Mikrosize®

UTM-TSH

Touch Screen Single Column Electronic Universal Testing Machine

Contact us

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Product Features and Application

Product Features

- Wide range of applications, powerful functions, compact structure, and easy operation.
- High measurement accuracy.
- Equipped with a high speed, low vibration, and low noise motor drive device
- Multilingual switching
- Flexible report viewing and printing functions
- Automatic return
- Multiple curve modes (optional): such as stress - strain, force - displacement, force - time, strength - time, etc.
- Multiple test mode functions: tensile, bending, compressive, flexural, tear, peel, elongation rate, and other test modes are available.
- Multiple protection devices.
- Optional large - deformation displacement tracker (for high - lift models): can meet specific test requirements.
- Optional upgrade to connect to a computer and use the advanced version of the testing software with more functions.
- Standards complied with:

GB/T 2611、GB/T 16491、GB/T 1040、ISO 527、GB/T 8804、GB/T 9341、GB/T 12160、GB/T 16825

Product Application

- Manufacturing industry: Detect the mechanical properties of various parts and raw materials in production to ensure that product quality meets design requirements.
- Material research and development: Assist researchers in understanding the mechanical properties of new materials and providing data support for material improvement and innovation.
- Research institutions: In scientific research experiments, it is used to study the mechanical behavior laws of substances and promote the development of related disciplines.

Machine Appearance

1.Load cell 2.Fixture 3.Touch display screen
4.Emergency stop button 5.Switch 6.Printer
7.Limit device 8.Leveling feet 9.Extensometer（optional）

1.Power cord interface 2.Computer Wlan interface（optional）
3.Extensometer socket (optional)

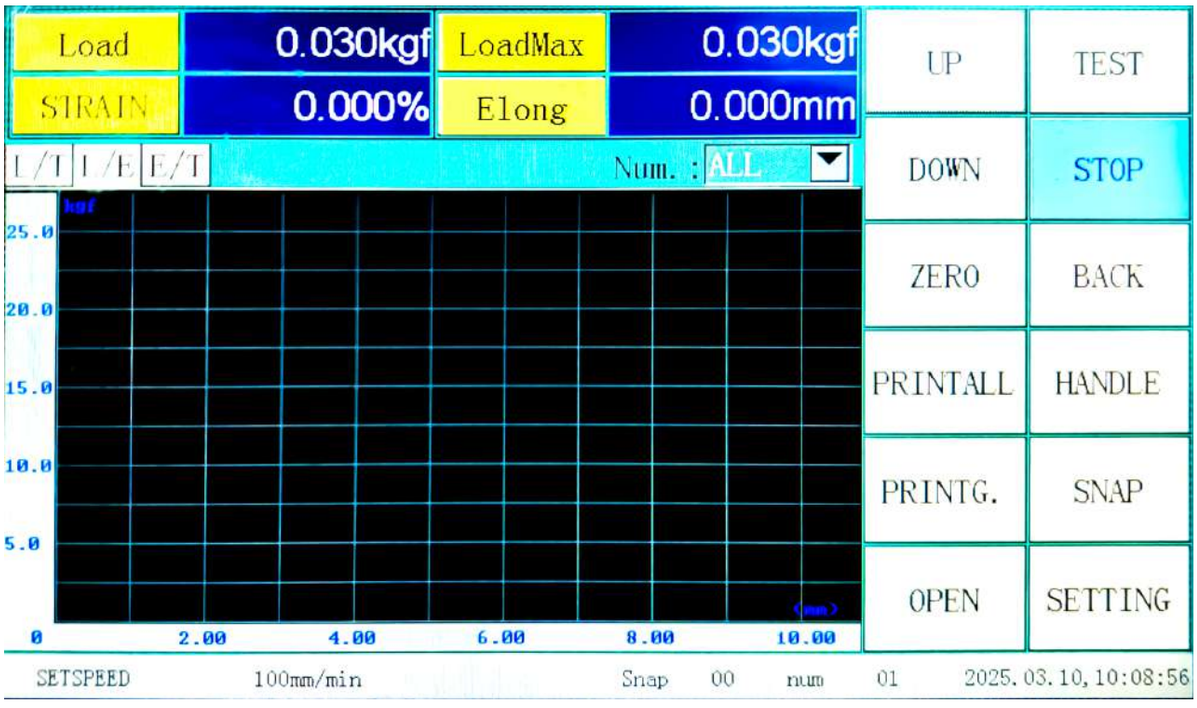
Detailed Display

●This device is equipped with a high - precision force value sensor to ensure the accuracy of experimental data.

●The fixture can be quickly installed and removed. Loosen the fixture locking nut and pull out the fixture pin to remove the fixture. Installation is carried out in the reverse order.

●This device can be adapted to a variety of fixtures to meet the requirements of different experiments.

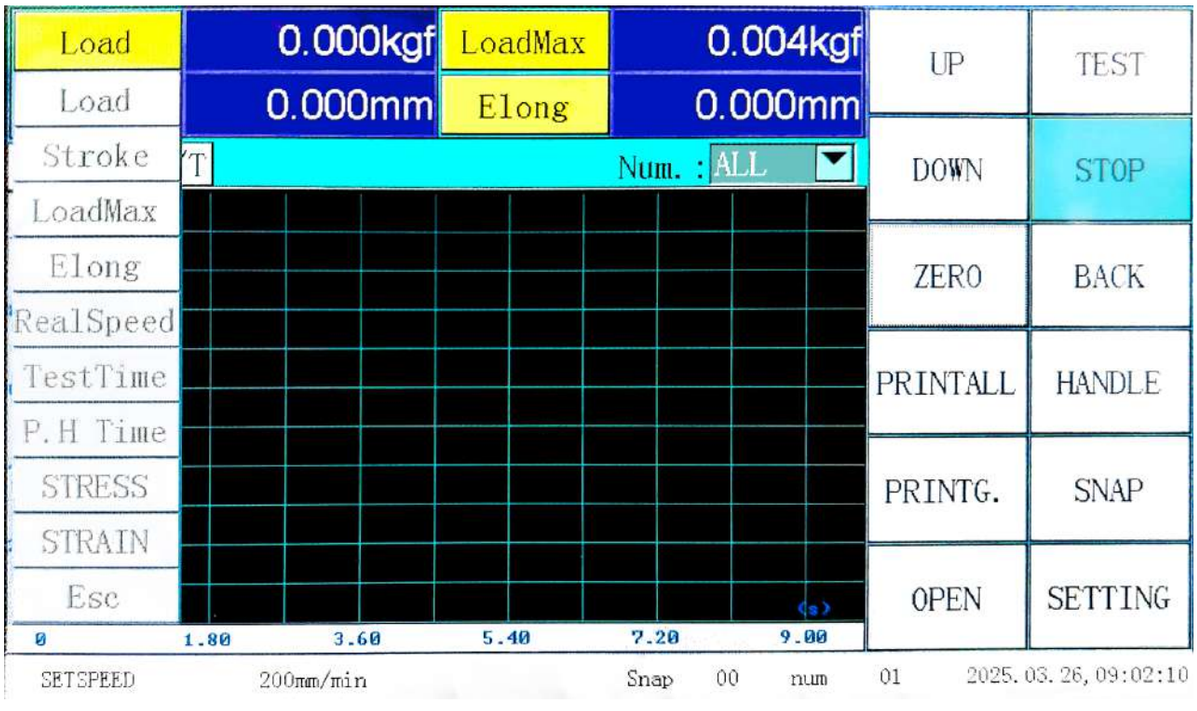
Display S creen Interface/Host Control



The display screen of this machine uses a touch - control method, which is simple and convenient to operate. On this interface, you can:

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

Select Display Parameters



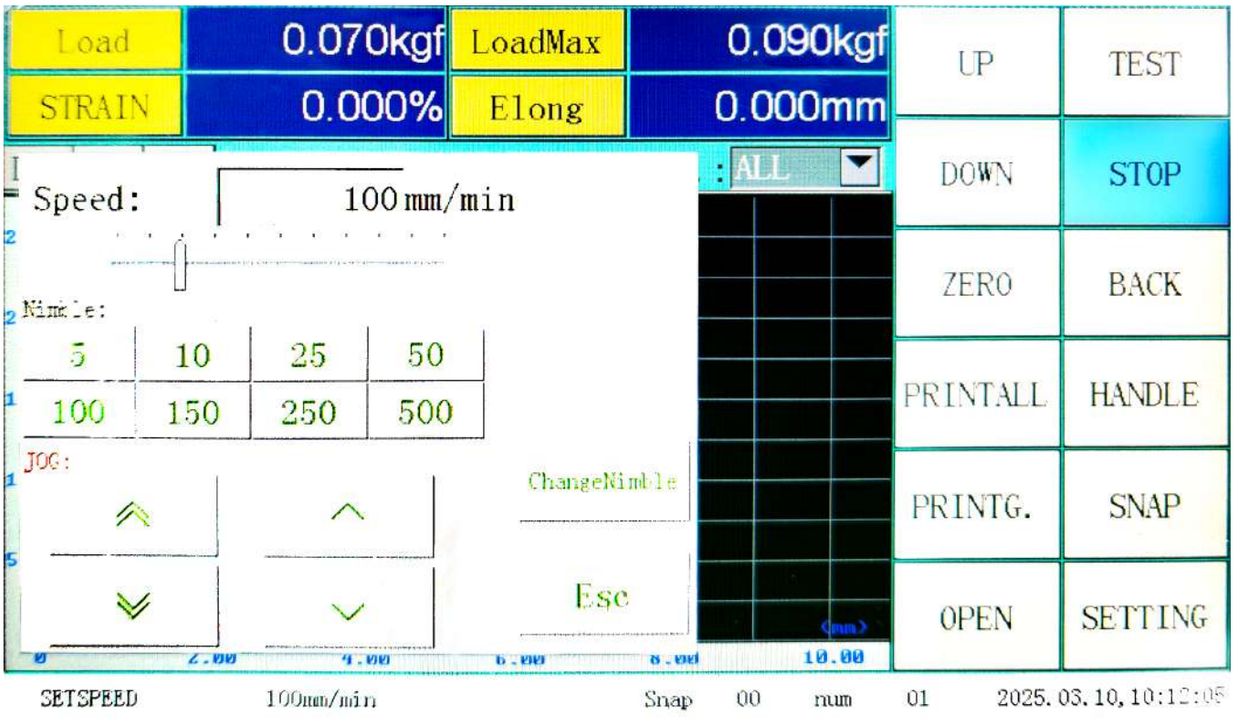
- Click the parameter section to select the parameters you want to display. The selectable parameters include: Load; Stroke; Load Max; Elong; Real Speed; Test Time; P.H Time; STRESS; SIRAIN

