Mikrosize®

UTM-FDC

Computerized Dual-column Servo Tensile Testing Machine

Contact us

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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.

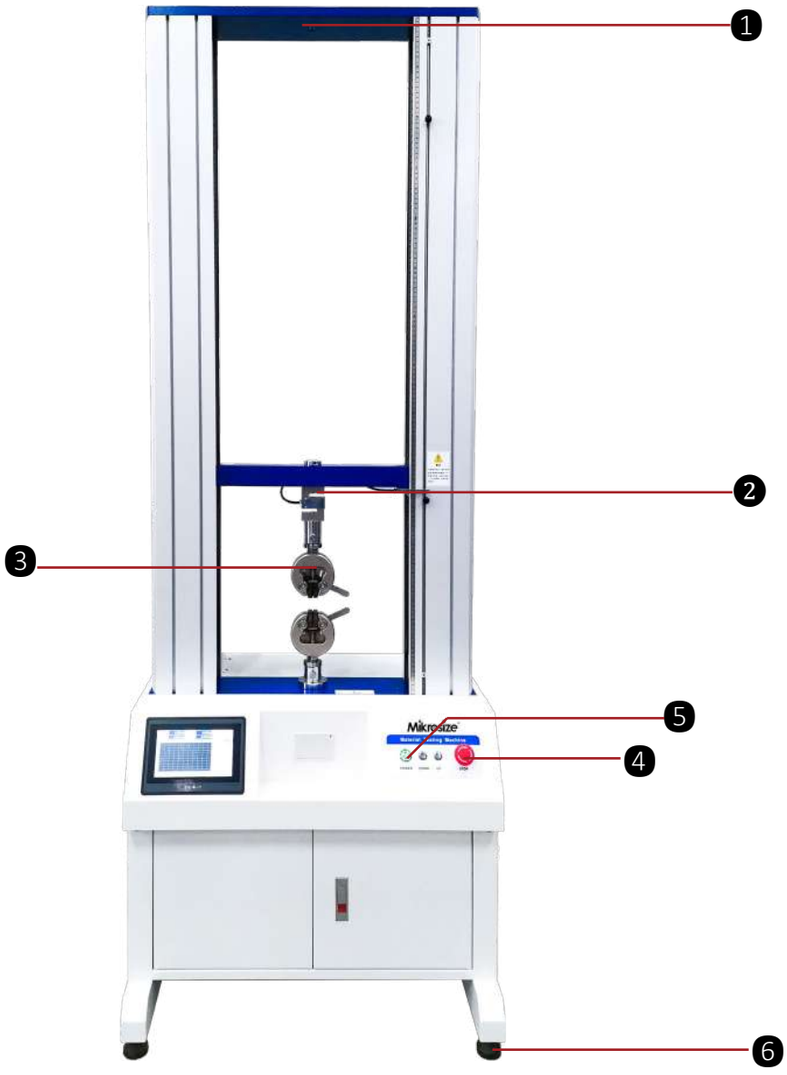
Without Working Cupboard

With Working Cupboard

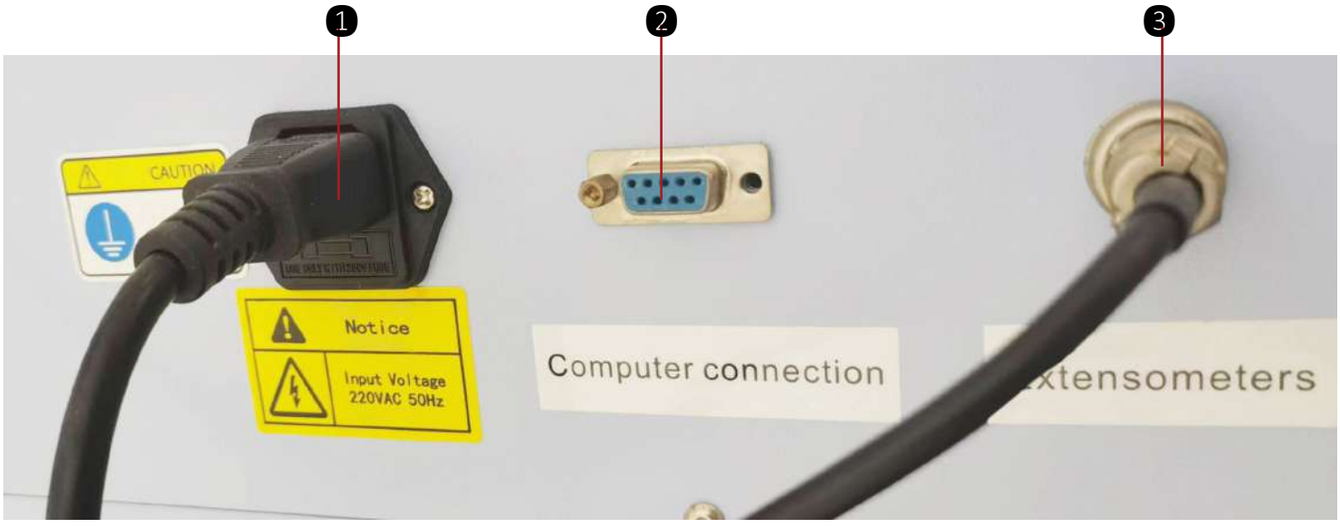
Product Application

●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**



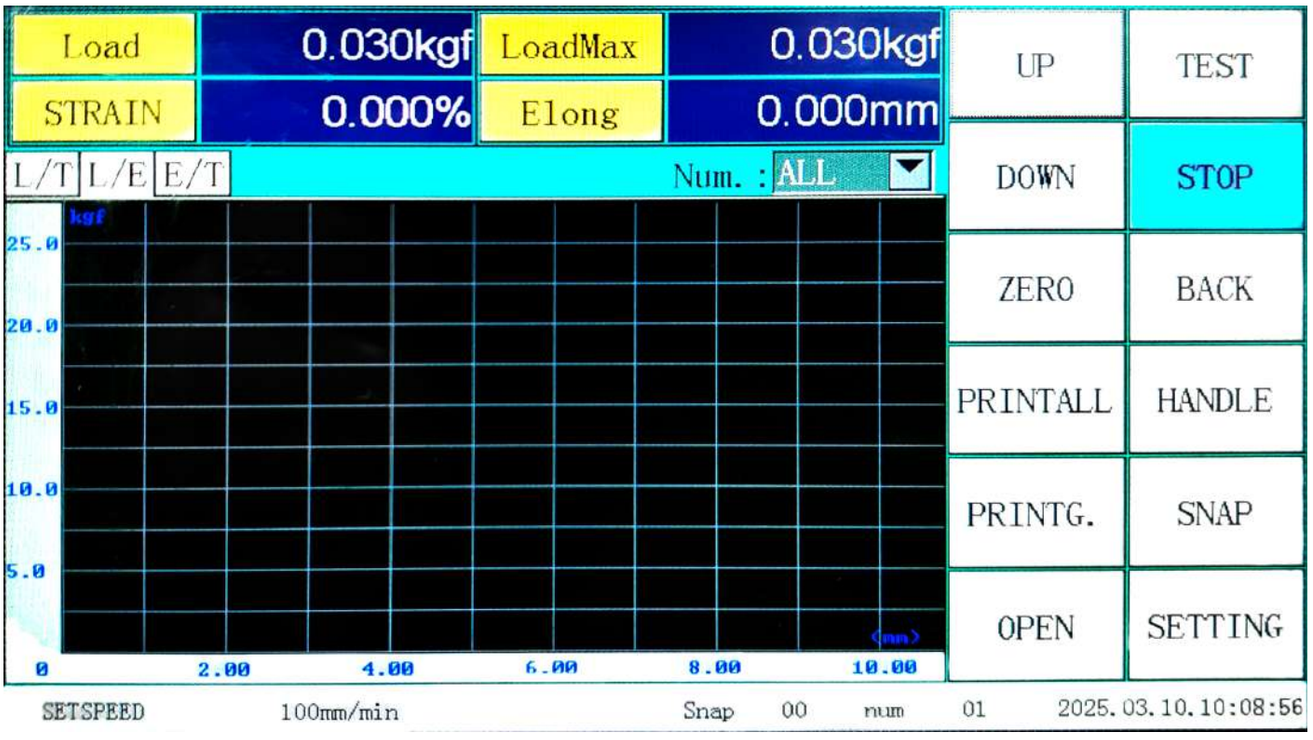
1.Power cord socket
2.Socket for computer connection (optional)
3.Socket for the extension meter (optional)

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.

