

TMA-50M Computer Controlled Universal Testing Machine



Computer Control Electronic Universal Testing Machine

TMA-50 M

1. Brief Information

Model TMA-50M Computer control electronic universal testing machine is designed and manufactured according to ASTM, ISO, DIN etc standards. It is computer-controlled precision testing machine, suitable for wide range of material for tension compression, bending and shearing test. It has high stability as well as high precision, equipped with PC system & printer for graph, test result display, test control as set program, printing & data processing. Complete with modulus for metal, spring, textile, rubber, plastic and other material testing & creep test. It is widely used in many field used in many fields such as industry factories, mineral enterprise and high schools.

2. Standard :

- ISO 527-6892: Metallic Materials-Tensile Testing At Ambient Temperature
- ISO 14125-Fiber Reinforced plastic composites -deformation of flexural properties
- ASTM A 370: Standard Test Methods And Definitions For Mechanical Testing Of Steel Products Tension Test
- ASTM 1060 And So on

3. Features:

3.1 Host Frame

- The mainframe is a double-space door structure. The driving principle is that the motor drives the ball screw pair to rotate after decelerating through the reducer system, thus driving the middle beam up and down to complete the test, the transmission is stable and the noise is low.
- Using four guiding optical screws, **φ 40mm high precision ball screw**. The high rigid frame is composed of thick beam and base, which can guarantee the frame with excellent longitudinal and transverse rigidity and good overall accuracy.
- Servo motor drive and reducer system without maintenance, can guarantee the accuracy and stability of the beam, the speed ratio can reach 1: 100000.
- Under the guidance of the internal control precision of 5% of coaxially, the cross joint can be precisely aligned in axial test, and the linear motion of the beam can be guaranteed, so as to ensure that the influence of the lateral force on the specimen under load is minimal. Thus, better test performance can be obtained.

3.2 Controller

- Force, displacement, deformation measurement resolution up to 1 / 300000 of full scale
- AD sampling frequency can be as high as 300 Hz
- Can realize closed-loop control of parameters such as test force, specimen deformation and beam displacement. It can be used to realize the tests of constant speed- test force, constant speed- displacement, constant speed- strain, constant speed-load cycle, constant speed-deformation cycle and so on. Various control modes can be switched smoothly. And smooth transition. Advanced Neuron Adaptive PID Control algorithm.

4.1. Technical specification:

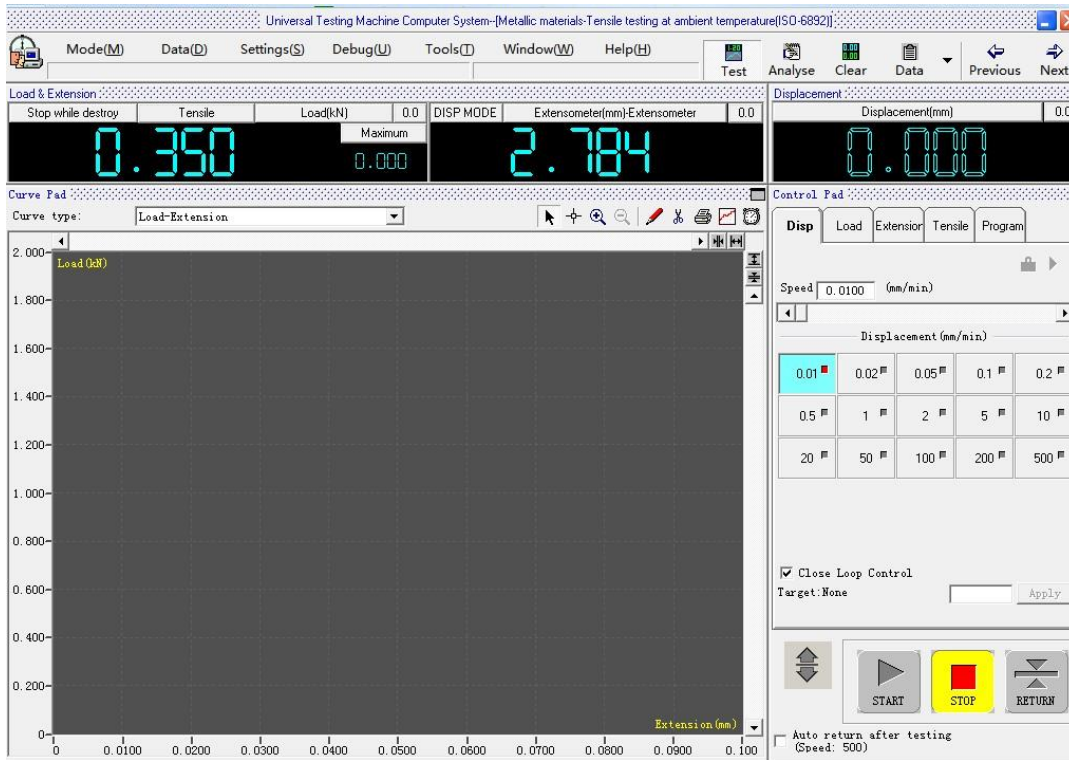
| | |
|-----------------------------------|--|
| Mode | TMA-50M |
| max. test force | 50KN |
| Test force testing range | 1%~100% |
| Testing machine accuracy grade | 0.5 |
| Accuracy of test force | Better than indication value $\pm 0.5\%$ |
| Crosshead displacement resolution | 0.001mm |
| Large deformation resolution | 1/200000 |
| Control system | servo drive controller |
| Auto-stop function | 1.maximum capacity overload protection 2.leakage current protection |
| Adjust speed range | 0.005-500mm/min |
| Tensile test space | 700mm |
| Compression test space | 1000mm |
| Compression Diameter | 100*100mm |
| Effective test width | 475mm |
| Host type | door structure |
| Host dimension | 845mm x 660mm x 2060mm |
| Weight | 600kg |
| Power Supply | 240volts, single phase, 50 Hz |
| Working environment | Room temperature 45 humidity 20%-80% |

