UTM-TDC

Dual - Column Universal Material Testing Machine （Bench Type）

Contact us

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Mikrosize®

Features and Applications

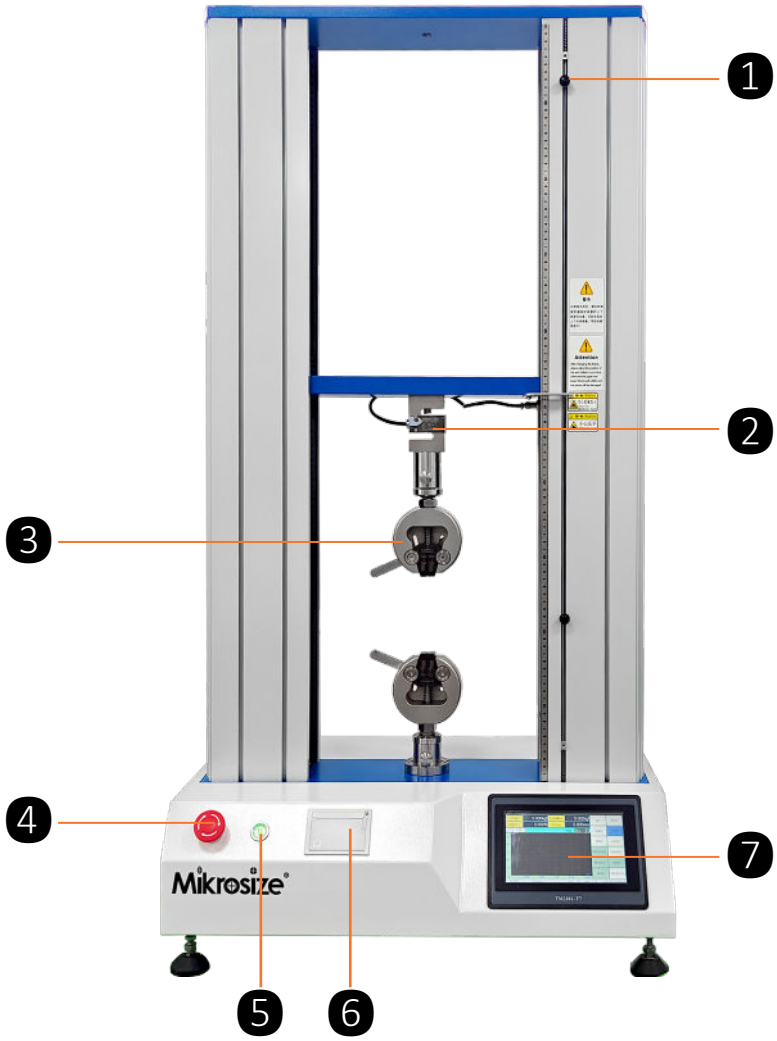
Product Feature

- Color touch - screen for easy and convenient operation.
- Can be connected to computer and used with software for more functions.
- Driven by a stepper motor.
- Class 1 testing machine.
- C3 - grade high - precision load cell.
- Gantry - type dual - column high - rigidity design for durability.
- Maximum capacity: 10KN.
- Test speed:
- Maximum 500mm/min,
- Minimum 0.1mm/min
- Multiple units available:
- Force: g、Kg、lb、N、KN
- Displacement:inch、 cm 、 mm
- With the function of automatically returning to the initial position after the test.
- In addition to the standard tensile fixture, other types of fixtures can be customized.
- The software provides curve graphs, data tables, and test reports, all of which can be printed.
- Automatically calculates maximum force, minimum force, average force, maximum deformation, elongation rate, strength, etc.
- With multiple curve modes such as stress - strain, force - displacement, force - time, and strength - time.
- With test mode functions for tension, bending, compression, tearing, peeling, elongation rate, etc.
- Equipped with multiple protection devices including mechanical travel switches, emergency stop switches, overload limit protection, and break - point stop protection.
- 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: Used to test the mechanical properties of various parts and raw materials to ensure product quality meets design requirements.
- Material research and development: Helps researchers understand the mechanical properties of new materials and provides 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.

Product Details



1.Limit Device	2.Load Cell		3.Standard Fixture
4.Emergency Stop Button	5.Switch	6.Printer	7.Display Screen

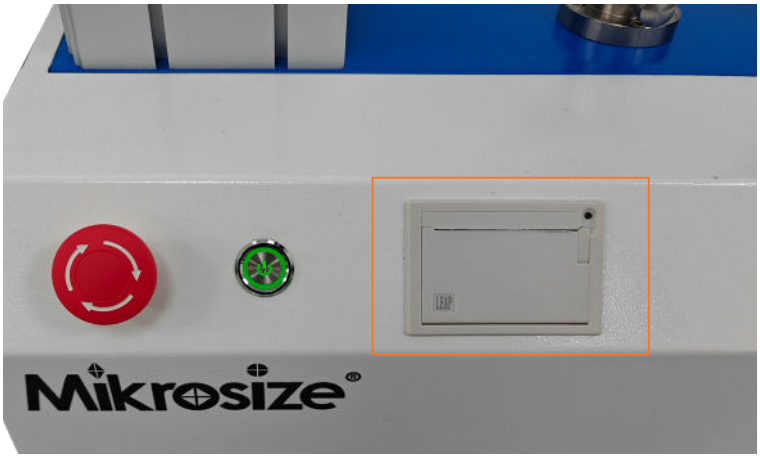
1.Power cord interface	2.Computer Wlan Interface

Product Details

Limit Device

- The machine is equipped with upper and lower limit devices to prevent the equipment from over - running and damaging the fixtures.
- When the crossbeam runs to the limit position, the limit device will be triggered, and the machine will stop running.
- The position of the limit device can be adjusted freely.

Printer



- Equipped with a micro - printer for quick printing of test data reports.
- The emergency stop button is prominent and reasonably located.

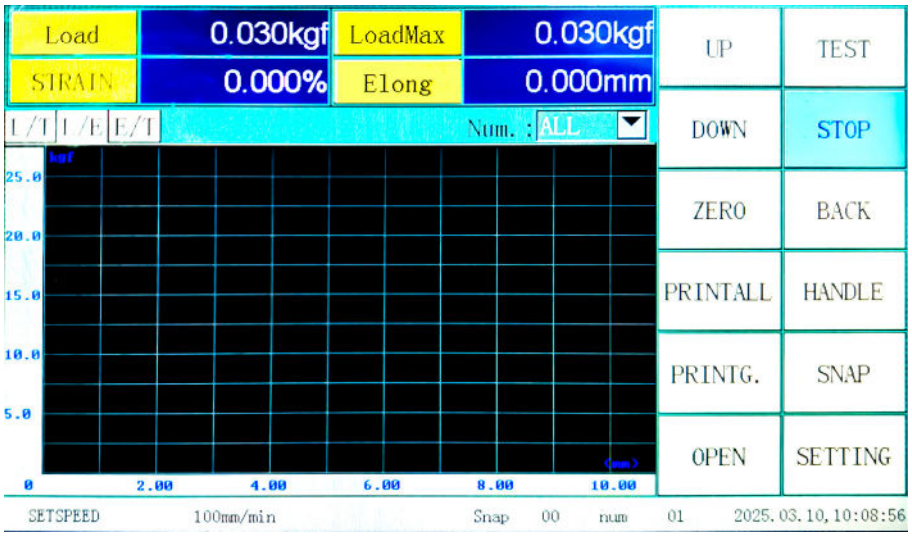
Product Details

Fixture - Sensor

- The testing machine is of class 1 and uses a C3 - grade high - precision load cell.
- Comes with a standard tensile fixture, and optional fixtures such as compression, bending, puncture, and peeling fixtures are available. Other customized fixtures are also supported.

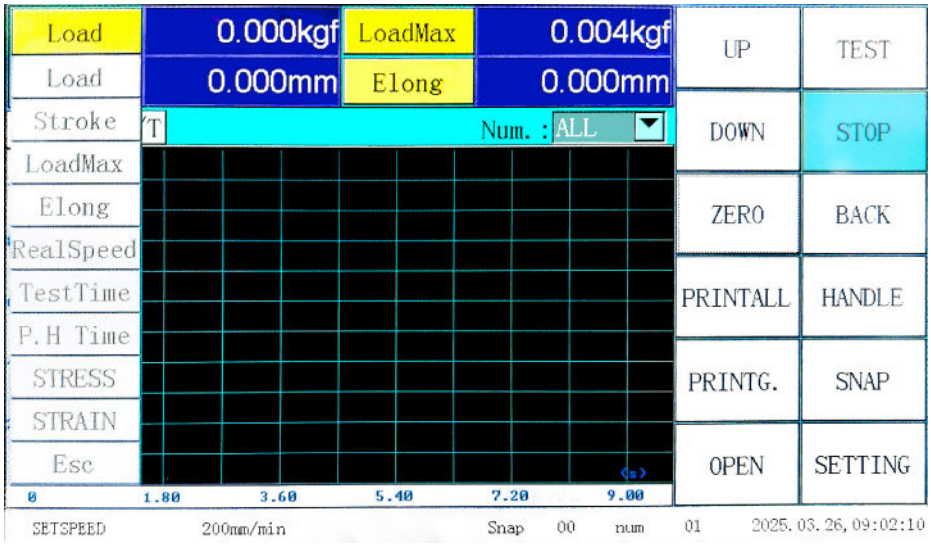
Operation Interface

Display Screen 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.