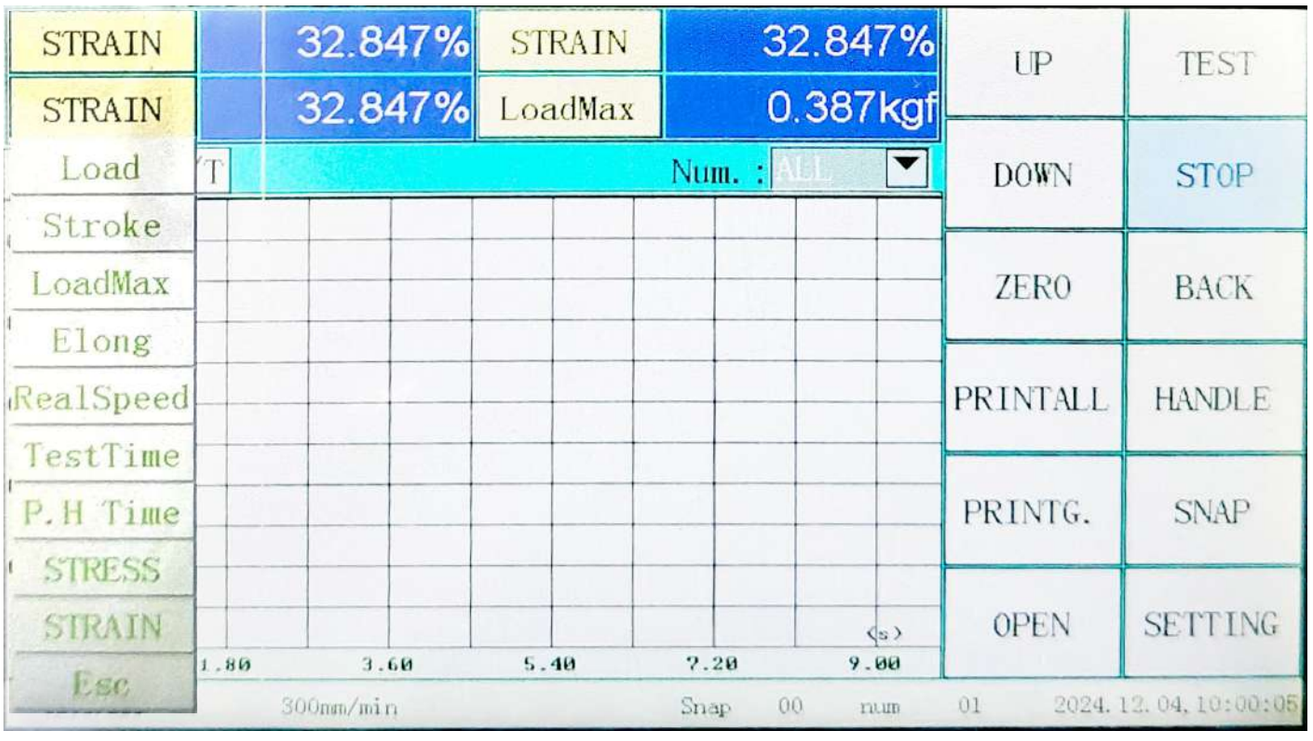
Main Interface



Touch screen control method, simple and convenient to operate.
On this interface, users can:

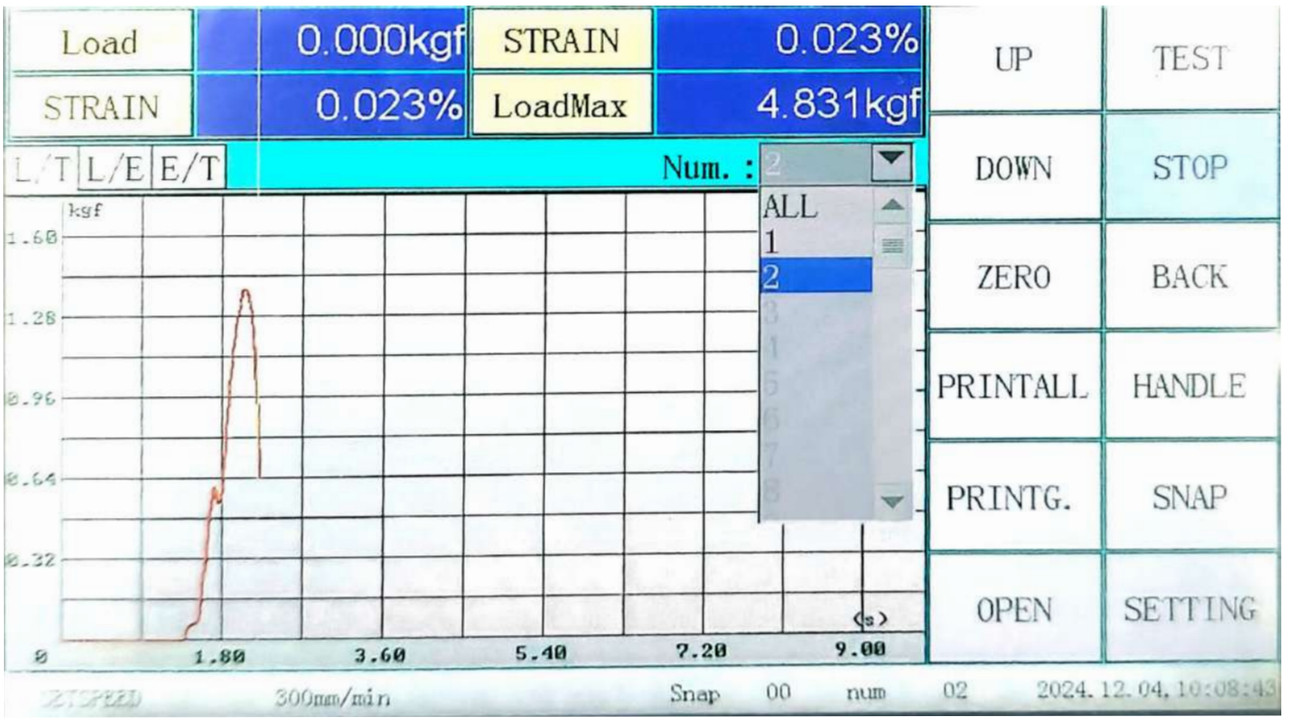
- Control moving of machine and start or stop test.
- Zero the test data and return the machine to its original position.
- View and print out the test results.