4.2 Standard delivery:

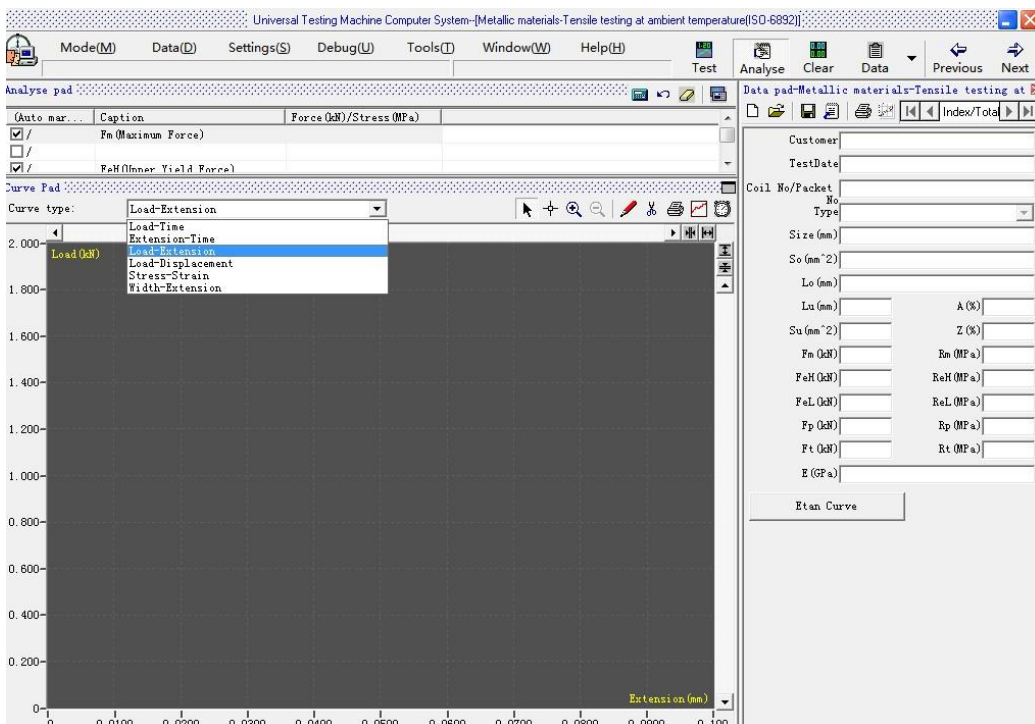
| NO. | | Brand Name | |
|-----|-------------------------|--------------------------|---|
| 1 | Test host | TMA | 1 |
| 2 | AC servo motor | | 1 |
| 3 | Speed governor | | 1 |
| 4 | Load cell | 50 KN | 1 |
| 5 | Precision ball screw | Taiwan ABBA | 2 |
| 6 | Deceleration system | | 1 |
| 7 | Computer control system | | 1 |
| 8 | Optical encoder | | 1 |
| 9 | Computer | Lenovo | 1 |
| 10 | Printer | Hp color ink jet printer | 1 |
| 11 | PCI Card | | 1 |
| 12 | Windows system software | | 1 |

| | | | |
|----|---|--|---|
| 13 | Tensile accessory For Metal Material | Round jaw(mm) Φ 4- Φ 9, Φ 9- Φ 14, Φ 14- Φ 20 Flat jaw 0-7,7-14,14-20 | 6 |
| 14 | Compression accessory | 100*100mm | 1 |
| 15 | Bending Fixture | Adjustable flexural attachment | 1 |
| 15 | Technical information | | 1 |