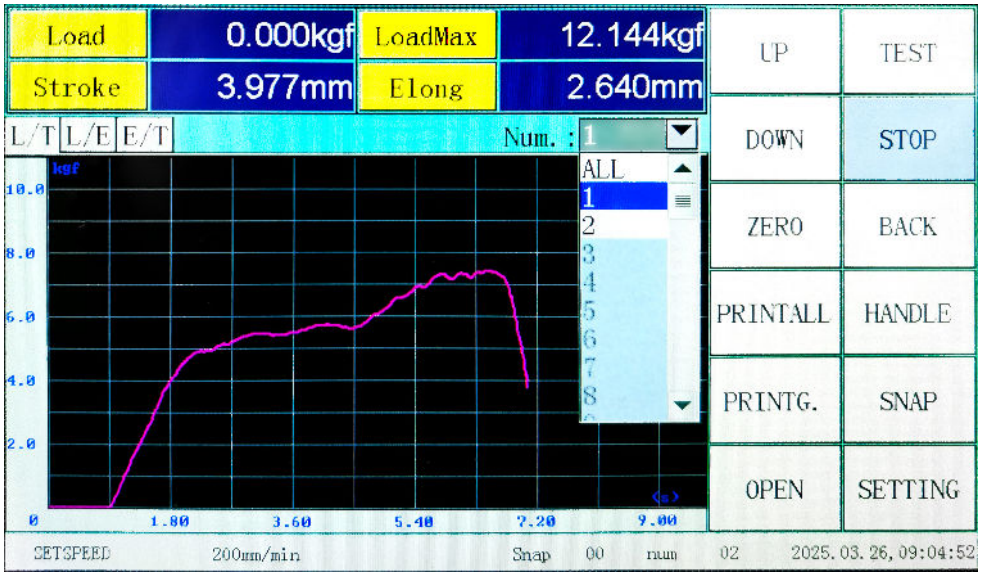
Select Display Parameters



- 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

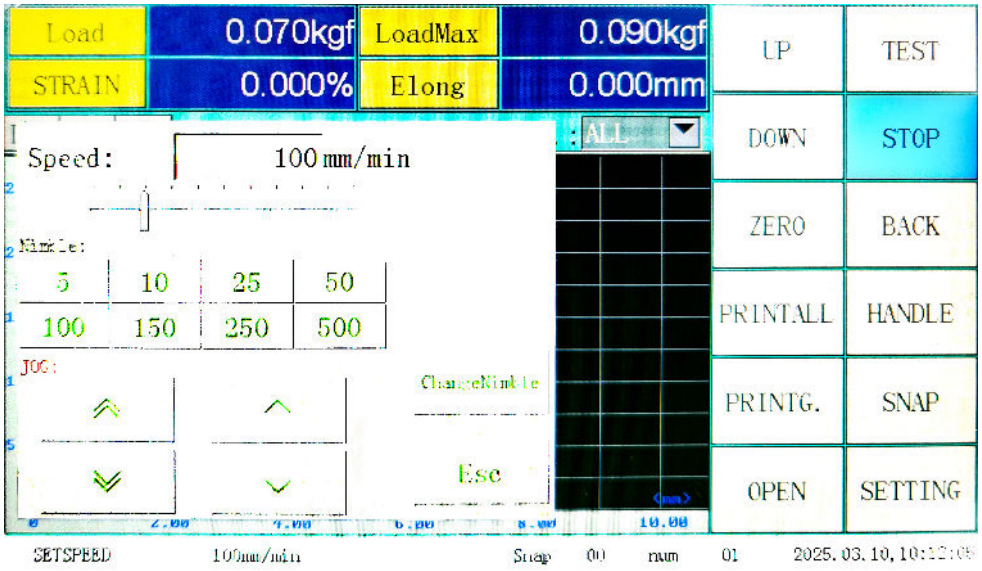
Operation Interface

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.

Group and Curve Coordinate Selection



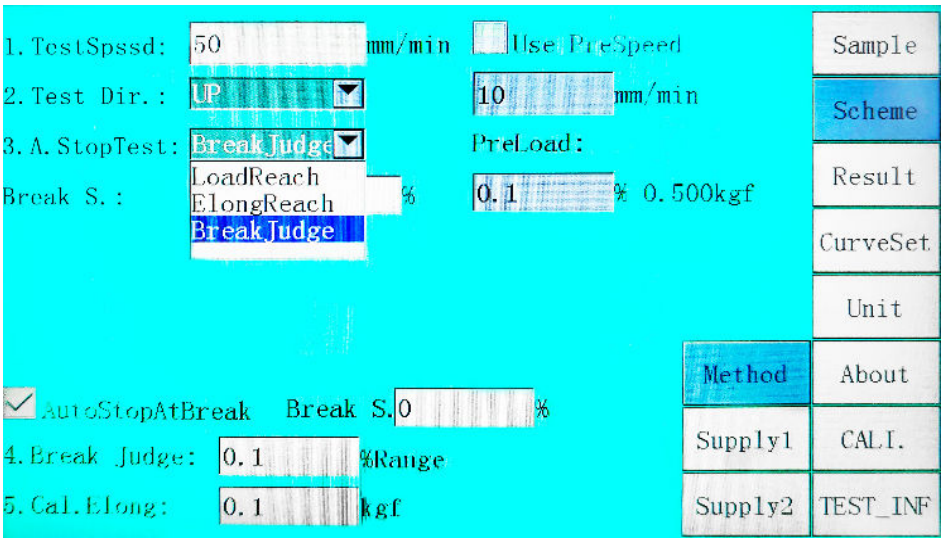
- On this interface, you can adjust the lifting speed of manual control. Users can directly select the required speed in "Nimble" or adjust the speed by sliding the slider.

Operation Interface

Sample Information

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

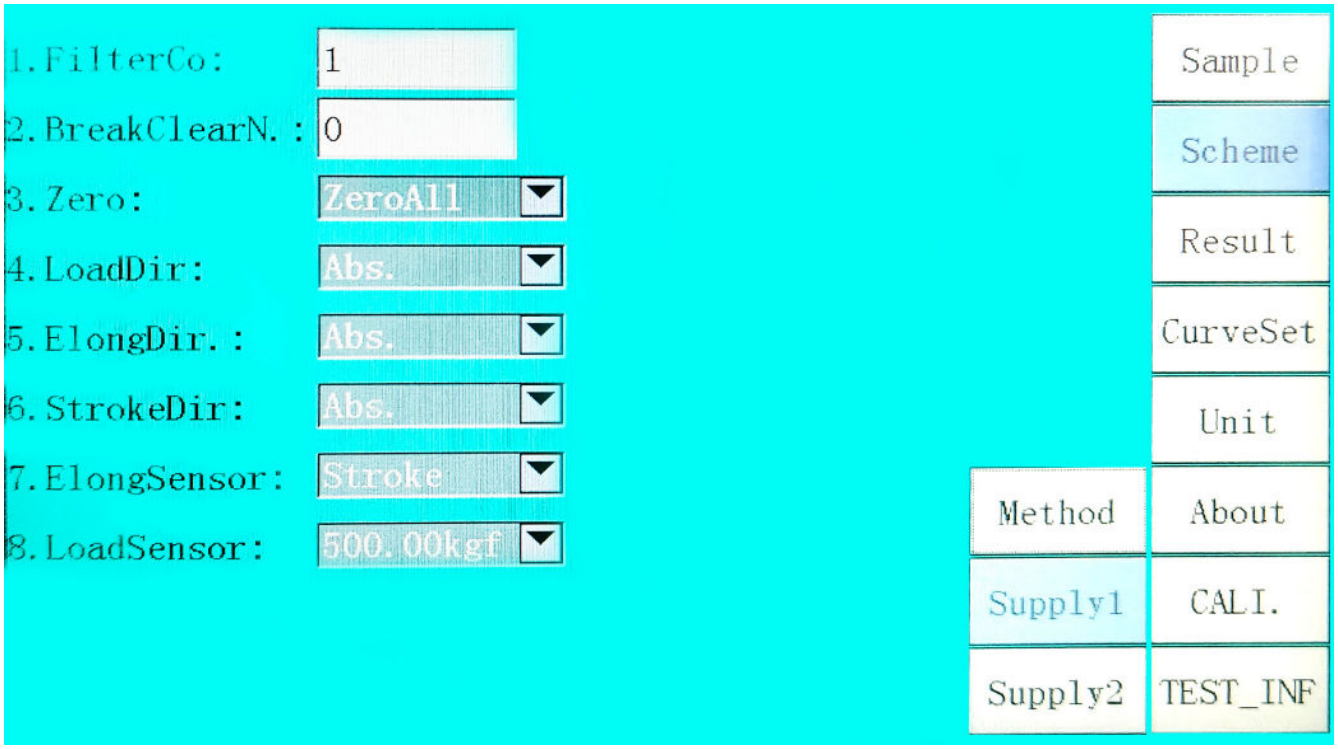
Test Scheme



- 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.

