UTM-E50
ELECTRONIC UNIVERSAL TESTING MACHINE
OPERATION MANUAL

www.insize.com

Technical support

Thank you for your choice of UTM-E50 Electronic Universal Testing Machine, it is very much appreciated. Before the use of this machine , please read carefully the “using instructions”, after full understanding, and then begin to use .Please use it correctly and take care of this machine , in order to keep a long time for maintaining a high accuracy and good working condition.

In your using of the machine, if you have any questions or unknown, you can contact with the company after-sale service , the company will serve you wholeheartedly.

Our Service tenet: Reliable quality, prestige first and service in time！ we promise to provide every customer with timely，efficient and high quality after-sale service !

Testing machine profile

The machine is used for metallic and non-metallic (including composites) tensile, compression, bending the statics of performance testing and analysis, it can automatic calculation biggest test force value, breaking force value etc test data, the corresponding test results also showed in each test data, after testing in the controller can be preserved for inquires the display

inside. The machine is widely used in aviation, petrochemical industry, machinery manufacturing, wire and cable, textile, fiber, plastic, rubber, ceramic, food, pharmaceutical packaging, lu: su pipe, plastic doors and Windows, geotextile, film, wood, paper, metal materials and manufacturing industries.

I Main technical parameters

1.Max. test force: 50 KN

2. Class of precision: 0.5 Class

3. Test force measuring range: 0.2% ~ 100% FS (full range)

4. Test force the over-error of indication error: within ±0.5% of the indication value

5. Test force resolution: ±1/300000 of the max. test force, the whole don't divide class, and resolution unchanged

6.Deformation measuring range: 0.2%～100%FS

7.Deformation value error: within±0.5% of the indication value

8. Deformation resolution: up to 1/300000 of Max Deformation.

9. Displacement value error: within±0.5% of the indication value

10. Displacement resolution: 0.01mm

11. Displacement rate adjustment range: 0.001～500mm/min

12. Effective test width: 700mm

13. Removable distance of beam: 970mm

14. Host external dimension (width× depth×height) :(820×620×1880)mm

15. Host weight: about 350kg

16. Power: 220V, 50Hz, 0.4kW~1kW

II Testing machine working conditions:

1. Room temperature 20 ℃± 5 ℃ scope;

2. Relative humidity is not more than 85%;

3.No corrosive medium around, no vibration, no strong electromagnetic interference environment;

4. Installed in a solid foundation and moves the workbench, or good level;

5. Stable power supply system, power voltage fluctuation range shall not exceed ±10% of the rated voltage, and the frequency wave should not exceed 2% of rated frequency, which can use uninterrupted power supply (UPS);

6. Power must be reliably grounded , resistance to earth ≤5Ω.

III Organization introduction

This machine consists of host, electrical, control and measurement systems and affix. (see attached picture 1)

1. The mainframe

Main frame mainly by the base, two fixed beams, a single mobile beams, four root pillar and two root screw constitute door type frame structure; Drive loading system adopts ac servo motor and synchronous cog belt deceleration device, drive high precision ball screw rotation, again drive mobile beams realize loading.

2. Electrical parts (sees attached picture 2)

3. Control and measurement system parts

The machine adopts servo motor and speed regulation system, through the speed system control servo motor, reverse and speed is the precision; Load by A high precision measurement system load sensor, measuring amplifier, A/D converter, manostat etc; Displacement measurement system consists of photoelectric encoder, pulse width plastic circuit, times frequency circuit, count circuit composed; All the control parameters and measurement result can on the screen real-time display.

4 .Affix part:

This machine equipped with several affixes: wedge tensile fixture, compression fixture，bending fixture , Shear fixture, Manual type cup affix and so on.

IV Installation and commissioning

1. Open the package

Tester and its accessories packed in the box in the opening test should be first check before packing are intact. When unpacking the case should be removed first technical document, then check components are intact tester, and according to the packing list check whether complete fittings. If any defect in the goods will reach you, please reflect us within one day after equipment reached, otherwise we shall not be responsible for equipment loss, damage.

Note: notice to protect equipment, When carrying the equipment ,the Angle must not be more than 30 °, avoid equipment tilting, overturned

that causing screw bending.

2. Installation

Put testing machine on the solid foundation or work bench, such as cement sets, then use gradienter for equipment find right position, adjust the four adjustment screw, make testing machine level. According to mark to connect the communication line needed, sensor line and the power cord, etc.

Note: installing tester needs to ensure there is enough space for operator to operate, minimum clearance requirements for:

Tester behind: 0.5 m

Tester left: 1m

Tester right: 2m(Computer is on the right)

Tester top: 0.5 m

Tester ahead: 1.5m

3. Electrify

Note: To avoid causing harm to your body or test equipment, the equipment must be linked grounding lines;

When the power is connected, don't add any electronic device, if need to pull plug-and-socket socket, please turn off the power supply.

4. Commissioning

As the instructions arrow direction rotary switch button to open test enginery host, open the Computer, first press load sensor gently with the hand, observing whether Computer has values shows, if value change,

shows that load sensor is normal. Then select 5mm/min displacement rate, observe whether middle beams in the host move, movement showing in good condition. Finally, choose 100mm/min, 200mm/min and 500mm/min displacement rate, observation middle beam movement speed, and check whether has unusual sound if there is okay, showing that equipment in good condition.

First try finished, check everything is normal, can for the test.

Note: Before the test please check whether the upper and lower limit positions is right, abrupt stop switch is on.

5. Test

The test operation can be referred 《Software Manual》part

Note: switch on test enginery power, please preheating fifteen minutes before the experiment;

When clamp sample adjustable position, do not use "quick up, quick down" button;

When do test, the operator all parts of the body must leave enginery space, more can't run around in fixture;

When do test, if test speed there are any complications, please click abrupt stop switch, lest damage equipment.

Ⅴ Care and maintenance

1. After testing shutdown the power timely(including host and computer) and keep tester cleaning. If it is not used for a long period, we advise that process antirust processing to fixture and other parts and covering

dustproof cloth for the equipment;

2. This machine is with the computer for the special, the proposal does not do other USES, such as the Internet, etc, so as not to affect the software running;

3. Screw and screw nut, at least every six months plus a grease.

VI Common fault and processing method

Serial number	Breakdown	Solution metheods
1	During the test, equipment display abnormal or beams don't move	Check whether displacement sensor connected; Detection limit, if the limit switch locked, loosen the lock and resumed do the test.
2	Test force and displacement in the test don't change	Check whether the connect line and socket contact good
3	Test process found the abnormal sound	To stop the machine immediately to check transmission system
4	Software can't normal work.	Check whether the power supply of main open, online communication line is connected to normal.