

# UTM-TSC

## Touch Screen Single Column Electronic Universal Testing Machine



Video



### Contact us

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## Features and Applications

### Product Feature

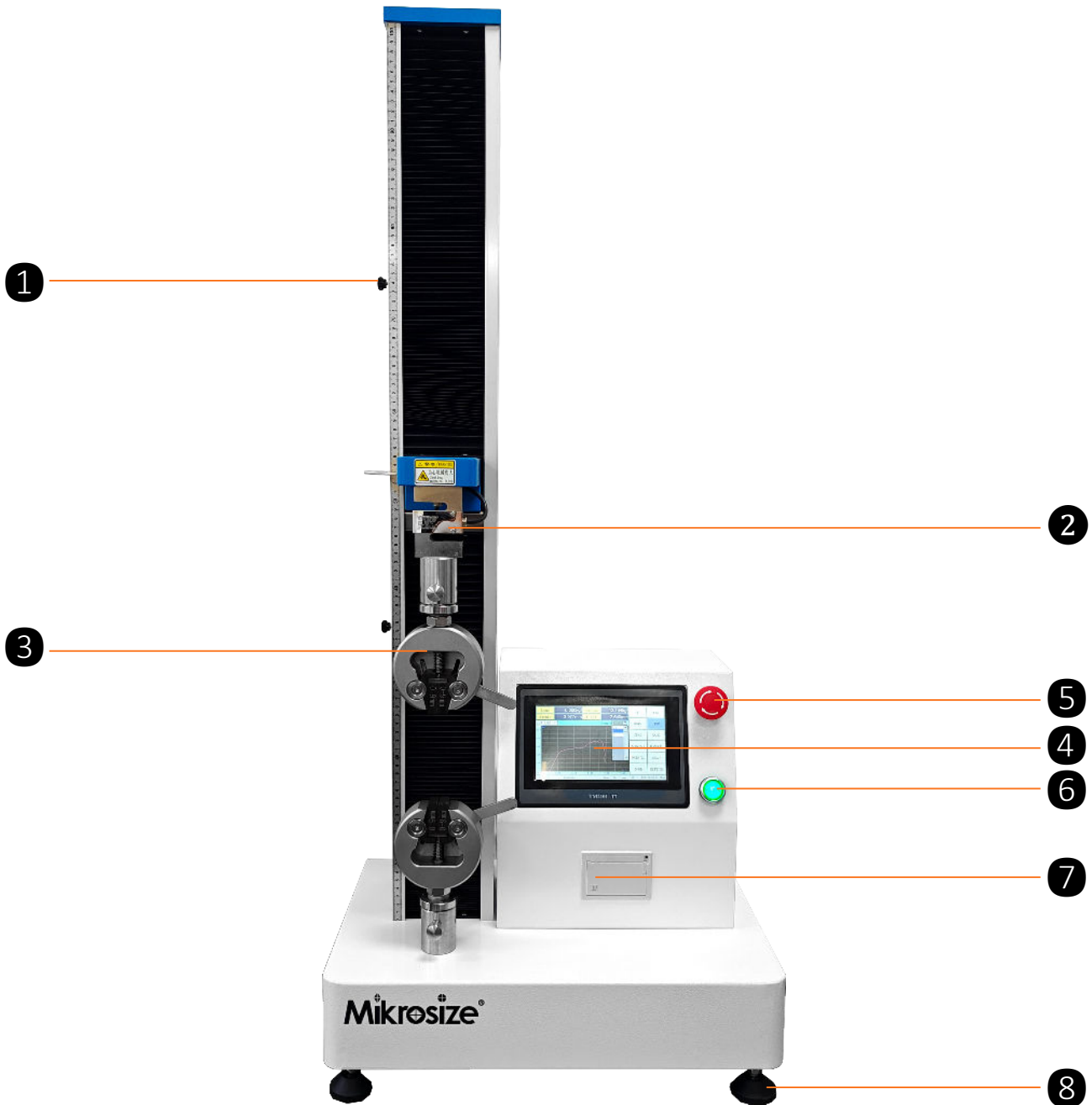
- Wide range of applications, powerful functions, compact structure, and easy operation.
- High measurement accuracy.
- Equipped with a high speed, low vibration, and low noise motor drive device.
- Multilingual switching.
- Flexible report viewing and printing functions.
- Automatic return.
- Multiple 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.



## Product Details



**1.Limit Device**

**2.Load Cell**

**3.Standard Fixture**

**4.Touch Display Screen**

**5.Emergency Stop Button**

**6.Switch**

**7.Printer**

**8.Leveling Feet**

## Product Details



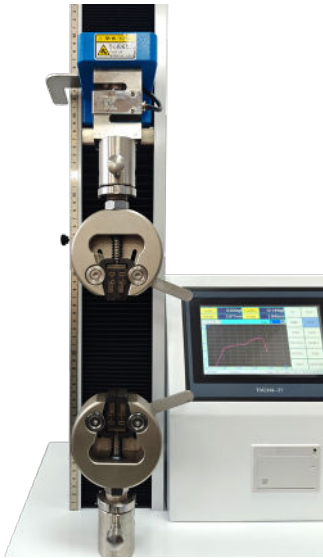
**1.Power Cord Interface**

**2.Computer Wlan Interface (Optional)**

**3.Extensometer Socket (Optional)**

## Product Details

### Sensor



- 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.

