



# Materials Testing Machine

Hydraulic Universal Testing Machine

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## Feature:

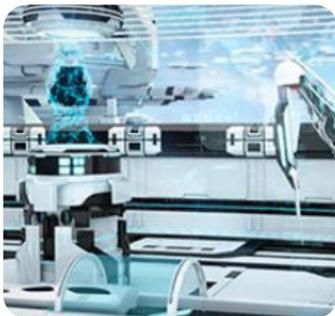
The load frame appearance is streamline designed and exquisitely made, four poles and double guide screws form loading test space; Underneath oil cylinder use hydrostatic oil film clearance seal technology, Upward-Downward moving beam adopt turbine, worm transmit mechanism and eliminate gap mechanism, it make sure the beam moving smoothly. without gap ,collect part is semi-open type, using imported high accuracy load sensor measuring test force directly, with high accuracy indicating value:  $\pm 1\%$  and wide measuring range: 2-100%. Oil source system adopt integrate control cabinet, with integrated servo- clamp oil source. Use imported high pressure gear pump, steady and no impacting, new independent control system is reliable and steady, also has high sampling frequency.

Strain control + Strain control + moving control , yield automatically determine, suit GB228-2010 A method;

Strain control + moving control + moving control , yield automatically determine, suit GB228-2010 A method;

Stress control + Strain control + moving control , yield automatically determine, suit GB228-2010 B method;

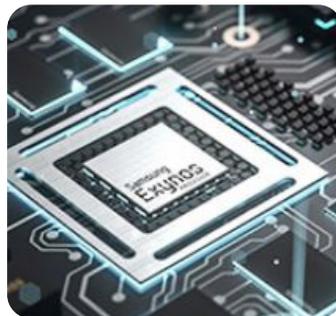
Stress control + moving control , Non-elastic portion automatically determine, Suitable for power control to pull off .



Scientific research



Machining



Electronic industry



Aerospace

# Product structure diagram

(WAW-D Series Hydraulic Universal Testing Machine)



01

This machine is an important equipment for testing the physical properties, mechanical properties, process properties, structural properties and internal and external defects of various materials and their products.

02

It can realize the tensile, compression, bending, shear and other types of tests on metal or non-metallic materials.

03

It can automatically calculate the tensile strength, yield strength, specified non proportional extension strength, elastic modulus and other performance indicators of the measured materials.

04

Complete the closed-loop control of constant velocity loading, constant velocity deformation, constant velocity displacement and constant velocity strain.

## Technical Specification:

Model	WAW-100/300D	WAW-600D/1000D	WAW-1500D/2000D
Columns	6 columns (4 Stand columns, 2 guide screw)	6 columns (4 Stand columns, 2 guide screw)	6 columns (4 Stand columns, 2 guide screw)
Max.force	100kN/300kN	600kN/1000kN	1500kN/2000kN
Grade	1	1	1
Force range	2%-100%FS	2%-100%FS	2%-100%FS
Force resolution	1/500000	1/500000;1/300000	1/300000
Force accuracy	±1%	±1%	±1%
Displacement resolution	0.01mm	0.01mm	0.01mm
Displacement accuracy	±0.5%	±0.5%;±1%	±1%
Deformation range	1%-100%FS	1%-100%FS	1%-100%FS
Deformation resolution	1/500000mm	1/500000mm;0.001mm	0.001mm
Deformation accuracy	±0.5%	±0.5%;±1%	±1%
Wedge clamp	hydraulic auto clamp	hydraulic auto clamp	hydraulic auto clamp
Round specimen	Φ13-Φ20 Φ20-Φ32	Φ13-Φ26 Φ26-Φ40	Φ15-Φ30 Φ30-Φ55 Φ55-Φ70
Flats pecimen thickness	0-15mm,15-30mm (optional)	0-15mm 15-30mm( optional); flat specimen thickness	10-40mm 40-70mm
Flats pecimen wide	75mm	90mm;100mm	
Press plate size	Φ120mm	Φ160mm	Φ160mm
Pull space	800mm	800mm/950mm	1000mm
Compression space	550mm	550mm/700mm	750mm
Wide	500mm	500mm/560mm	680mm
Table size(mm)	660*540	660*540/810*600	810*500/720*500
Machine size(mm)	690×660×2000, oilsources1200x680x750	690×660×2000, oilsources1200x680x750; 830×720×2160, oil sources1200x680x750	830×720×2160, oil sources1200x680x750
Weight	(machine) kgs 1850 (oil sources) kgs 300	(machine) kgs 1850 (oil sources) kgs 300;(machine) kgs 2100 (oil sources) kgs 300	(machine) kgs 2100 (oil sources) kgs 300
Power	2.75KW 380V,50HZ or 220V/60HZ	2.75KW 380V.50HZ or 220V/60HZ;3.0KW 380V, 50HZ	3.0KW 380V, 50HZ



### Control Cabinet

With low noise radial piston pump use servo pump to control oil temperature will not rise

