

**WAW-2000B Computerized Electro-hydraulic Servo
Universal Testing Machine (6 Column)
TIME GROUP**



1.Uses:

This testing machine is widely used for tensile, compression, bending and shearing test for metal materials, like steel, alloy, aluminum, etc. With special accessory, it can also be used for mechanical property test of fastener, steel wire rope and components .The machine is calibrated according to ISO 75001 and ASTM E4. It can do many different kinds of test according to different standards, ISO6892, ISO7438, ASTM A370, ASTM E8 and BS EN standards.

2. Main technical specifications:

2.1 Max. Test force: 2000 KN;

2.2. Measurement range of accuracy: 2%-100%; there is 4 subsections (1, 2, 5, 10);

- 2.3. Control range of stress rate: 1-60MPa/S;
- 2.4. Adjust range of test stress rate: 1N/mm²S⁻¹-60N/mm²S;
- 2.5. Adjust range of test strain rate:0.00025/S-0.0025/S;
- 2.6. Precision of deformation measurement: $\pm 0.5\%$;
- 2.7. Subsection of deformation measurement: $\times 1$, $\times 2$, $\times 5$, $\times 10$;
- 2.8. Precision of displacement measurement: $\pm 1\%$;
- 2.9. Control range of displacement rate:0.5mm/min-50mm/min;
- 2.10. Test tensile space: 850mm;
- 2.11. Test compression space: 800mm;
- 2.12. Clamping diameter of round specimen: $\phi 15$ - $\phi 70$ mm;
- 2.13. Clamping width of flat specimen: 120mm;
- 2.14. Clamping thickness of flat specimen: 10-70mm;
- 2.15. Diameter of cutting test specimen: $\phi 10$ mm
- 2.16. Diameter of upper and lower plate: $\phi 240$ mm;
- 2.17. Piston travel: 250mm;
- 2.18. Distance of bending roller: 50-550mm; Width of roller: 160mm;
- 2.19. Deformation measurement: Standard configuration: standard distance 50mm; extensometer that it's Max. Deformation is 25mm; subsection is 1, 2, 5, 10, the precision is $\pm 0.5\%$ FS of reading value from 20% of full travel;
- 2.20. Software and user's interface: software and interactive dialogue with the computer interface under windows;
- 2.21. Power supply: 3-phase 4-wire, 380V 50 Hz, total power 6Kw;
- 2.22. Dimension: Host machine 1500×910×3380(mm)
Control box 600×600×1165(mm)
- 2.23. Weight: Host machine 8000kg, control box 200kg.

3. Standard configuration:

- 3.1. Host machine
- 3.2. Servo control special oil supply

- 3.3. High-precision special electro-hydraulic proportion servo valve (Italy ATOS)
- 3.4. Multi-channel program-control amplifier
- 3.5. High-precision oil pressure sensor
- 3.6. Import Japanese photoelectric encoder
- 3.7. PC control system (general software and interface system)
- 3.8. Dell computer, 17-inch LCD monitor, 1G RAM, 160G Hard disk.
- 3.9. HP A4 color inkjet printer
- 3.10. Tensontest: Special software for testing machine that its function is very strong
- 3.11. UTB-P power control box; it is enlarge the power of valve group
- 3.12. Electronic extensometer: it can measure $R_{p0.2}(6p0.2)$, $R_{sl}(6sl)$, $R_m(6b)$, $R_{p0.05}(6p0.05)$ and E
- 3.13. Each one grip for tensile, compression, bending test

4. Features of measure and control system:

The AD800 full-digital closed-loop measure and control system is advance and creative, as followed:

4.1. Foreign electronic components, digital design.

4.2. Meeting to PCI2.1 standard; the computer identify and install automatically, "work if connect".

4.3. Integrated dual-channel precision amplifier, digital zero.

4.4. The data acquisition contains 4 high-precision and 18 A / D converter. The Max. resolution is 1/200000. There is no subsection or 4 subsections according to the user's needs.

