
Computer Control Electric-fluid Servo Universal Testing Machine ——1000KN

Model Number: SR-108

Brief Introduction

1.Scope of Application: this machine can be applied in various tests, such as tensile test, compression test and bending test for both metal and nonmetal materials, and also be applied in metallurgist, engineering, light engineering, aviation, aerospace, material research, colleges and institution of scientific research.Test operation and data processing should meet requirements of GB/T228-2010 Metallic Materials Tensile Testing at Ambient Temperature .

2.Main engine: Computer control electric-fluid servo universal testing machine, with integration of automatic control, automatic measurements, data collection, screen displaying with result processing, is consisted of the underlying oil cylinder as platform and precised servo oil mercury, servo electric motor and Panasonic servo controller so as to realize multiple closed-loop control. This machine feature with functions of automatic control and automatic measurements during the test and other factors, such as professional, reliability and easy upgrade. This machine can be improved constantly as the measurement and control technology of this testing machine develops and the testing standards change.

Product Manufacture and Test Standards

1.GB/T16491—1996 Electronic Universal Testing Machine

2.GB2611—92 Universal Technical Requirements for Testing Machine

3.GB/T6825.1-2002 The First Testing Section of Static Uniaxial Testing Machine: Tensile and (or) Compression Testing Machine, Inspection and Calibration of Force-Measuring System.

4.GB1499.1-2007 Technical Requirements on Mechanical Equipment.

5.Low Voltage Technical Requirements of 2006/42/EC.

6.Relevant Regulations of 2006/95/EC.

Applicable Test Standards

1.GB/T228-2010 Metallic Materials Tensile Testing at Ambient Temperature .

2.GB/T7314-2005Metallic Materials Compression Testing at Ambient Temperature .

3.GB/T14452-1993 Metallic Materials Bending Testing at Ambient Temperature .

4.JTGE30-2005 （JTG E30-2005）P87 Test Regulations on Road Engineering Cement and Concrete.

5.GB/T8653-1988 Yang Elastic, Chord Modulus, Tangent Modulus test.

6.GB/T10128 Metallic Materials Torsion Testing at Ambient Temperature.

Main Technical Specifications

1. Maximum testing force: 1000kN;
2. Scope of testing force: 2%-100%FS
3. Testing force accuracy: ±1%
4. Maximum stretch space: 600mm;
5. Maximum compress space:550mm;
6. Maximum space of bending bearing: 340mm;
7. Space between stand pillar: 560mm;
8. Piston displacement accuracy: ±1%FS;
9. The resolution ratio of deformation measurement is lee than 1/300,000.
10. Deformation accuracy: ±1%;
11. Sensor: oil pressure sensor, photoelectric sensor, extensometer.
12. Control mode: Electric-fluid servo closed-loop control and the control mode can be switched smoothly.
13. Display: the computer screen can show data about testing force, piston displacement, loading rate and deformation experiment and thus various experiment curves, zero adjustment and calibration.
14. Size of Main engine: approximately 990mm×650mm×2250mm;

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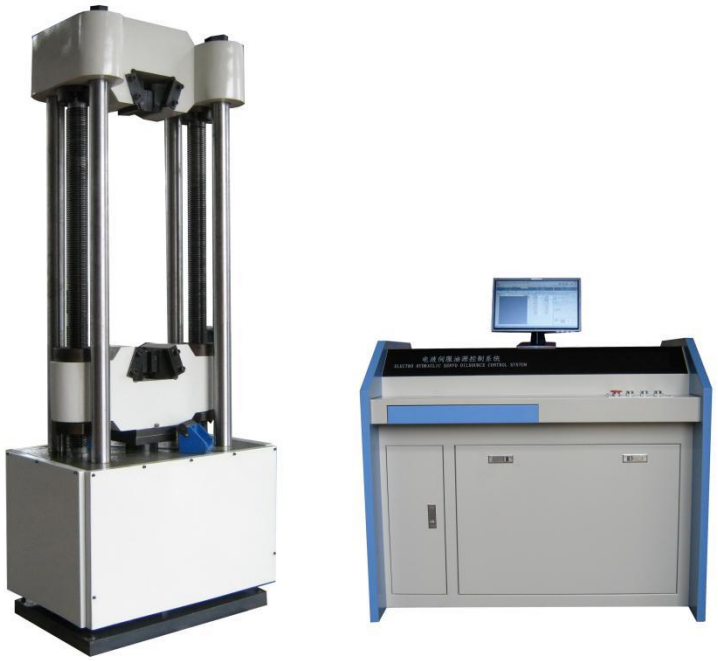
15. Size of control cabinet: 1000mm×900mm×1100mm;
16. Motor power of the oil mercury: 2.2 KW;
17. Motor power for beam movement: 1.1KW

Basic Structure and Main Functions

Main engine: Four-stand pillars and the material is cast steel. Precised underlying Grinding cylinder decrease the height of the Main engine and can be transformed, installed conveniently. This machine can functions stably and reliably. The testing platform can transmit by electric machine, chains and screw so as to adjust the tensile space and make sure a convenient test operation.