Select Display Parameters



- Users could select display parameters: Load; Stroke; Load Max; Elong; Real Speed; Test Time ; P.H Time; STRESS; SIRAIN

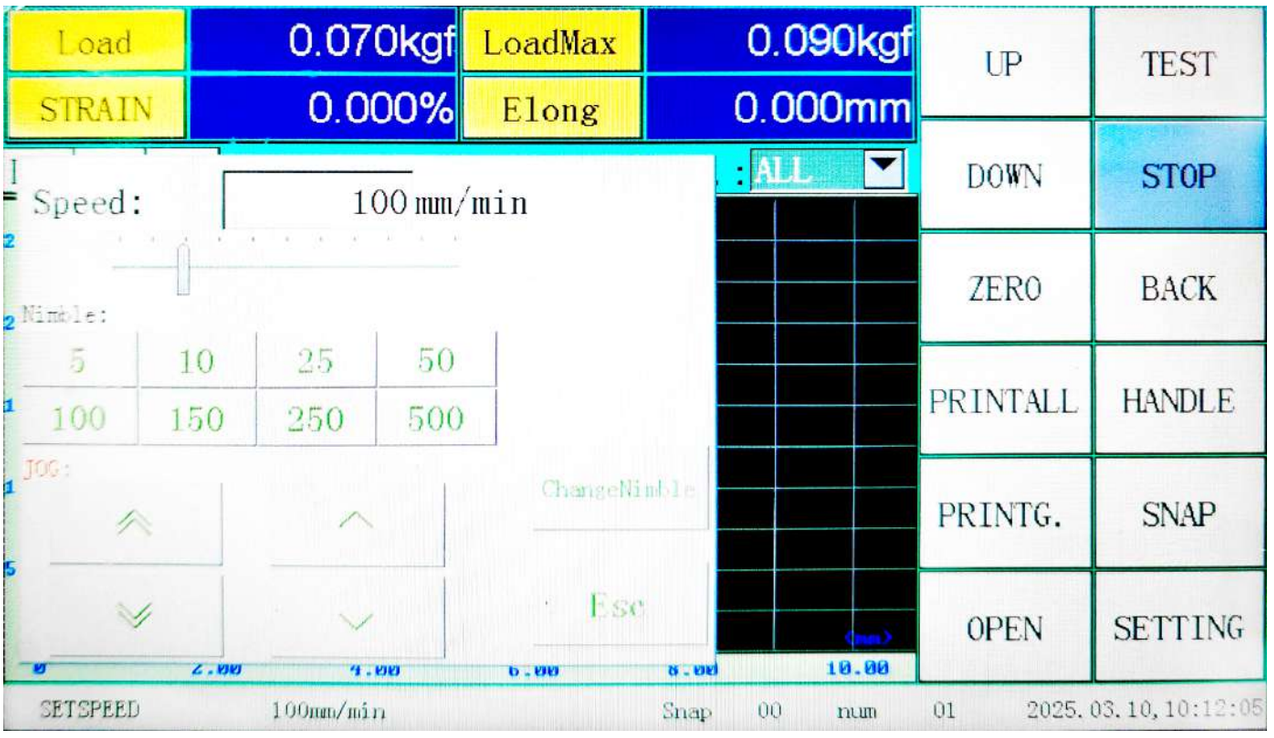
Select Group and Curve Coordinates



●After multiple groups of tests , click "Num" to select and view the curve chart corresponding to the according test group.

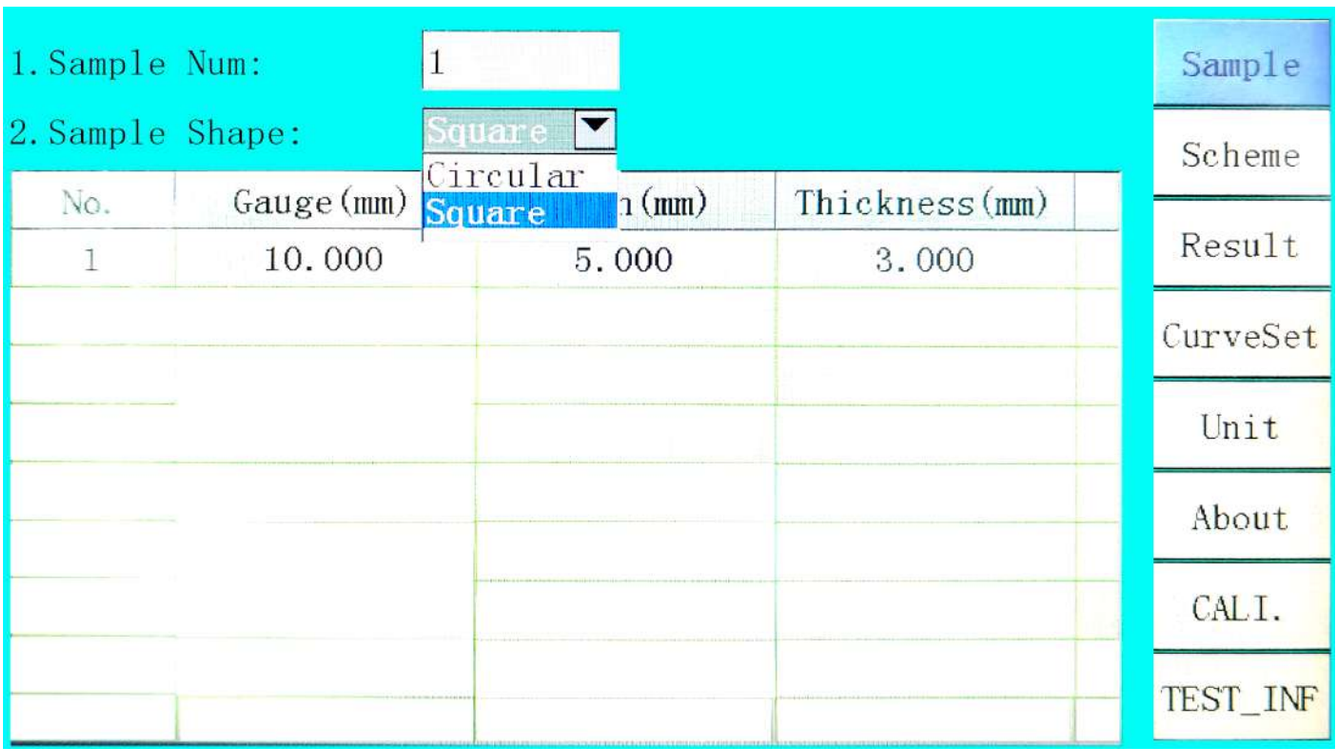
●3 types of curve charts with coordinates, Force - Time (L/T); Force - Displacement (L/E); Displacement - Time (E/T). Click the corresponding button to switch.

Manual Control Parameters Setting

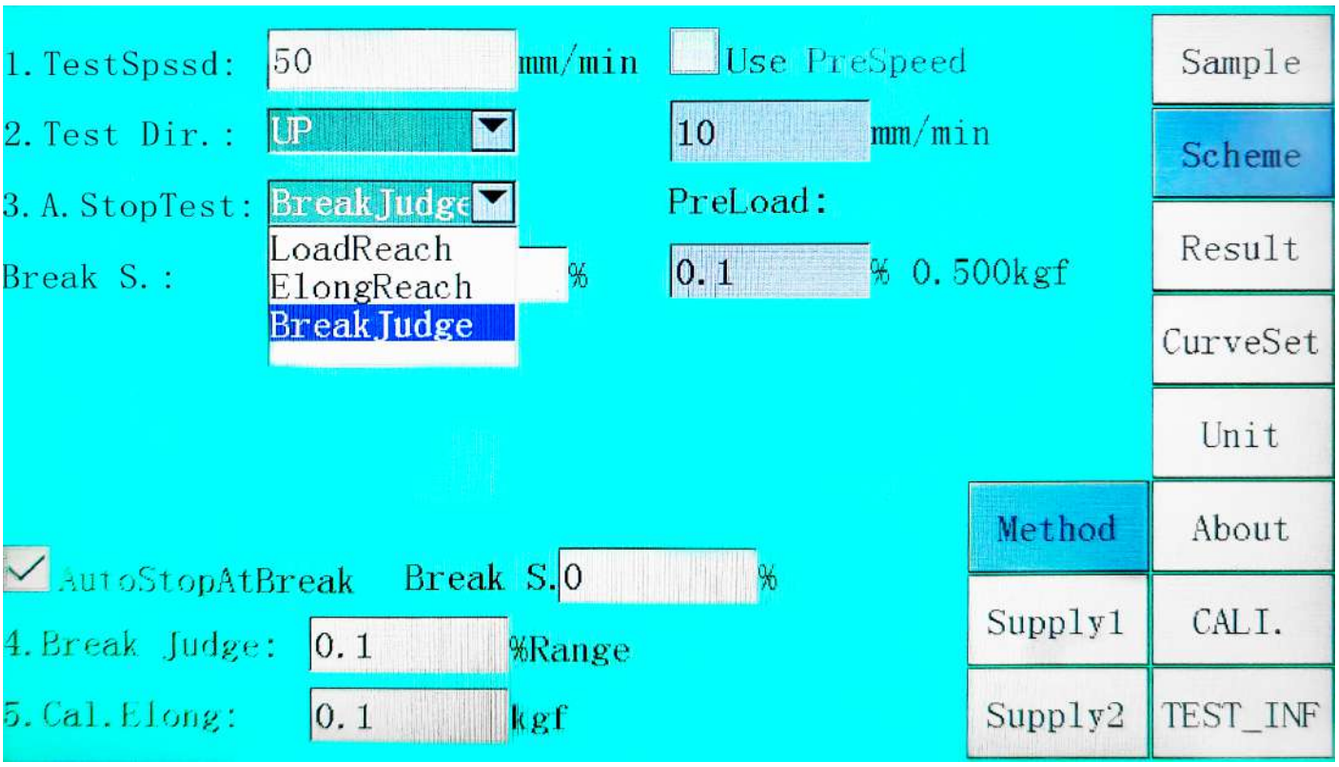


●On this interface, users can adjust the lifting speed of manual control. Users can directly and quickly select the required speed in the "Nimble" option, or adjust the speed by sliding the block.