### Limit Device

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



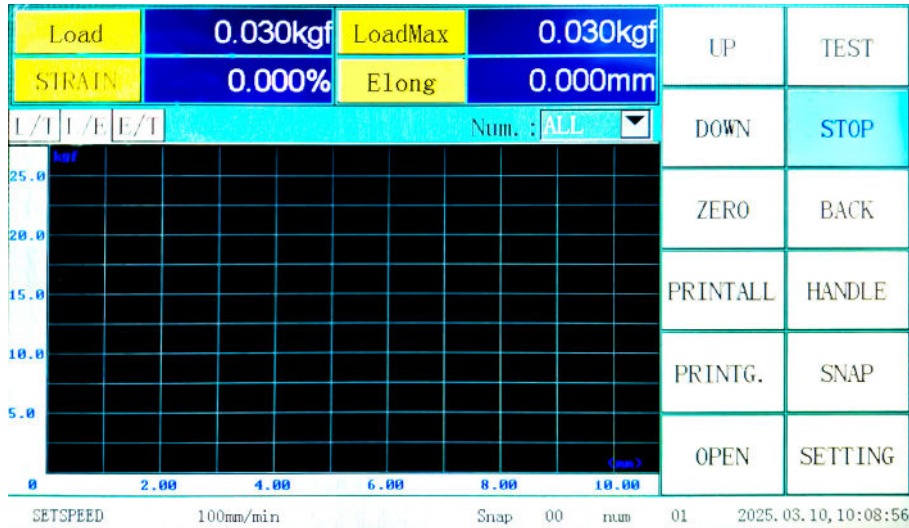
### Others



- It is equipped with a mini - printer that can quickly print test data reports.
- The emergency stop button of the device is prominent and reasonably positioned.