4.5.3 Photoelectric encoder inputs; the orthogonal codes pulse can be 5MHZ; it can find and correct mistakes, identify, count and so on.

4.6. There is no manual component in electronic measurement and control system; it can

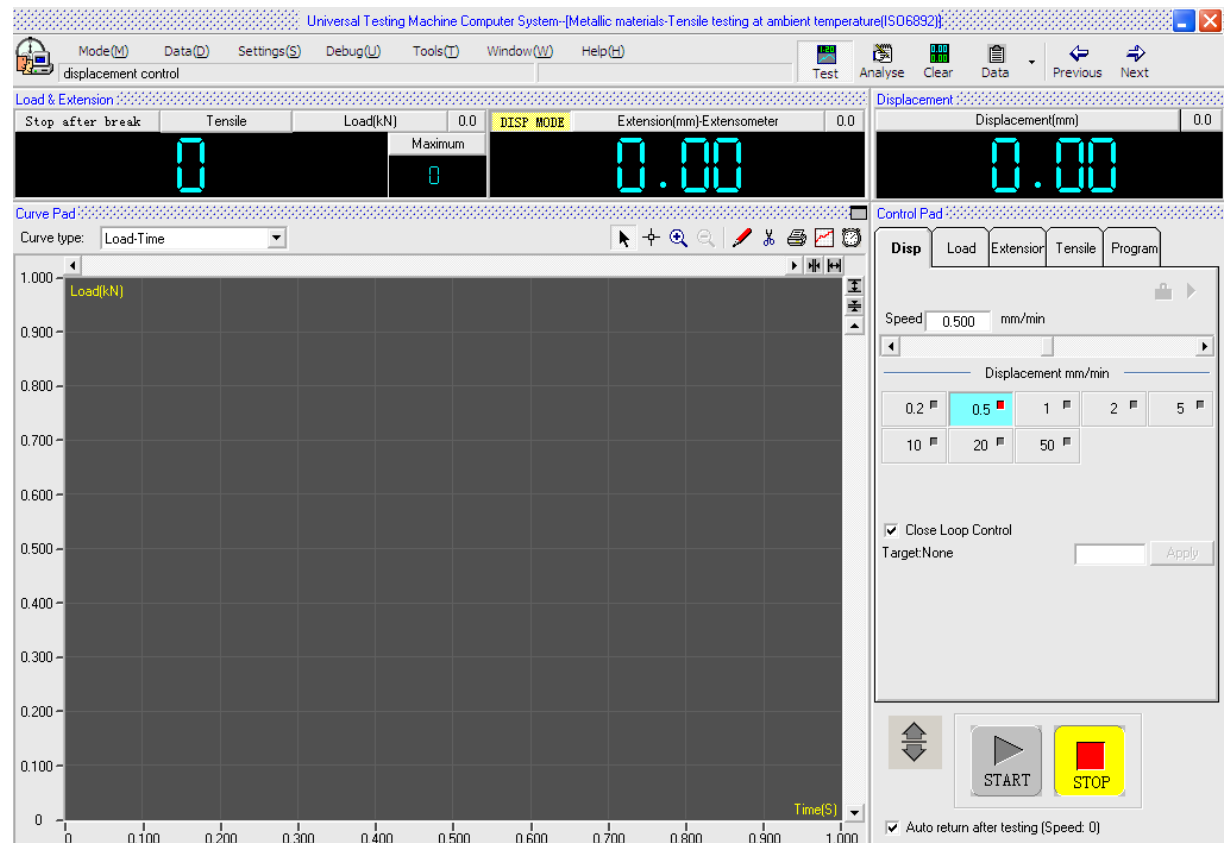


ensure to change easily.

4.7. Build-in CPLD, it can high-speed calculate and real-time process.

5. Functions and features of Tenson Universal Testing Machine Software:

Software interface:



5.1. Test module: test software main interface, test control center;

5.2. Parameter management authority: Operators of non-debug can not enter the parameters this module;

5.3. New data module: can make the new test parameters data by a single or batch of;

5.4. Curve analysis module: the users can analysis the curve after the test. The user can find the every point of curve by the mouse.