Operation Interface

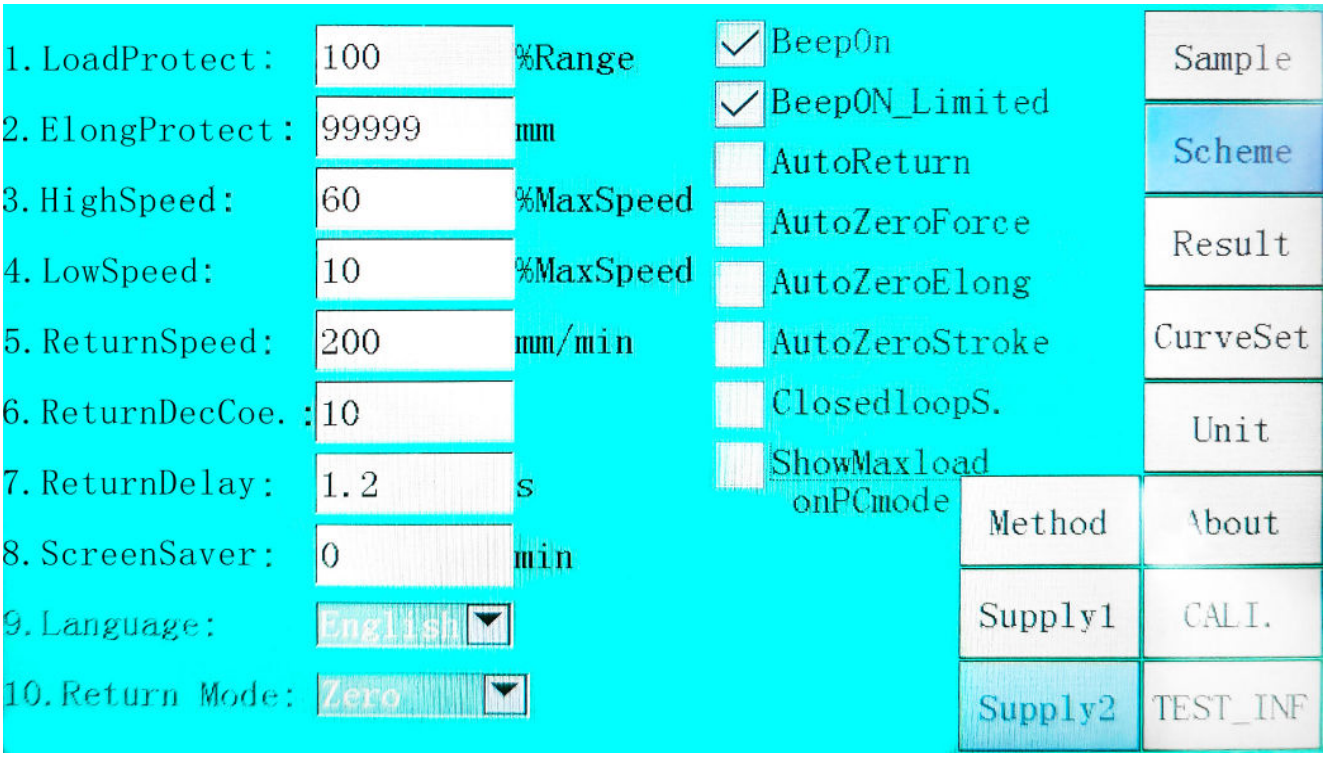
Parameter Control



- 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.

Operation Interface

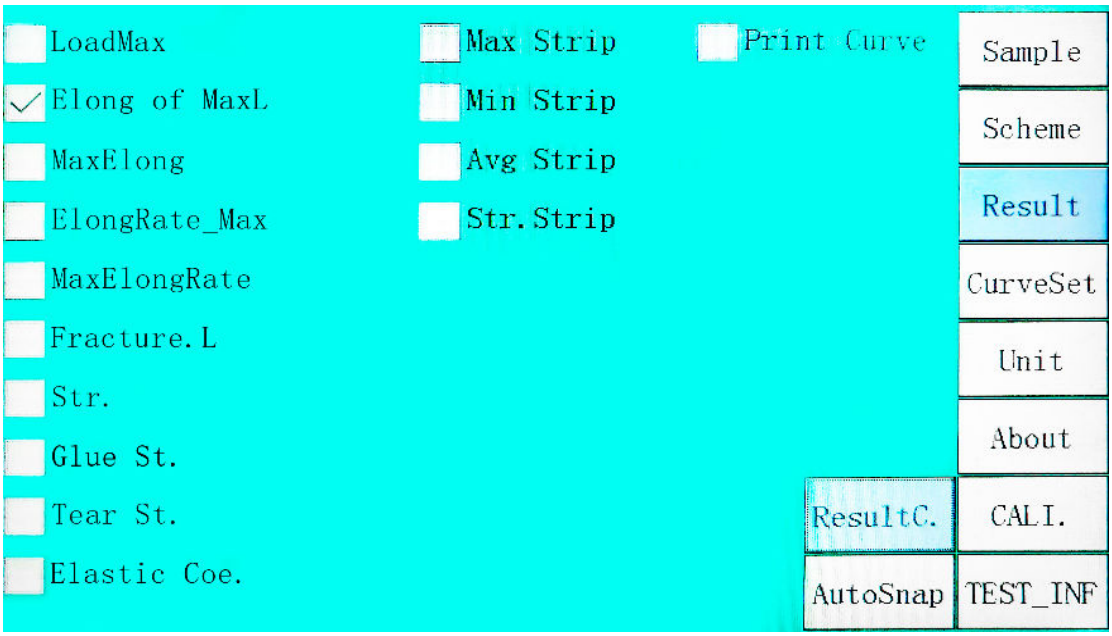
Parameter Control



- 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.

