Mikrosize®

UTM-DCH

Computerized Dual-column Servo Tensile Testing Machine

Contact us

Mikrosize Precision Instrument Co.,Ltd
A-4035 RuiFeng Business Expo, Wuhu City, China , 241000.
Web:www.mikrosize.com
Email: mikrosize@mikrosize.com

Product Features and Application

Product Features

●Fully computer-controlled testing machines, international speed control technology.

●International brands components, making the machine with long-term high reliability, stability, and precision, as well as smooth operation and a long lifespan.

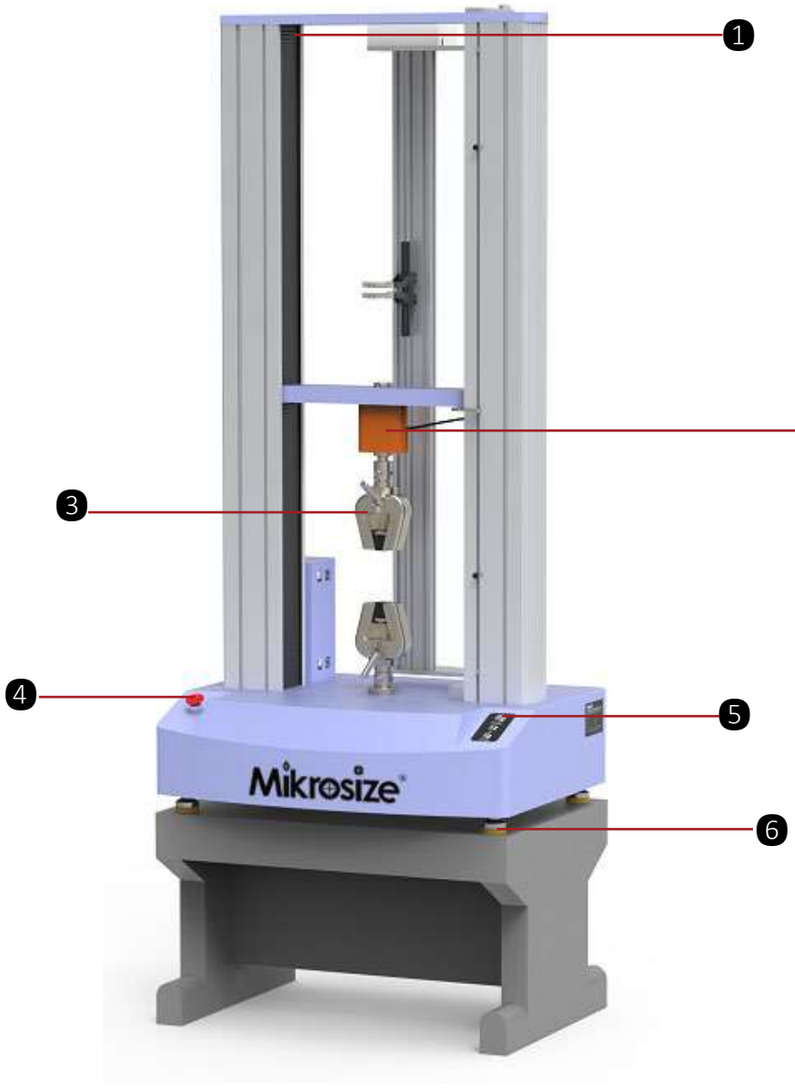
●Used for material testing with loads below 50 KN and covers a wide range of testing functions for most products, making it an ideal mechanical testing instrument for factories, research institutes, and quality inspection agencies.

●Fully digital, closed-loop (force, deformation, displacement) control system with adaptive PID algorithms achieves fully digital closed-loop control of force and displacement, allowing automatic switching between control loops and ensuring smooth transitions without impact when switching between different modes.

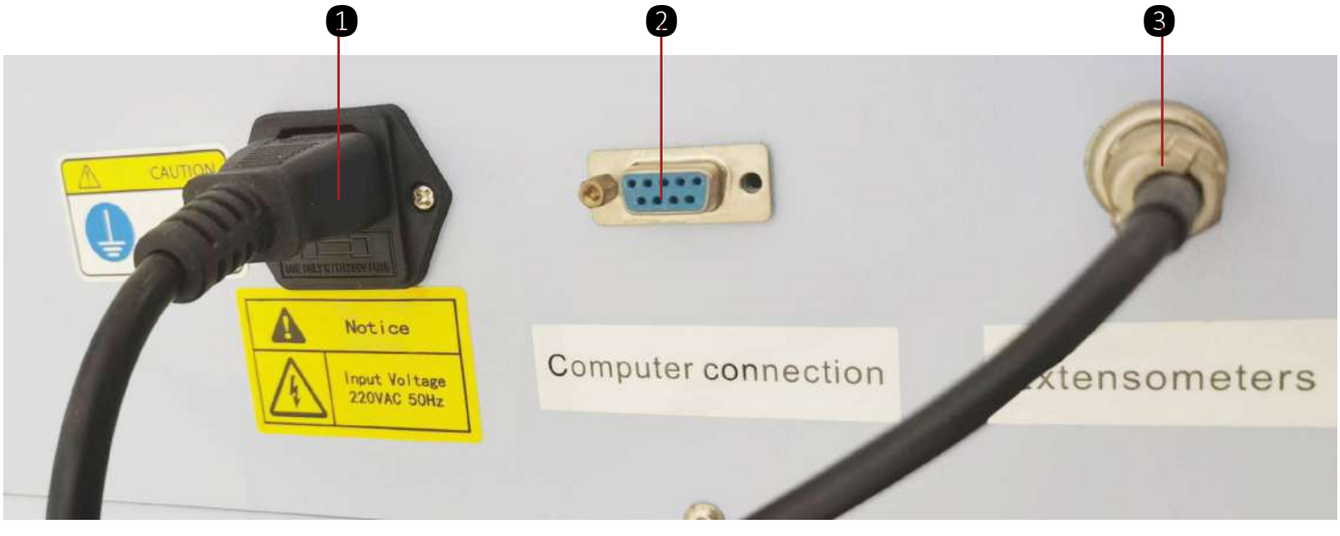
Product Application

●Suitable for mechanical performance tests and analysis such as tension, compression, peel, tear, and shear; suitable for Medium-strength Metal, Sintered product, friction material, rubber, plastic, thin film, fiber and fine thread, adhesive, foam material, adhesive tape, elastomer, connector, bio-material,wood products and paper products, metal foil, wire, oil bearing, ceramics, parts and components, fastener, composite material.

Instrument Appearance



1.Limit Device **2.Force Sensor** **3.Fixture**
4.Emergency Stop Button **5.Power Switch** **6.Leveling Feet**



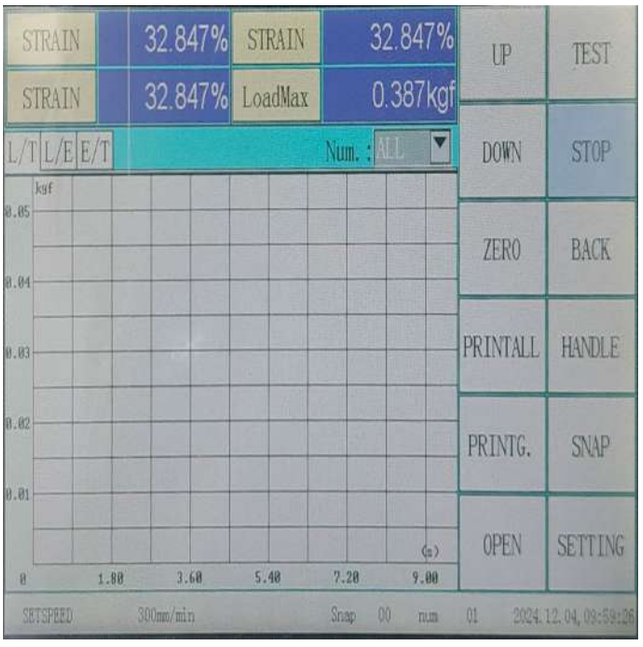
1.Power cord socket
2.Socket for computer connection (optional)
3.Socket for the extension meter (optional)

Detailed Display

This equipment adopts high-precision force value sensor to ensure the accuracy of experimental data;
The fixture can be quickly loaded and unloaded, loosen the fixture lock nut, pull out the fixture pin, you can remove the fixture, installation is installed in the reverse order;
This equipment can be adapted to a variety of fixtures to meet the requirements of different experiments.