Measurement and control system: composed by electric-fluid servo oil source, digital serco controller of Panasonic, servo electric machine of Panasonic, load sensor, tensile meter used to measure deformation, photoelectric encoder used to measure displacement, specific PC measurement and control card for testing machine, printer, multi-function testing package and electric control units.



Side view， to show it has four columns

上横梁	Upper Beam
上钳口	Upper jaw
下钳口	Lower jaw
下横梁	Lower beam
底座	Basement

Structure Diagram of the Main engine

Standard ratio of Electric-Fluid in oil controller: (displays as the following picture)

(1)In order to load the oil throttle and speed controlling system, this machine is designed and manufactured by applying technologies in accordance with standard mod ularization unit so as to be used with microprocessor control electric-fluid servo universal testing machine;

(2)This machine is composed by servo oil mercury, servo electric machine and servo actuator provided by Marzocchi which is of quality and stable performance.

(3)This machine is manufactured by throttle and speed controlling valve manufactured by unique technology, the pressure of the system is stable, there is no spill energy consumption and the machine can be controlled by PID closed-loop.

(4) Pipeline system: pipelines, joints and sealing parts is qualified and stable to ensure that the hydraulic system is sealed up in order to avoid the oil leakage fault.

Main merits:

(1) Low noise emission, the machine can function well at the mute state and the maximum volume is below 50 db.

(2) Follow-up pressure of the machine can save 70% of the energy which should be consumed when other machines function.

(3) High control precision and the control accuracy can be 1/10,000. (The control accuracy of other machine is 5/1000.)

(4) There is no dead area in controlling and the AIP is 1%.

(5) The oil pipelines are highly integrated without leakage.

Electric control cabinet

(1)All components of high voltage in this system are collectively set in the control cabinet of high voltage so that units of high voltage and units of low voltage can be separated so as to make sure that the measurement and control system will not be disturbed and the whole machine can functions well for a long time;

(2) There are manual buttons in the electric control cabinet, including power switch, emergency button and on-off button for oil mercury.

Digital Control of High Resolution

(1) This system is made up by PC, controlled by digital PID, equipped with PC board amplifier, measurement and control software and software for date collection and processing. Testing force, deformation and piston displacement can be under control by closed loop and the control mode can switched smoothly.

(2) This system is composed by units of triple-channel signal conditioning (unit of testing force, unit of piston displacement and unit of deformation), unit of control signal generator, drive unit of electro-hydraulic proportional valve, control unit of electro-hydraulic proportional valve, I/O joint parts and software.

(3) Closed-loop control circuit of the system: the multiple closed-loop control circuit composed by measurement sensors (pressure sensor, displacement sensor and deformation sensor) and electro-hydraulic proportional valve, controller (individual signal conditioner), control amplifier can control the testing force, piston displacement and deformation in the closed-loop system; This kind of system is competent to control the constant testing force, the constant piston displacement and the constant deformation. Switching the control mode swiftly adds flexibility to this system.

PC Board Automatically-controlled Amplifier Exclusive for the Testing Machine

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a. The pluggable PC card is designed with the most advancing computer control technology for the testing machine, including programmer-controlled simulation amplifier, A/D transformer, digital data collection channel, digital quantity I/O.

b. Measurement and control system composed by this card and PC can be connected with sensor directly to conduct measurement, control and data collection and make complicated measurement, control and data collection system become simple and reliable.

c. Can be plugged in the expansion slot by applying the bus technology. Wholly-digital circuits, zero-adjusting and gain adjustment can be conducted by software. It is the latest unit in the field of measurement and control technology of the testing machine.

