

WAW-3000D Hydraulic Universal Testing Machine



HST GROUP CO., LTD.

1.Introduction Application

HST WAW-3000D(Dual space) Hydraulic Universal Testing Machine is ideal for high-capacity tension, compression, bend/flex, and shear testing.

It accords with the correspondent requirements of BS, EN, ISO, ASTM,JIS and many other testing methods.

These frames feature dual spaces so users can quickly change between tension and compression testing without having to remove heavy fixtures.

2.Application

Metals-(wire, rod, tube,strip, plate, strip)

Fasteners (tensile, proof,single and double shear)

Construction materials(reinforcement bar, wire,mesh, folding,compression of concrete and components)

And more

3.Features

3.1 Top seated cylinder structure makes the installation of frame without complicated foundation construction.

3.2 Extra-length screws and columns, with an adjustable upper crosshead, to increase the available test space for longer test specimens.

3.3 Semi-open front hydraulic wedge clamps for easier loading and allowing rapid loading and unloading of specimens.

3.4 Rigid 4-column load frame construction providing superior axial and lateral stiffness and minimum maintenance, low reaction at specimen failure.

3.5 Servo valve attached direct on actuator providing close-coupled servo valve and accumulators for improved performance and reduced pressure fluctuations.

3.6 With digital displacement transducer for the best positioning and measuring accuracy.

3.7 Hydraulic operated wedge grips available.

3.8 Including grip control system mounted direct at the machine.

3.9 Tooling for tension, compression, bend/flex, shear and other tests.

3.10 With chrome plated columns for easy cleaning and longest life.

4.Mechanical Part

All components and parts of the product are processed under the control and management of ISO 9001. The key parts are original imported from well-known international companies, which has efficiently improved the measurement and control accuracy, as well as long term stability.

4.1Multi-functions:

It can perform high-capacity tension, compression, bend, flexure, and shear testing which in accord with the relative requirements of ISO, ASTM, BS, EN, JIS, and many other national testing methods.

Interchangeable fixture design to meet requirements of different specimen materials and test type.

4.2 Wide selection applications:

Frame is available in capacity 3000kN (675,000 lbf), this frame is designed for performing tests on metals, sheet materials, bar stock, composites, fasteners, rebar, strapping, wire and other materials.

4.3 Large test space:

Double acting crossbeam 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. Optional extra height load frames are available.

4.4 Rugged load frame:

Four-column construction provides exceptional load frame rigidity.

4.5 Fully open front wedge grips:

Fully open front wedge grips make it easy to insert and remove specimens for increased productivity and operator safety.

4.6 Crosshead remote control with handheld controller:

It allows positioning of the adjustable crosshead and opening and closing of the optional hydraulically actuated grips.

4.7 High performance load cell:

Load cell system provides superior accuracy, zeroing and overloading capability, which increases strong anti-side force and high measurement accuracy as well as long-term stability.