Test Sample Information

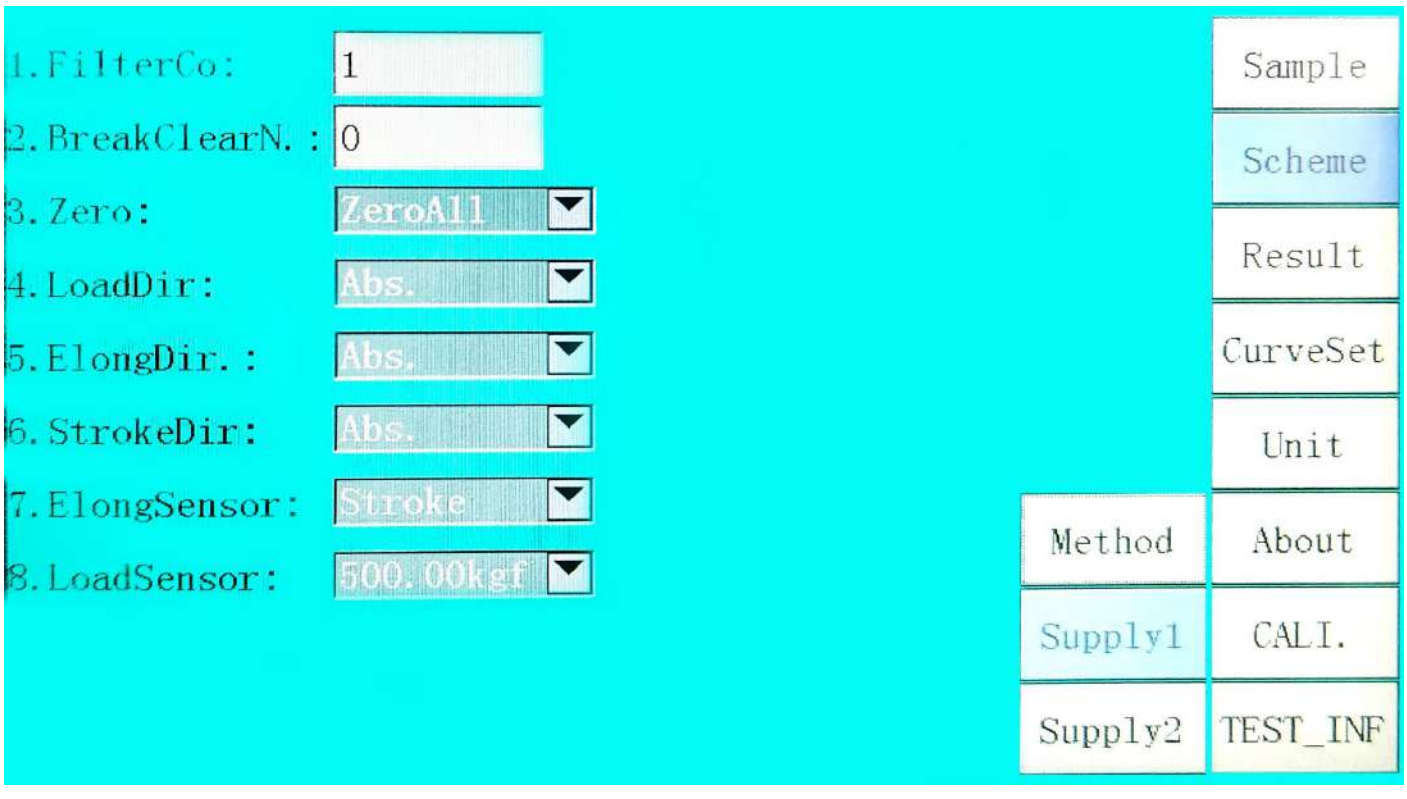


Set the number and shape of samples to be tested



- Set the test speed.
- Select the test direction, upward or downward.
- Set shutdown conditions.
- Set breakpoint judgment.
- Set the conditions for starting the deformation measurement.

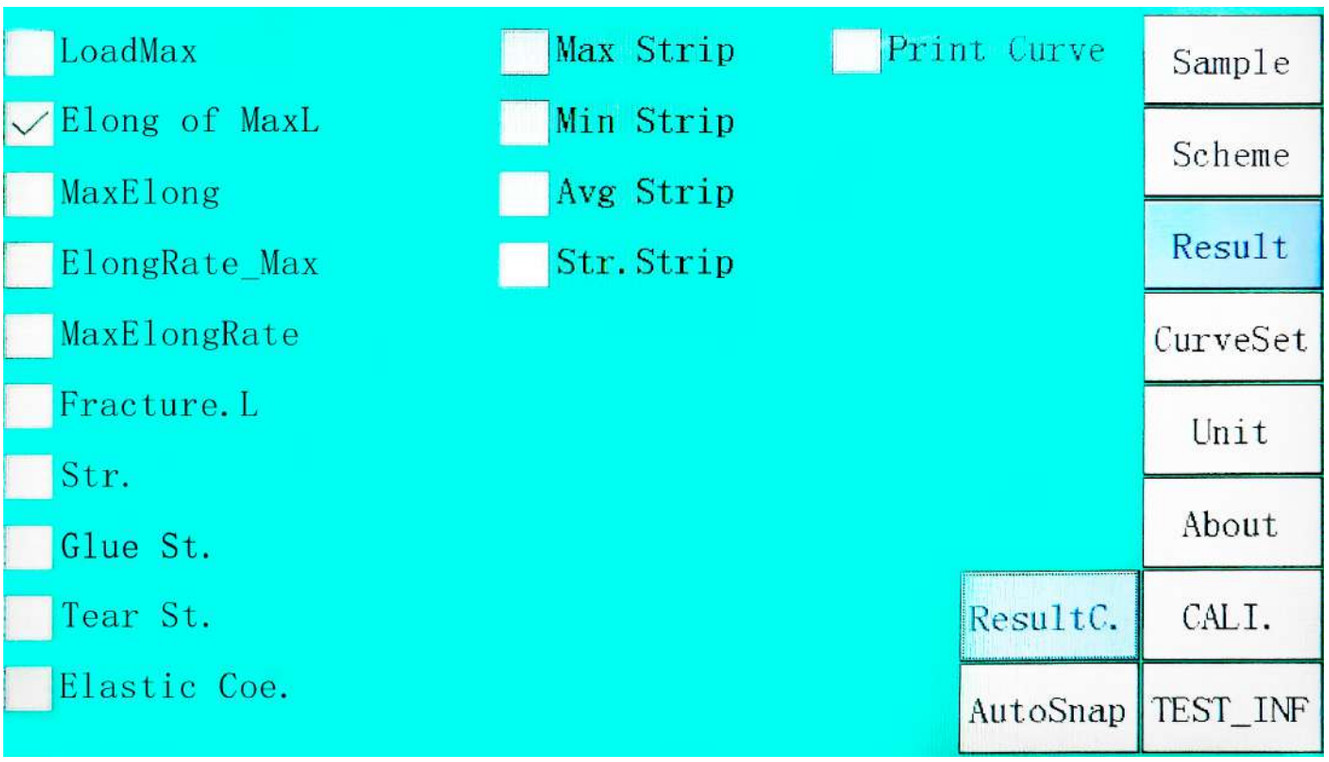
Parameters Control



- Select the mode of the "Zero Reset" button on the main testing interface. Options include "Full Zero Reset" and "Force Zero Reset".
- For the directions of deformation, force value and displacement, options such as "Reverse", "No Reverse" and "Absolute Value" are available.
- Select the deformation sensor. Options include "Displacement", "Rubber Extensometer (Optional)" and "Metal Extensometer (Optional)".
- Select the force sensor.