5.5. Data inquiry module: the user can quickly find test data they need from the thousands of test data if they know nay parameter.

5.6. Parameter debugging module: control unit of machine control parameter;

5.7. Report print module: edit test report by the needs arbitrarily.

5.8. Control program editor module: the user can order the special control program by the actual needs.

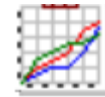
6. Tenson Test is with many ancillary procedures:

6.1. Debugging toolbox procedure: open it, and then can change the configuration parameters of system;



6.2. Batch processing program: it can process the test data that they have the same batch, serial date and other same signal.

6.3. Report processing program: TesonTest.DOC, TensonTest.xls and high-defined report, can make the user edit the format statements.



6.4. Tenson Test Programmer: the user can order the special control program by the actual needs.

6.5. Intelligent operation, the users provide the suggest airing the test and operate it easily.

6.6. Control function: it contains many control modes. The simple program includes isokinetic stress, isokinetic strain, isokinetic displacement, displacement maintaining and force maintaining and many closed-loop control modes; the multi-program includes metal tensile tests and so on. PID control algorithm adjusts the load process. Isokinetic control error $\leq 5\%$, pressure maintaining error $\leq 0.5\%$; it supply the professional "Control program editor" software; the user can choose the program for his needs.

6.7. Test force overload protection; it can record and can be found later.

7. Main features:

7.1 .Load measurement: high-precision oil pressure sensor, high-precision oil tank piston; they ensure the high precision and high reliability. The linear repeatability is good; the impact is strong, reliable and has long life.

7.2. Displacement measurement: import photoelectric encoder, high-precision, reliable.

7.3. Deformation measurement: high-precision strain extensometer is reliable and economical.

7.4. Automatic clamping: single hydraulic clamping oil supply; automatic and reliable clamping, high safety.

7.5. Multiple protection: double protection for hardware and software; double protection piston travel for mechanical and electric; protect itself automatically when exceeding 2~10% of Max. load.

7.6. Automatic calibration: calibrate the load, deformation and displacement automatically.

7.7. Getting the test results: get the ReH, ReL, Fm, Rp0.2, Rt0.5, Rm, E results automatically.

7.8. Management of database: manage the test machine software by Access database.

7.9. Preserve the data interface, can be connected with Internet directly and share the resources.

7.10. Compact structure: more reasonable structure. Lowering the height of the mainframe, but the test space is same.

7.11. Multiple control modes: force, displacement and deformation three closed-loop, multiple controls that contain metal tensile test and so on. The professional "Control program editor" software is customized by the users' actual needs.

8. Documents

- ✧ Operational manual (English language)
- ✧ Certificate
- ✧ Packing list
- ✧ Software manual (English language)

9. Installation and training

If required by the buyer, the seller can offer on site installation and training. In principle, the cost for our engineer go abroad for installation and training, which include visa, round tickets, food and room, 50 USD/ per day allowance should be undertaken by the buyer.

10. Warranty and after-sales service

The warranty of all our testing machines is one year.


During this warranty, it is free to replace the spare parts.

Without this warranty, it only charges the cost of the spare parts.

All our testing machines enjoy a long life after-sales service.

11. Standard parts

Description	Remark	Image
Control PC	Dell brand	
Control DSP card and software	3 Close Loop Control	
Printer	HP A4 Color Inkjet Printer	
Hydraulic Servo Valve	Italy ATOS	
Extensometer	Gauge length 50mm, Range 25mm	
Tensile Test Accessories	Wedge grips for specimen: Round $\Phi 15$ - $\Phi 30$, $\Phi 30$ - $\Phi 55$ mm, $\Phi 55$ - $\Phi 70$ mm Flat 10-40mm, 40-70mm	
Compression Test Accessories	Platen size: $\Phi 240$ mm	
Bending Test Accessory	3 point bending flexure	
Hydraulic pressure sensor	Built in the machine	
Signal Amplifier	Servo valve control	

Photoelectric encoder	Chinese or Japanese brand	
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