NG-SHM Class D – Servo Hydraulic Universal Testing Machine

Standards: ISO 7500-1, ASTM E4

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE

GET A QUOTE

Description

The NG-SHM Class D series is designed to provide a solution for your high-force mechanical testing of a diverse range of materials covering many different industries. Class D has an actuator above the unit to allow for one large testing space capable of testing tension, compression, bending, shearing, etc. These systems are developed to accommodate extra-long test specimens with high elongation.

Force Capacity: 600kN (134885.36 lbf), 1000kN (224808.94 lbf), 2000kN (449617.88 lbf)

Load Frame Configuration: 2/4 columns, servo-controlled hydraulic

Test Space: Single Zone

Typical Specimens: Fasteners, rebar, chain, welds, castings

Servo Hydraulic Universal Testing Machine Features

- Single zone design ensures all types of tests finish in one space. Compact and reasonable design is ergonomic and effective.
- Upper actuator features excellent axis alignment, good shock absorption and easy to adjust testing space.
- Advanced wedge type hydraulic tensile grips provide high gripping performance for high strength and a diverse range of materials
- Long travel double-acting cylinder can accommodate different specimen sizes. One-body forging piston and rod, and quality sealing components ensure perfect sealing, high accuracy and repeatability.
- Robust and high-accuracy guidance protects the cylinder from lateral force, improving the working life of the sealing components.
- "I" shape force transducer features excellent linearity and stability with ultra-high accuracy.
- Quality encoder provides high accuracy of displacement measurement and control.
- Servo valve offers fast response and high-accuracy control while providing being easy to handle and to maintain.
- Equipped motor features high efficiency, energy-saving, high start-toque, good performance, low noise, low shaking, high reliability and easy to maintain.

Main Cylinder

- Piston rod is Nickel and Chrome plated. Plating thickness can reach 0.1mm to prevent corrosion and reduce the wearing
- Extra thick rod ensures high stiffness to resist lateral loading.
- Piston and rod are one-body forging with strong impact resistance.
- Sealing components are U shaped and have a double sealing ring, ensuring zero leakage.
- Halite guidance wearing ring is applied to ensure high resistance to lateral force and low friction.

- Zero clearance and pre-loading connection between piston rod and upper grip guarantees high reliability.
- NextGen Material Testing uses the most advanced Piston / guide sleeve copper melting process with the wearing ring. This multiplies the lifespan by five times of that of a commonly used polymer material.

Hydraulic Power Unit

- Equipped with a logic valve in the hydraulic system of the equipment, the Class D features a smart regulation for system pressure. The pressure servo technology can guarantee that the systems pressure is never higher then 1MPa than the cylinders pressure. When the test force is low, the pump output pressure is lower, when the test force increases, pump output pressure increases.
- The differential pressure is adjustable to ensure no shaking occurs during a test, thus saving energy and reducing heat.
- Low noise: Gear pump ensures that the noise is not more than 70dB.
- Easy installation and maintenance: The hydraulic unit is designed with a semi-open structure. The rear cover opens with two doors providing easy access for maintenance and part replacement.
- Low heating and exceptional cooling: The unique pressure differential servo control technique makes the systems heat levels significantly low. The hydraulic unit is designed with a semi-open structure and includes an air-cooling device. Cooling devices can start automatically or manually. The air-cooling motor automatically starts when the temperature reaches the preset value found on the oil temperature gauge. This ensures that the system is capable of running normally despite having a high temperature. The whole systems heating power is 2kW.
- High filtration precision: triple filter, the particle size is less than 5 microns before entering the servo valve. This improves the service life of the servo valve and control accuracy, which makes it very easy to maintain.
- Pressure overload protection: When the pressure exceeds the systems rated pressure, the relief valve will begin to overflow to ensure the protection of the entire system.

- The advantages of the Hydraulic Power Unit: The power unit consists of a 25MPa high-pressure part and 50MPa super high pressure part. The main cylinders working pressure is approximately 25MPa and the clamping cylinder working pressure is around 48MPa. A single motor drives the oil pump.
- The system has two sets of differential circuits. One is for the main cylinder. This allows the piston to return quickly after the completion of a test to have a high working efficiency. Another circuit is for the clamping cylinder. The clamping cylinder allows fast and low pressure gripping of the specimen. Only after the samples are fully clamped, the extra-high pressure can be supplied. This prevents any damage to the sample due to a high clamping force. After the specimen is broken, the high pressure will be automatically released.

NG-SHM Class D - Servo Hydraulic Universal Testing Machine Technical Specifications

Servo-Hydraulic Universal Testing Machine			
Model	SHM605	SHM106	SHM206
Class	Class D		
Capacity	600kN (134885.36 lbf)	1000kN (224808.94 lbf)	2000kN (449617.88 lbf)
Calibration accuracy	Class 1 / Class 0.5		
Force range	1% - 100%FS		
Force accuracy	Better than ±1%/±0.5%		
Extension Range	1% - 100%FS		
Extension Accuracy	Better than ±1%/±0.5%		
Extension Resolution	1/350000 of max extension		
Actuator (piston) up speed (mm/min)	230	230	200
Actuator (piston) down speed (mm/min)	310	360	310
Force Loading Speed	0.02% - 2% FS /s		
Column Number	2	4	4
Column Spacing (test space width) (cm)	47.5	57.5 x 35.5	77 x 47
Maximum Tension Space(cm)	60	70	80
Maximum Compression Space (cm)	42	46	54

Servo-Hydraulic Universal Testing Machine			
Diameter of Round Specimens (mm)	Ø10 - Ø40	Ø15 - Ø55	Ø15 - Ø70
Thickness of Flat Specimens (mm)	2 - 30	2 - 40	10 - 70
Compression Platens (cm)	?150	?200	?200
Actuator (piston) Stroke (cm)	58	68	78
Frame Dimensions (l x w x h) (cm)	74 x 40 x 282	87 x 65 x 327	120 x 90 x 382
Hydraulic Power Unit Dimensions (l x w x h) (cm)	50 x 88 x 92.5	71 x 113 x 110	120 x 90 x 110
Power Consumption (kW)	5	8.5	12
Frame Weight	6613.86 lbs / 3000 kg	13227.74 lbs / 6000 kg	19841.60 lbs / 9000 kg

GET A QUOTE

NORTH AMERICA (CORPORATE HEADQUARTERS): 170-422 Richards St., Vancouver, BC, V6B 2Z4 Canada
CALIFORNIA: 3503 Jack Northrop Ave., Suite # AF937, Hawthorne, CA 90250
Toll Free:+1 (888) 332-3582 | Fax: +1 905 247-0555 | www.nextgentest.com