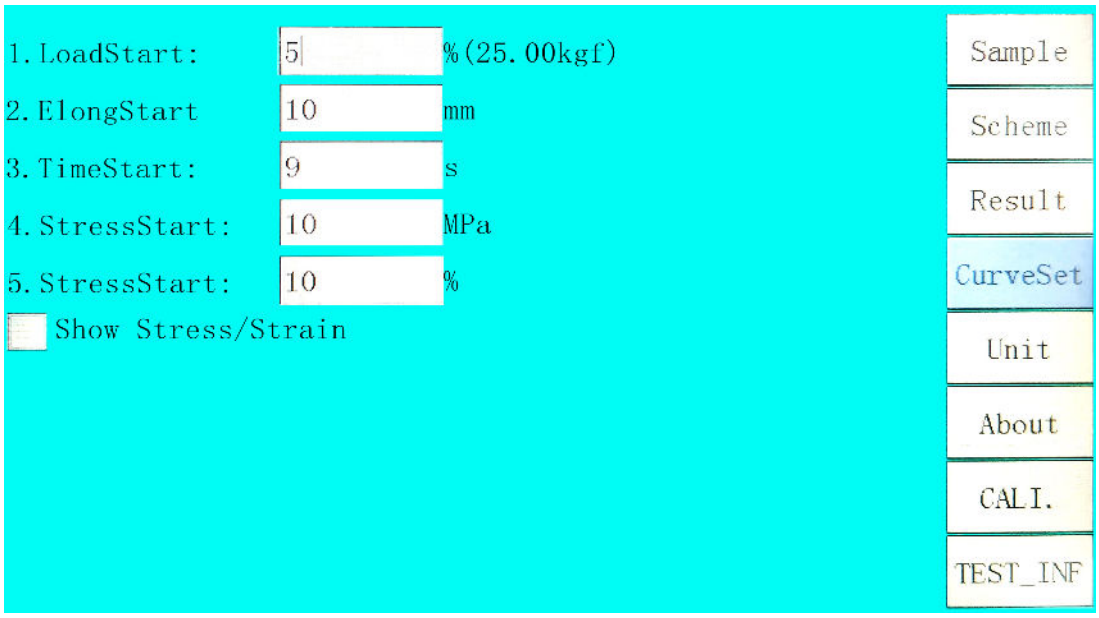
Operation Interface

Test Result Selection



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

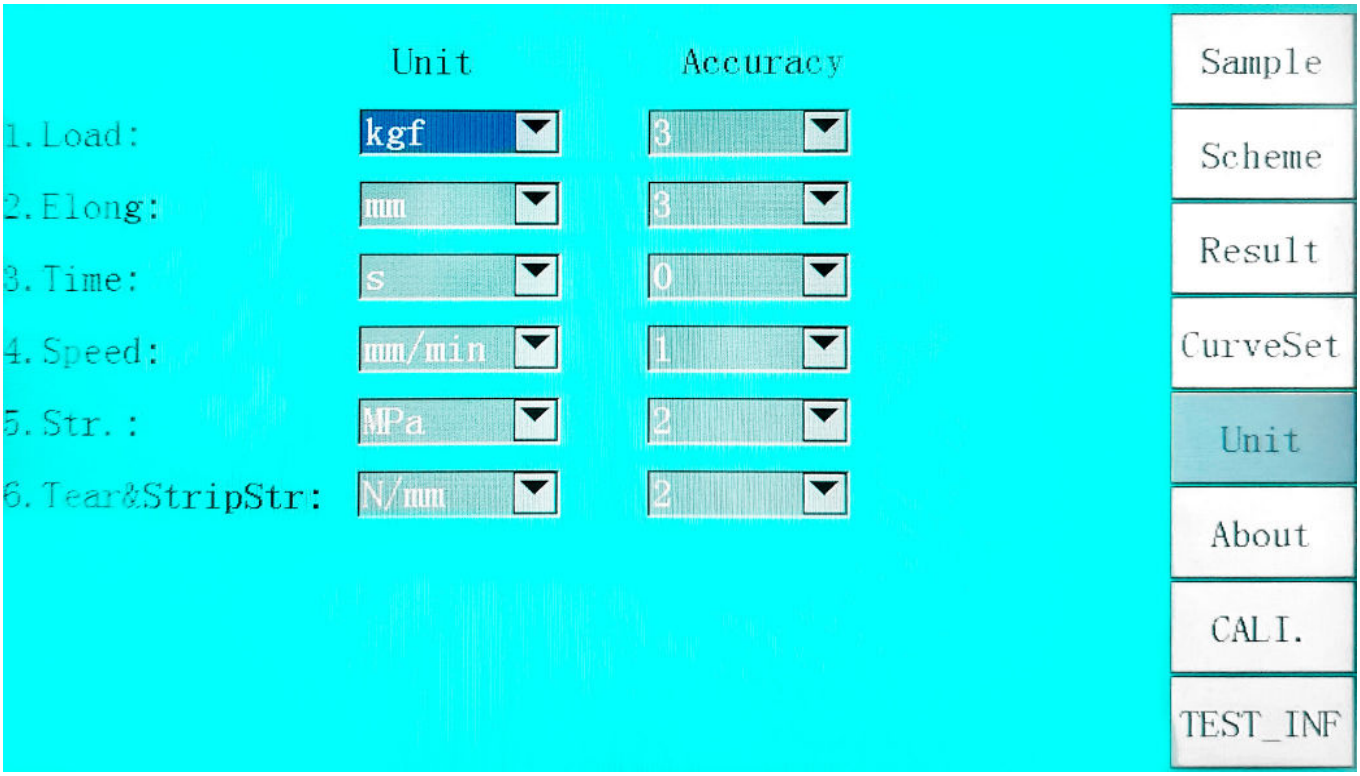
Curve Settings



- Set the starting parameters of the curve.

Operation Interface

Units and Precision

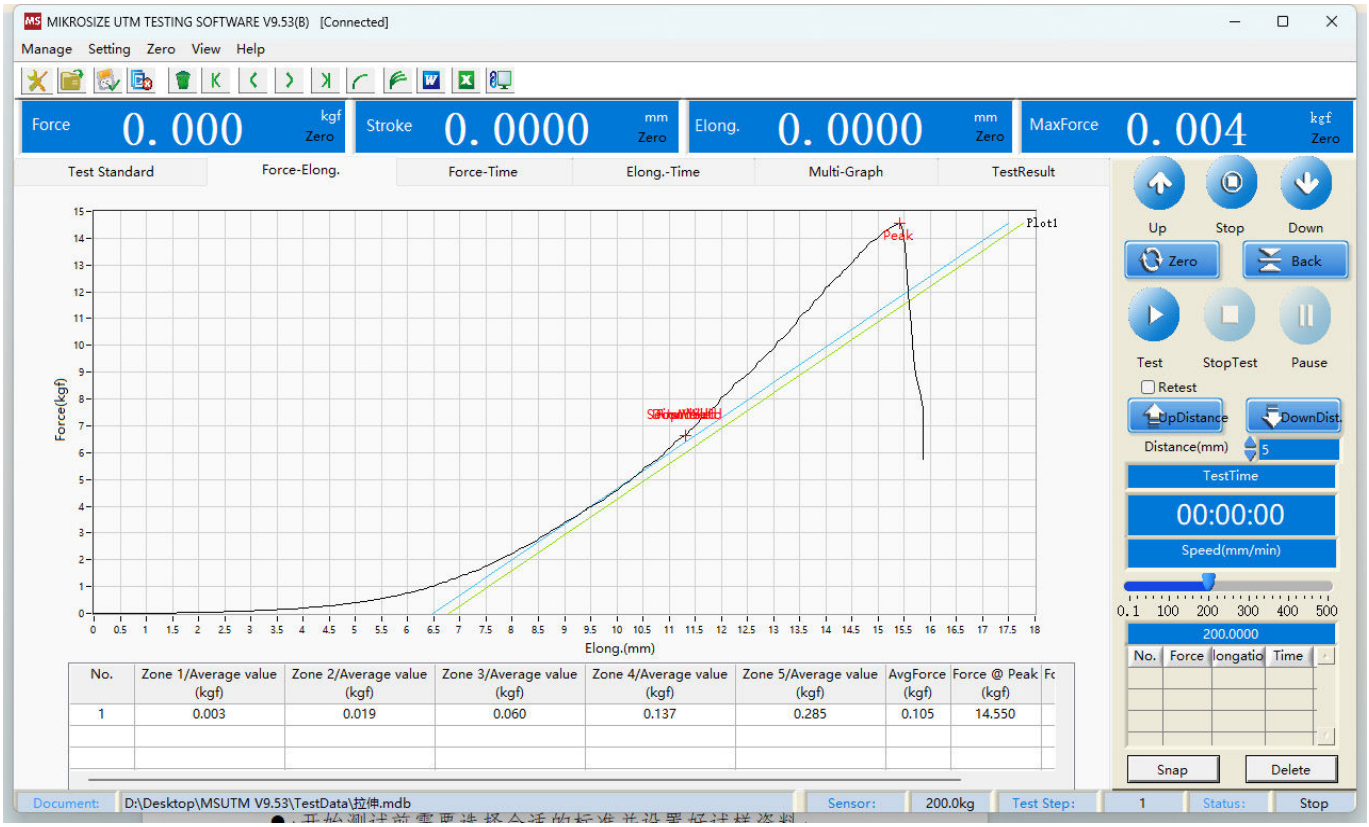


- There are multiple different units available for each parameter.
- Precision represents the number of decimal places.

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.