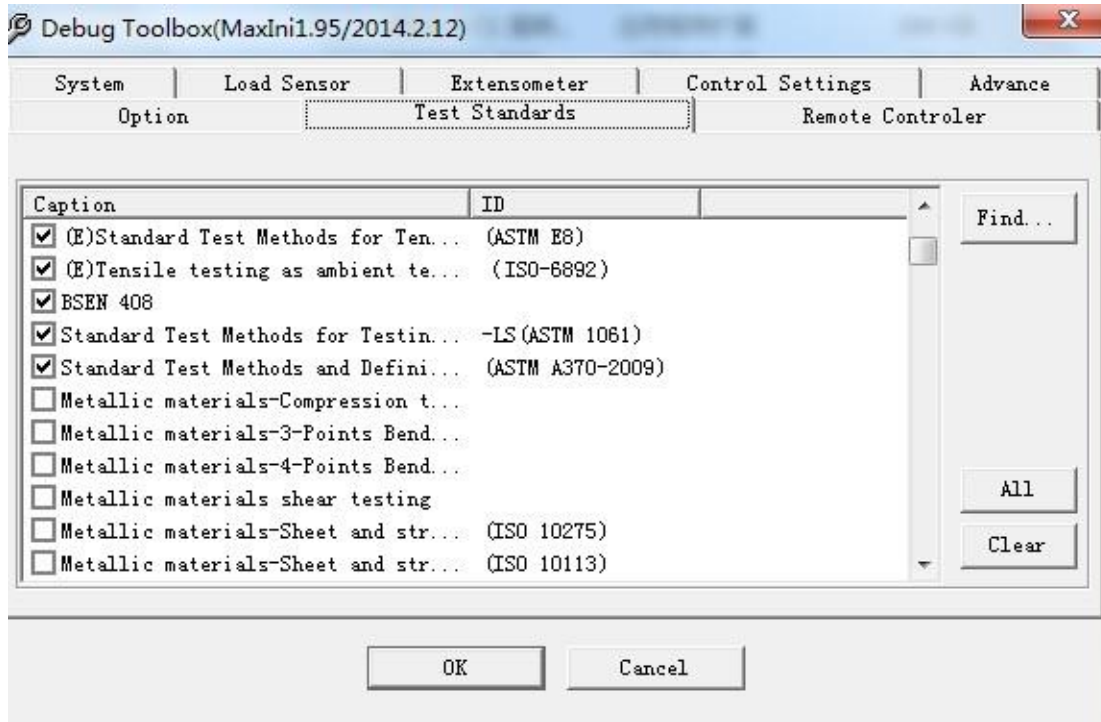
5.Max Test Software Interface



5.1.Test Interface



5.2. Test Standard



6. Maxt Test Software features

- 6.1 Language selection: English and other languages interface freely switch operation,
- 6.2 Basic functions: calculate and list data graphics: the basic parameters of a material testing machine: (1).yield point(2).0.2% off set.(3). Yield strength(4). Tensile strength(5). Elongation(6). Energy absorption(7). Maximum(8). Rupture values(9). Deformation amount (10). Averages. More than twenty parameters contrast to graphics.
- 6.3 Multiple curve display mode: Stress - strain, Force - displacement, Force - time, Strength -Time and other curve patterns.
- 6.4 Control mode: fixed displacement, fixed speed, constant strain rate, fixed load, fixed load rate, fixed strain rate, etc.
- 6.5 Dynamic display: During the test, the load, elongation, displacement and experimental curves selected as testing, real-time dynamic display on the main screen.
- 6.6 Automatic identification ,storage: test conditions, test results, regression
- 6.7 Graphical Analysis: After the test is completed, you can use the mouse to view data from the test curve, any point on the test curve can be enlarged analysis, and choose Print.
- 6.8 Report Output: Graphics and arguments are opened to customers and can be modified as required. It can output different report formats, convenient and easy to learn practical

9. Some Pictures for your reference



Grips For Metal Material



Round jaw(mm): Φ 4- Φ 9, Φ 9- Φ 14, Φ 14- Φ 20
Flatjaw:0-7,7-14,14-20



Celtron Load Cell



Panasonic Servo Motor



Wire connection with ground wire



Power Switch



Hand Panel

For further information please contact