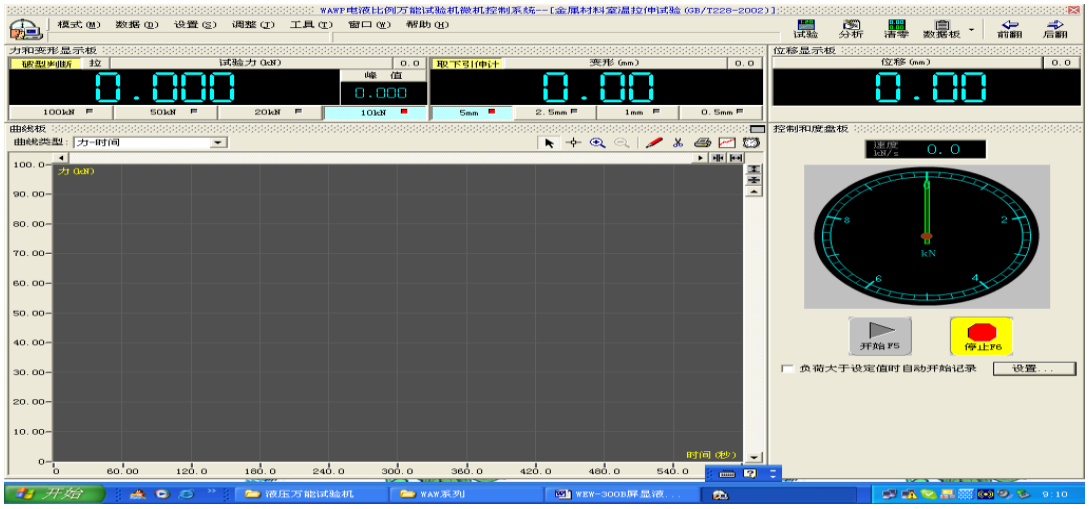
d. Gains can programme cascade amplifier and different magnification times of different gains can be achieved.

e. Bridge power of the sensor share the same voltage with the reference voltage of A/D chip. As the whole measurement system decrease, hardware compensation technology of the bridge power can be achieved.

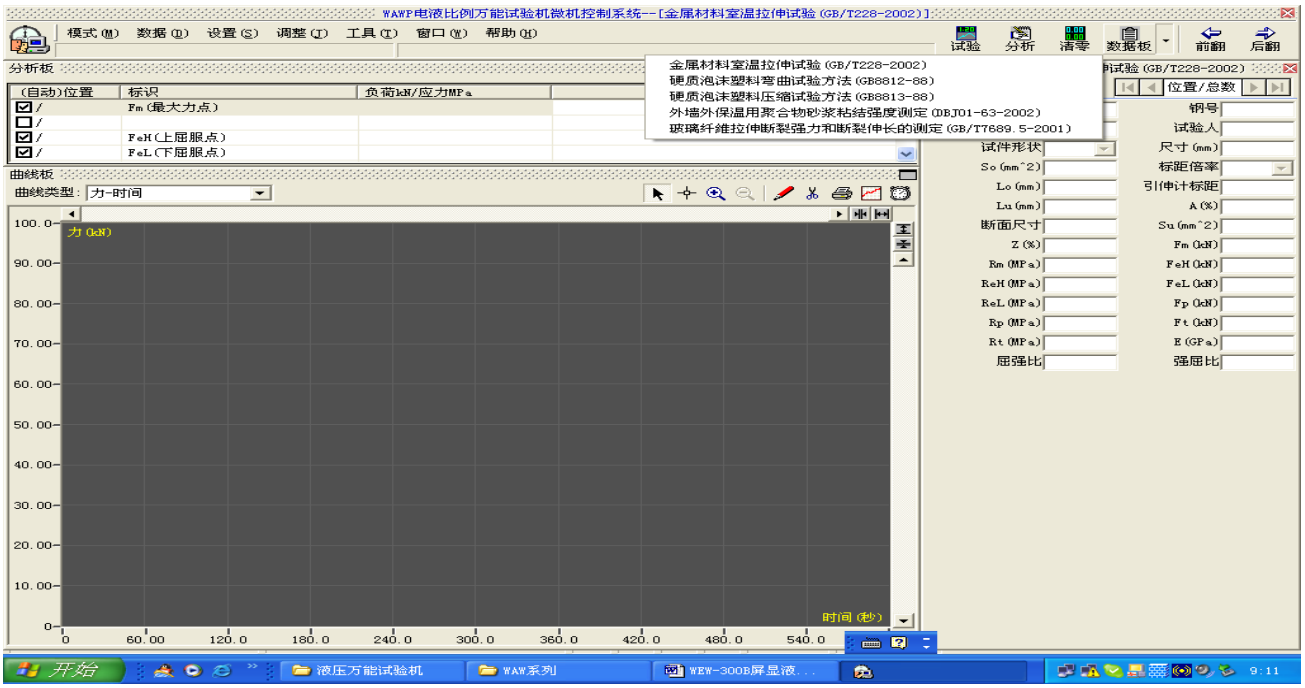
f. This card meets sensitivity and resolution requirements of the system through A/D transition, and thus avoiding the software multifrequency.