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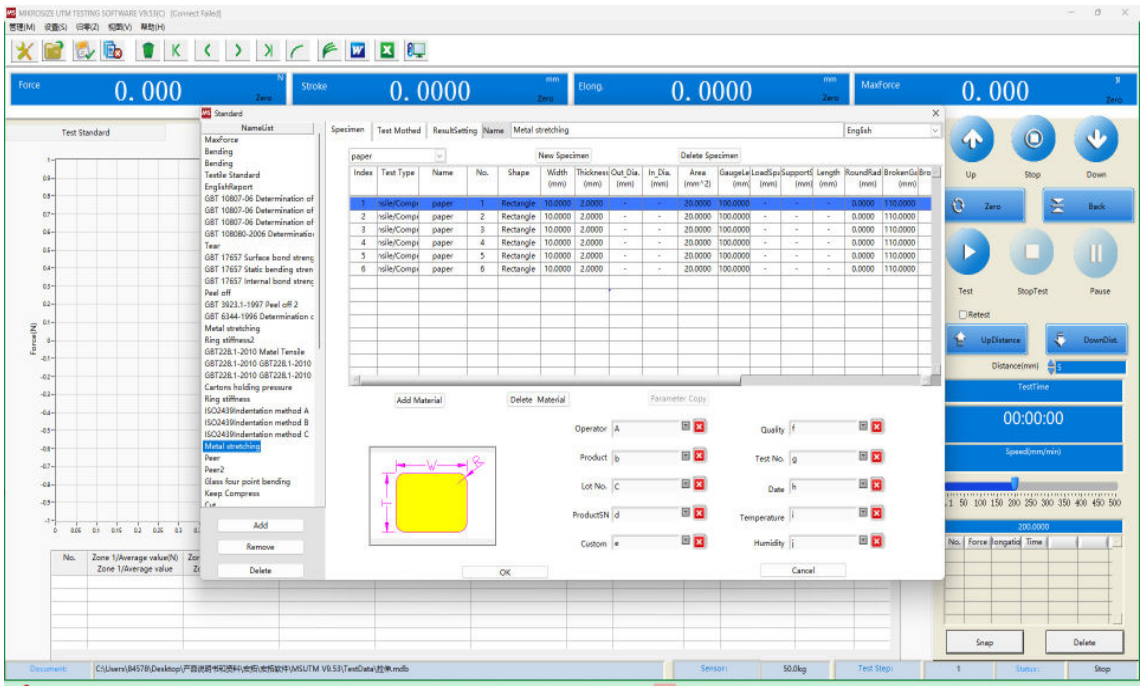
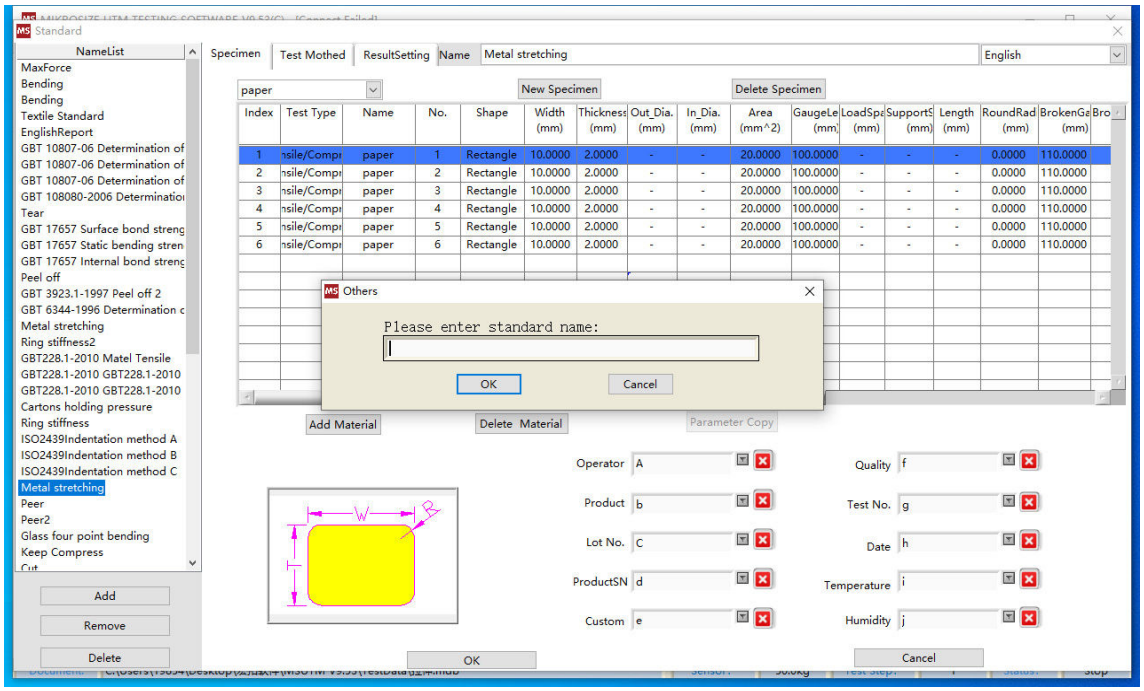
Test Standard and Specimen Information

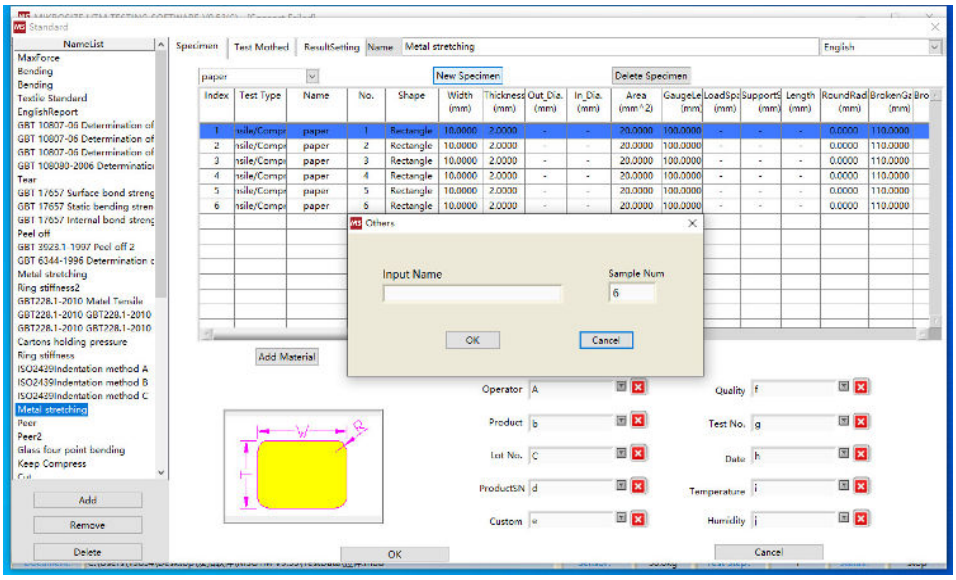


- Before starting the test, it is necessary to select an appropriate standard and set the specimen information.
- Display and set the information of test standards and test samples, including their shape and size, as well as relevant auxiliary information such as testers and specimen materials.