Group and Curve Coordinate Selection

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

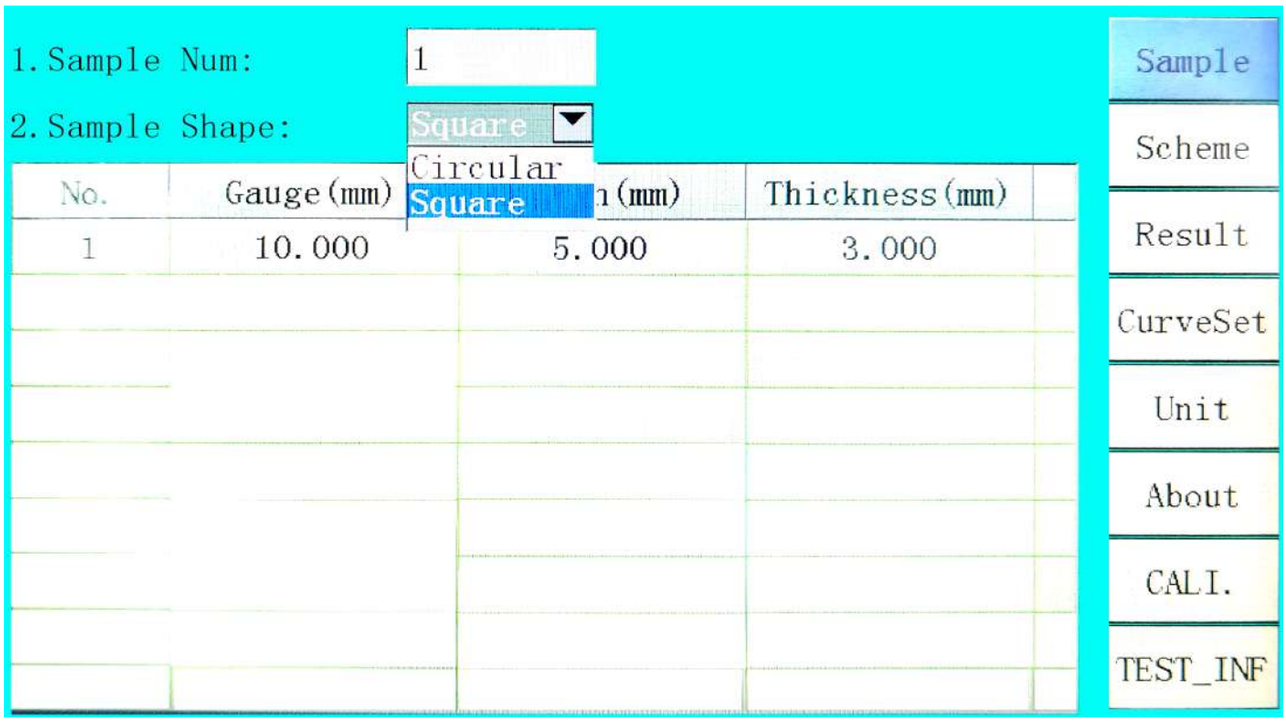
●3 types of curve charts with coordinates, Force - Time (L/T); Force - Displacement (L/E); Displacement - Time (E/T). Click the corresponding button to switch.

Manual Control Parameter Setting



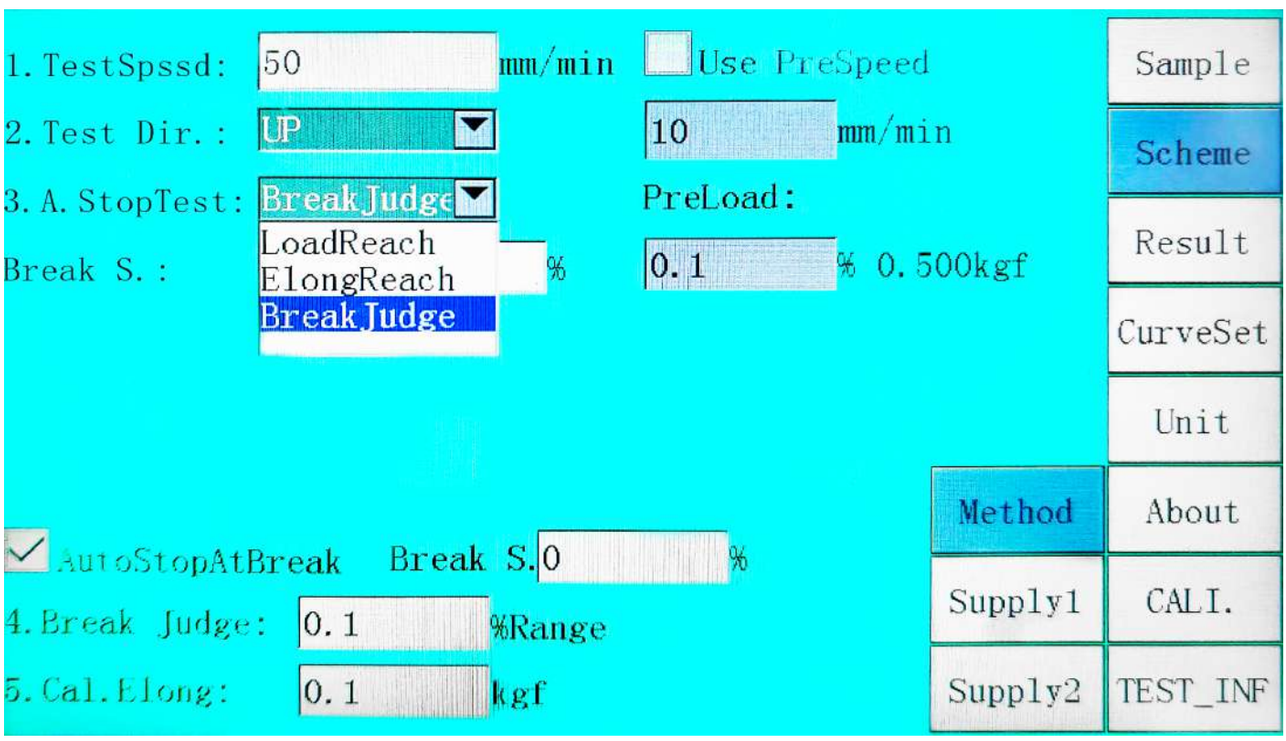
● On this interface, you can adjust the lifting speed of manual control. Users can directly select the required speed in "Nimble" or adjust the speed by sliding the slider.

Sample Information



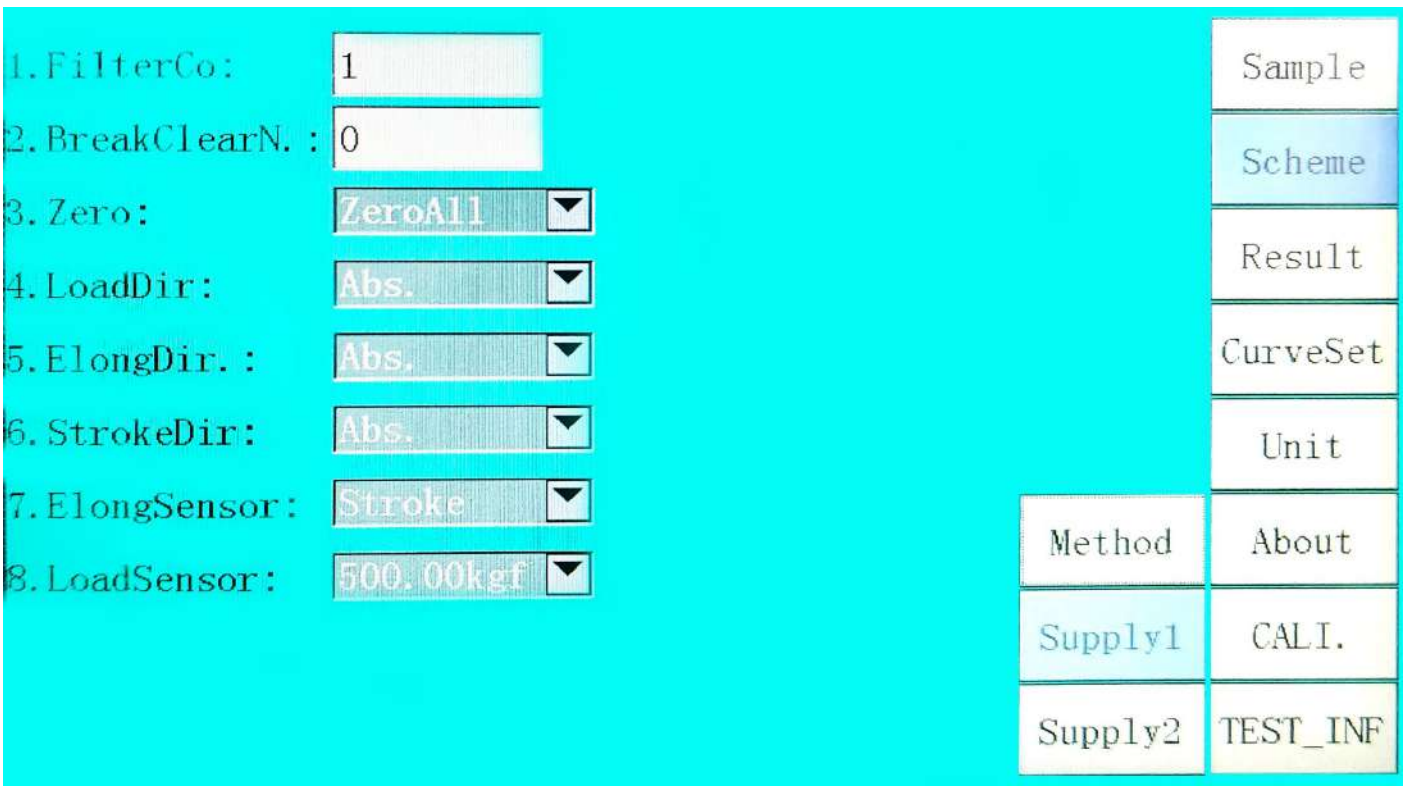
- Set the number and shape of the specimens to be tested.