International Testing Package

a. With the Windows XP/WIN 7, the Chinese managing page displays as follow:



The screen can show data about testing force, piston displacement, loading rate and deformation experiment and thus various experiment curves, such as time-testing force/deformation, deformation-testing force can be drawn up; the system can process data automatically which meet requirements of GB/T228-2010 and the pressure test requirements of the testing machine, such as upper and lower spike point, the maximum stress point, non-proportional stress point and the elongation stress point.



This software can provide data analysis which can make the tester to conduct experiment analysis and data processing of special experiment.

This system has strong graphic operating functions, such as dynamic experiment curve, digital readout, zoom in, capture and cursor pursuit.

a. Apply the VXDs high-speed data collection technology to collect data through multiple channels; (16 channels at most)

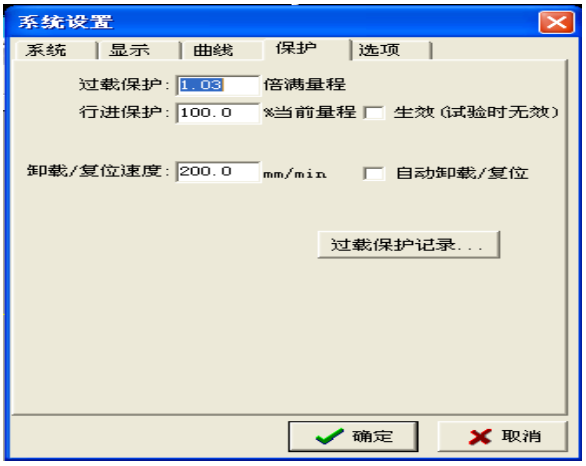
b. Complete document operation function in this system can be used to store experiment curve and data. The experiment data can also be in store in the way of ASCII code so that user can process it for the second time.

c. Piece experiment report output and batch experiment report output

d. The control system can some protective functions to respond when conditions of overloading, exceeding the setting, blackout and that the piston reaches the limiting position happen.

1.Hydraulic system of low noise clamps the oil source so as to control the chuck.

2.The system can get parameters about Fm, Rel, Reh, Rp, Rt, Agt, Z, A, Rm automatically in the metallic tensile experiment and also conduct manual analysis of Fel and Fm. Different report and curves can be printed according to different requirements.



Major Configurations

NO.	Name	Specification	Brand	Number
1	Main engine	1000KN	SUNRISE	1 set
B	Upper beam, middle beam	1000KN	SUNRISE	1 piece
C	Basement	1000KN	SUNRISE	1 piece
D	Cylinder	Clearance seal	SUNRISE	1 piece
	Total:	The main engine includes A-D four components		
2	Servo mercury oil source		SUNRISE	1 piece
A	AC servo motor		Hangzhou Jiugu	1 set
B	Reversing valve, solenoid valve	DSD-01-3C	Hangzhou Chuangbo	1 set
C	Oil source cabinet	1*0.9*1.1 meter	SUNRISE	1 set
D	Oil mercury	GHP1A-D-5-FG	Marzocchi	1 set
E	Oil mercury motor	2.2KW	Wannan Motor	1 set
F	Valve pad and oil filter		Jinan Xinguang	1 set
	Total	The main engine includes A-F six components		