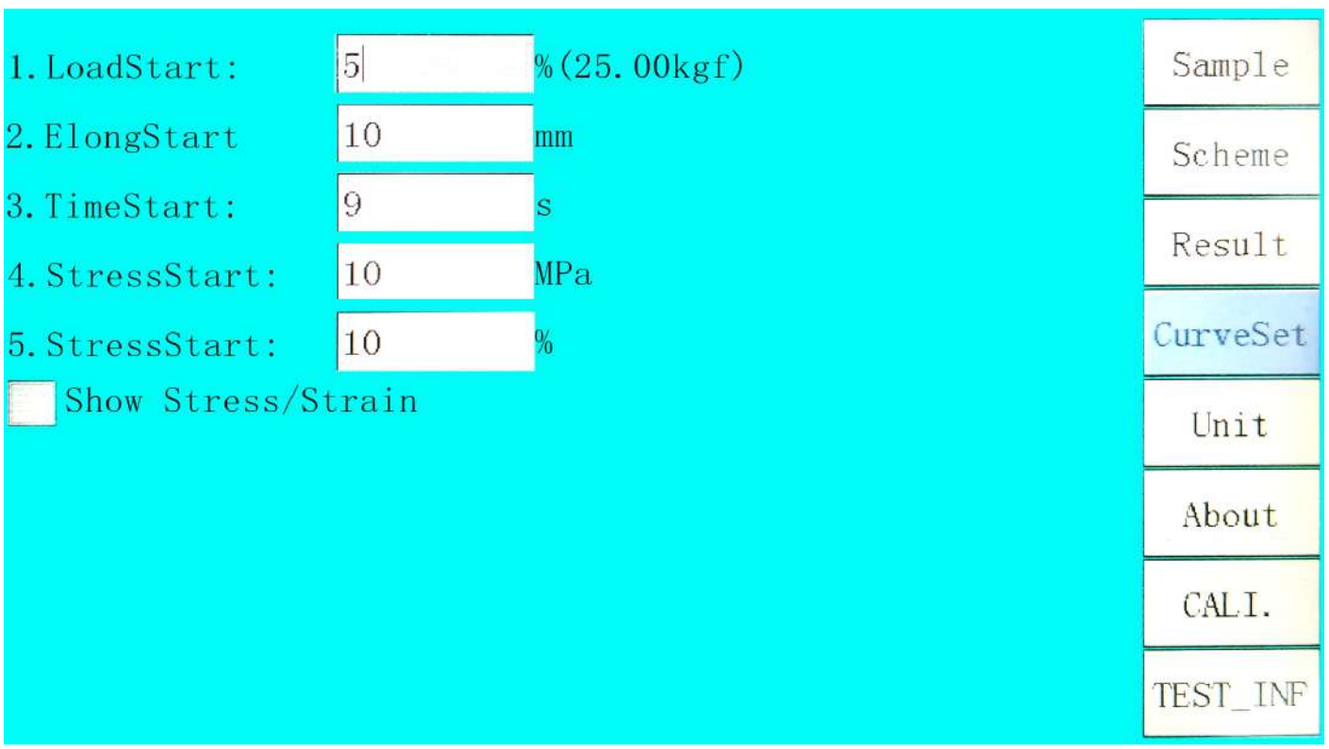
- Protection settings include force value protection and deformation protection.
- Set the return speed, waiting time, and deceleration coefficient. The function of the deceleration coefficient is to prevent displacement overshoot.
- Set the number of digits displayed after the decimal point of the force value.
- Switch the language display. Options such as "English" and other languages can be customized.
- Select the return mode, with options of "Displacement Zero Point" and "Limit Position".
- The buzzer will sound when the screen is touched or the limit is triggered.
- The displacement, force value, and deformation will automatically return to zero before the test, and the machine will automatically return to its original position after the test is completed.

Select Test Result



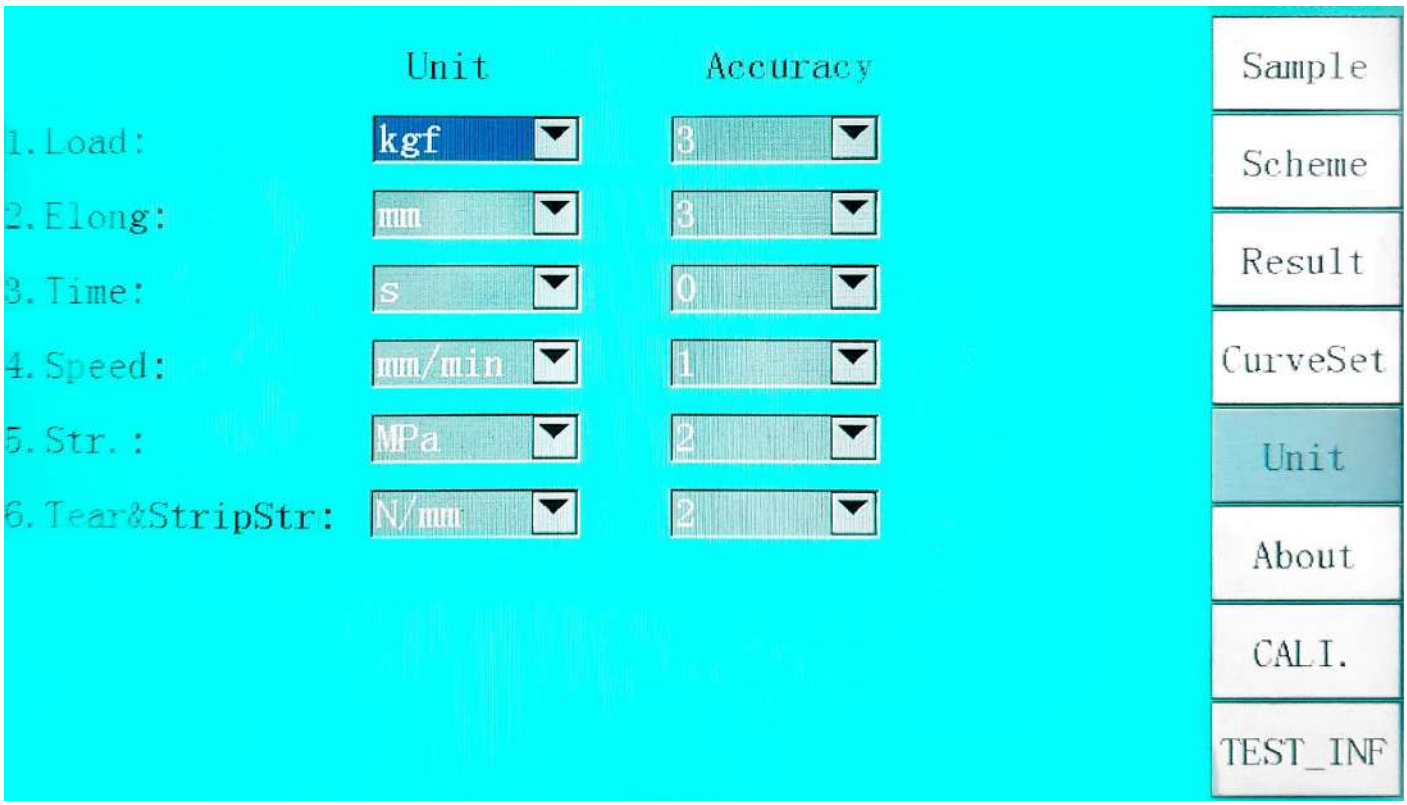
Select the required test results. The items that are ticked will be displayed in the report.