Extensometer(optional)
Extensometer with double encoder up and down extension axial structure, with rotating device, can be quickly loaded and unloaded, clamping strength tight, smooth operation, no inertia hysteresis, rugged, accurate measurements.

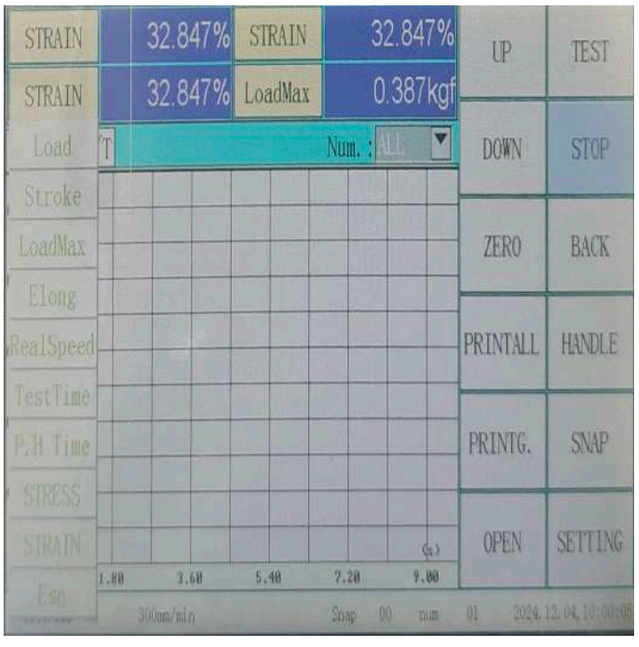
Screen Interface



Panel Control

The display screen of this machine adopts touch control method, which is easy and convenient to operate, in this interface you can:

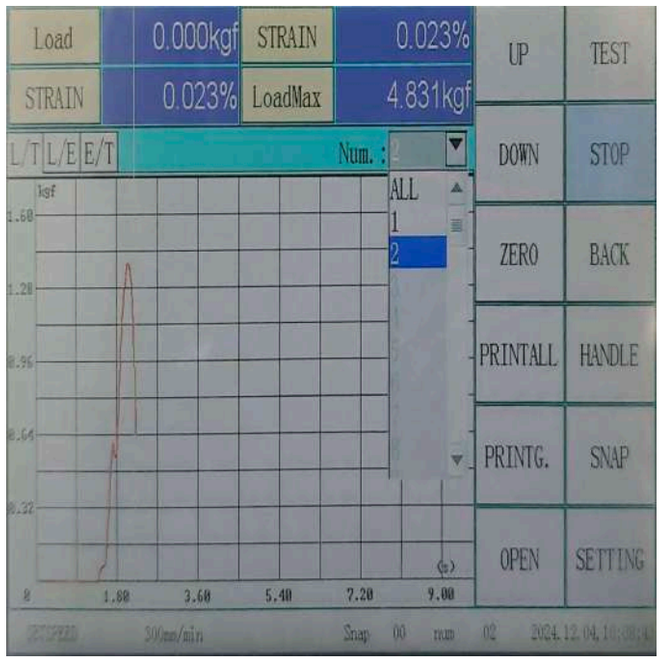
1. Control the lifting and lowering of the tensile strength machine and the start and stop of the experiment.
2. Zeroing of the test data and the machine back to the position (press the “back to the button”, the machine will return to the position of the most recent time to press the “zero” button moment, the process can be at any time by pressing the “stop” button) (The process can be stopped at any time by pressing the “stop button”)
3. Printing out the test results



Selecting Display Parameters

Click on the parameter section to select the desired parameter to be displayed, and the parameters that can be selected are: Load; Stroke; Load Max; Elong; Real Speed; Test Time; P.H Time; STRESS; SIRAIN.

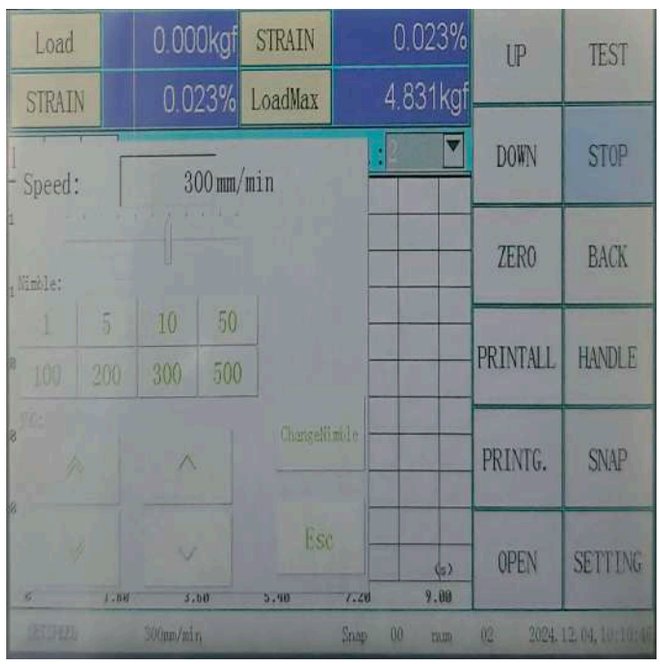
Screen Interface



Group and Plot Coordinate Selection

When several groups of tests have been conducted, click “Num” to view the curve graph corresponding to the desired test group.

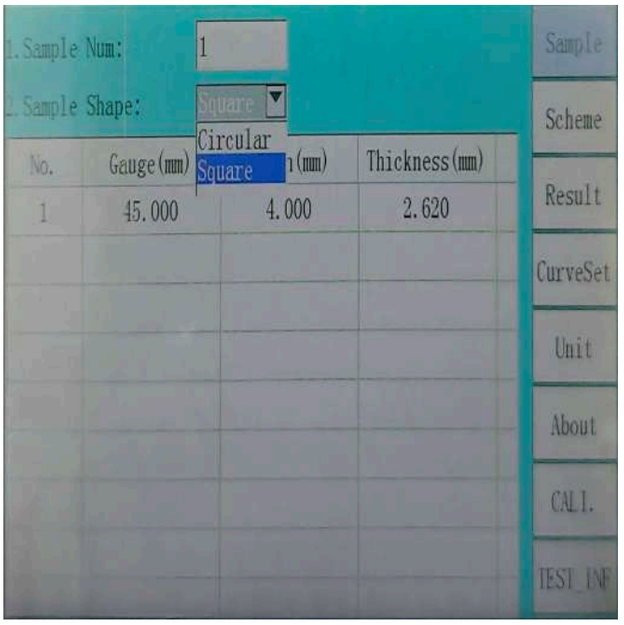
The machine has three kinds of curve graphs, respectively, force value - time (L/T); force value - displacement (L/E); displacement - time (E/T), click the corresponding button to switch.