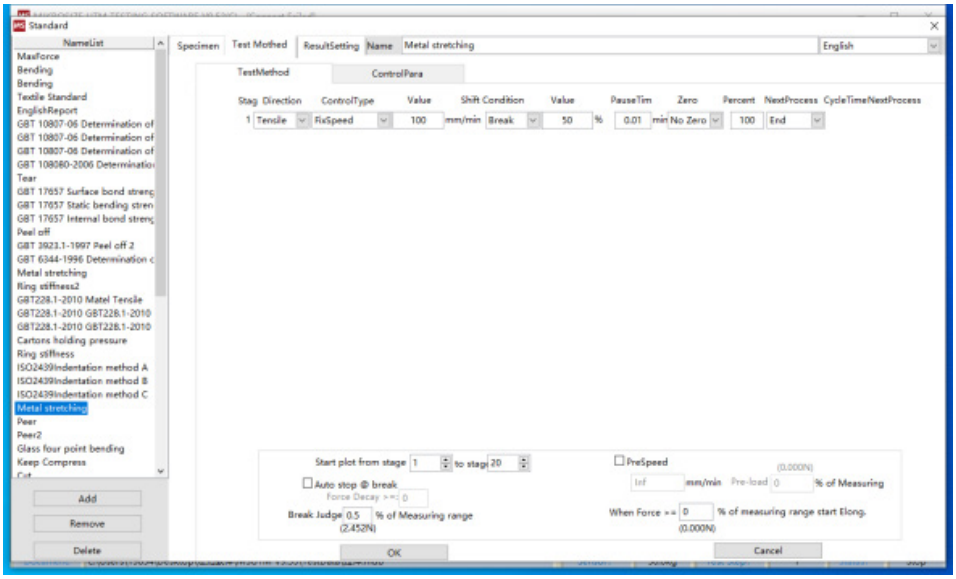
Mikrosize Software Interface

Test Standard and Specimen Information



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

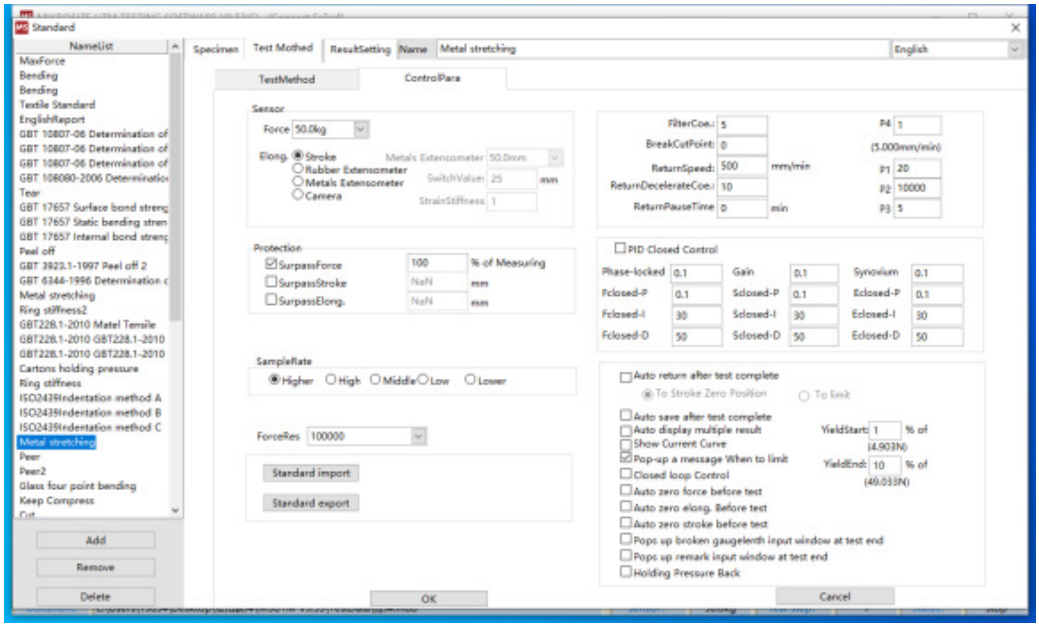
Test Method and Parameter Control



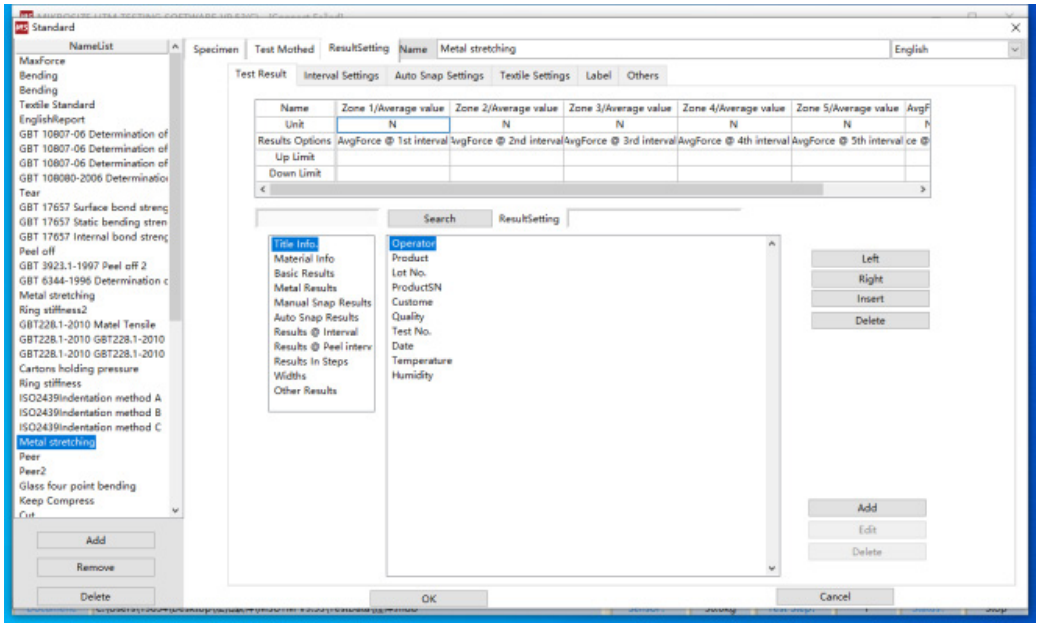
- After selecting the test standard, you can edit the test method. For example, for the tensile standard test method: set the test speed; choose the control mode such as constant deformation, constant speed, or constant stress.
- Also, set the stop conditions, like break point, yield point, or when parameters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

Mikrosize Software Interface

Test Method and Parameter Control



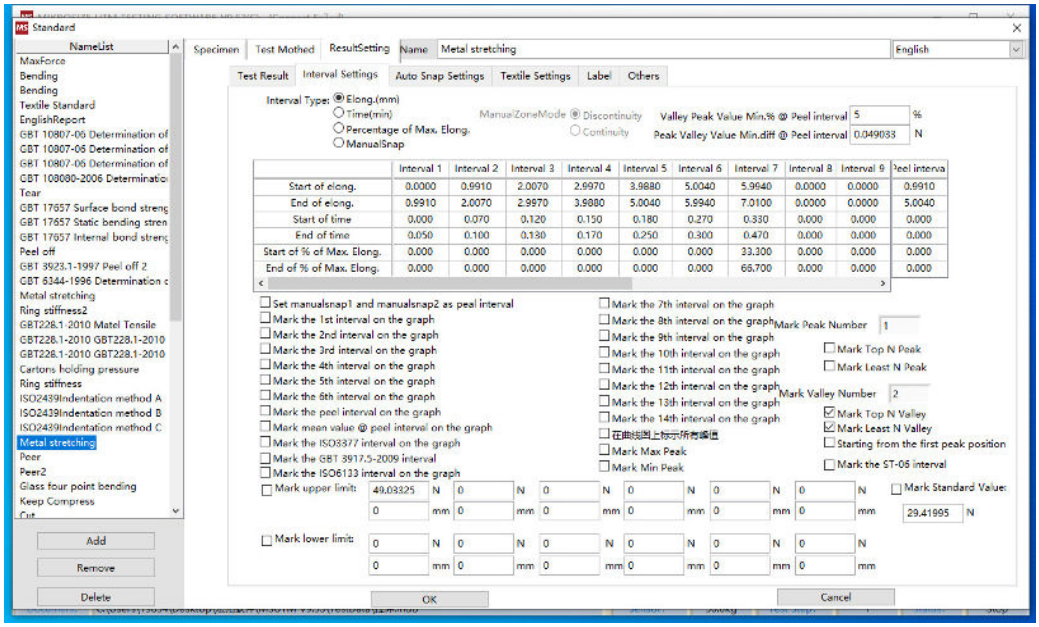
- Set parameters related to sensors, extension meters, force value resolution, and system control.



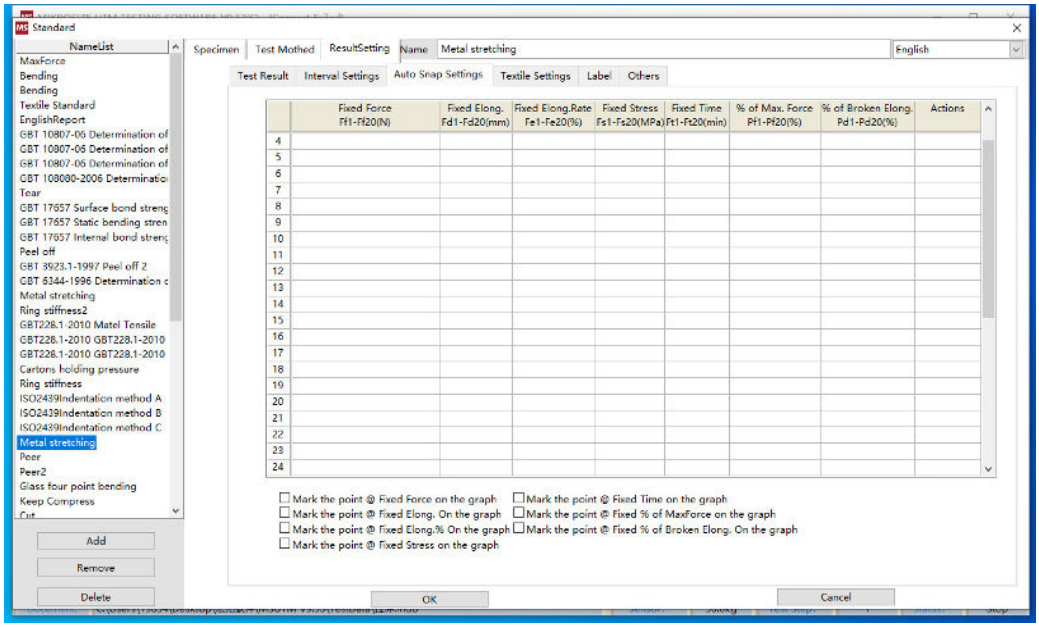
- The software classifies all test results into 11 categories for easy retrieval by customers.
- Users can also customize relevant test results.
- The added items will be displayed in the test report, allowing users to focus on the specific data they need.

