MITECH MAW-D Micro Control Series Static and Dynamic Universal Testing Machine

Overview

MITECH MAW-D Micro Control Series Static and Dynamic Universal Testing Machine, driven by computer-controlled high-pressure pump driven screw movement, equipped with the corresponding aids for metal, non-metallic and composite materials for dynamic fatigue test and static mechanical properties test, which uses microcomputer control mode High-precision gap seal cylinder, digital processing, closed-loop control technology, its performance is stable, powerful, data processing accuracy, robust construction, simple structure, high reliability, simple operation and friendly interface. Widely used in metal and non-metallic manufacturing industry, quality inspection department of quality testing, scientific research and other fields of higher education and other fields,it is to improve production efficiency, cost-saving production of essential professional precision testing equipment.

Technical Parameters

Technical Parameters	MAW-D10	MAW-D20	MAW-D50	MAW-D100	MAW-D200	MAW-D500	MAW-D1000
Maximum load	±10kN	±20kN	±50kN	±100kN	±200kN	±500kN	±1000kN
Load range	10%、20%、50%、100%						
Static load relative error	±1%						
Piston maximum stroke	±50mm	±50mm	±50mm	±50mm	±75mm	±75mm	±75mm
Frequency range	0.001-50Hz(customizable)						
Test waveform	Sine, Triangle, Square Wave (Expandable Trapezoidal Wave, Ramp, Block Wave, Random Wave)						
Standard frame form	Double column				Four columns		
Test space mm	450*350	450*350	500*500	500*600	600*600	750*600	750*700
Dimensions mm	800*500*1800	800*500*1800	1000*650*2430	1130*730*2430	1150*750*2650	1250*850*2950	1350*1350*3250
Hydraulic source basic config	10L/min	10L/min	30L/min	30L/min	63L/min	63L/min	160L/min
Hydraulic source expansion config	30L/min、63L/min、160L/min、200L/min						
Total weight	800kg	800kg	1200kg	1500kg	1800kg	4000kg	7000kg

Working Principle

Testing machine is the product of the combination of testing machine technology and mechanical transmission technology, sensor technology and automation control technology. It consists of three parts: drive system, control system and measurement system. The driving system is mainly used for moving the beam of the testing machine, and the beam can be adjusted by the control valve. The control system is controlled by the operating console and can obtain the state of the testing machine and various test parameters through the display screen. The measuring system uses sensors, Signal amplifier, optical encoder and data processing system can be force value measurement, deformation measurement, beam displacement measurement. Drive systems, control systems, measurement systems and other subsystems coordinate with each other to complete the material pull, pressure, bending and other mechanical properties testing.

Feautures

- It is widely used in the fatigue test of various materials, components, parts and components. It can test the tension and compression fatigue under dynamic loads such as sine wave, triangle wave, square wave, trapezoidal wave, ramp wave and rectangular wave.
- Adopting microcomputer control digital digital electro-hydraulic digital valve to drive precision hydraulic cylinder to control various modes of test force, displacement and deformation;
- Integrated oil source design makes the whole structure more compact and reasonable, reducing the floor space;
- Upper and lower jaws are fully open structure, and the use of automatic hydraulic clamping system, clamping the sample convenient and good stability;
- Display test force, peak test force, test force rate and other functions;
- With test force reset, peak hold, parameter setting, full range of gear force measurement, calibration and fine tuning functions;
- 5000 line optical encoder, the relative accuracy of displacement is high;
- High precision, high stability sensor, coupled with high-precision measurement and amplification system to ensure the high precision test force;
- Built-in controller to ensure that the test machine can sample deformation, test force and displacement of the closed-loop control;
- With limit protection function, it will stop automatically after the limit is reached, which will prevent overload and even damage to the sensor when the middle cross beam moves.
- Aids diversified customized to meet the testing needs of various materials;
- Built-in control card based on PCI technology can reduce connection, improve test real-time control and real-time collection function and improve product stability;
- Independent choice of load cell or oil pressure sensor, effectively improve the test range and force value accuracy;
- According to the size of the load can automatically switch to the appropriate range to ensure the accuracy of measurement data;
- Zero adjustment, calibration, storage and other analog regulatory links, highly integrated control circuit;
- End of the experiment, the test data and test curves are automatically saved for later retrieval analysis;
- Batch test, the same parameters of the sample only one test set;

- In line with GB, ISO, ASTM, DIN and other relevant standards at home and abroad.