Manual Control of Speed Adjustment

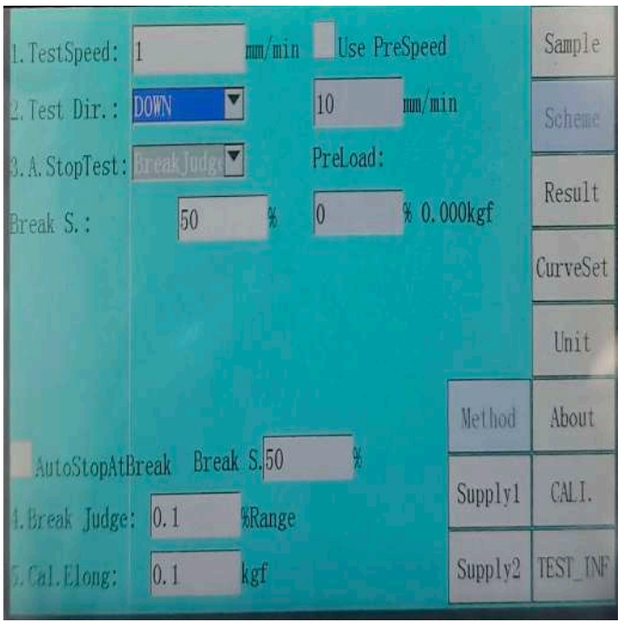
Press the “Manual Control” button to enter this interface, you can adjust the speed of the manual control, users can directly in the “Nimble” quickly select the desired speed, you can also slide the square to adjust the speed freely.

Screen Interface



Specimen Information

This interface allows the user to set the number of specimens to be tested and the shape of the specimen.

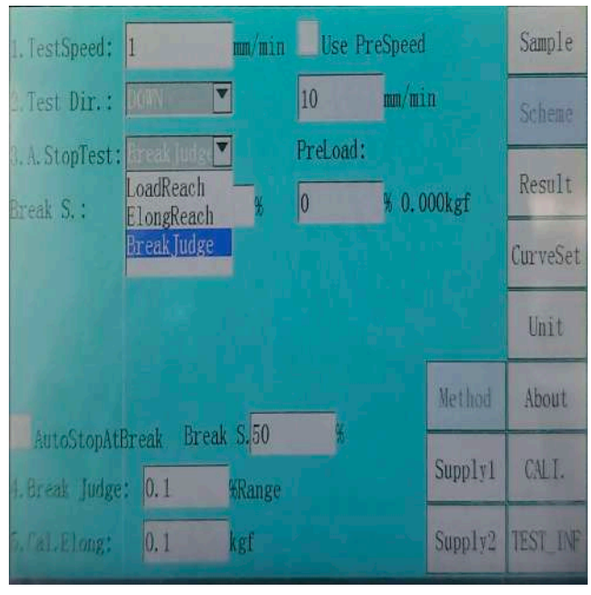


Test Methods

The main functions of this interface are:

1. Set the test speed;
2. Select test direction, up or down;
3. Setting the stopping condition;
4. Setting of breakpoint judgment: after entering the test, when the force value reaches the set condition value, the breakpoint ratio in the shutdown condition will be judged, which is generally set as 1% of the range of the force value sensor;
5. Setting of conditions for the start of deformation counting: when the force value reaches the set condition value after clicking test, it will be counted as entering the test, and the general setting is 0.1%-1% of the range of the force value sensor.

Screen Interface



Downtime Condition

There are three types of stopping conditions for this machine, namely:

1. “Force value reached”;

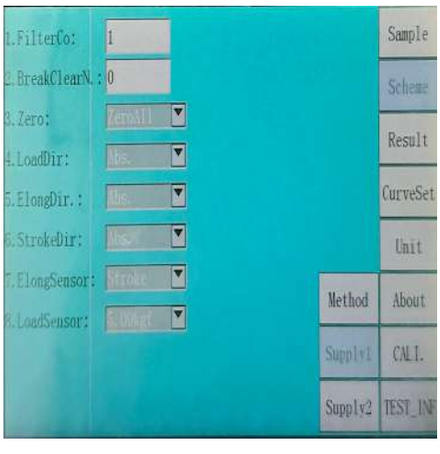
The test ends when the force value in the test reaches the set value;

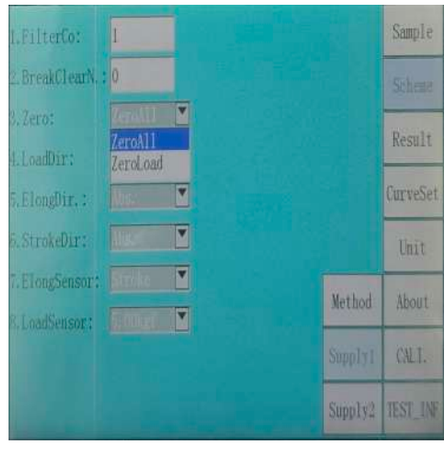
2. “Displacement reached”;

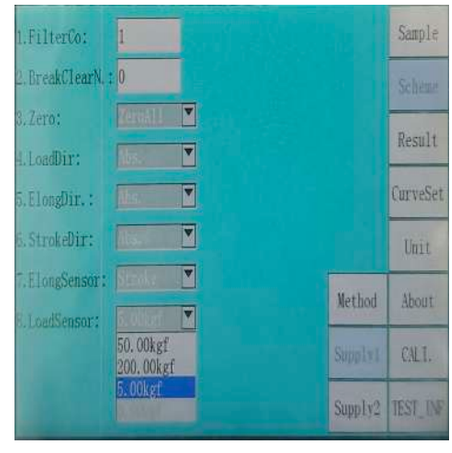
The test is completed when the deformation in the test reaches the set displacement value;

3. “Breakpoint Ratio”

Generally set to 50%, set the value of the break point ratio of 50%, that is, the current force value in the test fell to 50% of the maximum force value when judged as the specimen fracture, the test is complete.







Control Parameter

The main functions of this interface are:

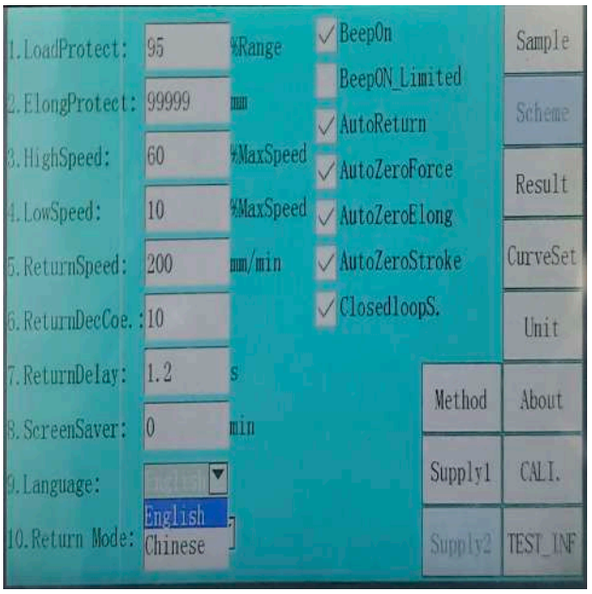
1.Select the mode of the “Zero” button in the main interface of the test, with “All Zero” and “Force Zero” as options.