Test Scheme



- Set the test speed.
- Select the test direction, upward or downward.
- Set the stop conditions.
- Set the break - point judgment.
- Set the conditions for starting to measure deformation.

Parameter Control 1



● Select the mode of the "Zero" button on the test main interface, with options of "Full Zero" and "Force Zero".

● Select the directions of deformation, force value, and displacement, with options of "Reverse", "Not Reverse", and "Absolute Value".

● Select the deformation sensor, with options of "Displacement", "Rubber Extensometer (optional)", and "Metal Extensometer (optional)".

● Select the force sensor.

Parameter Control 2

● Protection settings, including force value protection and deformation protection. You can set the protection parameters as needed.

● Set the return speed, waiting time, and deceleration coefficient. The deceleration coefficient is used to prevent displacement over - shoot.

● Set the number of decimal places displayed for the force value.

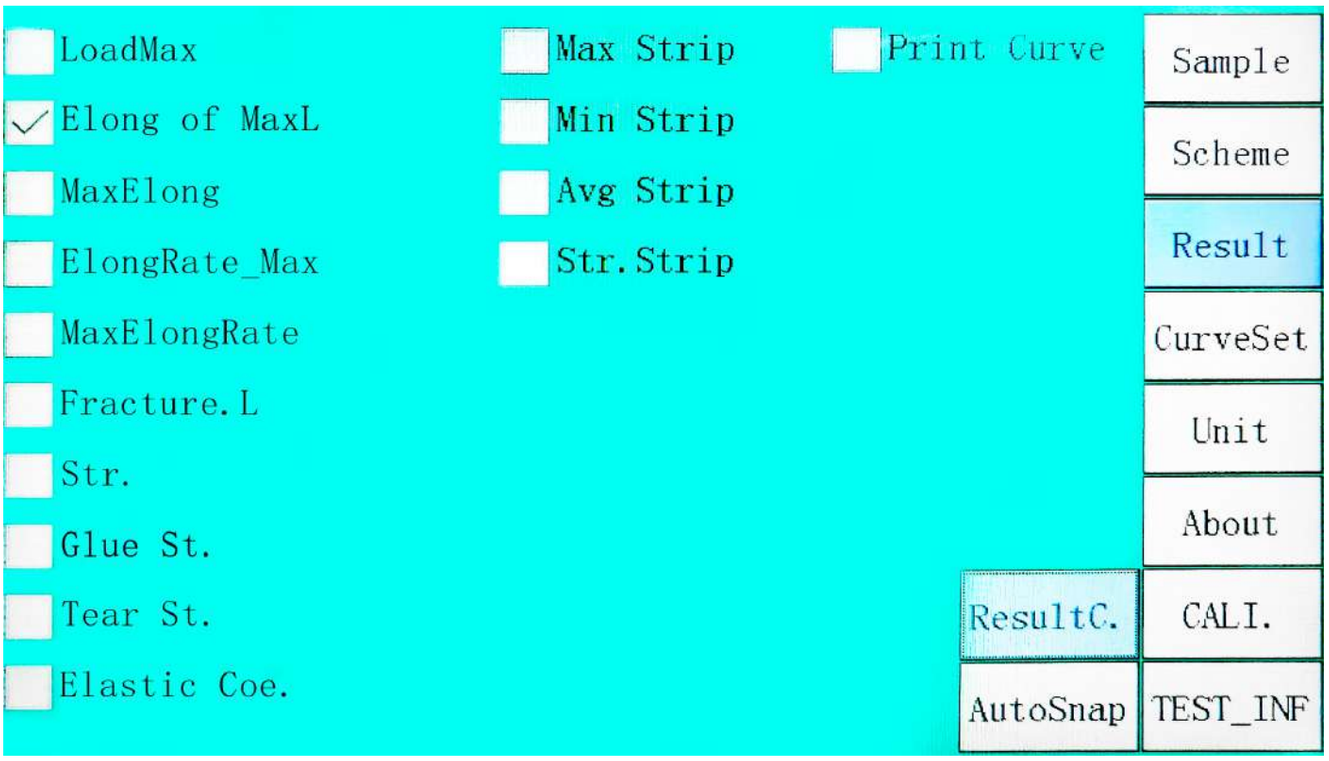
● Switch the language display, with options of "English", "Chinese", and other languages available upon customization.

● Select the return method, with options of "Displacement Zero Point" and "Limit Position".

● Beep when touching the screen or triggering the limit.

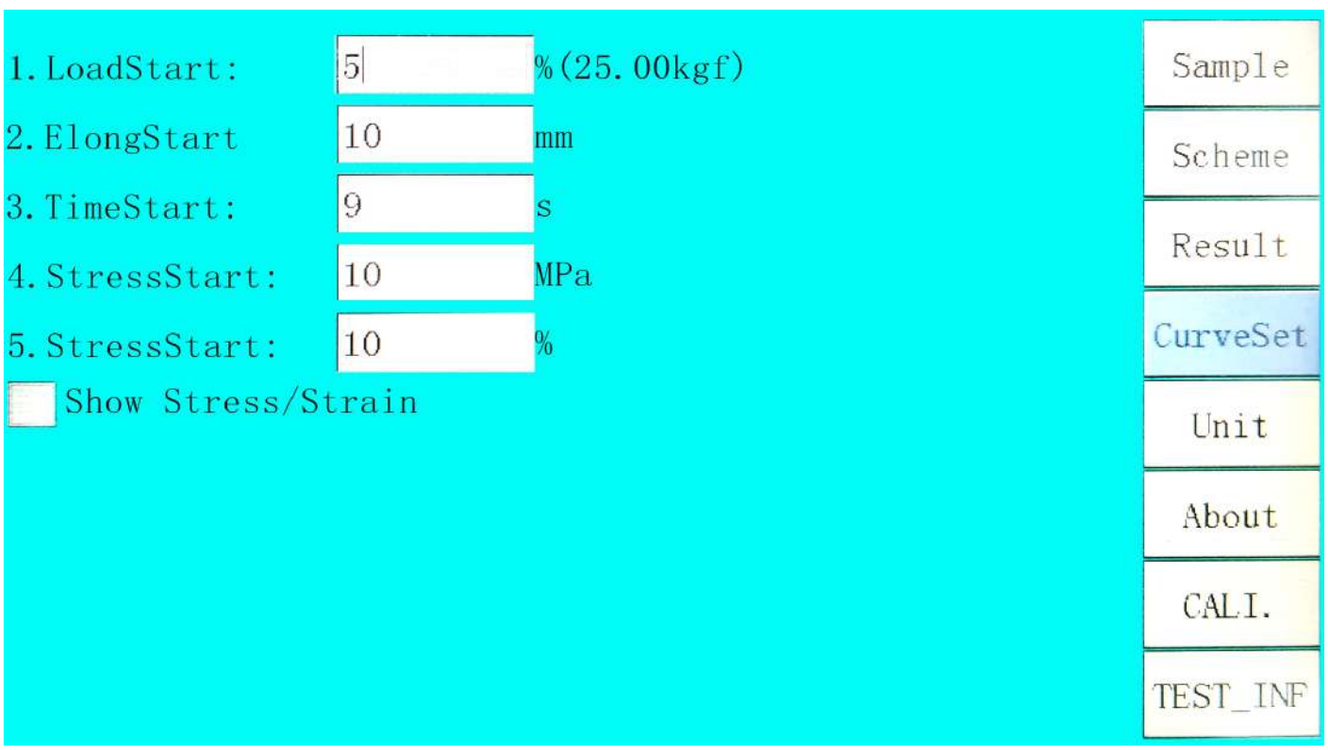
● Automatically zero the displacement, force value, and deformation before the test, and automatically return to the original position after the test.