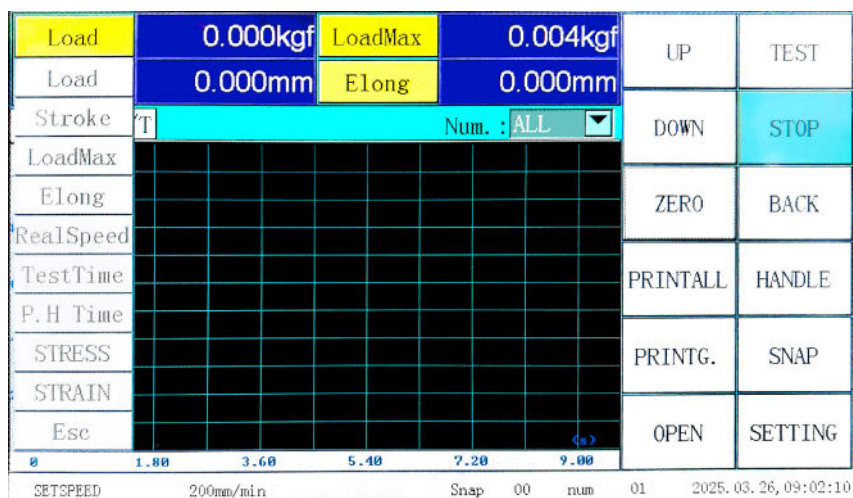
## Operation Interface

### 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.

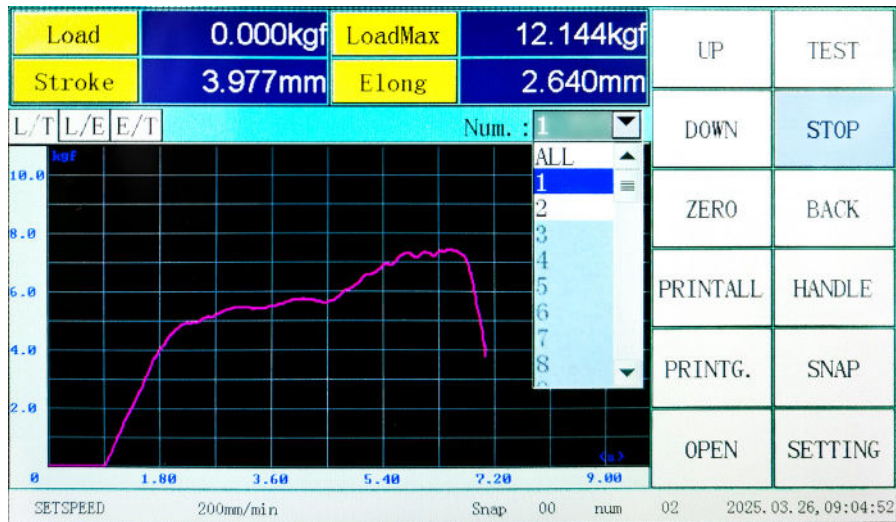
### Select Display Parameters



- 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; STRAIN

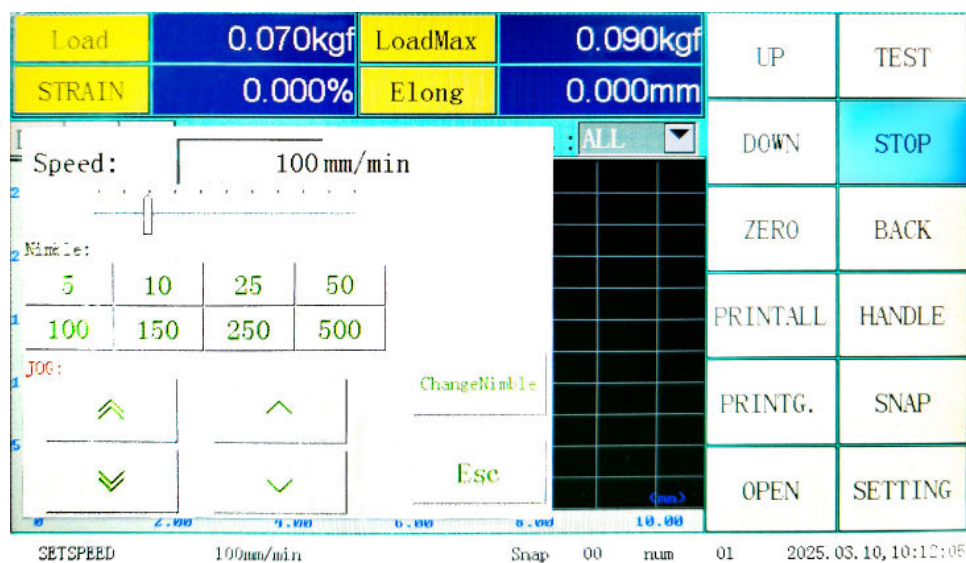
## Operation Interface

### 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.

### 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.

## Operation Interface

### Sample Information

1. Sample Num:	<input type="text" value="1"/>			Sample
2. Sample Shape:	<input type="text" value="Square"/> <input type="text" value="Circular"/> <input type="text" value="Square"/>			Scheme
No.	Gauge (mm)	1 (mm)	Thickness (mm)	Result
1	10.000	5.000	3.000	CurveSet
				Unit
				About
				CALI.
				TEST_INF

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

### Test Scheme

1. TestSpssd:	<input type="text" value="50"/> mm/min	<input type="checkbox"/> Use PreSpeed	Sample
2. Test Dir.:	<input type="text" value="UP"/>	<input type="text" value="10"/> mm/min	Scheme
3. A. StopTest:	<input type="text" value="Break Judge"/>	PreLoad:	Result
Break S.:	<input type="text" value="LoadReach"/> <input type="text" value="ElongReach"/> <input type="text" value="Break Judge"/>	<input type="text" value="0.1"/> % 0.500kgf	CurveSet
<input checked="" type="checkbox"/> AutoStopAtBreak	Break S. <input type="text" value="0"/> %		Unit
4. Break Judge:	<input type="text" value="0.1"/> %Range		Method
5. Cal. Elong:	<input type="text" value="0.1"/> kgf		About
			Supply1
			Supply2
			TEST_INF

- 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

1. FilterCo:	<input type="text" value="1"/>	Sample
2. BreakClearN. :	<input type="text" value="0"/>	Scheme
3. Zero:	<input type="text" value="ZeroAll"/> ▼	Result
4. LoadDir:	<input type="text" value="Abs."/> ▼	CurveSet
5. ElongDir. :	<input type="text" value="Abs."/> ▼	Unit
6. StrokeDir:	<input type="text" value="Abs."/> ▼	Method
7. ElongSensor:	<input type="text" value="Stroke"/> ▼	About
8. LoadSensor:	<input type="text" value="500.00kgf"/> ▼	Supply1
		Supply2
		TEST_INF

- 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

1. LoadProtect:	100	%Range	<input checked="" type="checkbox"/> BeepOn	Sample
2. ElongProtect:	99999	mm	<input checked="" type="checkbox"/> BeepON_Limited	Scheme
3. HighSpeed:	60	%MaxSpeed	<input type="checkbox"/> AutoReturn	Result
4. LowSpeed:	10	%MaxSpeed	<input type="checkbox"/> AutoZeroForce	CurveSet
5. ReturnSpeed:	200	mm/min	<input type="checkbox"/> AutoZeroElong	Unit
6. ReturnDecCoe.:	10		<input type="checkbox"/> AutoZeroStroke	Method
7. ReturnDelay:	1.2	s	<input type="checkbox"/> ClosedloopS.	Supply1
8. ScreenSaver:	0	min	<input type="checkbox"/> ShowMaxload onPCmode	Supply2
9. Language:	English			CALI.
10. Return Mode:	Zero			TEST_INF

- 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

<input type="checkbox"/> LoadMax	<input type="checkbox"/> Max Strip	<input type="checkbox"/> Print Curve	Sample
<input checked="" type="checkbox"/> Elong of MaxL	<input type="checkbox"/> Min Strip		Scheme
<input type="checkbox"/> MaxElong	<input type="checkbox"/> Avg Strip		<b>Result</b>
<input type="checkbox"/> ElongRate_Max	<input type="checkbox"/> Str. Strip		CurveSet
<input type="checkbox"/> MaxElongRate			Unit
<input type="checkbox"/> Fracture. L			About
<input type="checkbox"/> Str.			CALI.
<input type="checkbox"/> Glue St.		<input type="checkbox"/> ResultC.	TEST_INF
<input type="checkbox"/> Tear St.		<input type="checkbox"/> AutoSnap	
<input type="checkbox"/> Elastic Coe.			