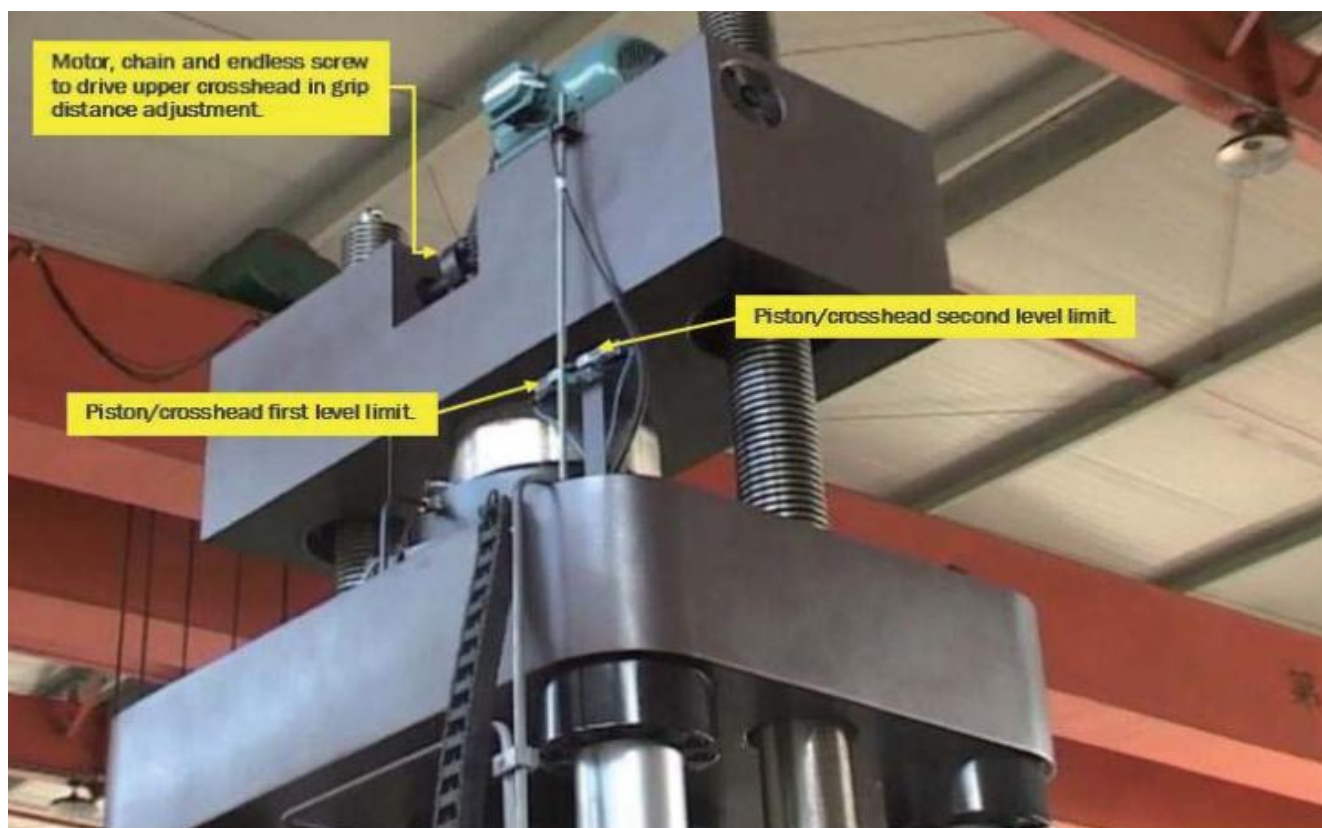
4.8 Over-Travel Limits:

Piston and crosshead over-travel limits, located on back frame, help prevent crosshead overshooting and sensor overloads.

3-stage crosshead position limit brings no risks during operation.

4.81 Mechanical part: position-limited protection of piston and lower crosshead.

4.82 Software part: Protection of over-load by software is also available.



5. Technical Specifications

Model	WAW-3000D
Max. Load(kN)	3000
Load accuracy	Class 1
Load range	50-3000kN
Load resolution	Capacity/300, 000 (fully auto scaling of single
Stroke	300mm
Test speed(mm/min)	0-80
Adjustable crosshead speed(mm/min)	50
Clearance between grips(mm)	1000 (excluding ram stroke)
Clearance between platens(mm)	800
Nominal maximum specimen sizes Diameter(mm)	Φ20~Φ50, Φ50~Φ80, Φ80~Φ110
Nominal maximum specimen sizes Thickness(mm)	0~50, 50~100
Nominal maximum specimen sizes Width(mm)	110
Platen dimensions(mm)	280
Speed accuracy	within ±1% / ±0.5% of set speed
Adjustable crosshead speed(mm/min)	260
Load frame(mm)	1,460*970*5,000
Weight(kg)	25500

Load Measurement Accuracy	±1% of reading to 1/100 of load weighing system
Strain Measurement Accuracy	±0.5% of reading to 1/50 of full scale with most ASTM
Speed Accuracy	Set speed ~10% Max. Speed: ±1% Set speed ≥10%
Position measurement accuracy	±0.5 of reading or 0.001mm, whichever is greater.
Power supply	AC380V±10%, 50Hz/60Hz (can be customized)
Humidity Range	10% to 90% non-condensing.
Storage Temperature	-40 to +66°C (-40 to +150°F)

6. Software Part

TestWorld provides all the capabilities you need to handle basic tensile, compression, bend/flexure, peel, tear, friction, and simple cyclic test requirements quickly and efficiently, it features programmable control channels, programmable calculations and programmable report templates.