Test Result Selection



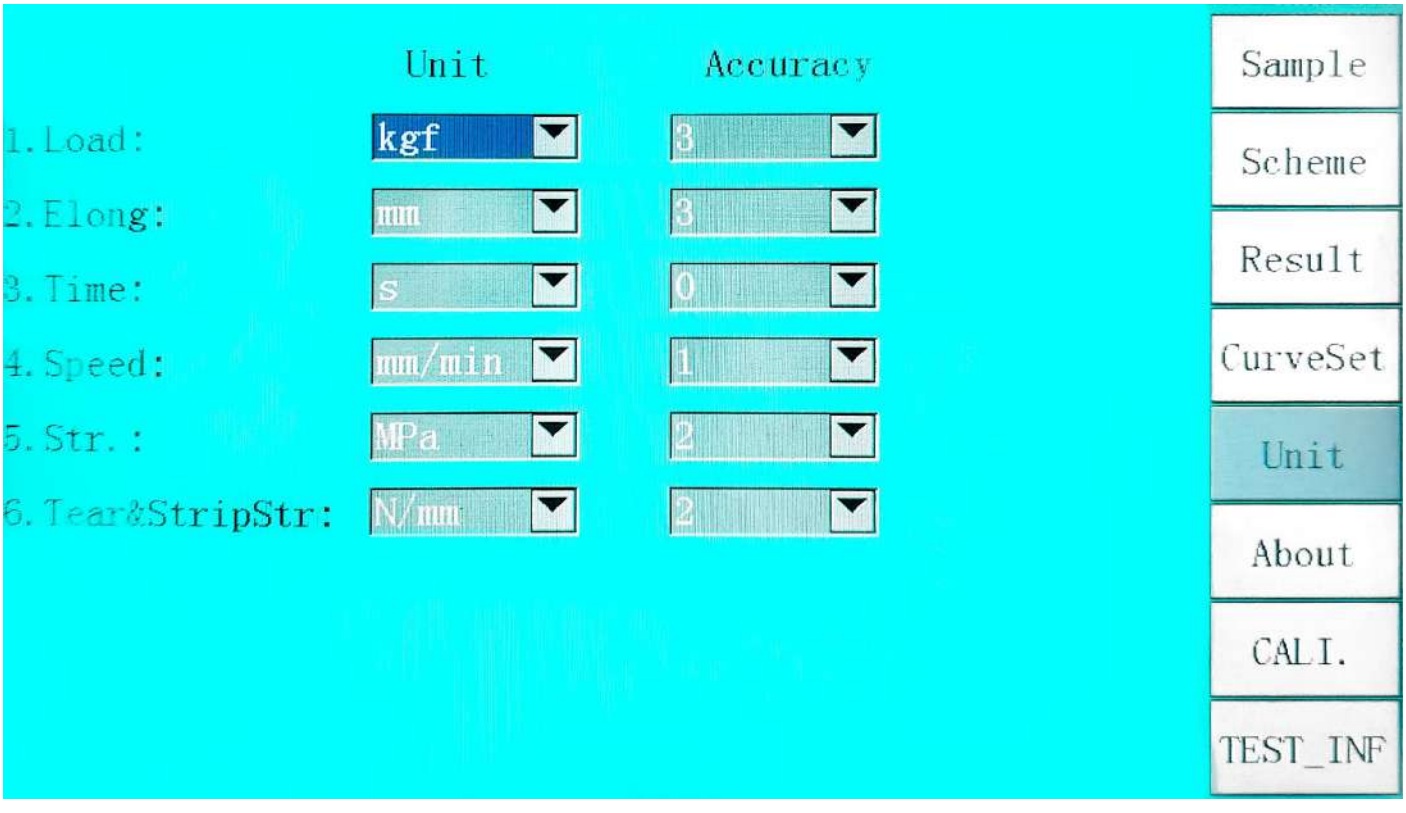
- Select the desired test results. The checked items will be displayed in the report.

Curve Settings



Set the starting parameters of the curve.

Units and Precision



- There are multiple different units available for each parameter.
- Precision represents the number of decimal places.

Load	kgf、N、lbf、gf、KN、t
Elong	mm、cm、inch
Time	s、min、h
Speed	mm/min、mm/s、cm/min、cm/s、in/min、in/s
Str	MPa; kPa; kgf/mm2; kgf/cm2; N/mm2; N/cm2; N/m2; gf/mm2;
	gf/cm2; psi; ldf/in2
Tear/StripStr	N/mm; N/cm; N/m; kN/m; kgf/mm; kgf/cm; kgf/m; gf/mm; gf/cm; lbf/in; klbf/in

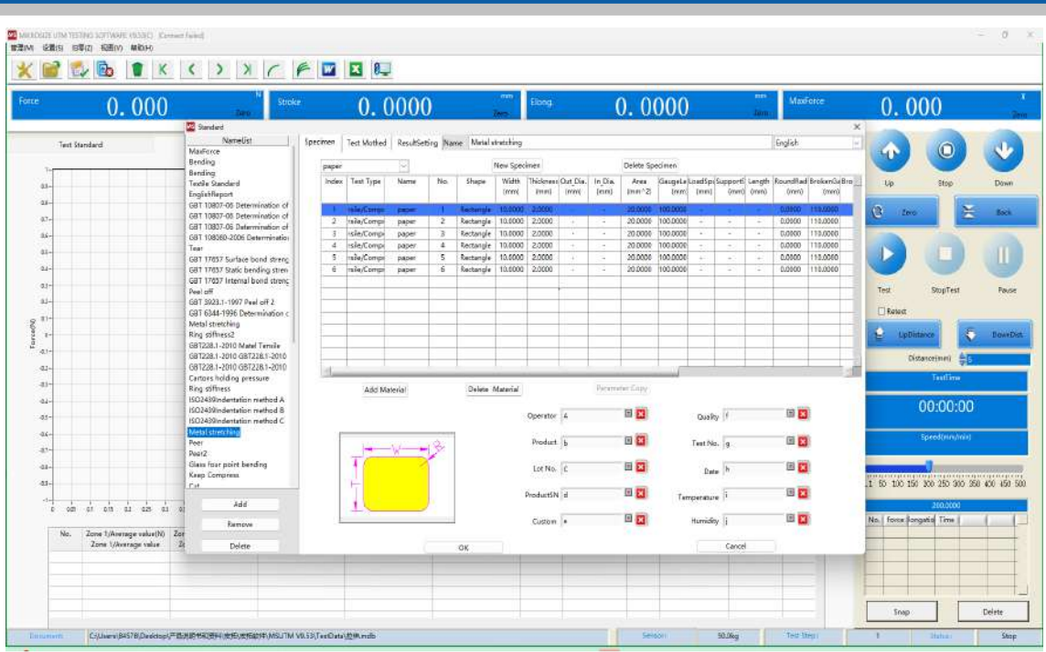
Mikrosize Software Interface

Main Interface

● The buttons on the right side can control the lifting, running, stopping, and jogging speed of the host.

● The upper part displays four parameters: force value, displacement, deformation, and maximum force. You can click the item name to select the item to be displayed, such as stress, strain, elongation rate, speed, etc.