Mikrosize Software Interface

Interval Settings



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



- 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

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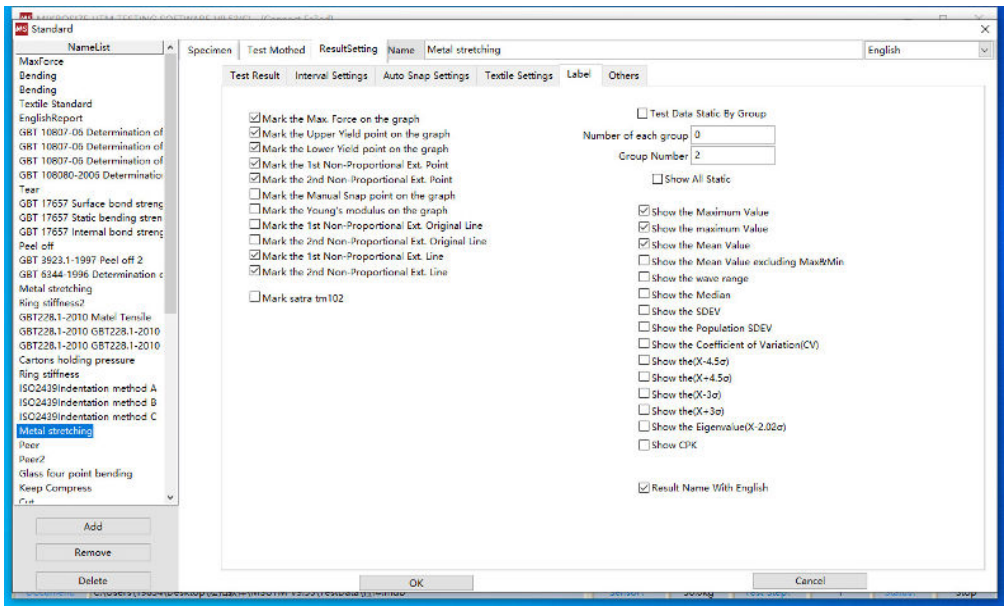
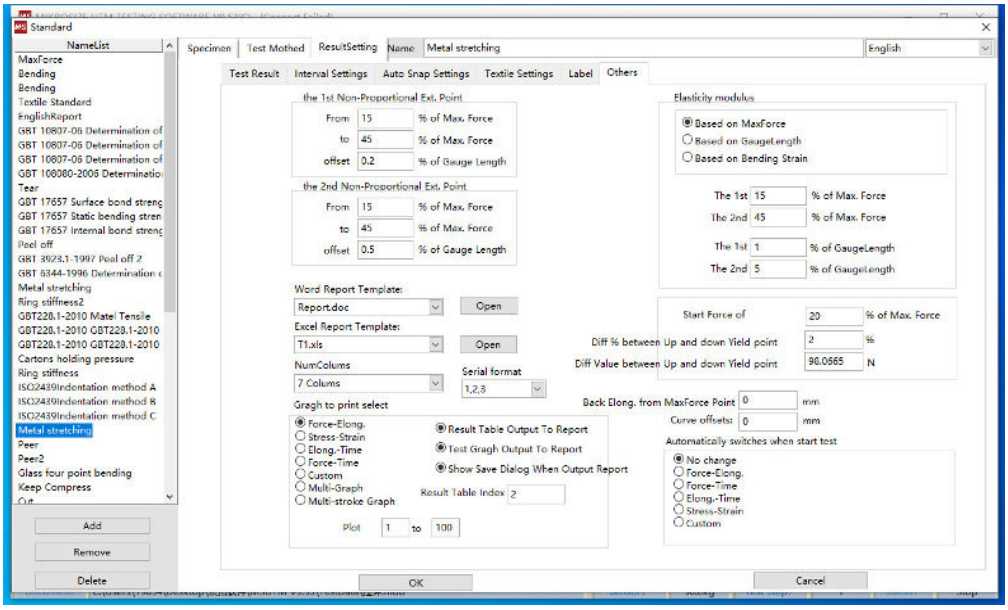
Marking



- 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.

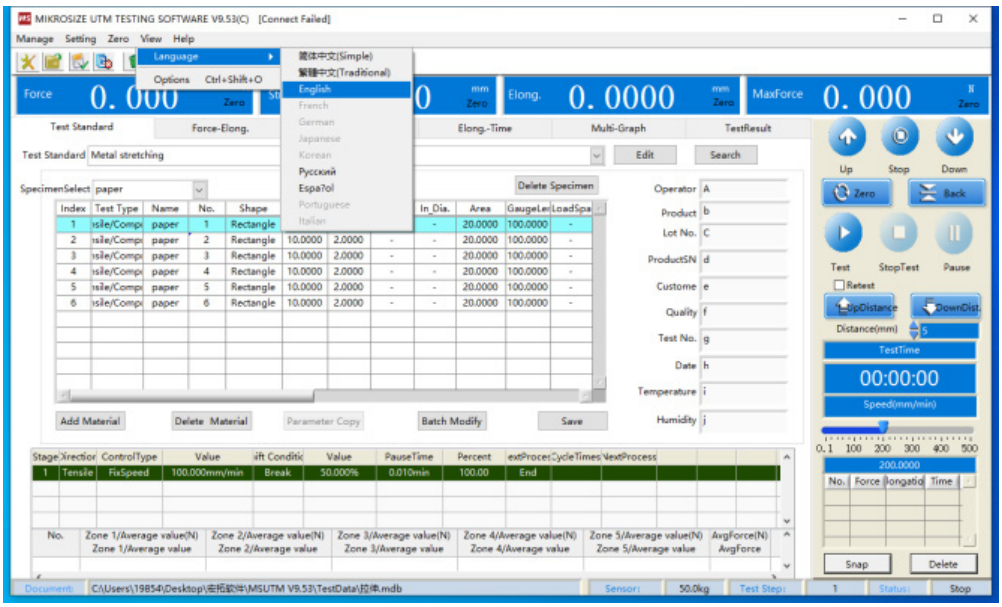
Others



- 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.