6.1 Windows-based platform

Software package on Windows-based platform which is userfriendliness and easy-to-use.

6.2 Multi measurement units

Load can be displayed in kN, lbf or kgf as selected by the operator.

6.3 Multi controlling channels

Displacement control, force control, deformation control, stress control, strain control, constant stress, constant strain etc.

6.4 Multi-Stage Testing

The multi-stage setup allows the user to configure virtually any type of test setup imaginable. Each part of a test is defined as a "stage". Each stage can be setup with its own independent load or distance characteristic and speed. Multi-stage testing can be used for creep tests, load hold or distance hold tests or other sophisticated test methods. You can configure a wide range of wave shape methods including sine, triangle, saw tooth, square, ramp and trapezoidal to your test sample. The user has total freedom to create the test movement required for testing their sample without the need for expensive 3rdparty software applications or validation requirements.

For example, testing process can be divided into four stages, first: pre-load, the other three stages may select control type of displacement control, force control, deformation control, strain control and stress control etc. Parameters of each stage may be freely set and be switched automatically and smoothly.

6.5 Test method storable

User can work out an optimal test method according to test specimen of different material and dimensions according to their experience, then operator only need to load existed test process and click “Start” to conduct the same test specimen for next tests.

6.6 Memory return

The crossbeam can be set automatically return to the original position when test completed.

6.7 Intelligent navigation

Powerful and mature wizard guide operator of fresh hand to finish every test procedure with no mistakes. Straightforward operation menu makes the switching among different menus clear and simple, full intelligent tips help you avoiding any operation mistakes.

6.8 Software linear compensation

Up to 20 sections of linear compensation function for the sensors which can improve the accuracy degree when necessary.

6.9 Automatic input the specimen dimensions

Automatically re-generate the same specimen dimensions,which has reduced the input operations and avoided re-input errors.

6.10 Reset value

Force, deformation, and displacement can be manually reset to zero by clicking button on software, while, the value automatically reset to zero when starting a test.

6.11 Recall Test process

Test process can be recalled as video clip on review window for teaching and research purpose. (Recall every finished test like video clip to review what really happened during test.)

6.12 Data editable on curve

Test parameters can be marked on finished testing curve. You can select required parameters to show on test curves.

6.13 Editable report

User can freely edit tailor-made EXCEL report template.

6.14 Multi curve diagrams

Display real-time Stress-Strain, Force-elongation, Force-time,Force-displacement and other related graphs or switch to other graphs on demand.

Y-axis could be Force, stress X-axis could be Elongation, extension, strain, time,displacement

6.15 Curve comparison

Curves of the same specimen group may be compared to analyze the differences.

6.16 Part enlargement

Any part of the testing curves can be enlarged for data analysis.

6.17 Automatic calculation

System automatically calculate related test parameters according to EN, ISO, ASTM, JIS, GB etc, such as F_m (F_b), F_{eh} , F_{el} , F_p , R_m (σ_b), R_{eH} (σ_{su}), R_{eL} (σ_{sl}, σ_s), $R_{p0.2}$, $R_{p0.1}$ ($\sigma_{p0.2}$), $R_{p0.05}$ ($\sigma_{p0.05}$), $R_{p0.5}$ ($\sigma_{p0.5}$), E , E_t , E_c , $Z(\psi)$, A (δ), τ and other test parameters, test data can be saved in several formats. (You can select required test parameters that you want to display on main interface as well as show on report.)

6.18 Networking Interface system available

It can download test information and upload test result to remote computer facilitate the whole test procedure.

6.19 Tailored language pack available

TestWorld is currently available in Chinese, English, other languages are available upon request.