2. The direction of deformation, force and displacement, “reverse”, “non-reverse”, “absolute value” can be selected.

3. Select the deformation sensor, there are “displacement”, “rubber extensometer (also called large deformation)”, “metal extensometer (also called small deformation)” can be selected, the latter two for the optional accessories

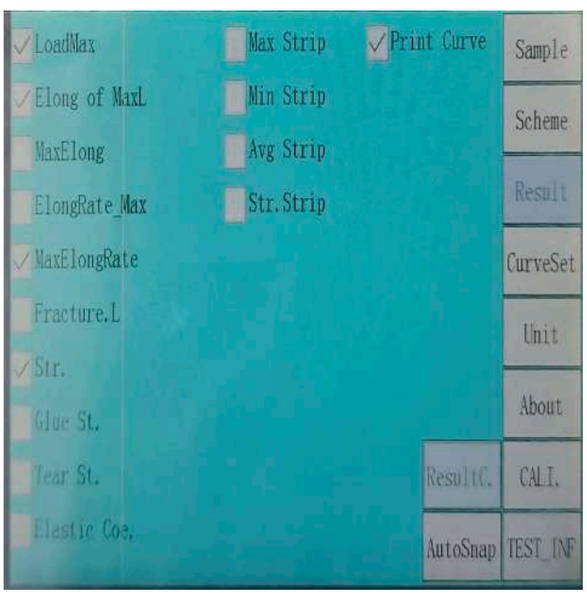
4. Select the channel of force sensor

Screen Interface



The main functions of this interface are:

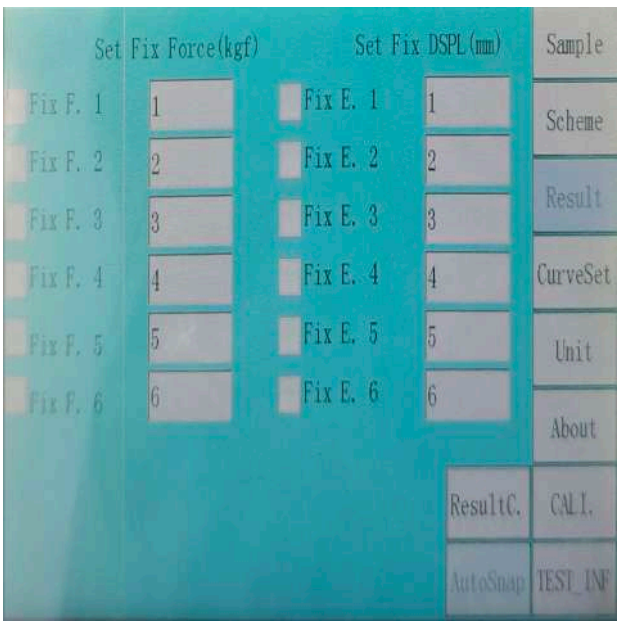
1. Protection setting, force value protection and deformation protection, you can set the protection parameters according to the need;
2. Setting the speed and waiting time of return and deceleration coefficient, the function of deceleration coefficient is: when the travel is less than the set value when returning to the position, it starts to decelerate automatically, so as to prevent overshooting of the displacement;
3. Set the number of digits displayed after the decimal point of the force value;
4. Switch the language display, “English” and “Chinese” are optional;
5. Select the return mode, with “displacement zero point” and “limit position” optional.
6. Beep when touching the screen and triggering the limit.
7.Automatic zeroing of displacement, force and deformation before testing, and automatic return to the position after testing is completed.



Test Result Selection

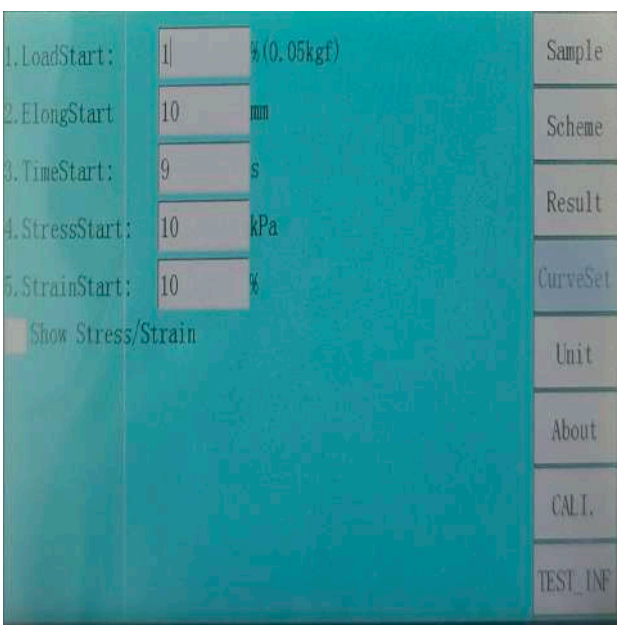
Select the desired test results, the checked items will be displayed in the view report.

Screen Interface



Auto Fetch Points

Setting the parameters for automatic point taking.

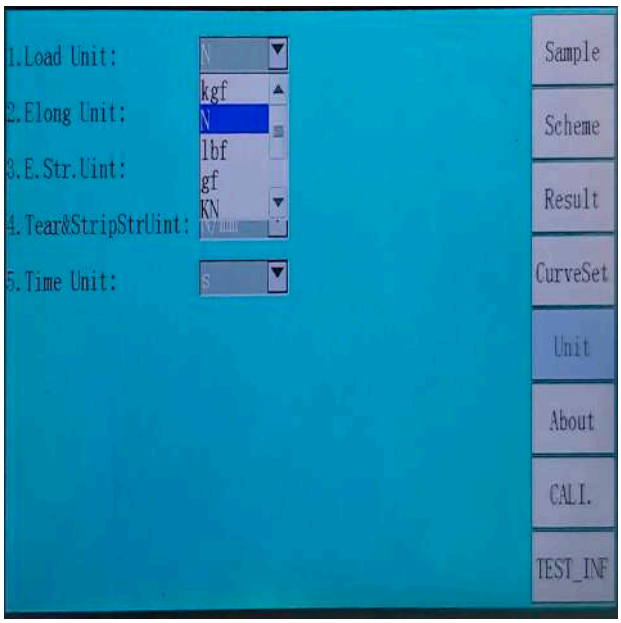


Curve Settings

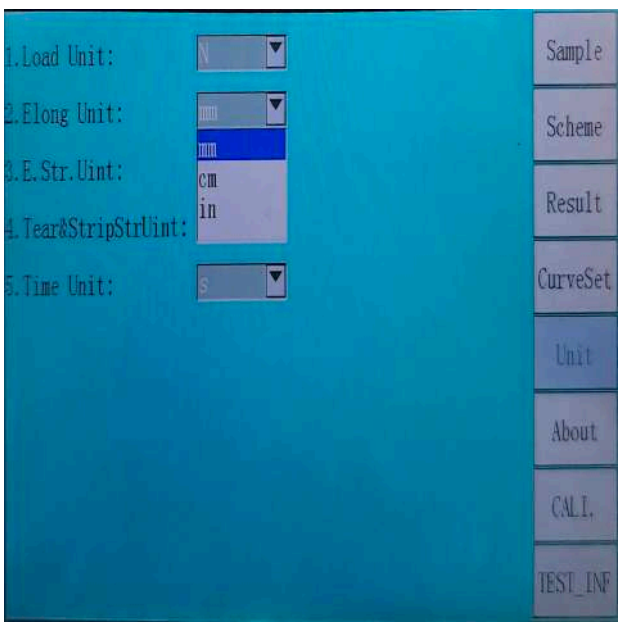
Setting curve coordinates.