Test Standard and Specimen Information

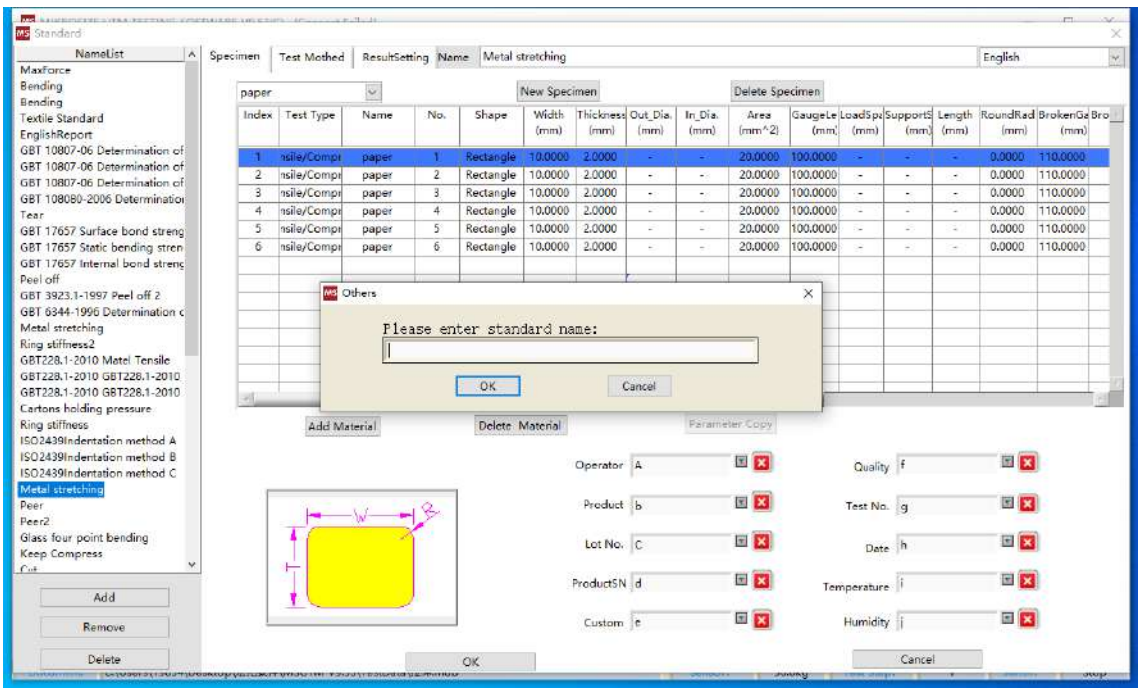


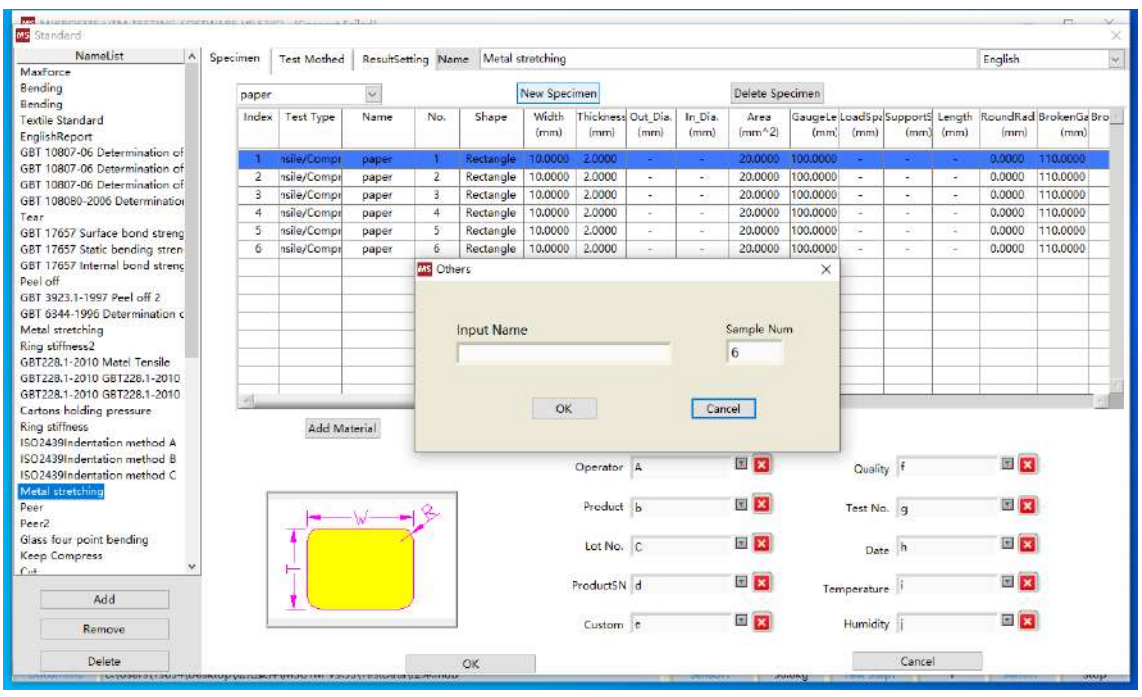
Test Standard

● Before starting the test, it is necessary to select an appropriate standard and set the specimen information.

● Display and set the information of test standards and test samples, including their shape and size, as well as relevant auxiliary information such as testers and specimen materials.

Test Standard and Specimen Information

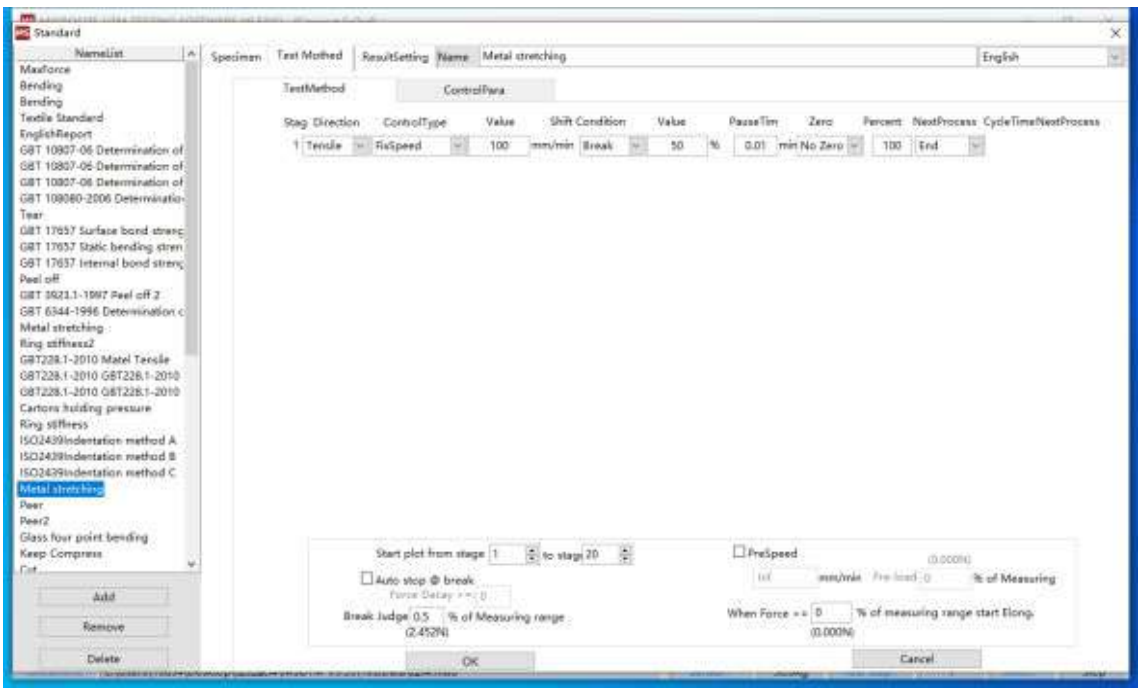




New Standard

- It is possible to add or delete test standards and specimen information.

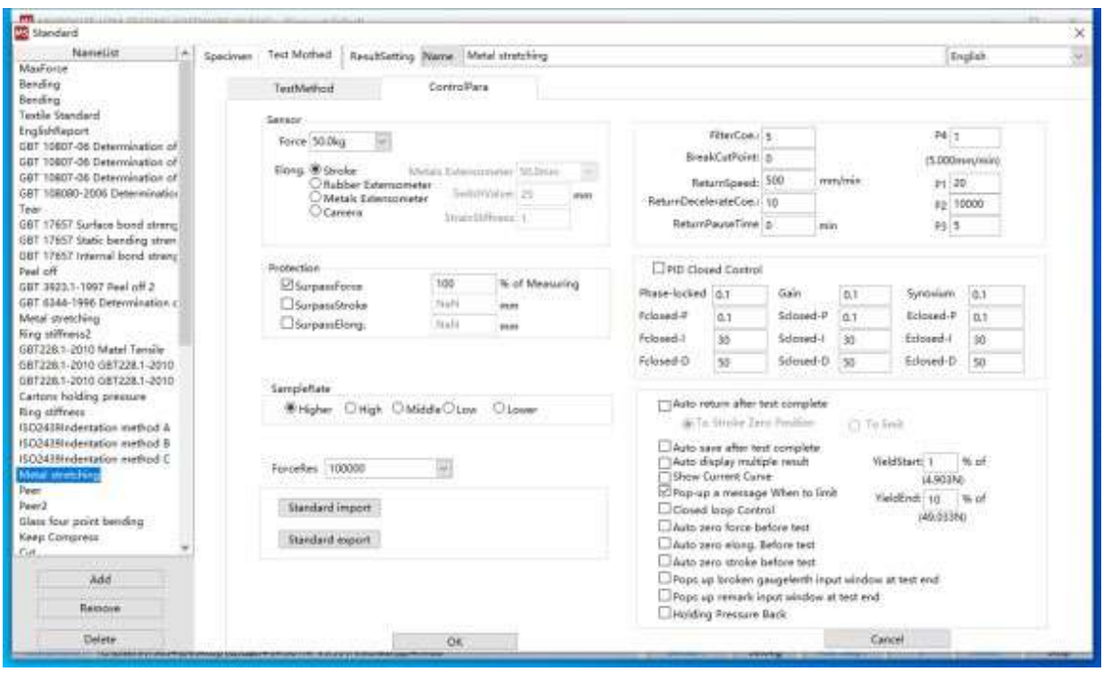
Test Method and Parameter Control



Test Method

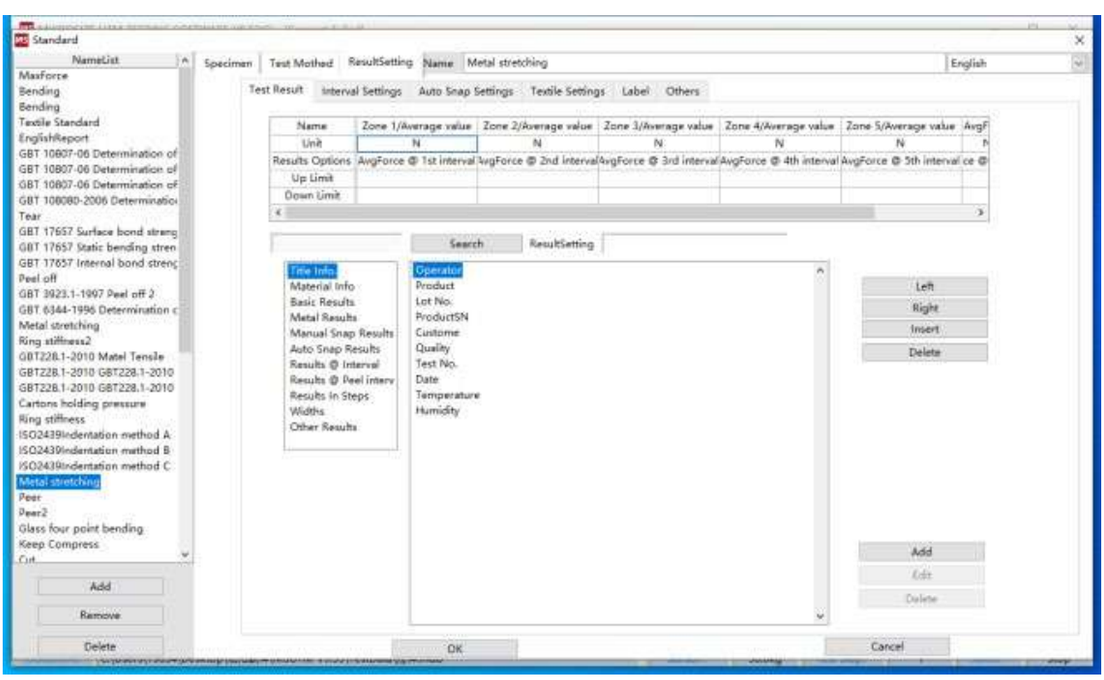
- After selecting the test standard, you can edit the test method. For example, for the tensile standard test method: set the test speed; choose the control mode such as constant deformation, constant speed, or constant stress.
- Also, set the stop conditions, like break point, yield point, or when parameters such as deformation, force, or strain reach the set values.