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

### Curve Settings

1. LoadStart:	<input type="text" value="5"/>	% (25.00kgf)	Sample
2. ElongStart	<input type="text" value="10"/>	mm	Scheme
3. TimeStart:	<input type="text" value="9"/>	s	Result
4. StressStart:	<input type="text" value="10"/>	MPa	<b>CurveSet</b>
5. StressStart:	<input type="text" value="10"/>	%	Unit
<input type="checkbox"/> Show Stress/Strain			About
			CALI.
			TEST_INF

- Set the starting parameters of the curve.

## Operation Interface

### Units and Precision

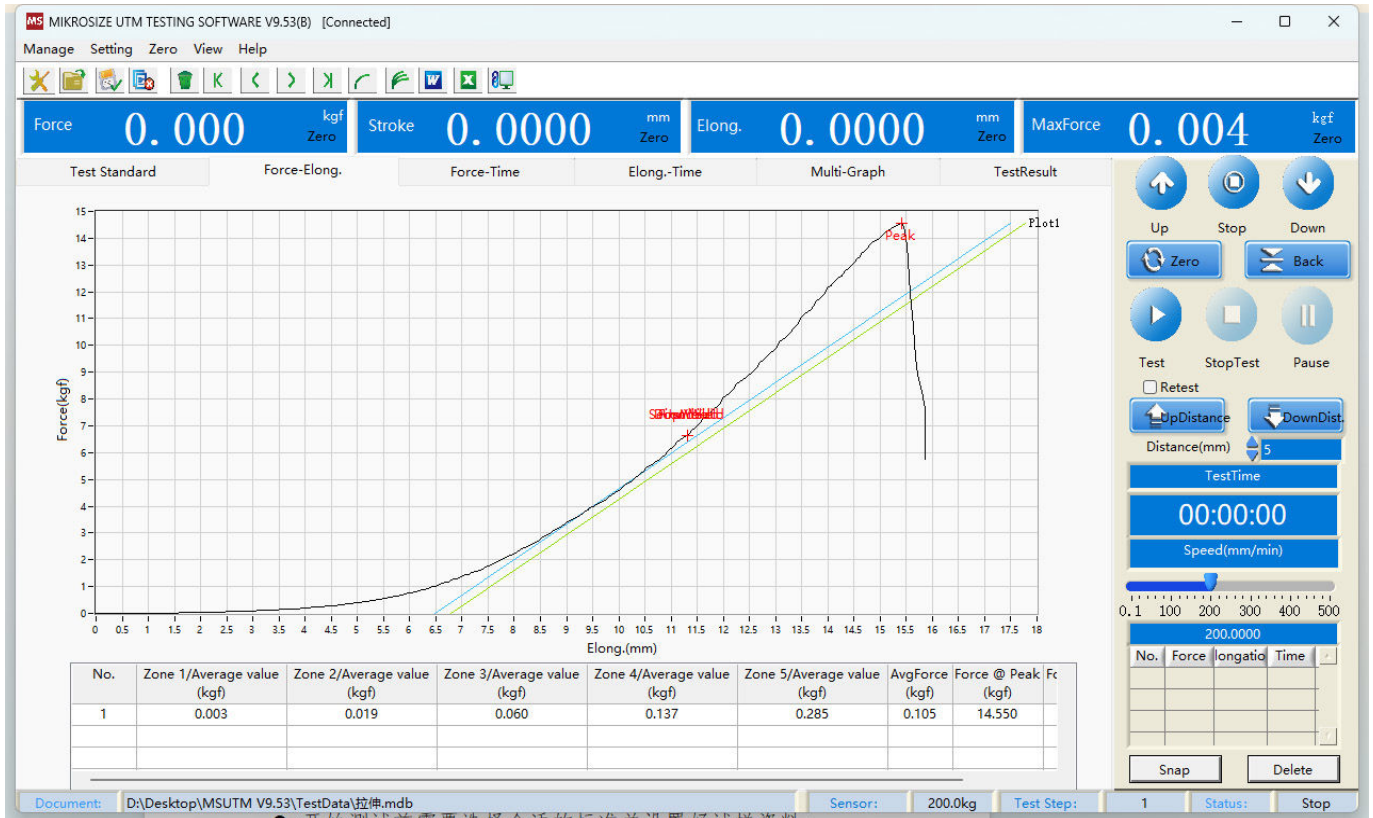
	Unit	Accuracy	
1. Load:	kgf	3	Sample
2. Elong:	mm	3	Scheme
3. Time:	s	0	Result
4. Speed:	mm/min	1	CurveSet
5. Str. :	MPa	2	Unit
6. Tear&StripStr:	N/mm	2	About
			CALI.
			TEST_INF

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

<b>Load</b>	kgf, N, lbf, gf, KN, t
<b>Elong</b>	mm, cm, inch
<b>Time</b>	s, min, h
<b>Speed</b>	mm/min, mm/s, cm/min, cm/s, in/min, in/s
<b>Str</b>	MPa; kPa; kgf/mm <sup>2</sup> ; kgf/cm <sup>2</sup> ; N/mm <sup>2</sup> ; N/cm <sup>2</sup> ; N/m <sup>2</sup> ; gf/mm <sup>2</sup> ; gf/cm <sup>2</sup> ; psi; lbf/in <sup>2</sup>
<b>Tear/StripStr</b>	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