Screen Interface

Unit Selection



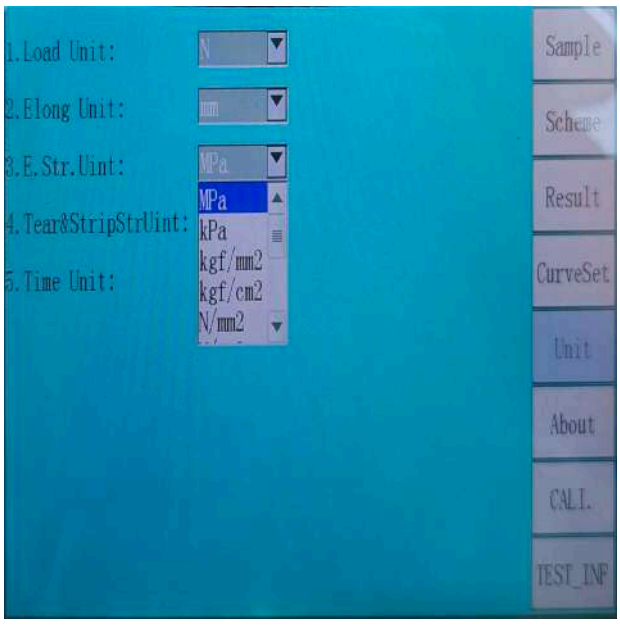
Switching force units, “kgf”, “N”, “lbf”, “gf”, “KN”, “t” are available. “KN”, ‘t’ can be selected.



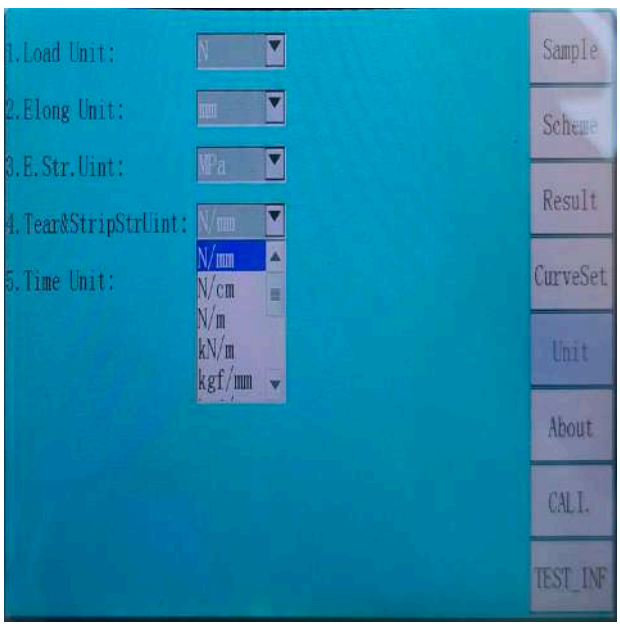
Toggle the unit of deformation, “mm”, “cm”, “in” can be selected.

Screen Interface

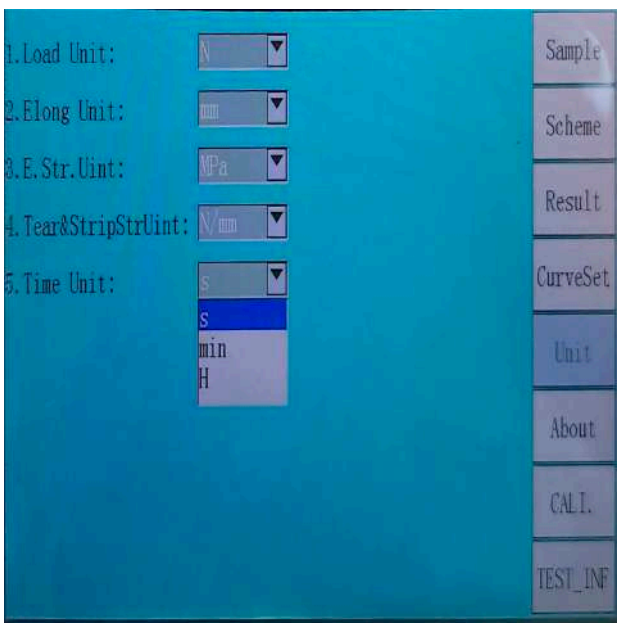
Unit Selection



Toggle tensile strength units with:MPa; kPa; kgf/mm2; kgf/cm2; N/mm2; N/cm2; N/m2; gf/mm2; gf/cm2; psi; ldf/in2, etc.



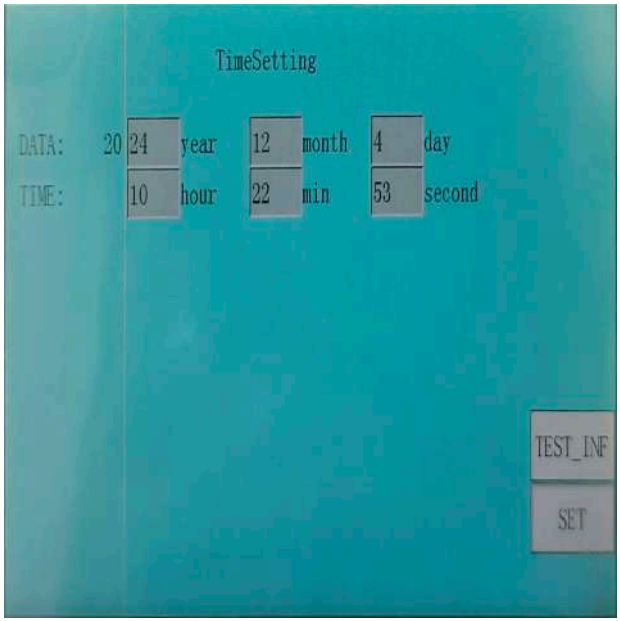
Toggle tear peel strength units with: N/mm; N/cm; N/m; kN/m; kgf/mm; kgf/cm; kgf/m; gf/mm; gf/cm; lbf/in; klbf/in, etc.



Switch the unit of deformation, “s”, “min”, “H” can be selected.

