



NG-SHM CLASS DP – Servo Hydraulic 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

Description

The NG-SHM Class DP series is designed to provide a solution for your high-force mechanical testing of a diverse range of materials covering many different industries. Class DP has an actuator above the unit to allow for one large testing space capable of testing tension, compression, bending, shearing, etc. This system features a side action hydraulic wedge grip. 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



GET A QUOTE



Servo Hydraulic 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

- The clamping force can be adjusted automatically according to sample dimension and material.
- Excellent axial alignment avoids lateral loading.
- Cylinders are inserted inside the grip body; dual direction clamping can ensure a proper alignment regardless of sample thickness.
- Piston is made of alloy steel with high hardness and abrasion resistance.
- Piston rod and piston are a one-body forging. Piston is sealed with a sealing ring which can bear pressure up to 70MPa.
- Upper and lower grip alignment is guaranteed by mechanical force with a high precision and reliability.
- Unique grip design allows clamping of a wide range of specimens without having to change the jaws frequently.

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 than 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 DP – Servo Hydraulic Testing Machine Technical Specifications

Servo-Hydraulic Universal Testing Machine			
Model	SHM605	SHM106	SHM206
Class	Class DP		
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 $\pm 1\% / \pm 0.5\%$		
Displacement resolution	0.007 μ m		
Displacement accuracy	Better than $\pm 1\% / \pm 0.5\%$		
Extension Range	1% - 100%FS		
Extension Accuracy	Better than $\pm 1\% / \pm 0.5\%$		
Extension Resolution	1/350000 of max extension		
Actuator (piston) up speed (mm/min)	190	180	90
Actuator (piston) down speed (mm/min)	240	290	100
Force Loading Speed	0.02% - 2% FS /s		
Column Number	4	4	4
Distance between columns (cm)	60 x 35	66 x 40	90 x 45



Servo-Hydraulic Universal Testing Machine

Maximum Tension Space(cm)	58	68	78
Maximum Compression Space (cm)	45	55	58
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)	∅15	20 x 20	∅20
Actuator (piston) Stroke (cm)	56	65	78
Frame Dimensions (l x w x h) (cm)	88 x 63 x 298	98 x 72 x 359	122 x 88 x 410
Hydraulic Power Unit Dimensions (l x w x h)	48" x 34" x 44" / 121 x 86 x 110 cm		
Power Consumption (kW)	8		
Frame Weight	7716.19 lbs / 3500 kg	14330.05 lbs / 6500 kg	19841.60 lbs / 9000 kg

GET A QUOTE