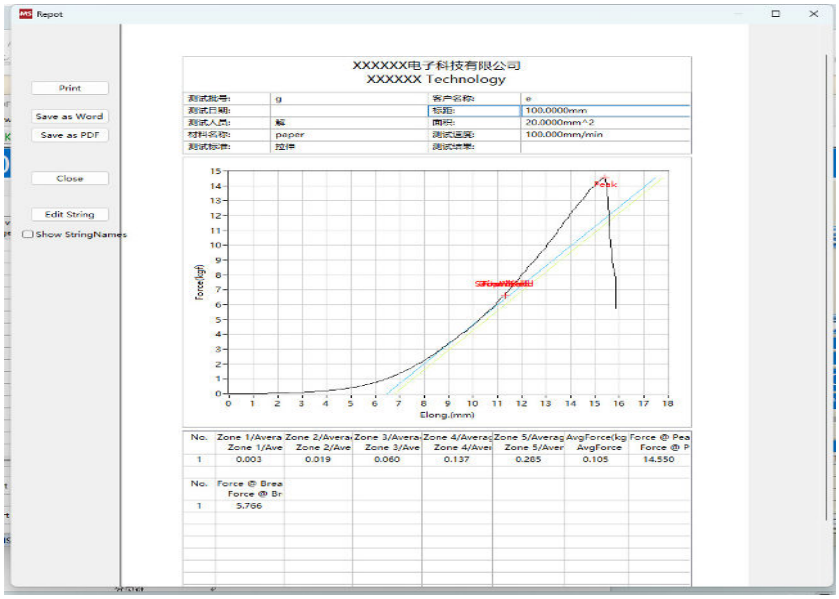
Mikrosize Software Interface

Language Selection



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

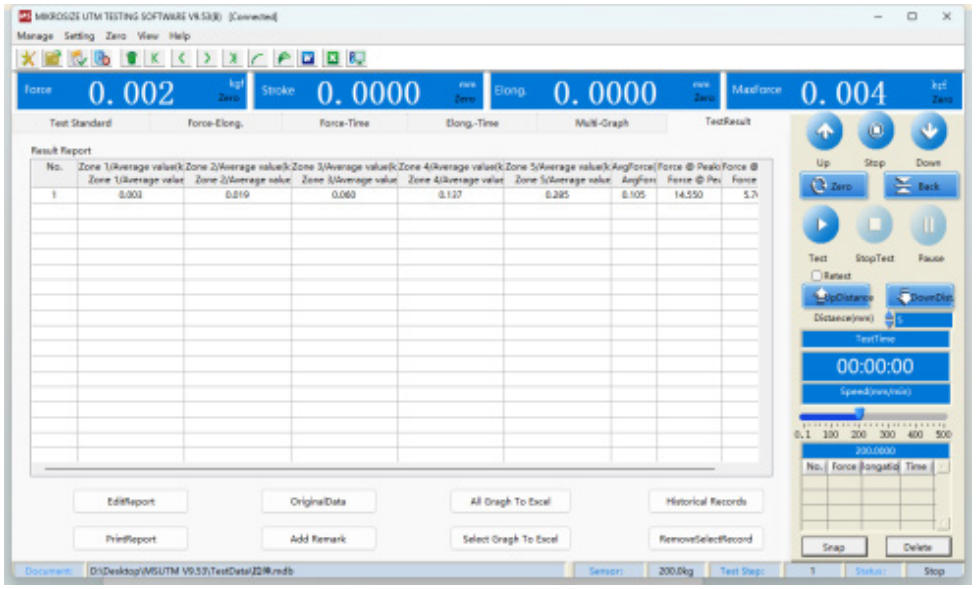
Report Output



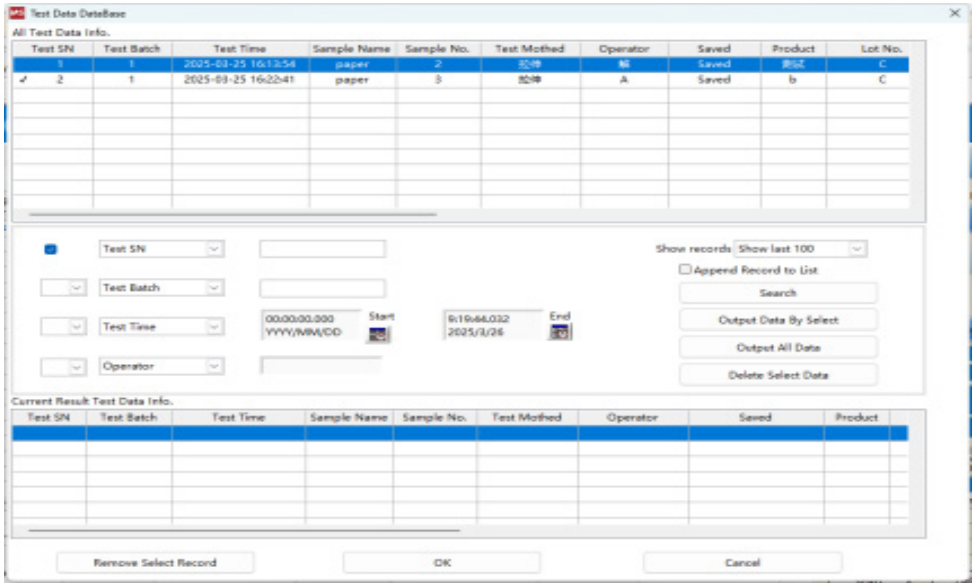
- The software comes with a simple result report, and users can edit the report.
  The output formats are PDF and Word. Users can also choose to output the report through the shortcuts on the top of the software, with options of Word and Excel.

Mikrosize Software Interface

Data Viewing and Searching



Test Results

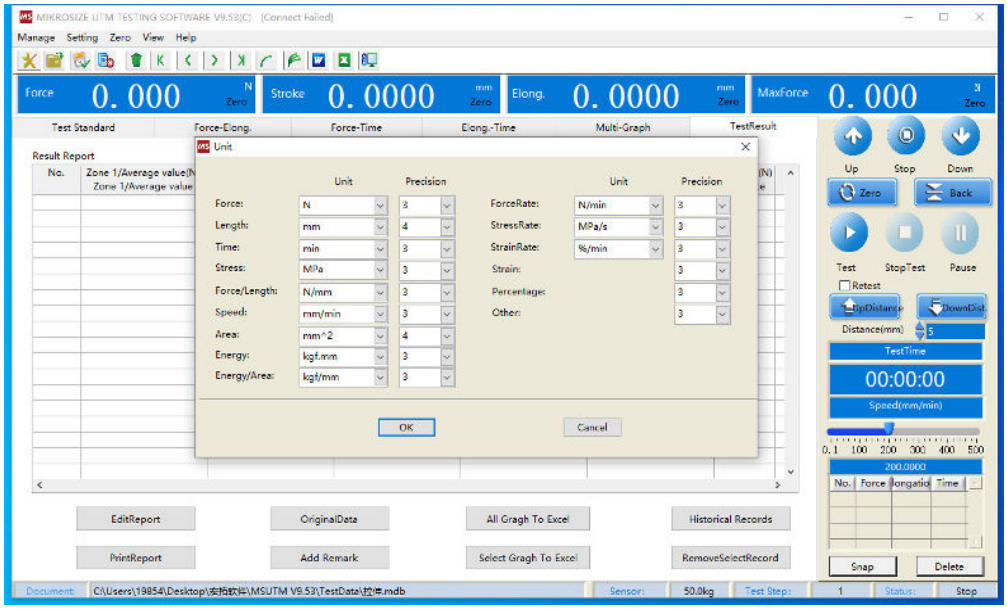


Historical Data

- 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.

Mikrosize Software Interface

Units

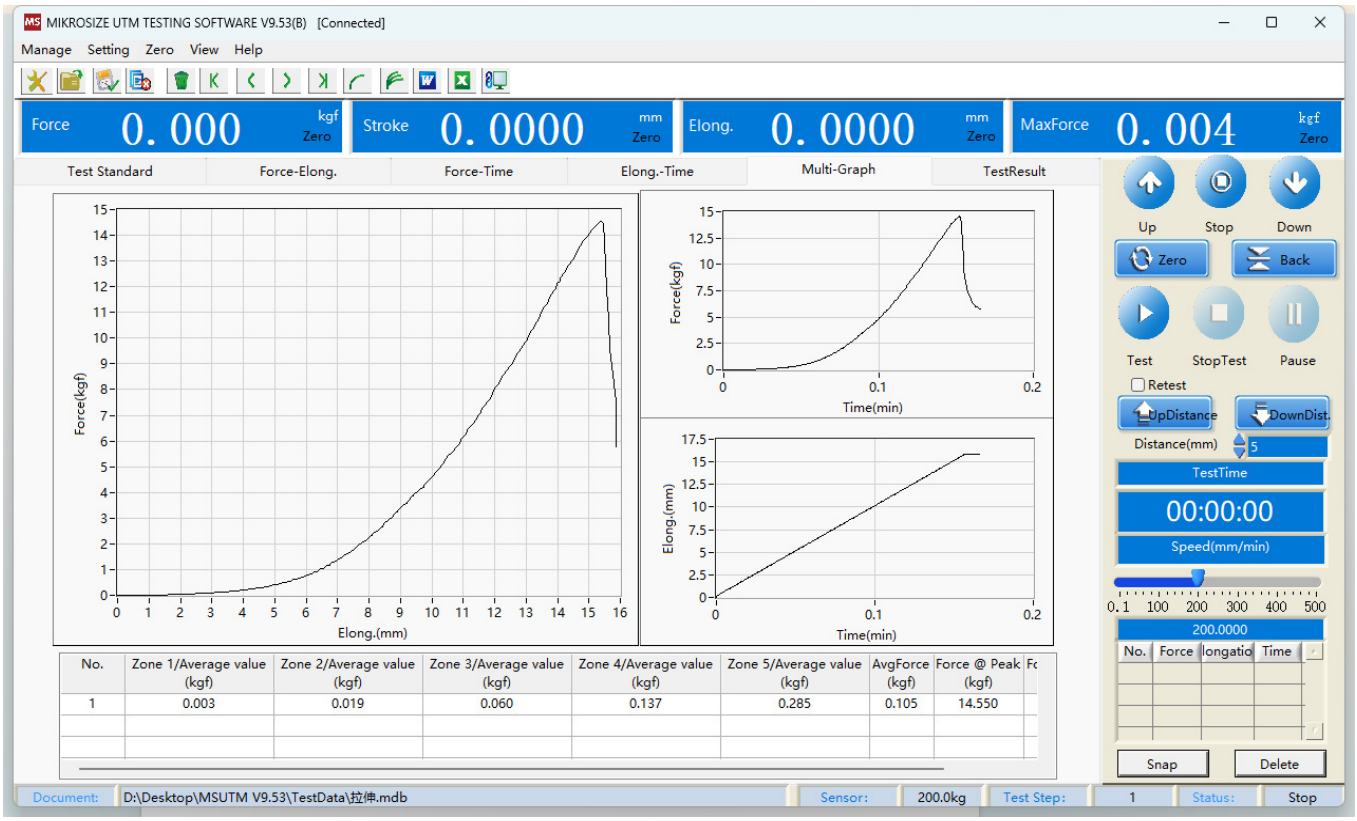


- There are multiple different units available for each parameter.
- Precision represents the number of decimal places.
- The parameter units determine the unit system of the entire system, and all parameter operations are performed based on this unit system.

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

Mikrosize Software Interface

Multi - Graph



No.	Zone 1/Average value (kgf)	Zone 2/Average value (kgf)	Zone 3/Average value (kgf)	Zone 4/Average value (kgf)	Zone 5/Average value (kgf)	AvgForce (kgf)	Force @ Peak (kgf)
1	0.003	0.019	0.060	0.137	0.285	0.105	14.550

- 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.

Technical Specification

Model		UTM-TDC							
Name		Dual-Column Universal Material Testing Machine(Bench Type)							
Subdivision Model		UTM-TDC-5	UTM-TDC-10	UTM-TDC-20	UTM-TDC-50	UTM-TDC-100	UTM-TDC-200	UTM-TDC-500	UTM-TDC-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							

Technical Specification

Deformation Measurement Range	2%~100%FS
Deformation Indication Accuracy	Within ±1% of the indicated value
Maximum Test Speed	500mm/min
Minimum Test Speed	0.1mm/min
Speed Accuracy	Within ±1% of the indicated value
Crossbeam Stroke	No - fixture test stroke: 920mm
Measuring Width	320mm
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:650mm*400mm*1220mm About 70Kg
Packaging Size/Weight	L*W*H:700mm*450mm*1350mm About 90Kg

Standard Delivery

Name	Qty	Photo
Machine Mainframe	1pc	
Tensile Fixture	1pc	
Testing Software	1pc	/
Power Cord	1pc	/
Computer Connection Cable	1pc	/
Instruction Manual	1copy	
Warranty Card	1copy	
Product Certificate	1copy	

Optional Delivery

Optional	Other types or customized fixtures
	Computer
	Protective cover

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