Screen Interface

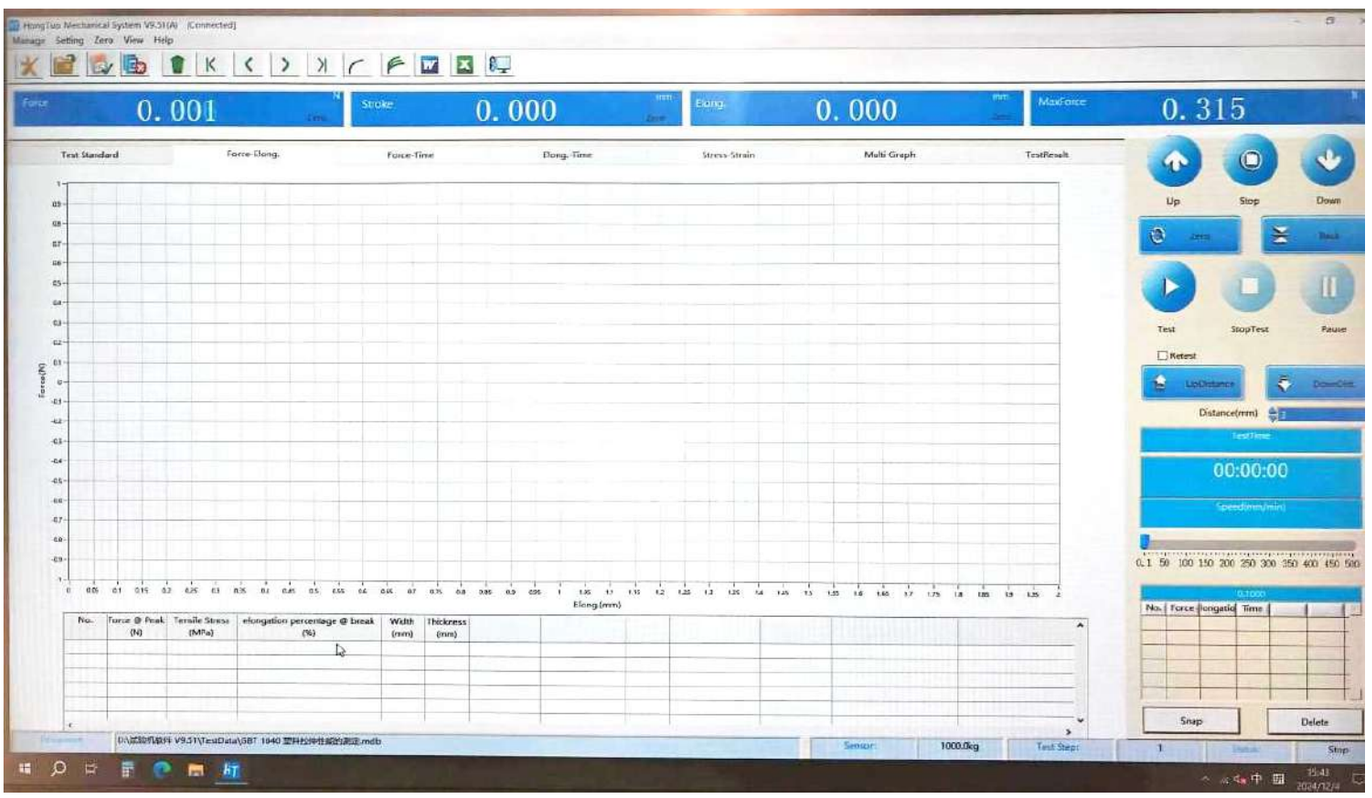
Time Setting



Setting the system time.

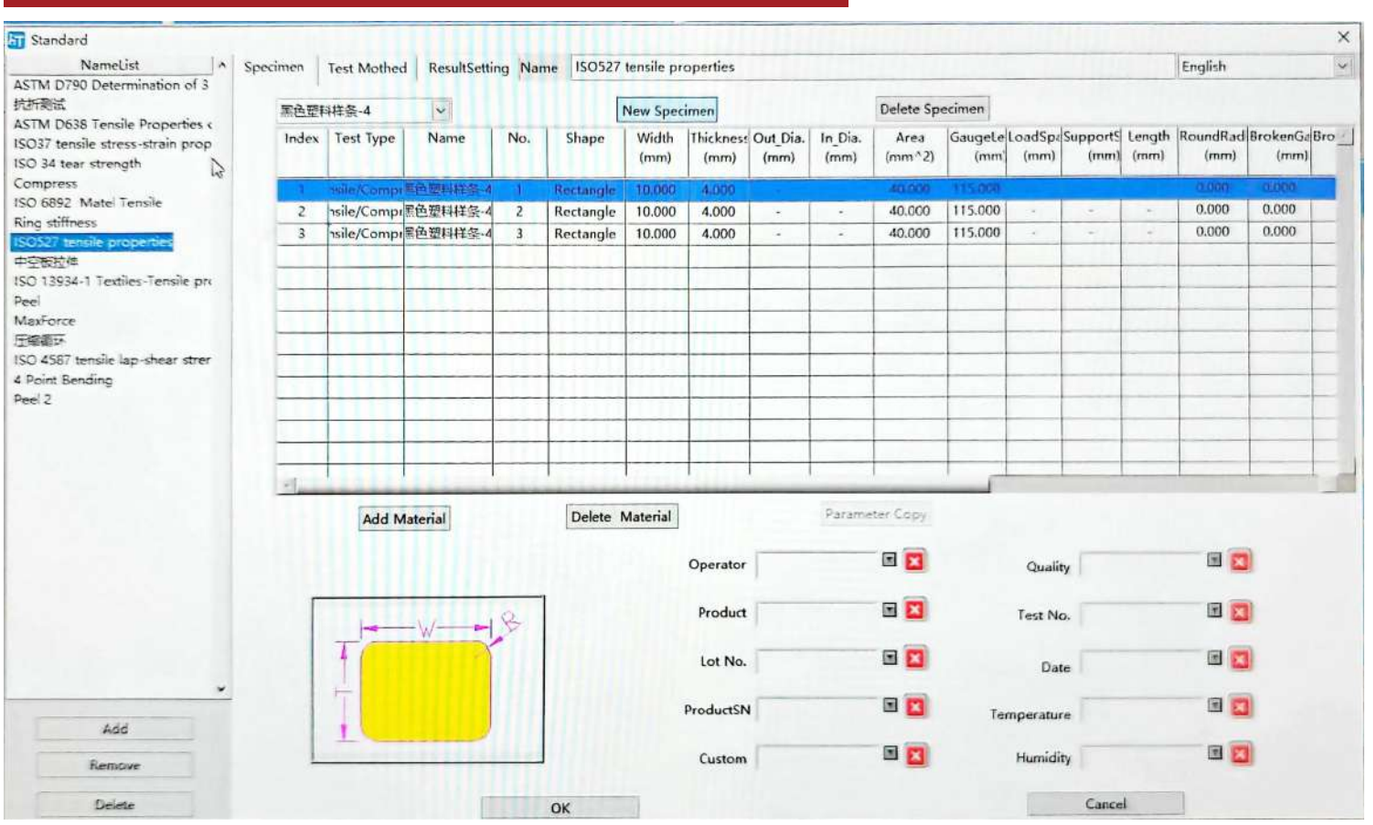
Software Interface

Operation Interface



Mainly includes standard modification, file creation, report output, curve display, test result display, image pickup point setting, instrument movement speed, and the right instrument operation button.