Safety Cover  
Guaranteed test safety



Compression Plate or Bending Fixture  
Can change according customers requirements

Computer control  
According to user required format,using EXCEL  
or WORD to compile reports and print bulk



## New type advantages



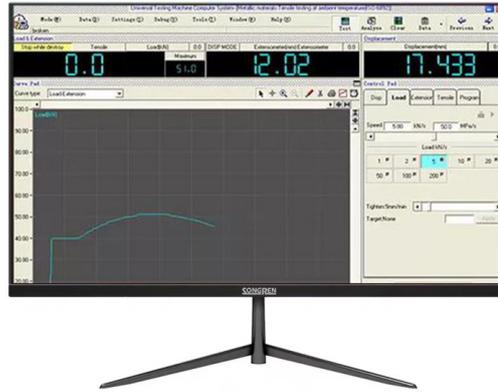
**Manual control box:**Stainless steel hand control box:more durable,can control the rise and fall of moving beams and cylinders,clamping and loosening of jaws

**External independent controller(WAW model,USB connect to the computer):**the external independent controller replaces the traditional test machine PCI or PCIE board and power amplifier.It effectively avoids data loss caused bycomputer damage or loss,saves maintenance costs,and is more convenient to install and replace.

# Testing Software

WAW Series control way:

The computer real time control the testing operation progress,that is computer automatically control the main unit movement,such as:thebeam rise and down,refueling speed control.- contains a variety of control methods,one of these is single-step program,including many closed-loop control ways,such as constant stress,constant strain,constant displacement.



## The installation of the product

- Carry the main engine and hydraulic power unit to the installation area, and check the equipment according to the packing list.
- Prepare for lifting according to the weight of the machine.
- Lift the main engine and hydraulic power unit to the foundation and adjust the position. (Please refer to the lifting diagram when lifting)
- After the main unit is hoisted, attach the four anchor screws to the corresponding positions on the base of the main unit.
- After the host is in place, place the leveling horn under the base of the main unit, and adjust the level of the main unit on the plane of the main machine table with a frame level to water the foundation.
- Place the hydraulic power unit on the side of the main unit according to the product foundation map.

### Oil tube connection

Refer to (Figure 7) oil source pipeline connection diagram, connect the hydraulic clamping oil pipe and the main oil pipe to the corresponding high-pressure hose according to the joint at the joint, and check whether the O-type sealing ring of each hydraulic pipe joint is intact, otherwise the replacement is random. A new sealing ring is provided; the high pressure hose joint and the corresponding oil pipe joint are tightened.

### Device Control Line Connection

According to the identification of the connector of each connector, connect each connector to the corresponding connection position and fasten it.

## Adding hydraulic oil

Add the pre-prepared HM-46 anti-wear hydraulic oil to the fuel tank from the air filter interface of the oil source. Note that the concentrated hydraulic oil must be a brand new hydraulic oil and must not be used with used oil.

## Power connection and debugging

Connect the cable equipped with the equipment to the pre-configured air switch on the site. After turning on the power, open the front door of the oil source control cabinet and observe whether the running indicator is lit. If it is not bright, please select any two of the three live wires. The joints are exchanged for position and confirmed by operation.

## Maintenance of Products

Hydraulic universal testing machine is a high-precision instrument for material testing. Good maintenance not only guarantees product performance and prolongs service life, but also is an necessary means to reduce product waiting time and improve efficiency. In addition, the more understanding of the structure of the machine, the working principle, hydraulic components, electrical components, software, etc., is more conducive to product maintenance.

### Maintenance of the main engine and hydraulic power unit

- 1.1. Develop good operating habits and follow the rules. After the end of each shift, carefully clean the rust and other dirt around the main engine, the cylinder returns to the original position, and the equipment is returned. Anti-rust treatment for parts that are easy to prevent rust.
- 1.2. Fill the lubrication parts regularly according to the usage. For example, the screw nut pair and the chain drive connection are added with molybdenum disulfide grease, and the lithium-based grease is added to the hole combined with the screw.
- 1.3. Pay attention to the abnormal conditions of the product, such as the noise of the hydraulic power unit, the screw pair, the abnormal vibration and noise of the chain pair. In case of abnormal situation, promptly eliminate it. If you have any questions, please call our company.
- 1.4. The hydraulic oil of the hydraulic power unit is inspected according to the requirements of the oil. The quality of the oil is closely related to the performance and life of the product. Please use qualified hydraulic oil.
- 1.5. Always pay attention to the liquid level of the hydraulic power unit. When it is lower than the normal liquid level, it should be replenished in time.
- 1.6. Generally, the hydraulic oil is replaced once a year, and it is better to clean the entire tank when replacing the hydraulic oil of the power unit.
- 1.7. Depending on the application, the filter element of the oil pump inlet and outlet should be cleaned or replaced regularly.
- 1.8. Check and verify the equipment regularly.
- 1.9. Develop maintenance and maintenance plans and record maintenance information in detail.