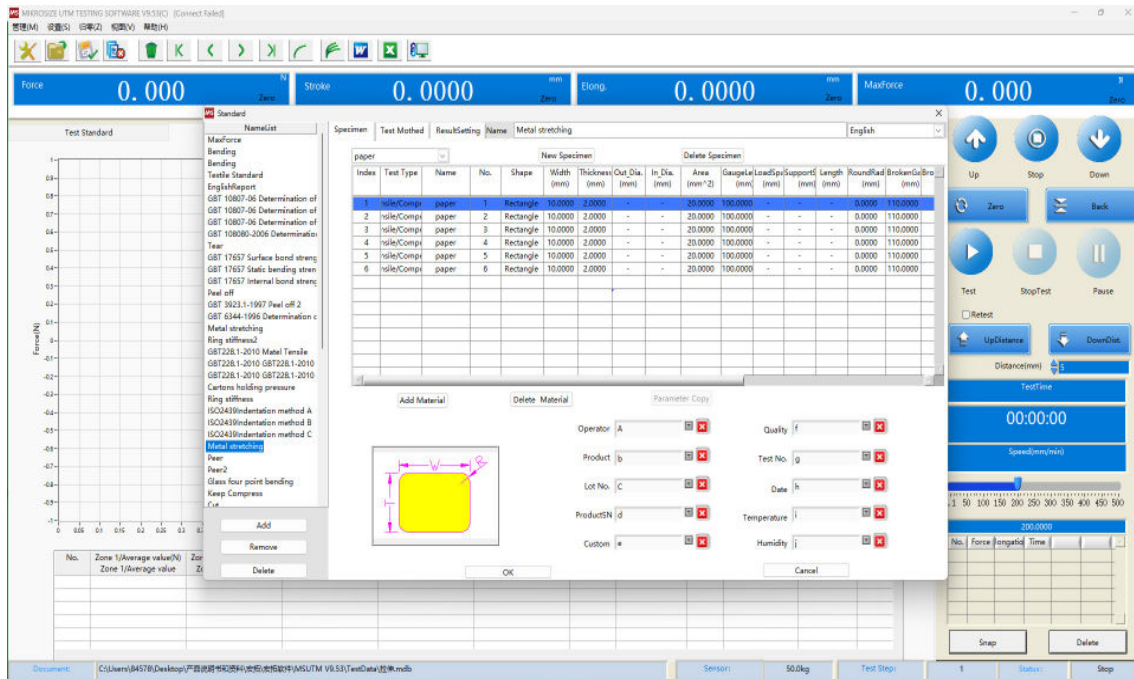
### Main Interface



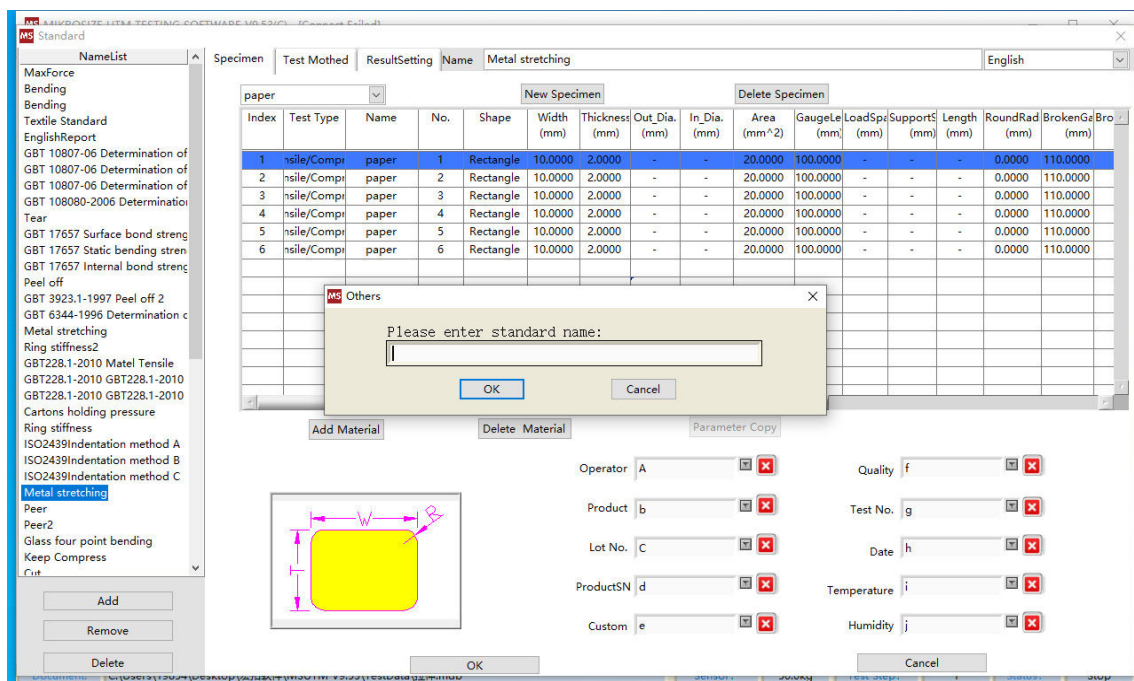
- The buttons on the right side can control the lifting, running, stopping, and jogging speed of the host.
- The upper part displays four parameters: force value, displacement, deformation, and maximum force. You can click the item name to select the item to be displayed, such as stress, strain, elongation rate, speed, etc.