Test Standard Interface

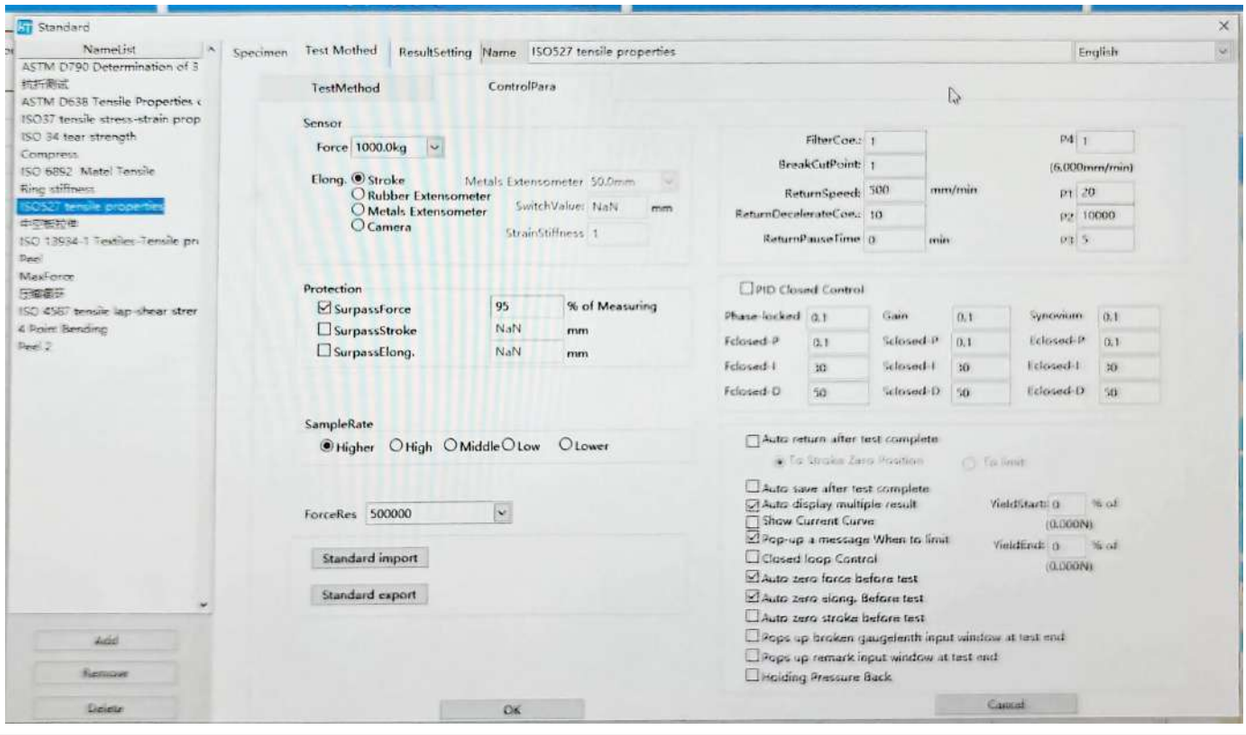


Specimen Data Interface: Specimen data viewing and editing, specimen parameter copying.

Software Interface

Test Program Interface

Test Method Interface: 1. Control of test direction including tension and compression.
2. Control mode selection includes constant speed, constant deformation, constant force rate, constant force, constant stress rate, constant stress, constant strain rate, constant strain.
3. Setting the corresponding control values and switching conditions.
4. Control the condition value, pause time and control parameters.
5. Whether to clear when the switching condition is reached includes not clearing, force clearing, displacement clearing, deformation clearing, force and displacement clearing, force and deformation clearing, displacement and deformation clearing, and all clearing.
6. Control of subsequent processing.

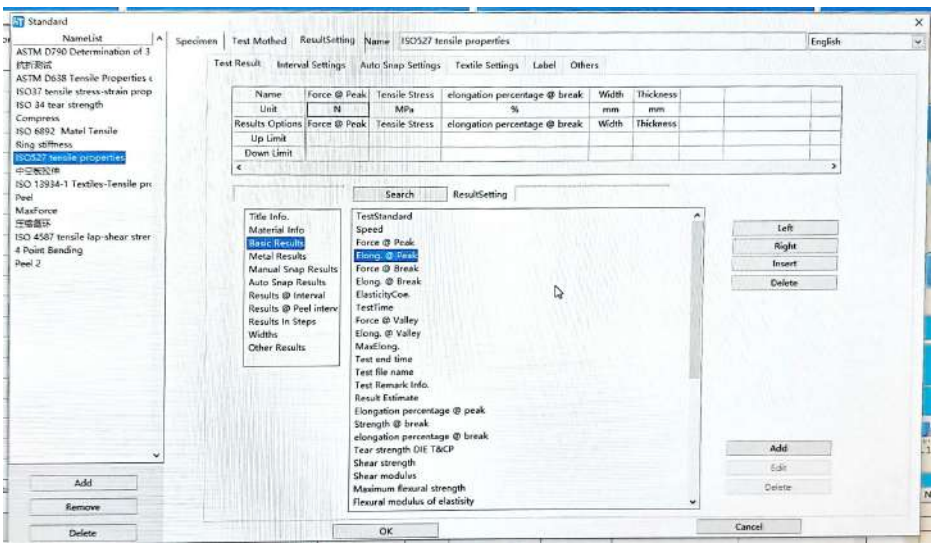


Control Parameter Interface: Control of sensors, protection, sampling rate, power resolution, filter coefficients, break removal points, return speed, return deceleration coefficient, return wait time, etc.

