

SELV Series Hydraulic dead weight tester



Working principle

SELV Series 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 $\text{pressure} = \text{force}/\text{area}$. 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 1000bar.
2. Pressure reference for factory and calibration lab for the testing, adjustment and calibration

Specification

Model (optional):	SELV-6T	SELV-60T	SELV-250T	SELV-600T	SELV-1000T
Range(MPa):	(0.04~0.6)	(0.1~6)	(0.5~25)	(1~60)	(2~100)

Material

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 Oil volume: 250ml
Gravity: user's local gravity
Piston displacement: LCD display

Features

- Able to test two gauges synchronously; Applied the fast pressure plug;
- 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.
- 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.

Scope of delivery

Measuring base
Weights
Measuring system
"O" Ring
Hand Wheel
Operation manual &CD
Certificate of approval
Calibration record
Power adapter

Order information

Type	SELV-6T	SELV-60T	SELV-250T	SELV-600T	SELV-1000T
Measurement range (MPa)	0.04 ~ 0.6	0.1 ~ 6	0.5 ~ 25	1 ~ 60	2 ~ 100/1 ~ 100
Upper nominal limit (MPa)	0.6	6	25	60	100
Lower nominal limit (MPa)	0.04	0.1	0.5	1	2/1
Upper measurement range (MPa)	0.6	6	25	60	100
Lower measurement range (MPa)	0.04	0.1	0.5	1	2/1

Nominal area of piston (cm ²)		1	0.5	0.1	0.05/0.1	0.05
Chassis and piston	Nominal mass (kg)	0.4	0.5	0.5	0.5/1	1/0.5
	Pressure produced(MPa)	0.04	0.1	0.5	1	2/1
Weight masses	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
	Pressure produced (MPa)	0.01;0.05	0.1;0.5	0.5 ; 2.5	1 ; 5	1;2;4;10
	Quantity(piece)	6;10	4;11	4; 9	4;11	1;2;1;9
Connection		M20 × 1.5 female				
Total weight, including box (kg)		26	50	45	50	75
Working medium		The kinematic viscosity of oil mixture of 25# transformer oil and mm^2/s aviation kerosene is 9~12 at 20°C , 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 °C , with the acid value no greater than 0.05mgKOH /g.		