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HY-WDW-10D Computer control Universal Testing Machine

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I. Model and Name

HY-WDW-10D Computer control Universal Testing Machine

II. Introduction

HY-WDW-10D is a new generation of microcomputer controlled electronic universal testing machine. It is mainly used to test the tensile, compression, bending, shearing, peeling, tearing and other mechanical properties of various metals, non-metals and composite materials. The system adopts microcomputer closed-loop control, has a wide and accurate loading speed and force measurement range, and has high accuracy and sensitivity in the measurement and control of load and displacement. The equipment is suitable for metal, adhesives, pipes, aluminum, stainless steel, copper, aerospace, petrochemicals, waterproof membranes, wires and cables, textiles, fibers, rubber, ceramics, food, medical packaging, geotextiles, films, wood, Paper and other manufacturing industries, as well as product quality supervision departments at all levels. It is also suitable for teaching demonstrations in colleges and universities.

The design of the main machine of the testing machine has the characteristics of beautiful appearance, convenient operation, stable and reliable performance, no pollution, low noise and high efficiency. The design of the auxiliary equipment matches the host machine, and the structure is wedge-shaped translational, manual rotation clamping, and the sample is not subject to additional force. The clamping is convenient, reliable, and does not slip.

The test machine adopts AC servo speed control system and motor with high

speed control accuracy and stable performance as the drive system; a specially designed synchronous toothed belt deceleration system and ball screw pair drive the moving beam of the test machine; Windows is the operating platform The control and data processing software based on database technology adopts virtual instrument technology to replace traditional digital tubes and oscilloscopes, and realizes the screen display of test force, test force peak value, beam displacement, sample deformation and test curve. All test operations are It can be done by mouse input on the computer screen, has a good man-machine interface, and is easy to operate; the dual-channel all-digital program-controlled amplifier inserted in the PC realizes the real physical zeroing, gain adjustment and test force The automatic gear shift, zero adjustment and calibration of the measurement, without any analog adjustment links, the control circuit is highly integrated, and

mechanical adjustment devices such as potentiometers are completely eliminated. The structure is simple and the performance is reliable. The comprehensive application of the above-mentioned technologies ensures that the machine can realize closed-loop control of parameters such as test force, specimen deformation and beam displacement, and can realize constant force, constant displacement, constant strain, constant velocity load cycle, constant velocity deformation cycle, etc. test. Users can use the PC expert system to independently set control modes such as constant stress, constant strain, and constant displacement, and smooth switching between various control modes.

The program-controlled mode meets the requirements of the national standards GB/T228-2002 "Metal Material Tensile Test Method at Room Temperature" and GB/T7314-1987 "Metal Compression Test Method", achieving compliance with GB, ISO, JIS, ASTM, DIN and other standards Data processing, especially with good scalability, processing results can be stored on disk in the form of ASCII code. It provides convenience for the post-processing of test data such as reanalysis, database management and network transmission.

Because the test machine realizes the automatic control of the test process and the information processing of the test results, the operator can conveniently and autonomously set the test program control steps. During the tensile test, the tester can clearly observe the whole test process of low carbon steel and cast iron. Through repeated loading in different curve segments, from the force-displacement (deformation) curve, it is possible to visually verify Hooke's law and observe the phenomenon of cold work hardening. For materials without obvious physical yield phenomena, the hysteresis loop method or the stepwise approximation method can be used to determine the prescribed non-proportional extension strength. During the compression process, it is convenient to observe the compression yield phenomenon and strengthening phenomenon of low carbon steel, the compression failure process and fracture shape of cast iron.

It can also detect the n value and r value of mechanical materials.

III. Main technical parameter

★, style: door type floor type

★, testing machine accuracy: 0.5 level

★, Maximum tensile and compression test force: 10KN; 1 ton

1. Test force measurement range: 0.4%-100%FS

2. Test force classification: you can choose to classify or not to classify the whole process

3. Test force measurement accuracy: better than ±0.5% of the indicated value;

4. Displacement resolution: 0.0001mm;

5. Accuracy of displacement measurement: ±0.5%;

6. Deformation measurement range: 0.2～100% FS;

7. Relative error of deformation indication: within ±0.50%;

8. Deformation resolution: 1/100000FS;

9. Force control rate adjustment range: 0.05～5%FS/S;

10. Relative error of force control rate: within ±1% of the set value;

11. Deformation rate adjustment range: 0.02～5%FS/S;

12. Relative error of deformation control rate: when the rate is less than 0.05% FS, it is within ±2% of the set value;
When the rate is ≥0.05% FS, it is within ±0.5% of the set value;