Curve Settings



Set the starting parameters of the curve.

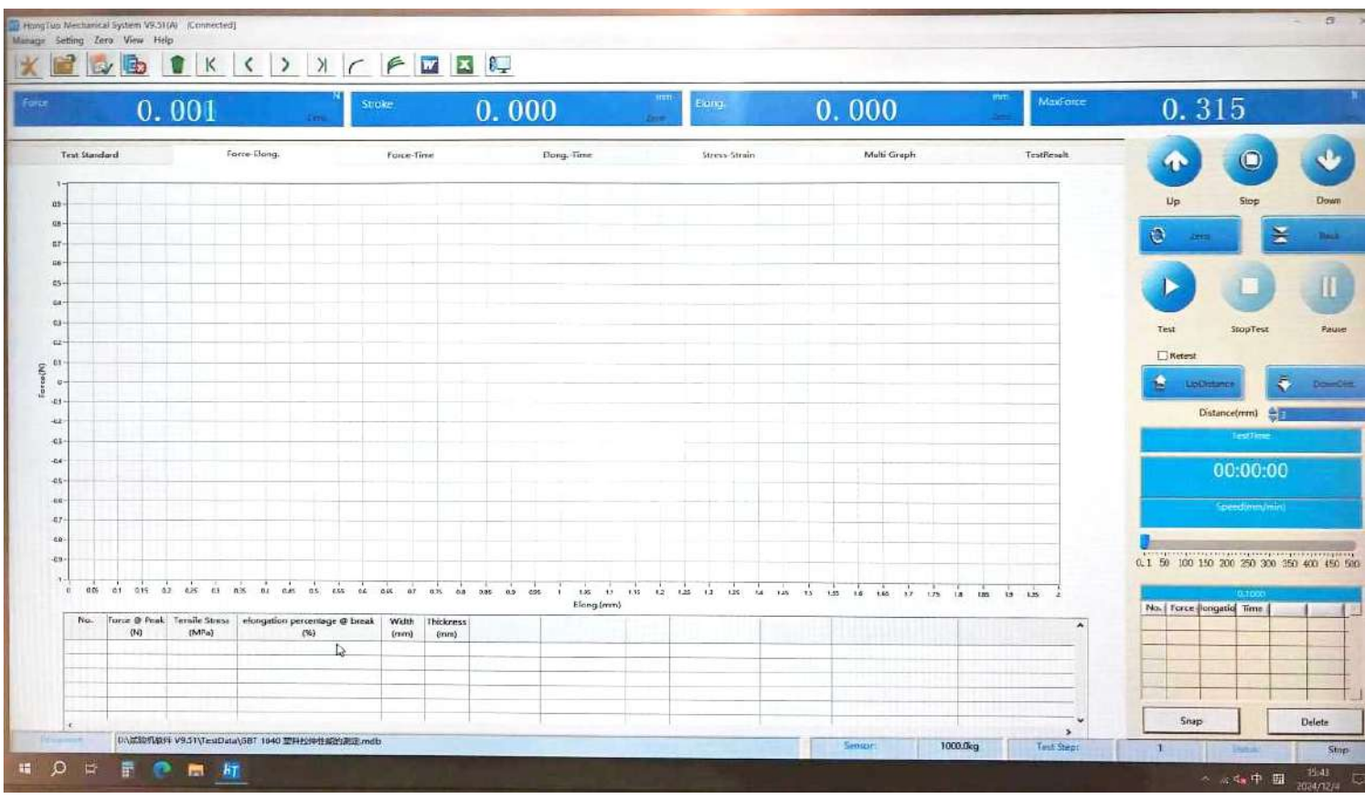
Units Setting



- Force unit:“kgf”, “N”, “lbf”, “gf”, “KN”, “t”
- Deformation unit, “mm”, “cm”, “in”
- Tensile strength unit:MPa; kPa; kgf/mm2; kgf/cm2; N/mm2; N/cm2; N/m2; gf/mm2; gf/cm2; psi; ldf/in2
- Tear and peel strength unit: N/mm; N/cm; N/m; kN/m; kgf/mm; kgf/cm; kgf/m; gf/mm; gf/cm; lbf/in; klbf/in等
- Time unit:“s”, “min”, “H”