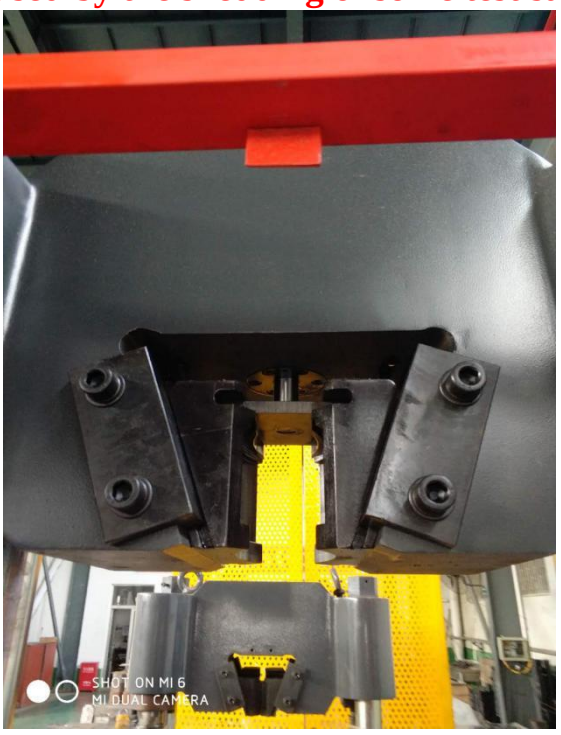
3	Displacement encoder	2000	Changchun Beixin	1 set
4	Load sensor	30MPa	Ningbo Zhenhai	1 set
5	computer	19-itch LCD	Lenovo	1 set
6	printer	A4	HP	
7	Experiment control software	AS800	Hangzhou Langjie	1 set
8	Double-channel programme-controlled amplifier		Load sensor	1 set
9	PC controlling system		Load sensor	1 set
10	Stretching tool	Horizontal vice jaw 0-20mm and round pliers φ13-φ60 mm	Load sensor	1 set
12	Compressing tool	204*204mm	Load sensor	1 set
13	Bending tool	indenter and support	Diameter is 30mm	1 set

Details of our 1000KN Universal Tensile Testing Machine

Packing1

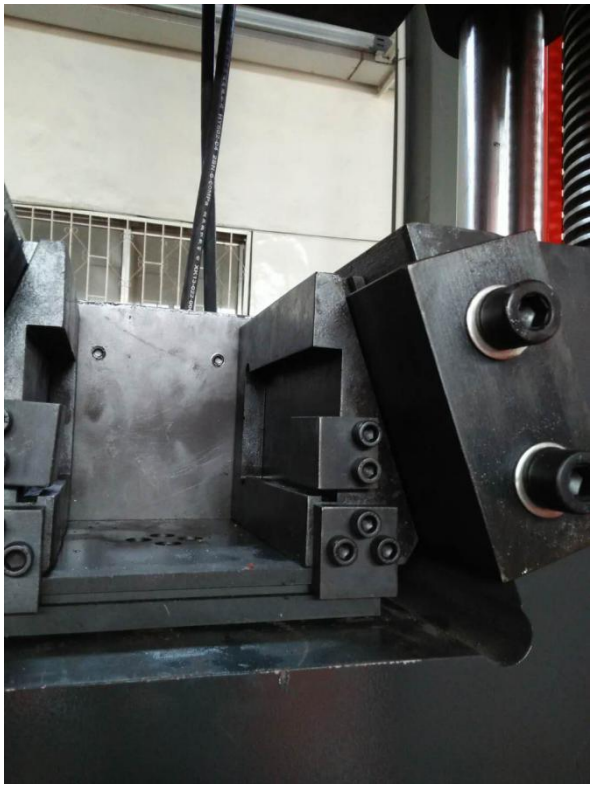
Packing 2

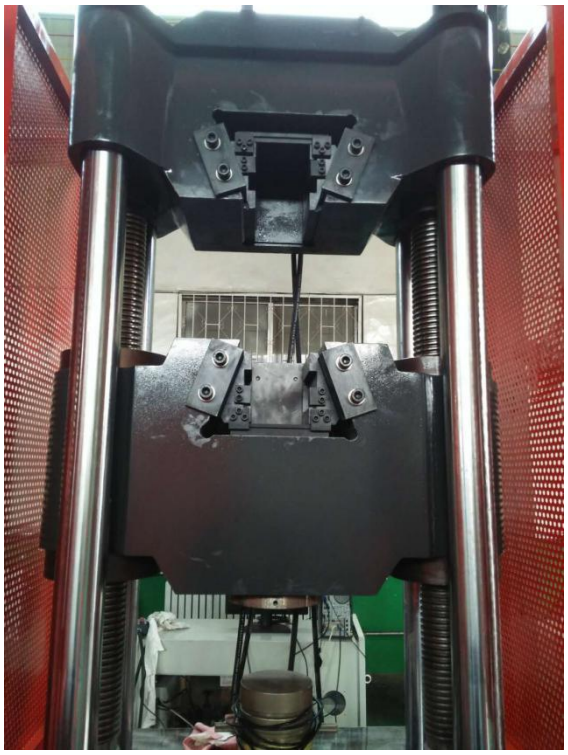
The door is used to protect the trouble caused by the shedding of some test samples.




当心伤手
SHOT ON MI 6
MI DUAL CAMERA


SHOT ON MI 6
MI DUAL CAMERA





These are standard clips for holding different samples.

Different door colors and types you can choose.