## Mikrosize Software Interface

### Test Standard and Specimen Information

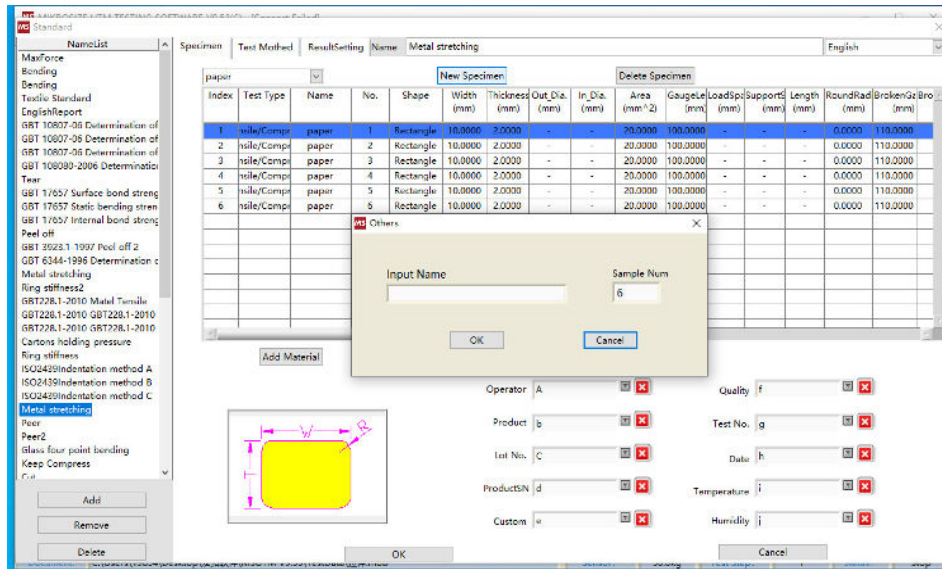


- Before starting the test, it is necessary to select an appropriate standard and set the specimen information.
- Display and set the information of test standards and test samples, including their shape and size, as well as relevant auxiliary information such as testers and specimen materials.