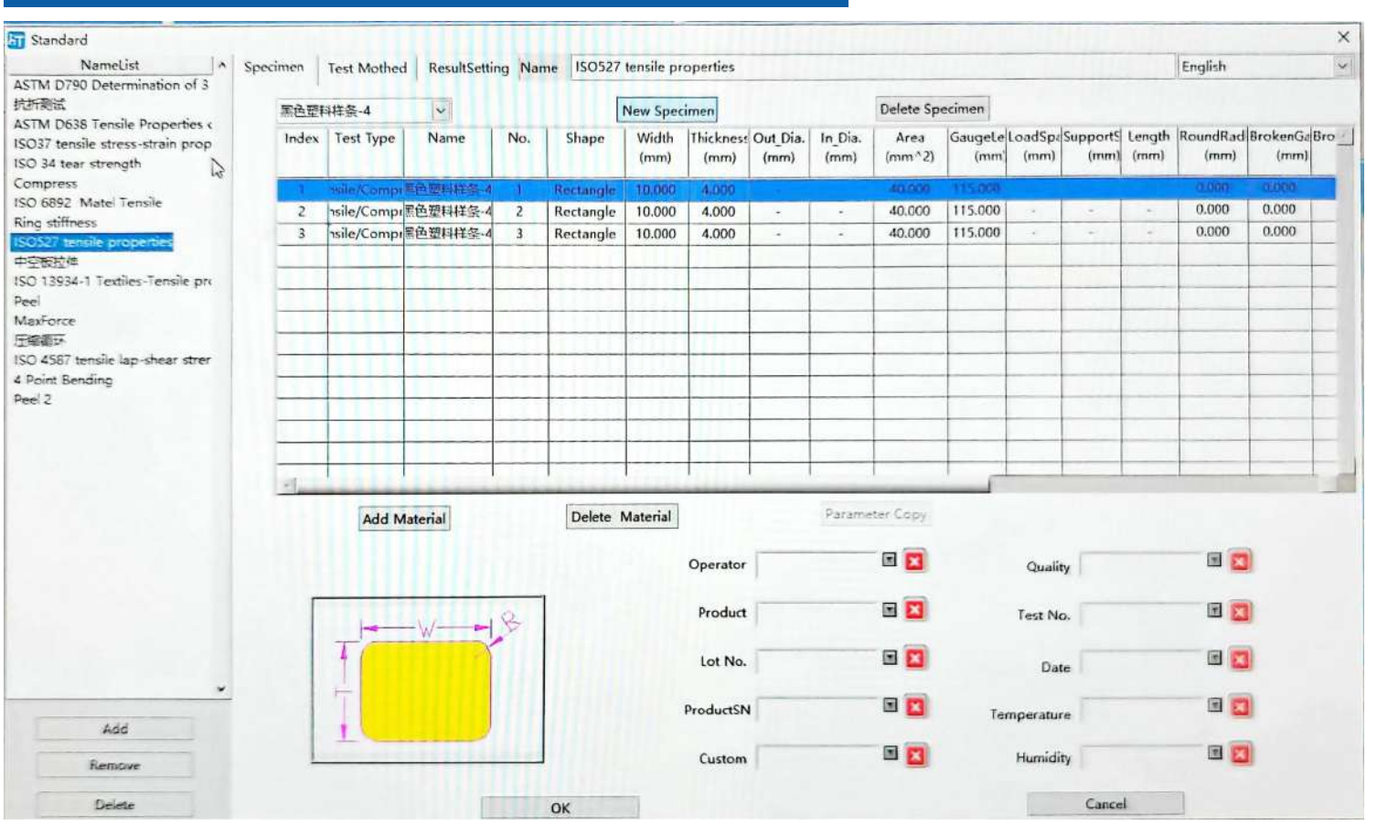
Software Interface

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

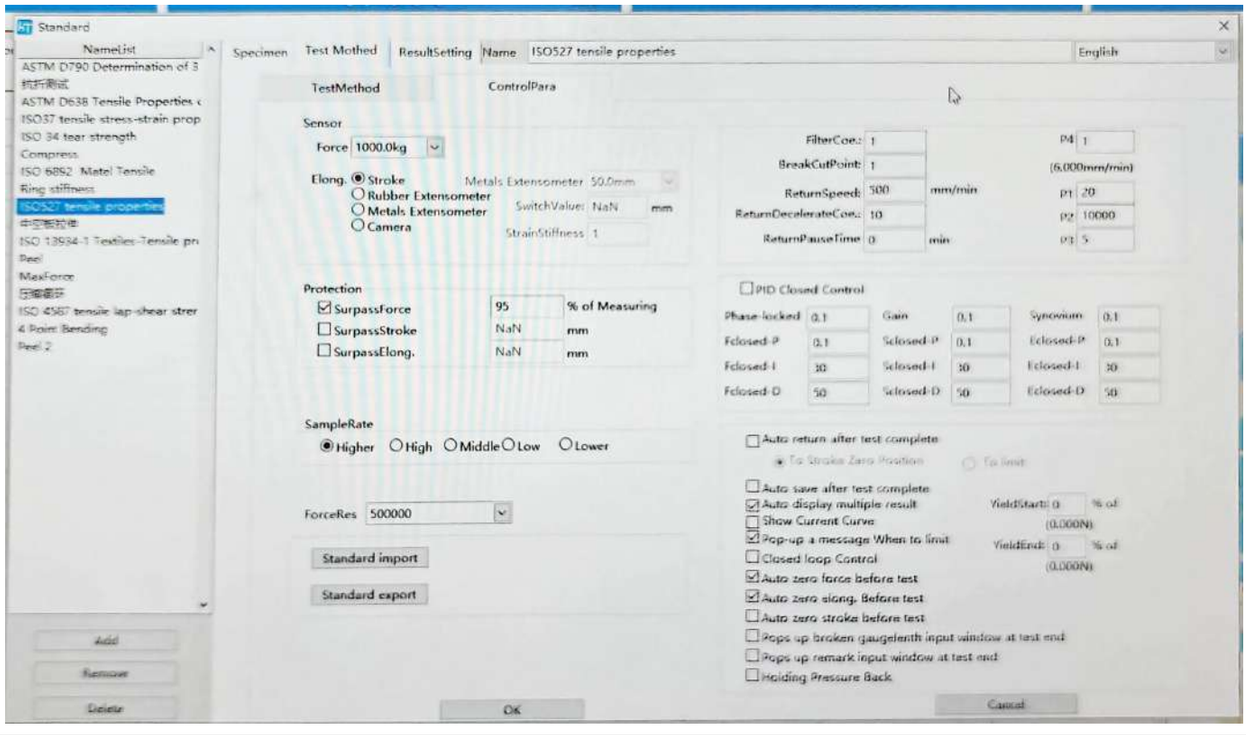


Specimen Data Interface: Specimen data viewing and editing, specimen parameter copying.

Software Interface

Test Program Interface

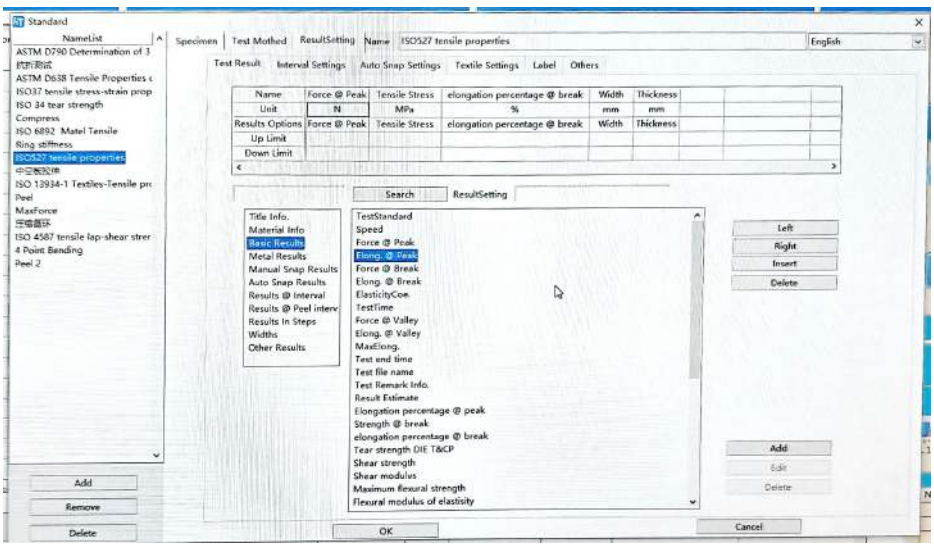
Test Method Interface: 1. Control of test direction including tension and compression.
2. Control mode selection includes constant speed, constant deformation, constant force rate, constant force, constant stress rate, constant stress, constant strain rate, constant strain.
3. Setting the corresponding 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.



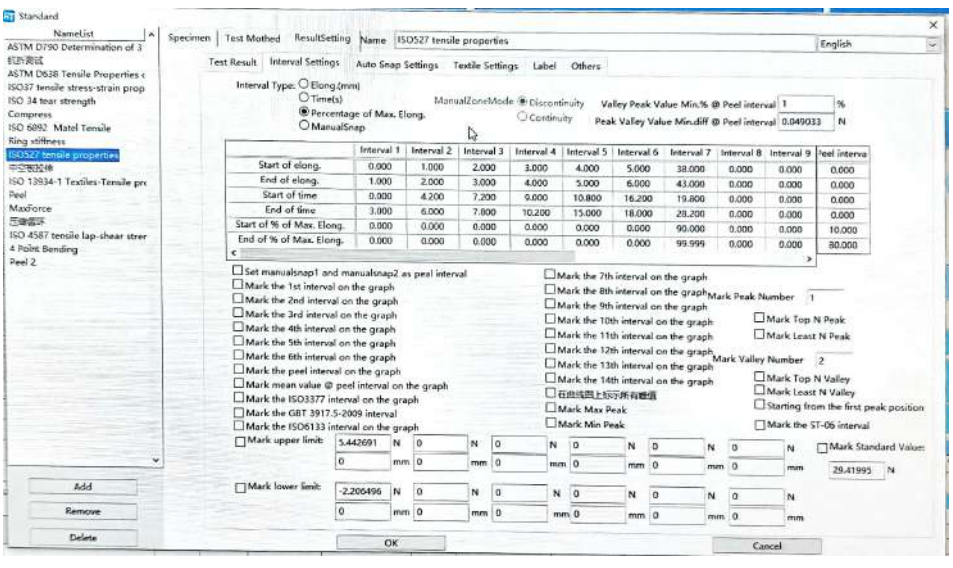
Control Parameter Interface: Control of sensors, protection, sampling rate, power resolution, filter coefficients, break removal points, return speed, return deceleration coefficient, return wait time, etc.