Test Method and Parameter Control



Parameter Control

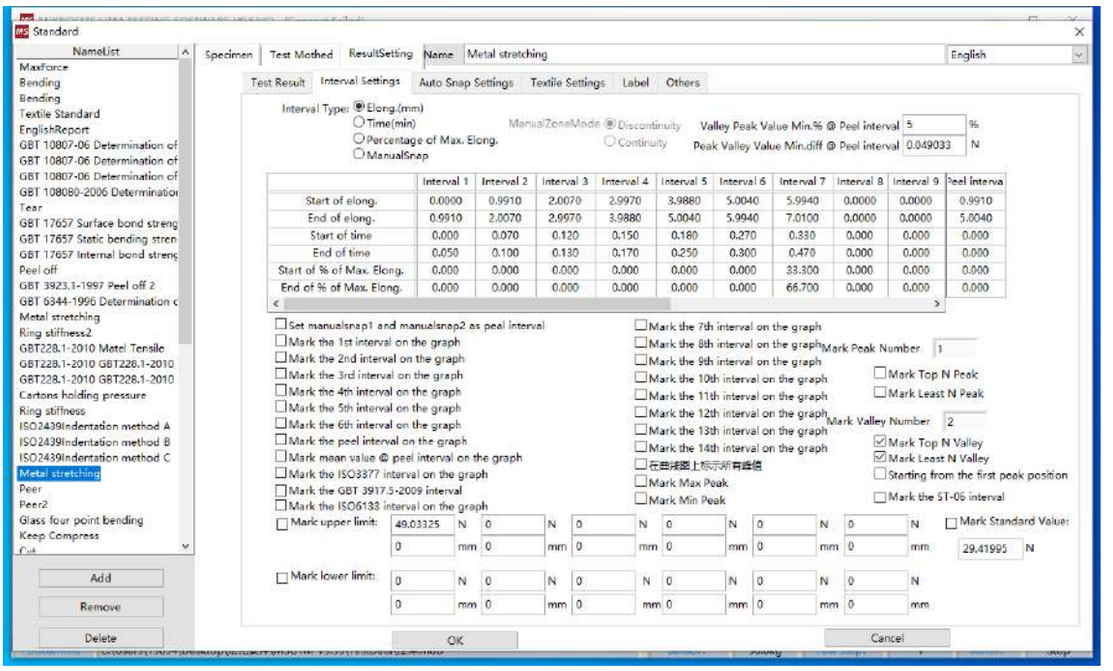
- Set parameters related to sensors, extension meters, force value resolution, and system control.



Select Output Items

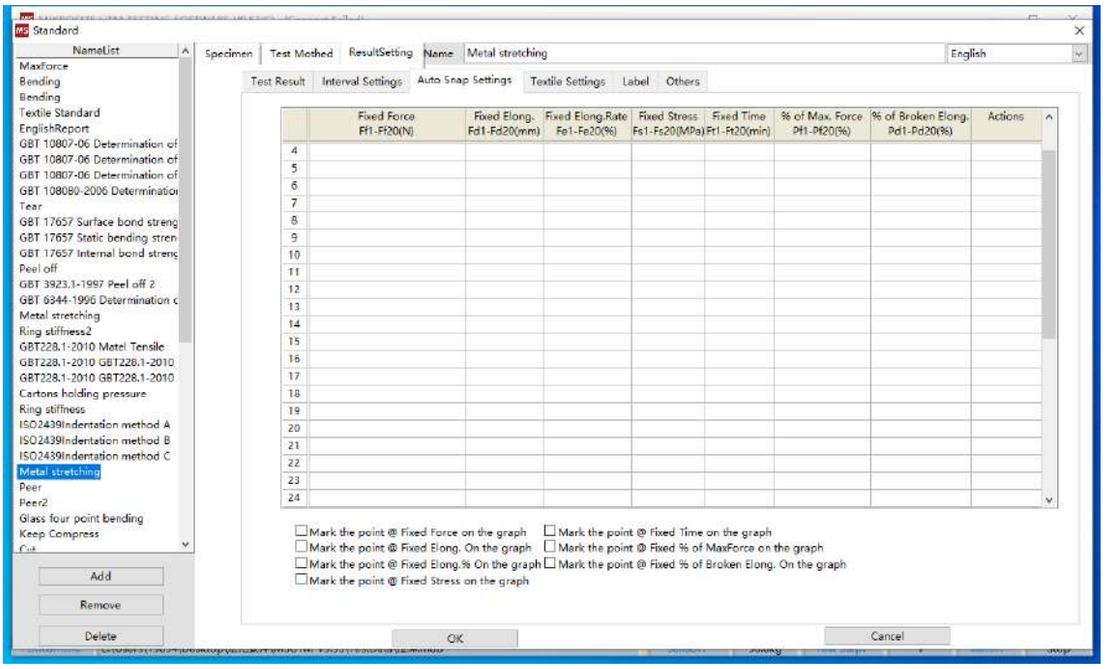
- The software classifies all test results into 11 categories for easy retrieval by customers. Users can also customize relevant test results.
- The added items will be displayed in the test report, allowing users to focus on the specific data they need.

Interval Settings



Interval Settings

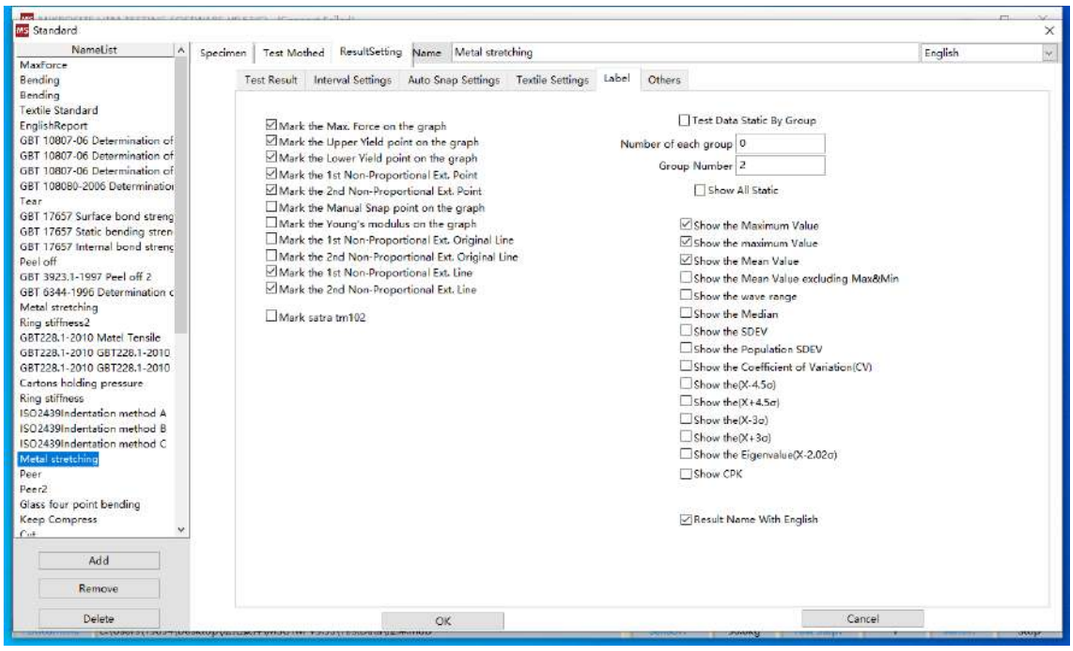
- It supports three modes of dividing intervals: deformation, time, and deformation percentage.



Auto - Point Selection

- Supports 7 point - selection modes: fixed - force point selection, fixed - deformation point selection, fixed - elongation - rate point selection, fixed - stress point selection, fixed - time point selection, percentage - of - maximum - force point selection, and percentage - of - fracture - deformation

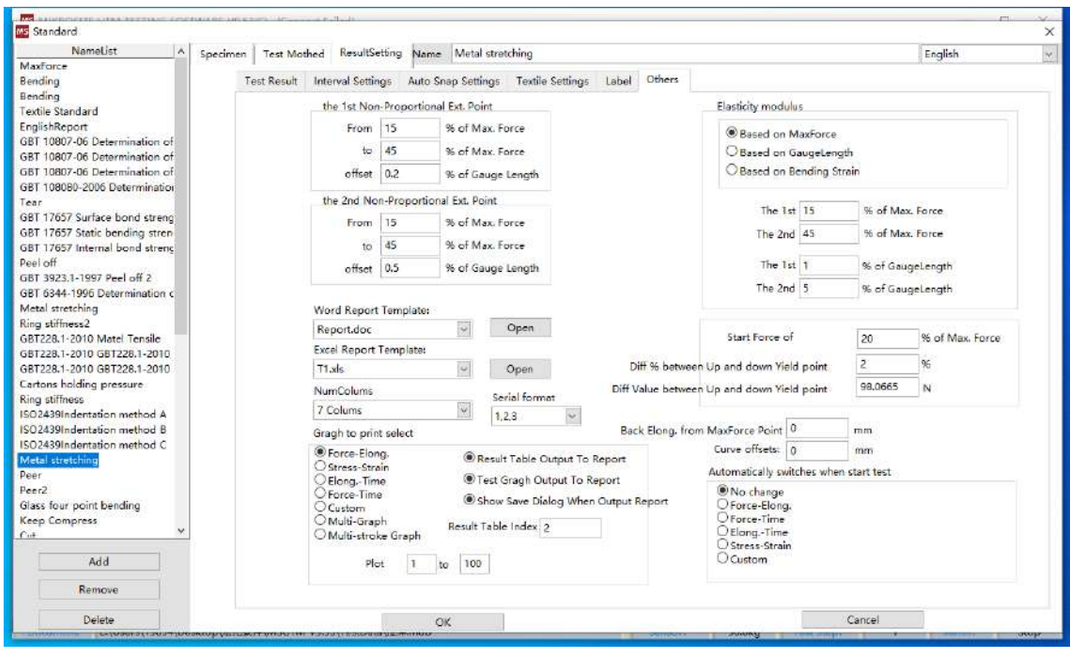
Marking



Marking

● Used to set the marking of various characteristic points on the curve, as well as whether to display statistical values such as the maximum value and the average value in the test results.