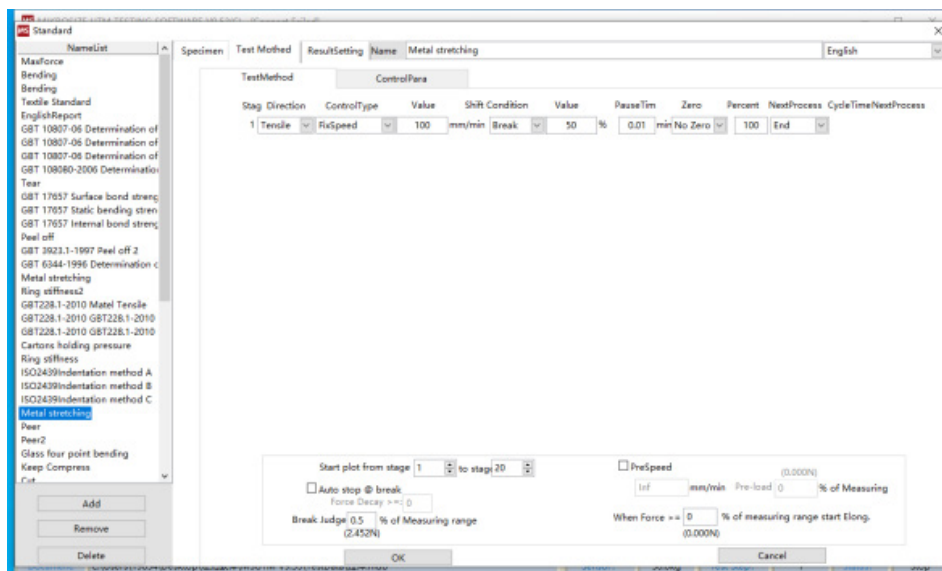
## Mikrosize Software Interface

### Test Standard and Specimen Information



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

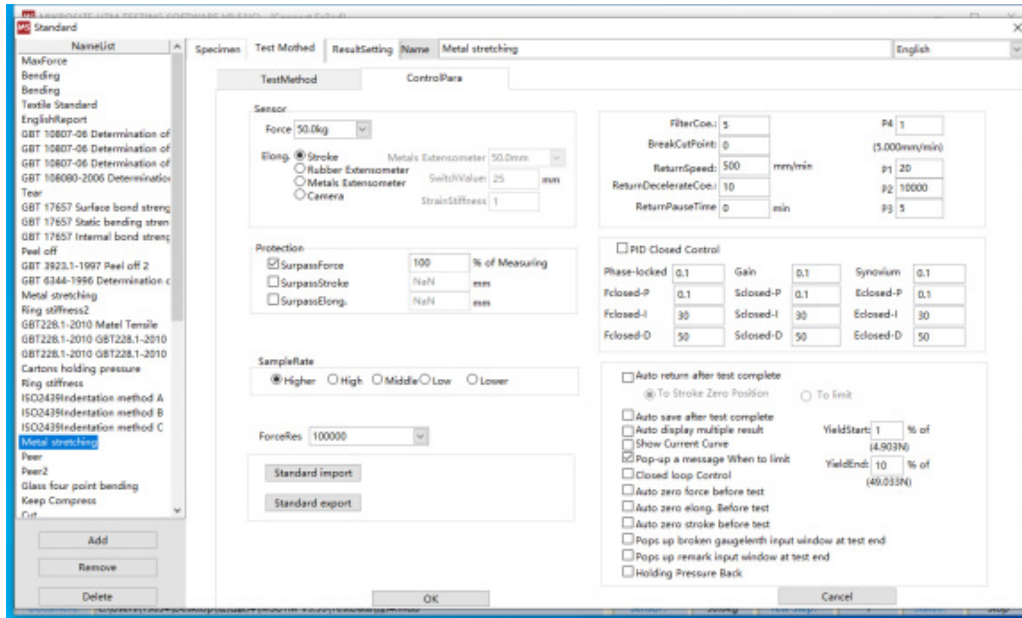
### Test Method and Parameter Control



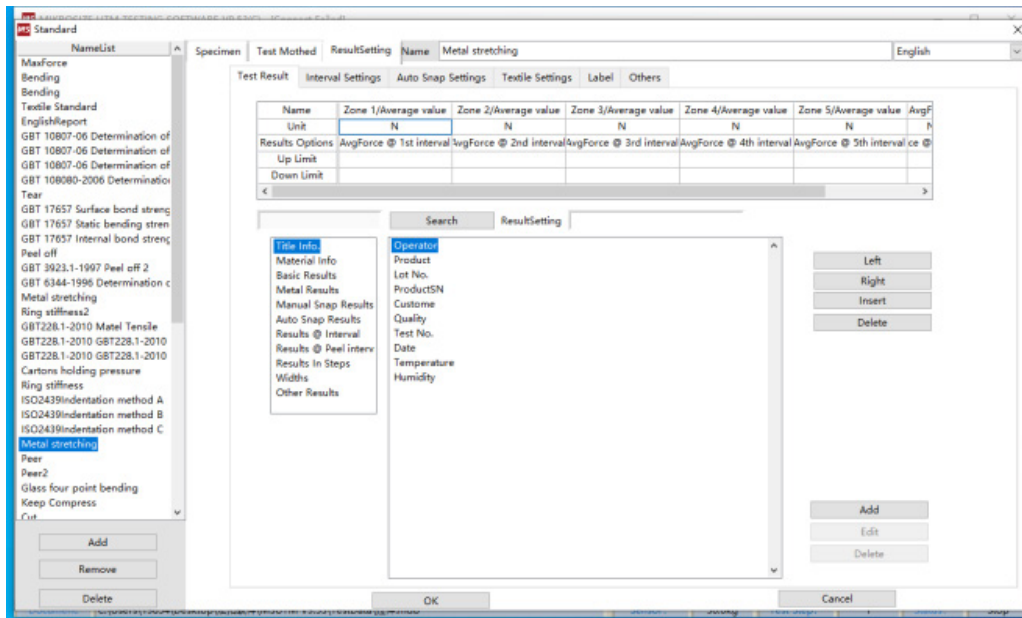
- After selecting the test standard, you can edit the test method. For example, for the tensile standard test method: set the test speed; choose the control mode such as constant deformation, constant speed, or constant stress.
- Also, set the stop conditions, like break point, yield point, or when parameters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

## Mikrosize Software Interface

### Test Method and Parameter Control



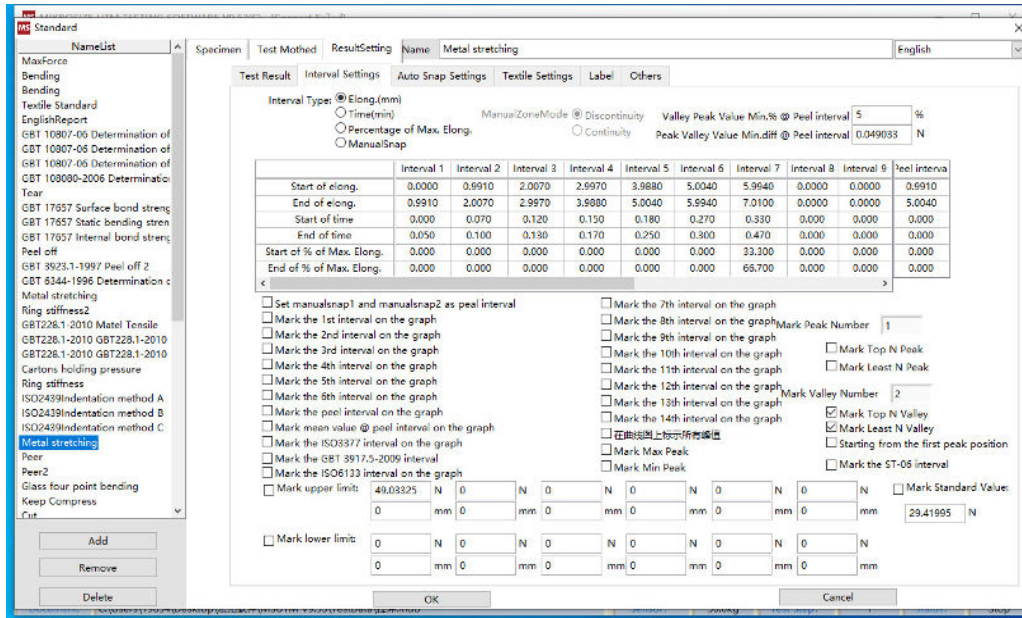
- Set parameters related to sensors, extension meters, force value resolution, and system control.