Software Interface

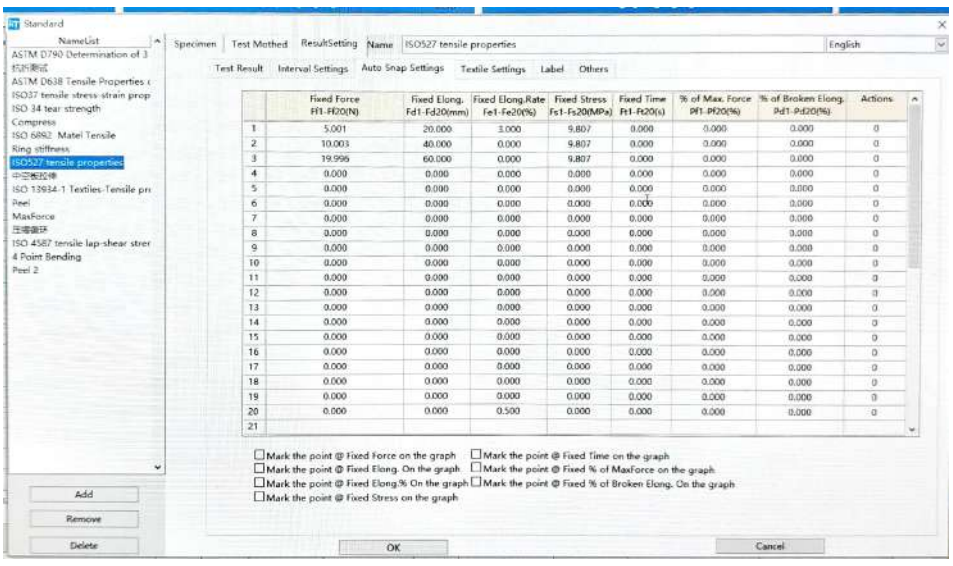
Results Setting Screen



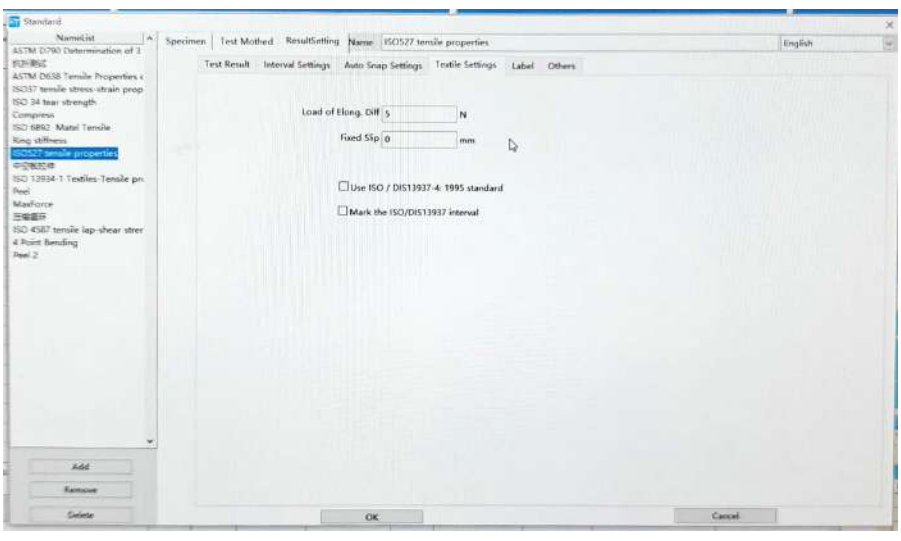
Test results screen: Display, find and edit the desired output in the report.



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.



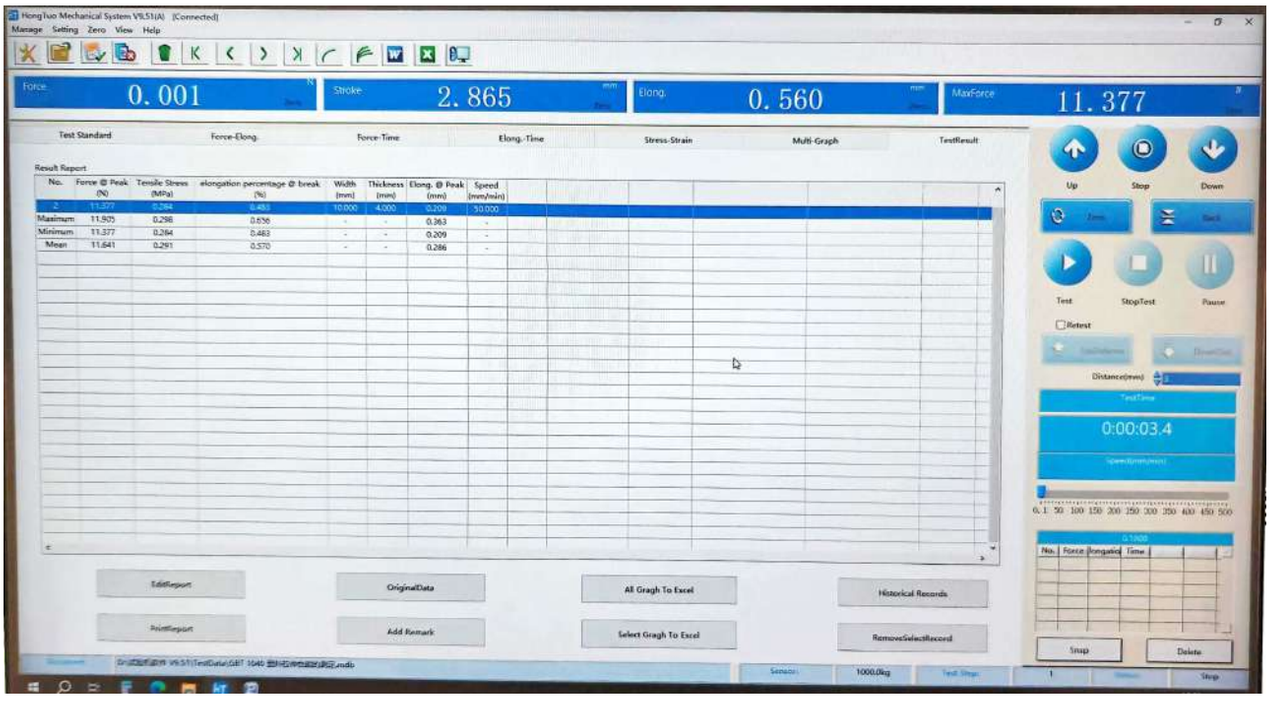
Textile test setup interface: the main functions include 1) elongation difference load: calculating the setup parameters of elongation difference; 2) specified slip: calculating the setup parameters of slip resistance.

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

Product Name		Floor Type Dual Column Electronic Universal Testing Machine											
Model		UTM-FDC											
Divided Models		UTM -FDC -002	UTM -FDC -005	UTM -FDC -01	UTM -FDC -02	UTM -FDC -05	UTM -FDC -1	UTM -FDC -2	UTM -FDC -5	UTM -FDC -10	UTM -FDC -20	UTM -FDC -30	UTM -FDC -50
Test Force	KN	0.02	0.05	0.1	0.2	0.5	1	2	5	10	20	30	50
	KG	2	5	10	20	50	100	200	500	1000	2000	3000	5000
	lb	4	11	22	44	110	220	440	1102	2204	4409	6613	11023

Test Force Unit Switch		G、Kg、lb、N、KN
Displacement Unit Switch		Inch cm mm
Test Level		Level 1
Effective Force Range		0.4%～100%FS
Test Force Precision		Within ±1% of Indicated Value
Test Force Resolution		1/500000
Displacement Resolution		≤0.05μm
Displacement Precision		Within ±1% of Indicated Value
Deformation Test Range		0.2%～100%FS
Deformation Precision		Within ±1% of Indicated Value
Large Deformation Test Range		1000mm（Optional）
Large Deformation Resolution		0.01mm（Optional）
Large Deformation Error		Within ±1% of Indicated Value(Optional)
Max Test Speed		500mm/min；Optional 1000mm/min
Min Test Speed		0.1mm/min
Speed precision		Within ±1% of Indicated Value
Standard Test Height		Without Clamp：1330mm；With Clamp：800mm
Test Width	Standard	420mm
	Optional	650mm
Clamps		A Set of Tensile Clamps, Other Clamps Optional
Return Mode		Manual/Auto
Shutdown Mode		Automatic Shutdown at the Maximum Breaking Value.
		Shutdown due to Upper and Lower Limit Safety Settings
Safety Device		Mechanical Travel Protection
		Emergency Stop Button
Overloading Protection		Automatically Protect If loading exceeds the Maximum Load by 10%
Power Supply		220VAC/ 50Hz
Mainframe Dimension/Weight		Without Working Cupboard：L*W*H:750mm*500mm*1650mm / 165KG With Working Cupboard：L*W*H:750mm*500mm*2050mm / 185KG
Package Dimension/Weight		Without Working Cupboard：L*W*H:850mm*600mm*1800mm / 200KG With Working Cupboard：L*W*H:850mm*600mm*2250mm / 210KG

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