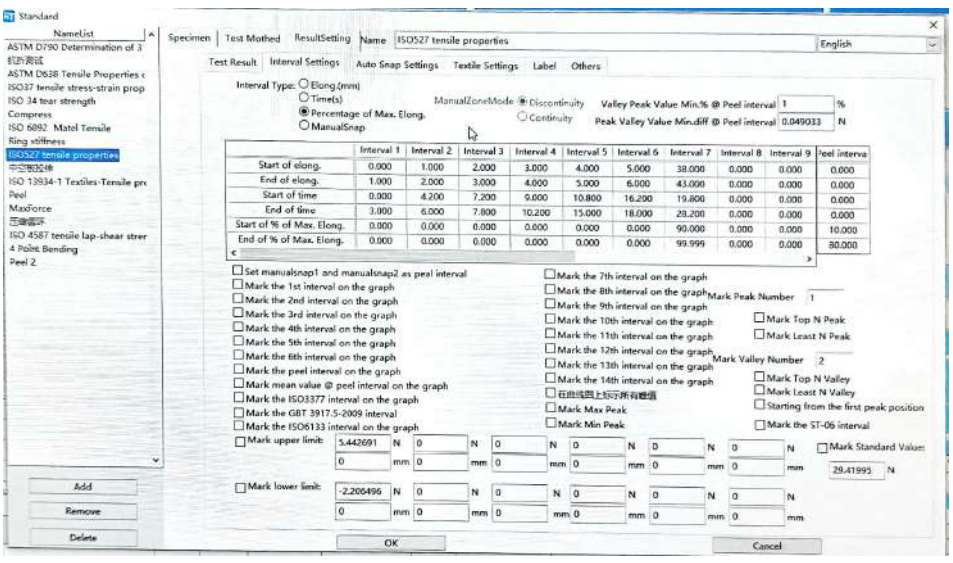
Mikrosize®

Software Interface

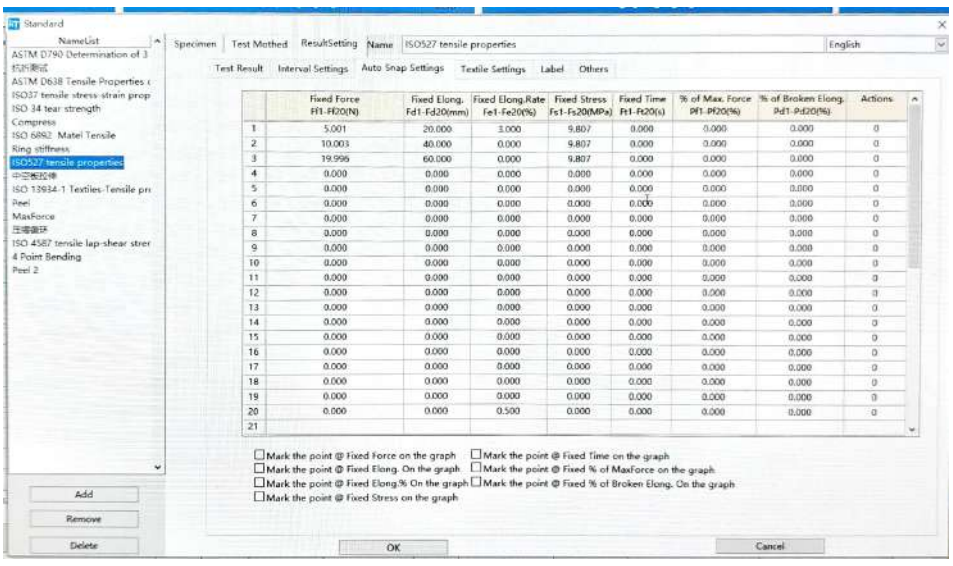
Results Setting Screen



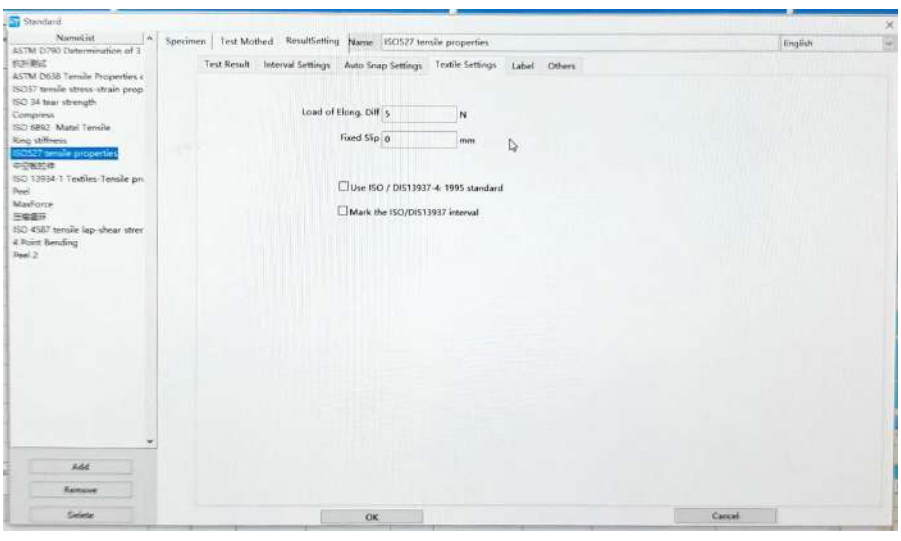
Test results screen: Display, find and edit the desired output in the report.



Interval setting interface: the main functions include the selection of interval mode, the display of curve marking force, manual selection of the desired stripping interval, and the peak-to-valley ratio and minimum drop force of the stripping interval.



Auto Picking Points Setting Interface: The main functions include auto picking points setting and supporting picking points on the back and forth curves. An action of 0 indicates that points are taken on the whole curve. An action of 1 indicates that the point is taken at the first test step.



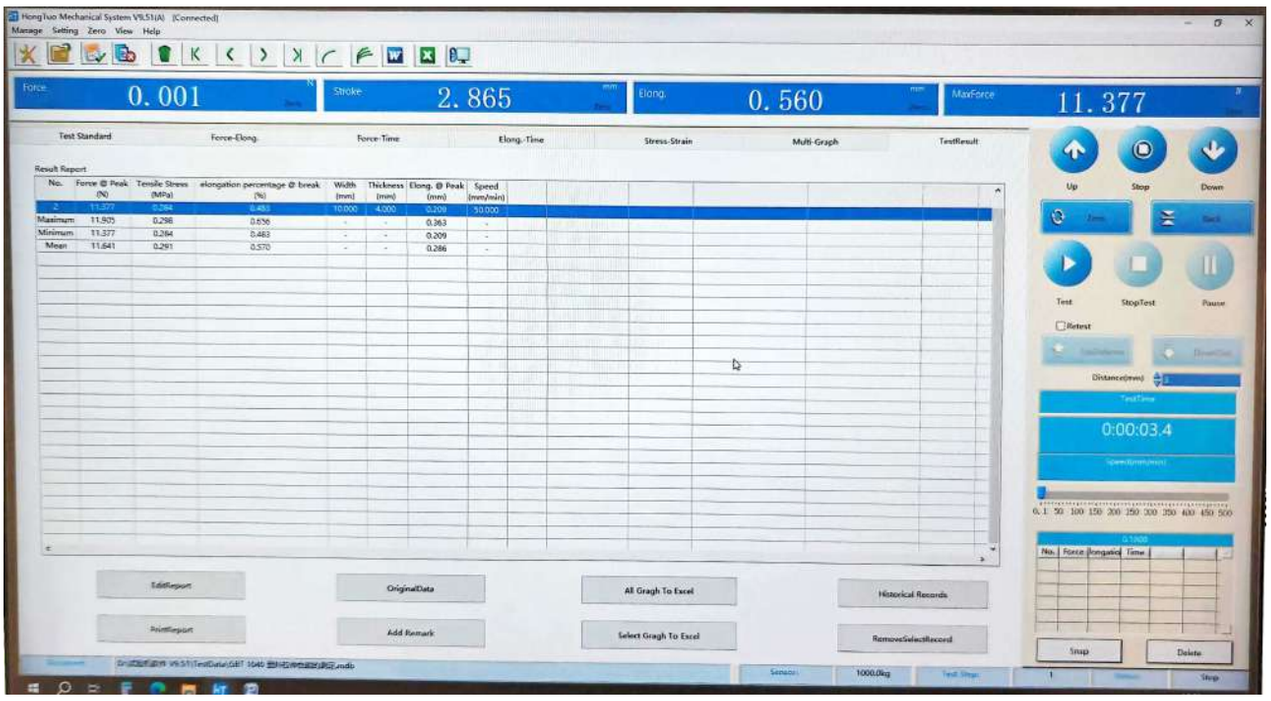
Textile test setup interface: the main functions include 1) elongation difference load: calculating the setup parameters of elongation difference; 2) specified slip: calculating the setup parameters of slip resistance.

Software Interface

Multi-image Interface

Force-deformation, force-time deformation, and deformation-time graphs can be observed.

Test Results Screen



Edit report, print report, output original data to excel, add note information, output all curves to excel, output selected curves to excel, view historical data, remove selected records.

Technical Specifications

Model		MS-140SC
Capacity	KN	50
	KG	5000
	lb	11023
Unit Switching		G,Kg,Ib,N,KN
Displacement Unit Switching		Inch/cm/mm
Testing Machine Class		Class 0.5
Effective Force Measurement Range		0.4%~100%FS
Force Accuracy		Within ±0.5% of the indicated value
Force Value Resolution		1/500000
Displacement Resolution		≤0.05μm
Displacement Accuracy		Within ±0.5% of the indicated value
Deformation Measuring Range		0.2%~100%FS
Precision of Deformation Indication		Within ±0.5% of the indicated value
Limit of Large Deformation Indication Error		Within ±0.5% of the indicated value (optional)
Maximum Test Speed		500mm/min; The maximum value is 1000mm/min(optional)
Minimum Test Speed		0.01mm/min
Speed Accuracy		Within ±1% of the indicated value
Measuring Width		Test stroke without fixture: 1330mm; Test stroke with fixture: 800mm
Effective Width		420mm,650mm(optional)
Fixture Configuration		A group of tensile fixtures
Return Mode		Manual or automatic options, automatic return after the end of the test or manual return to the initial position
Stop Method		1.The maximum breaking value of automatic stop 2.The upper and lower limits of safety setting stop
Safety Device		1.Mechanical stroke switch protection 2.Emergency stop switch emergency braking
Overload Protection		Over 10% of the maximum load, the machine automatically protects
Power Supply		220V.AC/50HZ; (110V.AC/60HZ can be selected by country)
Weight		Net Weight: about 185KG Gross Weight: about 220KG
Dimension		Mainframe:L*W*H:800mm*550mm*1700mm Package:L* W*H:900mm*650mm*1800mm

Standard Delivery

Name	Quantity	
Mainframe Machine	1	
Power Cord	1	
Test Software Program CD 1	1	
Data Cable		
Fixture		
Anti-flight Excitation Device (Protective Door)	1	
Computer	1	
Printer	1	
3 Point Bending Fixture	1	
4 Point Bending Fixture	1	
Instruction Manual	1	
Product Certificate	1	
Product Warranty	1	

Optional Delivery

Name	Quantity
Small Deformation Metal Extensometer	1
Large Deformation Extensometer(1000mm,0.01mm)	1
Other Fixtures	1