13. Measuring range of beam speed: 0.05～500mm/min;

14. Relative error of beam speed: when the speed is <0.01 mm/min, within ±1.0% of the set value;
When the speed ≥0.01 mm/min, within ±0.2% of the set value;

15. Constant force, constant deformation and constant displacement control range: 0.5%～100%FS;

Constant force, constant deformation, constant displacement control accuracy: when the set value is ≥10% FS, within ±0.1% of the set value; When the set value is less than 10% FS, within ±1% of the set value;

16. Stretching stroke: 0～800mm;
17. Compression stroke: 0～800mm;
18. The maximum stroke of the beam: 1250mm;
19. Test width: 400mm
20. Power supply: 220V, 50Hz; 0.75kW;
22. Host size: 700×460×1750mm;
23. Host weight: about 450Kg;

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IV. Host configuration

No.	NAME		SPECIFICATION	配置数量
1	Mainframe		45# steel plate	1 set
2	Deceleration system		Synchronous toothed belt	2 sets
3	Ball screw pair		Rolling IBI	2 sets
4	Load cell		10kN	1 set
5	driver		AC Servo Drive	1 set
6	Main motor		AC servo motor	1 set
7	Displacement encoder		Servo motor comes with	1 set
8	Timing belt / timing belt wheel		Width 50mm	2 sets
9	Two-stage reduction gear		45# steel plate	1 set
10	Timing belt tensioner		Induction hardening	2 sets
11	Screw guard		Aluminum alloy 3mm	4 pcs
12	Electronic Extensometer		20/50 10/50	1 set
13	Rotary encoder		Measuring displacement	1 set
14	computer		For testing machine	1 set
15	printer		Inkjet color printer	1 set
16	Software and control system		Operation with manual control box	1 set
17	random document		Instructions for use, certificate of conformity, packing list, warranty.	1
18	Random tool		Phillips screwdriver,	
19	Accessory	1. Wedge-shaped tensile accessory	0-7、7-14 Φ4-9、Φ9-14、 Φ14-21、	Can choose 2 pcs
		2. compression accessory	φ100mm	1 set

V. Work condition

1. Room temperature is 10-35℃.
2. Relative humidity ≤80%.
3. There is no vibration, no corrosive medium, and no strong magnetic field interference.
4. The power supply voltage fluctuation does not exceed 10% of the rated voltage.
5. Install horizontally on a stable foundation with a level of 0.2/1000.

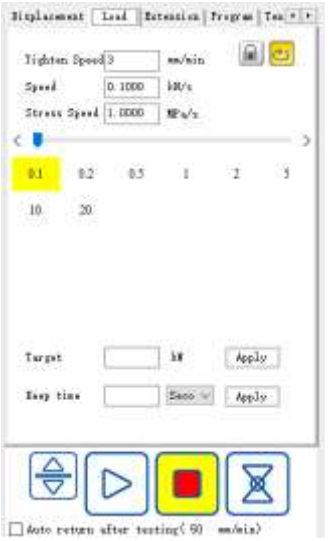
VI. Performance and characteristics:

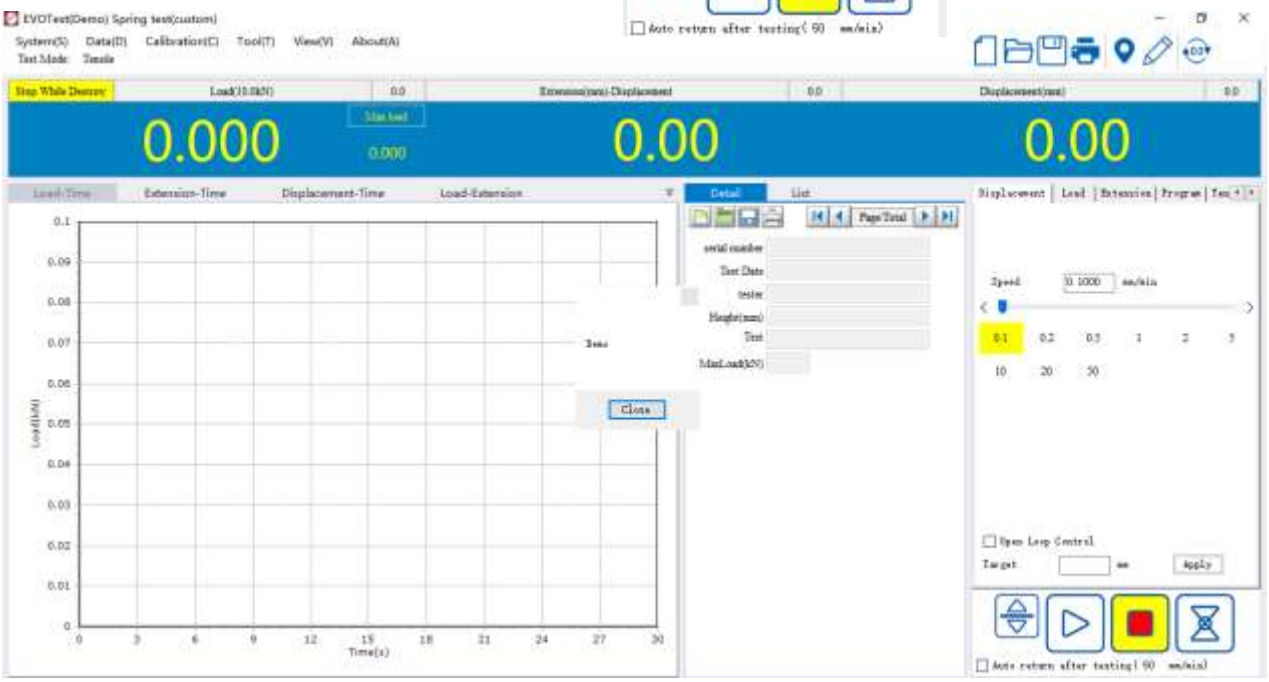
1. Using AC servo motor and AC servo speed control system to control the test process, the control accuracy and quality are greatly improved, stable, efficient, low noise (basically no noise at low speed) and the control speed range is greatly widened (0.05-500mm/min), which is conducive to the low-speed test of conventional materials (metal, cement, concrete, etc.), but also to the high-speed test of non-metallic materials (rubber, etc.). It can also be used to quickly adjust the test space when there is no load and save auxiliary test time. The test speed meets the current requirements of all conventional metal and non-metal materials in China.
2. The deceleration mechanism composed of synchronous toothed belt and precision ball screw pair "strong and strong" makes the structure more concise and bright, and the transmission efficiency is greatly improved. The height of the lower table of the main machine and the height of the main machine are also reduced.The appearance is more coordinated.

3. The dual-space structure with independent tension and compression is adopted, which is easy to operate and avoids the cumbersome change of different test accessories when the tension and compression bend are in the same space.
4. Sensors of different specifications can be configured according to requirements, which greatly widens the test range to meet the measurement requirements of different test loads.
5. The host adopts a fully sprayed plastic shell, which is generous and beautiful in shape.
6. Adopting advanced control technology, with three closed-loop control modes of stress, strain and displacement, each control loop can be automatically switched, and a smooth transition without impact can be realized when switching between various modes, and the test force, peak value and displacement can be displayed simultaneously, Speed, test status, test curve, etc.

7. It can control and maintain the rate of test force, deformation and displacement.
8. It can realize the fast/slow lifting adjustment of the beam when the specimen is clamped, and the operation is flexible and can be switched at will.
9. It has the function of returning to the initial position after the test, which is efficient and fast.
10. It has perfect limit protection function and overload, over current protection, test break automatic shutdown and other functions, reliable and safe.
11. Self-built powerful test database, test data can be saved, inquired and recalled at any time.
12. Provide multiple report printing interfaces, users can edit reports in any format according to their needs and print them out;
13. The entire control system has high cost performance and high reliability.
14. According to the national standard or the standard provided by the user, carry out the tensile test on the material, and carry out the statistics and processing of the test data, and then output and print various required test curves and test reports. You can choose load-time, load-displacement and displacement -Time, deformation-real-time display, enlargement, comparison, traversal function of time and other test curves and monitoring of the test process. Smart and convenient.
15. Provide professional users with "standard addition program editor" software, users can flexibly add required standards according to actual needs;

16. The test software under the full English Windows platform has strong data and graphics processing functions. It can print out complete test reports and test curves in real time, and can reserve data interfaces to directly connect to the comprehensive information of the enterprise (laboratory) Manage the network. It can also be customized according to the specific conditions of the user's local area network.





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