressure transmitter calibration |
| Masses | Non-magnetic stainless steel |
| Media | Pure Nitrogen |
| PCU | Tungsten carbide |

Special features:

- Sensibility up to 10mg
- Measuring system is equipped with new structure. Change Pressure vacuum cover and reversing valve to measure positive pressure and negative pressure.
- With filter unit, it prevents dust into dead weight tester.
- With vacuum and positive conversion valve, the DWT can be connected with

vacuum pump and Nitrogen cylinder.

- Base is made of AL

Technical data

| Model | | KDQ-1 | KDQ-6 | KDQ-25 | KDQ-60 | KDQ-70 | KDQ-100 |
|----------------------------------|---------------------|---|---------------|----------|---------|---------|---------|
| (MPa) Measuring range(MPa) | | -0.1~0.6 | 0.04~0.6 | 0.1~2.5 | 0.1~6 | 0.1~7 | 0.1~10 |
| Upper limit (Nominal pressure) | | Positive pressure:0.6; Negative pressure:-0.1 | 0.6 | 2.5 | 6 | 7 | 10 |
| Lower limit (Nominal pressure) | | Positive pressure:0.01; Negative pressure:-0.01 | 0.04 | 0.1 | 0.1 | 0.1 | 0.1 |
| Upper limit (measuring pressure) | | Positive pressure:0.6;; Negative pressure:-0.1 | 0.6 | 2.5 | 6 | 7 | 10 |
| Lower limit (measuring pressure) | | Positive pressure:0.01; Negative pressure:-0.01 | 0.04 | 0.1 | 0.1 | 0.1 | 0.1 |
| Nominal area | | 5 | 1 | 0.5 | 0.5 | 0.5 | 0.5 |
| Chassis & piston | Nominal weight (kg) | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |
| | Pressure (MPa) | 0.01 | 0.04 | 0.1 | 0.1 | 0.1 | 0.1 |
| Masses | Nominal weight (kg) | 0.25; 0.5; 2.5; 5/0.25; 0.5; 1 | 0.1; 0.5 | 0.5; 2.5 | 0.5;2.5 | 0.5;2.5 | 0.5;2.5 |
| | Pressure (MPa) | 0.005; 0.01; 0.05; 0.1/ 0.005; 0.01; 0.02 | 0.01; 0.05 | 0.1; 0.5 | 0.1;0.5 | 0.1;0.5 | 0.1;0.5 |
| | Qty (Piece) | 2; 3; 1; 5/1; 1; 4 | 6; 10 | 4; 4 | 4;11 | 4;13 | 4;19 |
| Thread | | M20*1.5 | M20*1.5 | M20*1.5 | M20*1.5 | M20*1.5 | M20*1.5 |
| Weight (kg) | | 64.5 | 35.6 | 42 | 59.5 | 64.5 | 79.5 |
| Media | | Pure Nitrogen, vacuum pump | Pure Nitrogen | | | | |