



KD Series Hydraulic Dead Weight Tester

KD Series Dead weight tester can be used as reference pressure equipment and high standard pressure instrument. It is the important measuring instruments of establishing pressure standard for measurement institutes. It is applied to values transferring and testing pressure gauge, precision pressure and pressure transmitters.

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.



Application

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

Feature

- The piston rod and cylinder uses tungsten carbide material with high strength, high hardness and low coefficient of thermal expansion;
- increasing the wear resistance of piston, reducing linear expansion and deformation coefficient of the piston rod and cylinder.
- Using quick connectors, no leakage
- Pistons that more than 25MPa uses cradle structure; with low gravity and excellent stability
- Pistons' working position is numeric displaying; eye-catching and more accurate
- Consistent with nominal range and measuring rang

Technology Specification

- Nominal range/Measure range (0.04~0.6)MPa, (0.1~6)MPa, (0.5~25)MPa,(1~60)MPa, (2~100)MPa, (2~160)MPa, (5~250)MPa
- Accuracy 0.005%, 0.01%, 0.02%, 0.05%
- Piston material :tungsten carbide
- Weight material :nonmagnetic metal(0.005,0.01, 0.02 level); carbon steel(0.05 level)
- Working medium ,<25MPa mixture of electric insulating oil and coal oil; ≥25MPa dibutyl sebacate
- Function Test the digital pressure gauge, high-accuracy pressure gauge and pressure transmitter

Specification

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Range		KD-0.6	KD-6	KD-25	
Measuring range(MPa)		0.04~ 0.6	0.1~6	0.5~25	
Nominal upper limit(MPa)		0.6	6	25	
Nominal lower limit(MPa)		0.04	0.1	0.5	
Measuring upper limit(MPa)		0.6	6	25	
Measuring lower limit(MPa)		0.04	0.1	0.5	
Nominal area(cm ²)		1	0.5	0.2	
Underpan and piston	Nominal mass(kg)	0.4	0.1	1	
	Creating pressure(MPa)	0.04	0.1	0.5	
Specific weights	Nominal mass(kg)	0.1;0.5	0.5;2.5	1;2;5	
	Creating pressure(MPa)	0.01;0.05	0.1;0.5	0.5;1;2.5	
	Quantity(pcs)	6;10	4;11	2;1;9	
Interface		M20 × 1.5	M20 × 1.5	M20 × 1.5	
Weight(kg)		35	60	80	
Work media		25# The mixed oil of transformer oil and aviation kerosene (ratio 4.39:1), its kinematic viscosity at 20℃ is 9~ 12 mm ² / s, The acid value is not more than 0.05mgKOH/g.			

Range		KD-60	KD-100	KD-160	KD-250
Measuring range(MPa)		1~60	2-100	2-160	5-250
Nominal upper limit(MPa)		60	100	160	250
Nominal lower limit(MPa)		1	2	2	5
Measuring upper limit(MPa)		60	100	160	250
Measuring lower limit(MPa)		1	2	2	5
Nominal area(cm ²)		0.1	0.05	0.05	0.025
Underpan and piston	Nominal mass(kg)	1	1	1	1.25
	Creating pressure(MPa)	1	2	2	2
Specific weights	Nominal mass(kg)	1;2;5	0.5;1;2;5	0.5;1;2;5	1.25;2.5;5
	Creating pressure(MPa)	1;2;5	1;2;4;10	1;2;4;10	5;10;20
	Quantity(pcs)	2;1;11	1;2;1;9	1;2;1;15	1;2;11
Interface		M20 × 1.5	M20 × 1.5	M20 × 1.5	M20 × 1.5
Weight(kg)		90	90	120	150
Work media		Di(2-ethylhexyl) sebacate, kinematic viscosity at 20℃ 20~25 mm ² / s, The acid value is not more than 0.05mgKOH/g.			



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Model	KD-6 T	KD-60 T	KD-250T	KD-600 T	KD-1000 T	KD-1600 T
Range(MPa)	(0.04~0.6)	(0.1~6)	(0.5~25)	(1~60)	(2~100)	(2~160)
Accuracy: 0.005%; 0.01%; 0.02%; 0.05% of Readings						