Scope of application

Widely used in metal, non-metallic and composite materials pull, pressure, bending and other mechanical properties test.

Applications

- Metal processing manufacturing quality control
- Non-metallic processing manufacturing quality control
- Scientific research and teaching experiment in colleges and universities
- Research institutes material analysis test
- Quality inspection department quality testing session

Working Conditions

- Working temperature: room temperature ~ 45 ℃;
- Relative humidity: 20% ~ 80%;
- No vibration around, no corrosive media, no strong magnetic interference;
- Horizontal installation on a solid basis;
- Power supply voltage fluctuations do not exceed 10% of the rated voltage.

Configurations

Configuration instructions	NO.	Name	QTY.	Remarks
Standard Configuration	1	Testing machine host (gap seal cylinder)	1	include sensor, limit
	2	Control system	1	
	3	Constant pressure servo pump station	1	
	4	All digital servo controller	1	
	5	Test application package	1	
	6	Computer	1	
	7	A4 laser printer	1	
	8	Compression attachment	1	
	9	Extensometer	1	
	10	Rinse attachments	1	Include monitor
	11	Fluid connection element	1	
	12	Signal line	1	
	13	Power cable	1	
	14	Attachment files	1	
Optional Configuration	1	Three-point bending fixture	1	13-26mm、26-40mm One each

Maintenance and care

- Test machine is a large precision instruments, should pay attention to water, moisture. Exposed outside the workbench, the upper and lower beams and accessories should be coated with anti-rust oil to prevent rust;
- If the idle for a long time, at least once every week and move the upper and lower beams up and down the beam, the beam position, Nimi activities often to prevent rust;
- Long-term frequent use may lead to reduced or deteriorated oil quantity, should be based on the use of every 1 to 3 months to check the oil, such as oil below the oil window you need to add the same type of hydraulic oil to the middle of the window; Metamorphism, then unscrew the special oil source after the lower nozzle will release the oil, replace the hydraulic oil;
- Frequent use of this equipment for tensile failure testing may cause some fasteners to loosen. The following locations should be regularly checked fastening:

① There are two L blocks (a total of 8 blocks) on the front and the back of the crossbar and the moving crossbeam (with the guide function of the jaw plate), each of which is fixed by 3 screws;

② Move the beam ends of the 6 screws;

③ Screw drive chain to be checked every 6 months once the level of tightness, adjust the location of the tension wheel (to be removed under the main body of the enclosure)

- According to the environmental conditions and the frequency of use, lubricate the following parts every 3 to 6 months:

① screw rod and the machine at the junction of 100 oil lubrication (to be removed under the main body of the lower panel);

② screw drive chain to grease lubrication (need to remove the main body of the lower panel);

③ screw thread to keep clean and butter or molybdenum disulfide lubrication;

- There are two clamp jaws on the upper beam and moving beam, which are the important parts of the machine. The debris on the contact surface between the jaw plate and the beam should be removed regularly. Remove the side of the moving beam Of the pressure plate, remove the jaw pallets, oil rags, respectively, the jaw plate and the beam contact surface clean, coated with a suitable amount of butter and graphite mixed grease, replace the clamp jaw plate and then tighten the plate fixing screws;
- Do not start the test Prohibition Click the "Start Test" button, otherwise easy to cause an accident;
- When entering the program, if it is found that the abnormal prompt or the default test force is different from the previous test, do not conduct the test and refer to the troubleshooting method for troubleshooting;
- After the sample is broken, if the program does not exit the test state, immediately click [Stop] to exit the test state;
- Finish the test exit the program, the cylinder must be in the end to turn off the pump;
- The software overload protection function, when more than 0.2% of full scale will have protection tips, press OK to confirm and stop the experiment;
- Do not disassemble the instrument without permission, please contact the sales service department of MITECH at 4000600280.