

Servo-Hydraulic Universal Testing Machine

SHT5000 Series 200kN-2000kN

Fig.1 SHT5000 series (300kN-2000kN)
With top mounted actuator



Configuration

SHT5000 series are servo hydraulic loading and motor driving system and a rugged two or four column construction for exceptional load frame rigidity .This series has three type: top-mounted actuator(fig.1) , built-in oil station(fig.2). Also this series has only one testing space where all tests(need corresponding grips) are performed. An adjustable upper grip block quickly

accommodates specimens of varying lengths .In the case of additional length of columns; the maximum testing space is adjustable to meet extra length specimens. Positive specimen holding is ensured by the wedge action of hydraulic operated grips. This series has an operating range from 200kN to 2000kN and maintains an accuracy of $\pm 1\%$ ($\pm 0.5\%$) of the displayed ,load from 1% to 100% of capacity.



Fig.2 SHT5000 series (200kN/300kN) with built-in oil station

Functions & Applications

SHT5000 series' systems comply to ISO 15579-2000, ISO679, ISO 7438-1985, ISO6892-1998, ISO4012, ISO10065 and other international and national standard. SHT5000 series' systems can carry out tension test, compression test, bend test and shear test by three controlling ways including force control, deformation control and displacement control; and these three

controlling ways can be switched according to the preset conditions, the systems can realize constant-rate loading, testing with constant-rate displacement, testing with constant-rate deformation and so on. With powerful testing software PowerTest, SHT5000 series' systems can acquire, dispose automatically testing data, display real-timely stress-strain curve,

load-deformation curve, load-time curve and other related curves, at the same time, can save, output, print test report and data with customized format. With knight after service of experienced experts and assistant controlling of powerful professional testing software PowerTest, the machine can be widely used in ultimate R&D department, Universities and Academies,

Quality control and Inspection department, calibration centers/laboratories and concerned industries etc

Key Features

SHT5000 series testing machine features as follow:

1. Equipped with advanced servo-hydraulic valve with excellent pollution-resistance and high accuracy;
2. Equipped with hydraulic cells and accessories with high quality to ensure non-leakage and non-pollution of hydraulic system;
3. Various self-diagnosing functions such as self-detecting of overpressure, over-flow and over-high temperature;
4. Various protecting functions including protection of over-load, position-limited, over-voltage, and

- self-alarmed on non-pure oil and so on;
5. Adopting full-digital closed-loop controlling system to realize three closed-loop controlling requirement of load, deformation and displacement; and these three controlling ways can be switched smoothly and combined discretionarily;
 6. Non-step loading system within capacity which is superior to loading system with step;

7. Testing space and working height comply to man-machine engineering, which offer easier and more convenient operation;
8. Special hydraulic loop to improve greatly returning rate of upper jaw and save testing time;
9. Single testing space which permits more capacious testing space; available with upper-located oil cylinder or lower-located oil cylinder.



Fig.3: Close-up of DCS-200

Control System

SHT5000 series is supplied with closed-loop servo control

capability conducted by DCS-200 (fig.3) . This closed-loop control system constantly monitors the test in

progress and regulates the testing rate to maintain preset conditions .This enables you to conduct tests automatically

and ensures consistent

testing control free from

operator variability.

Accessories

1. Hydraulic tensile grips(fig.4)
2. Hydraulic power station(fig.5)
3. optional hydraulic power station(fig.6)



Fig.4



Fig.5:



Fig.6

Technical Specifications

Series	SHT5000			
Models	5205/5305	5505/5605	5106	5206
Accuracy Level	1/0.5			
Load Capacity(kN)	200/300	500/600	1000	2000
Number of Column	2	4	4	4
distance between Columns(mm)	520	600x350	660x400	800x450
Maximum Tensile Space (mm)	400	600	700	1000
Round Specimen Diameter (mm)	Φ10-Φ32	Φ10-Φ40	Φ15-Φ60	Φ15-Φ80
Flat Specimen Thickness(mm)	2-25	2-30	2-40	10-70
Compression Platens(mm)	Φ120	Φ150	200×200(cube)	Φ240
Ram Stroke (mm)	300	580	680	780
Stroke Speed range (mm/min)	0-160	0-290	0-280	0-156
Stress Speed	1 N/mm ² / s – 30 N/mm ² / s			
Strain Speed	0.00025/s-0.0025/s			
Dimension of Load Frame(L×W×H)(mm)	920×610×2430	880×630×2980	980×720×3530	1220×880×4180
Dimension of Hydraulic Power Station(L×W×H)(mm)	1150×600×900	1210×610×1100		1500×620×1250
Total Power(kW)	3	6		
Weight(kg)	1500	3500	6000	9000

(1) Available according to order (2) available according to actual requirements

(2) Specifications

Load measurement accuracy: ±1% of indicated load from 0.4% to 100% capacity(Grade 1); ±0.5% of indicated load from 1% to 100% capacity(Grade0.5)

Load measurement resolution: 1/300000 of capacity, no steps in full loading range and keeping unchanged

Displacement Measurement Accuracy: ± 1% of indicated / ± 0.5% of indicated

Displacement Resolution (mm): 0.004/0.0008

Deformation Measurement Accuracy: ± 1% of indicated / ± 0.5% of indicated

Strain measurement accuracy: ± 0.5% of indicated load from 1% to 100% capacity FS

Strain Velocity Accuracy: ± 1% / ± 0.5% of set

Operating temperature range: 0°C to 38°C

Storage temperature range: -10°C to 45°C

Humidity range: 10% to 90% non-condensing, web bulb method

Power: standard optional voltages 220/240VAC, 50-60 Hz; power must be free of spikes and surges exceeding 10% of the nominal voltage(CMT5000 needs voltage in 380V±10%)