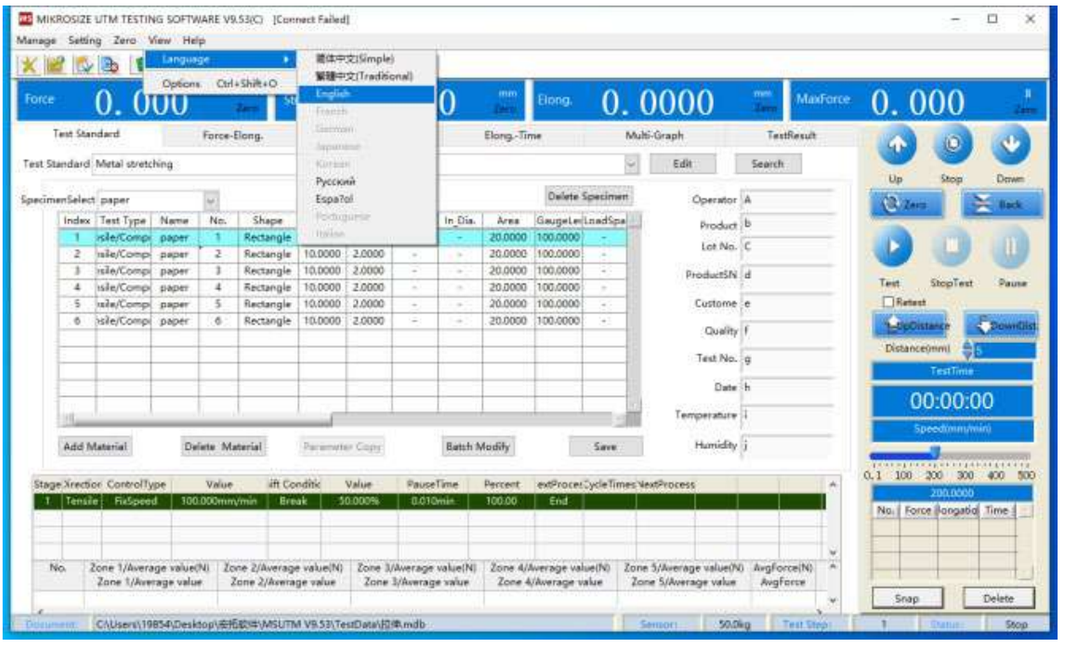
Others



Others

● Also, make report - related settings, such as the Word and Excel report templates, the selection of graphs to be printed in the report, and whether to output the test result table and graphs in the report.

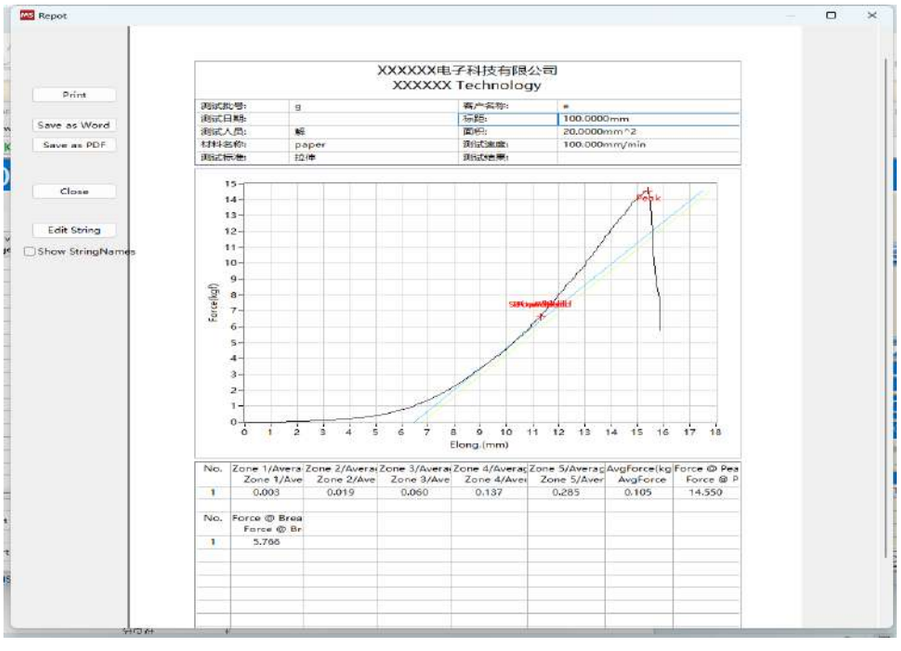
Language Selection



Language Selection

- Supports multiple languages
- Can be customized according to customer requirements.

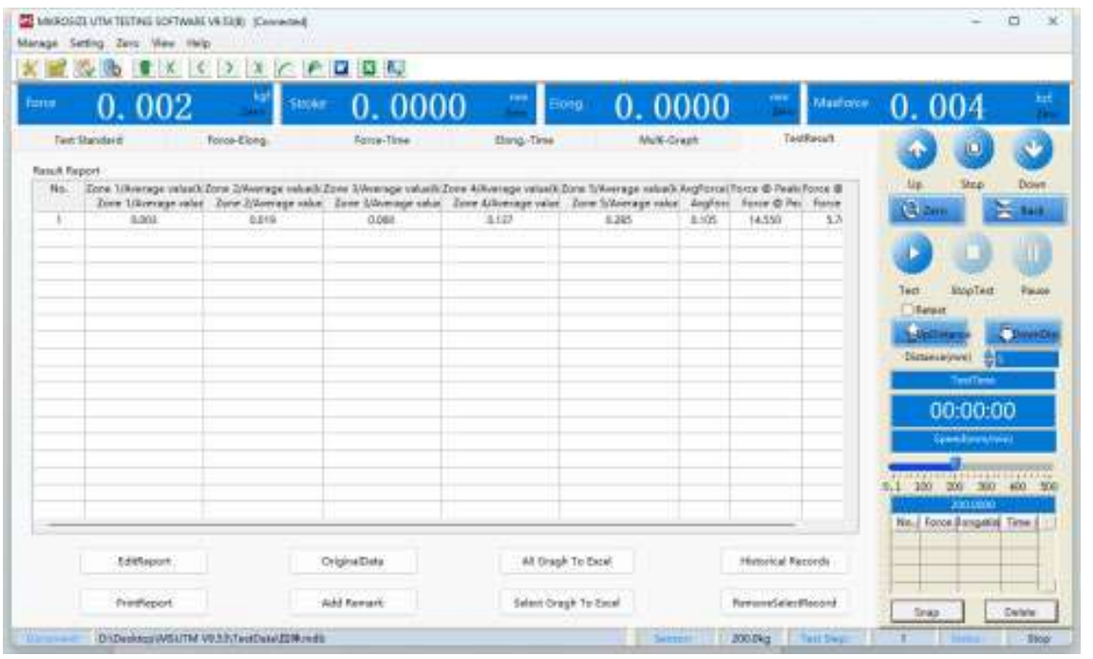
Report Editing



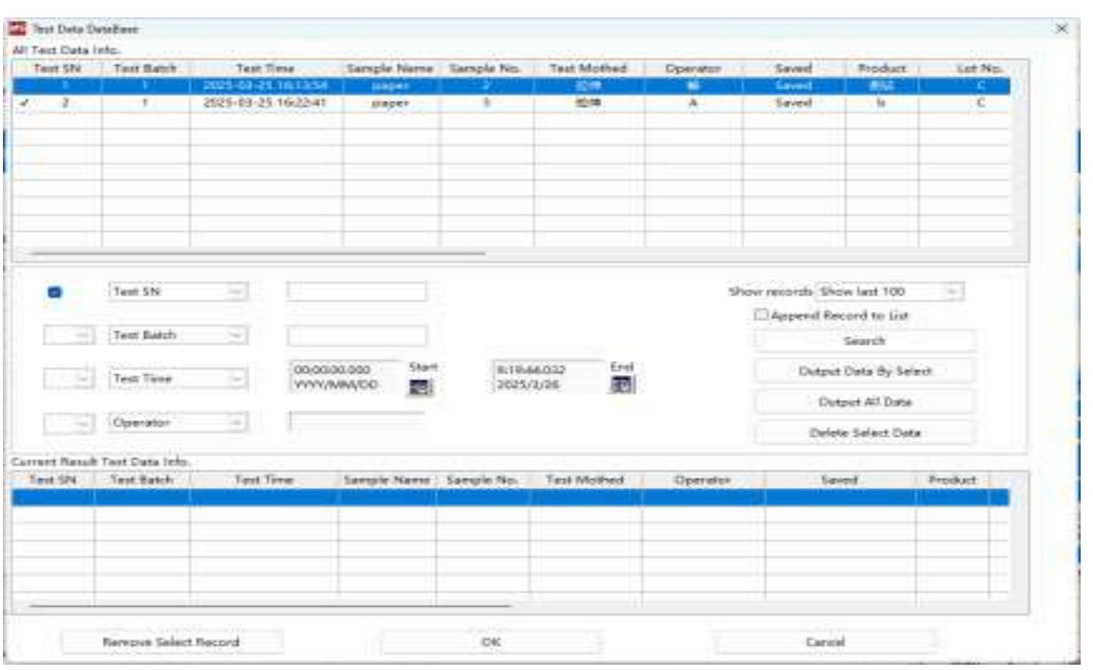
Report Output

- The software comes with a simple result report, and users can edit the report.
- The output formats are PDF and Word. Users can also choose to output the report through the shortcuts on the top of the software, with options of Word and Excel.

Data Viewing and Searching



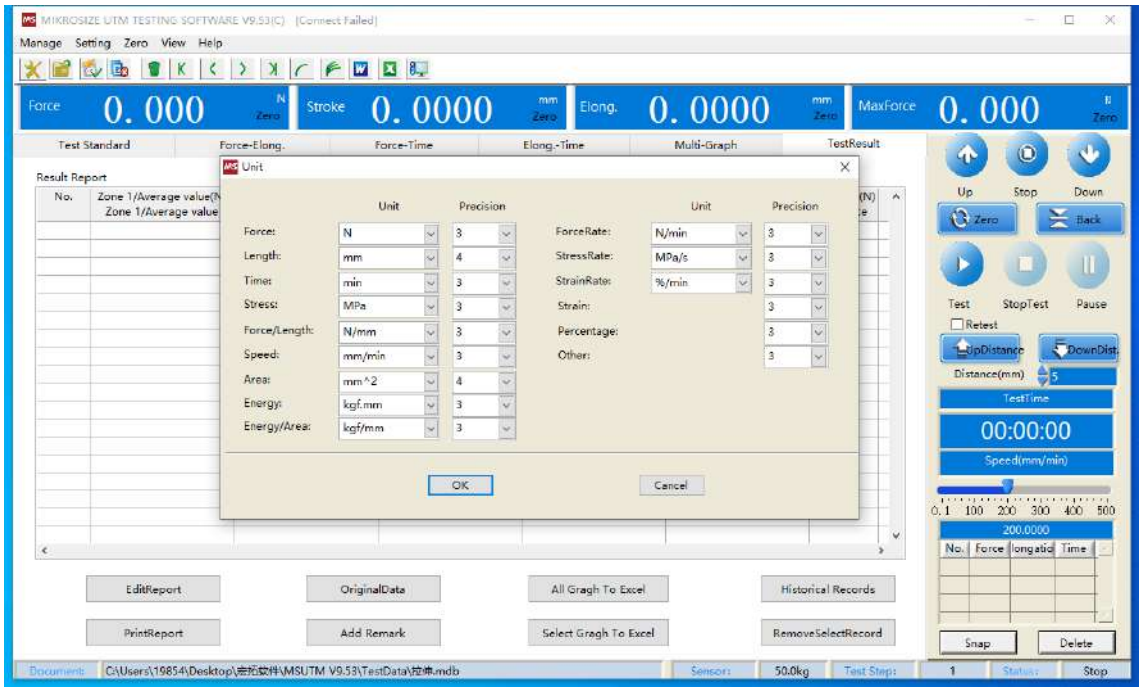
Test Results



Historical Data

- After the test is completed, view the test data and results on this interface.
- "All Test Data Info" displays all the test data - related information saved in the file, facilitating customers to query and retrieve the data in the file.
- Users can also query the corresponding test data according to the test time, number of times, batch, material, standard, etc., and output the test result report based on the query results.
- "Current Result Test Data Info" shows the test information corresponding to the current output result.

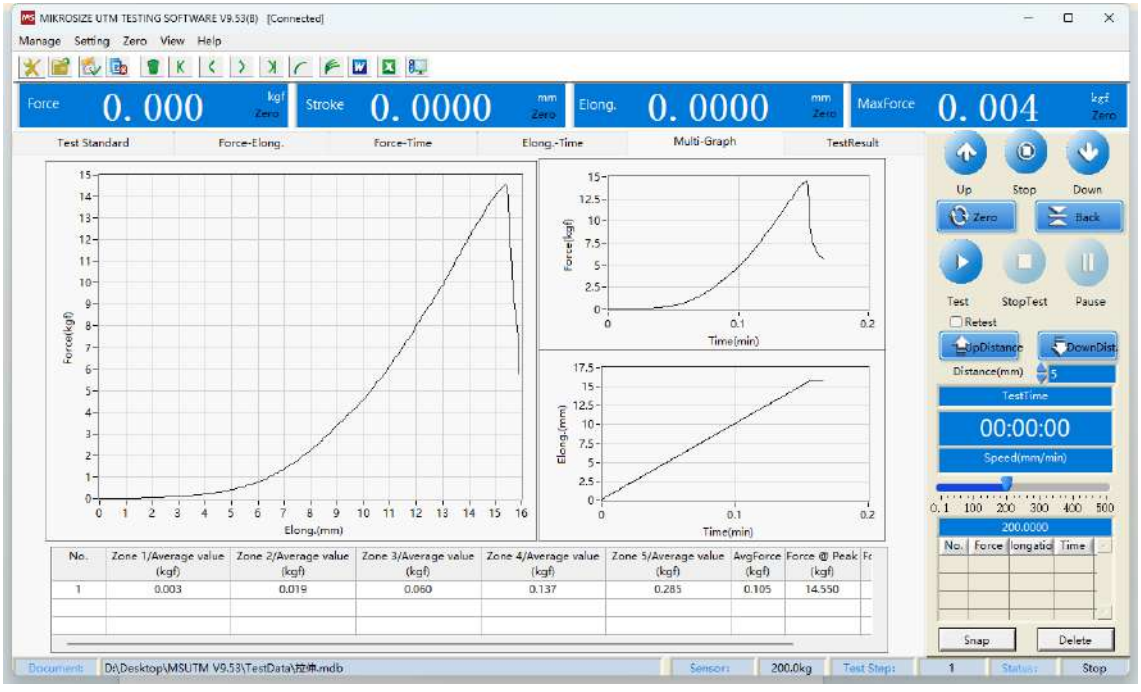
Units



- There are multiple different units available for each parameter.
- Precision represents the number of decimal places.
- The parameter units determine the unit system of the entire system, and all parameter operations are performed based on this unit system.

Force	gf、kgf、N、kN、tf(SI)、lbf、tf(long)、tf(short)、ozf、cN、mN
Length	mm、cm、m、in、km、μm
Time	s、min、h
Stress	Pa、kPa、MPa、GPa、kN/m∧2、N/m∧2、N/cm∧2、N/mm∧2、kgf/m∧2、kgf/cm∧2、kgf/mm∧2、gf/cm∧2、gf/mm∧2、psi、kpsi、lbf/in∧2、lbf/ft∧2、gf/in∧2、gf/m∧2
Force/Length	N/mm、N/cm、N/m、kgf/mm、kgf/cm、kgf/m、gf/mm、gf/cm、kN/m、lbf/in、gf/in、kgf/in、pli、kN/mm、N/in
Speed	mm/min、mm/s、cm/min、cm/s、in/min、in/s
Area	mm∧2、cm∧2、m∧2、in∧2、ft∧2
Energy	kgf.mm、kgf.cm、kgf.m、N.mm、N.cm、N.m、lbf.in、J、kJ、cal、kcal、gf.mm、gf.cm、gf.m
Energy/Area	gf/mm、gf/cm、kN/m、lbf/in、gf/in、kgf/in、pli

Multi - Graph Mode



Multi - Graph

● Supports the multi - graph mode, allowing users to view three different - axis curves of the same test simultaneously. This is convenient and intuitive, avoiding the need to switch back and forth.

Mikrosize®

Technical Specifications

Model		UTM-TSH							
Name		Touch Screen Single Column Electronic Universal Testing Machine							
Subdivision Model		UTM-TSH-5	UTM-TSH-10	UTM-TSH-20	UTM-TSH-50	UTM-TSH-100	UTM-TSH-200	UTM-TSH-500	UTM-TSC-1000
Capacity	KN	0.05	0.1	0.2	0.5	1	2	5	10
	KG	5	10	20	50	100	200	500	1000
	lb	11	22	44	110	220	440	1102	2204
Testing Machine Class		Class 1							
Force Unit		g、Kg、lb、N、KN							
Displacement Unit		Inch、cm、mm							
Effective Test Force		0.4%~100%FS							
Force Accuracy		Within ±1% of Indication Value							
Force Resolution		1/300000							
Displacement Accuracy		Within ±1% of Indication Value							
Displacement Resolution		0.001mm							
Deformation Measurement Range		2%~100%FS							
Deformation Indication Accuracy		Within ±1% of the indicated value							
Maximum Test Speed		500mm/min（Optional 1000mm/min）							
Minimum Test Speed		0.1mm/min							
Speed Accuracy		Within ±1% of the indicated value							
Crossbeam Stroke		No - fixture test stroke:1320mm　Test stroke with fixture: 800mm							
Fixture Configuration		Configured according to customer requirements							
Return Method		Manual, Automatic							
Stop Method		1.Automatically stop at the maximum fracture value 2.Stop when the upper and lower limit safety settings are reached							
Safety Device		1.Mechanical travel switch protection 2.Emergency stop switch for emergency braking							
Overload Protection		When reaching 100% of the maximum load, the machine automatically stops for protection							
Power Supply Voltage		220V.AC/50Hz (Can be selected as 110V.AC/60Hz according to the country)							
Machine Size/Weight		L*W*H:450mm*350mm*1570mm　About 80kg							
Packaging Size/Weight		L*W*H:500mm*400mm*1600mm　About 100KG							

Standard Delivery

Name	Quantity	
Machine Mainframe	1	
Tensile Fixture	1	
Power Cord	1	
Horizontal Adjusting Feet	4	
Instruction Manual	1	
Warranty Card	1	
Product Certificate	1	

Optional Delivery

Small deformed extensometers	
Large deformation extensometer	
Testing Software	
Other types or customized fixtures	
Computer	