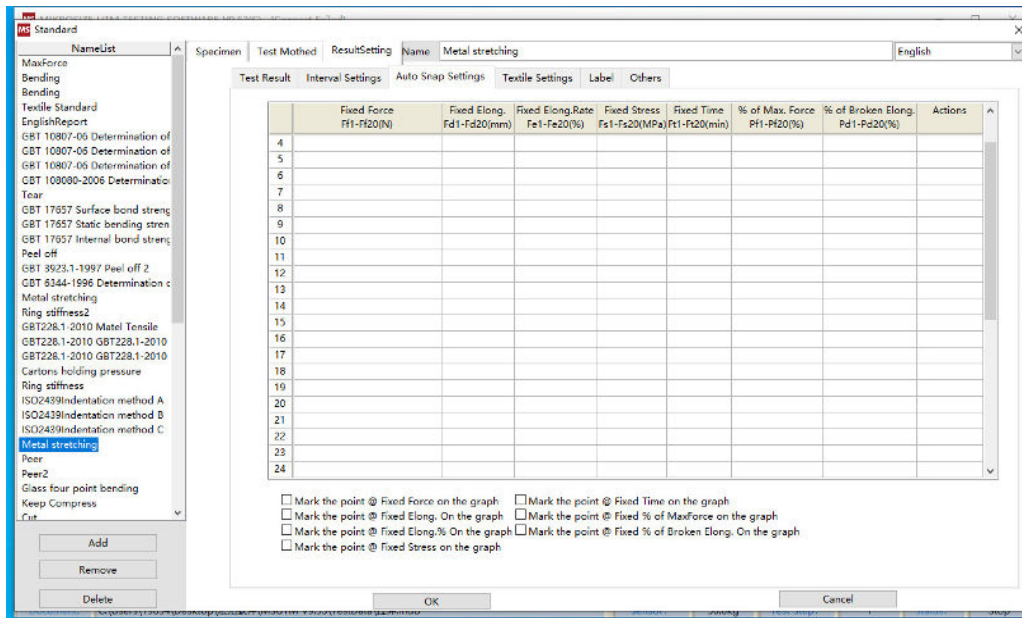
- The software classifies all test results into 11 categories for easy retrieval by customers.
- Users can also customize relevant test results.
- The added items will be displayed in the test report, allowing users to focus on the specific data they need.

## Mikrosize Software Interface

### Interval Settings



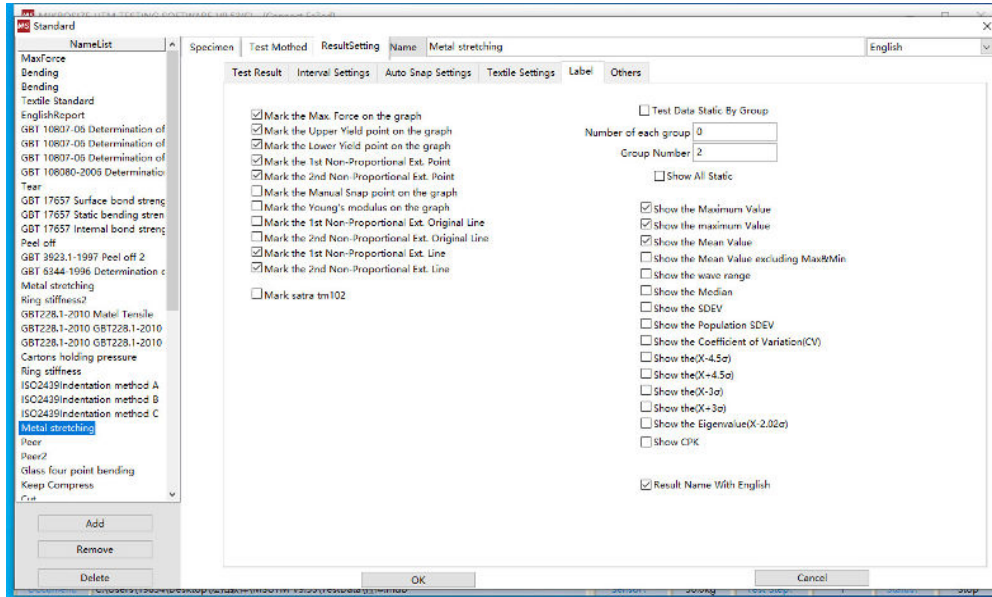
- It supports three modes of dividing intervals: deformation, time, and deformation percentage.



- 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

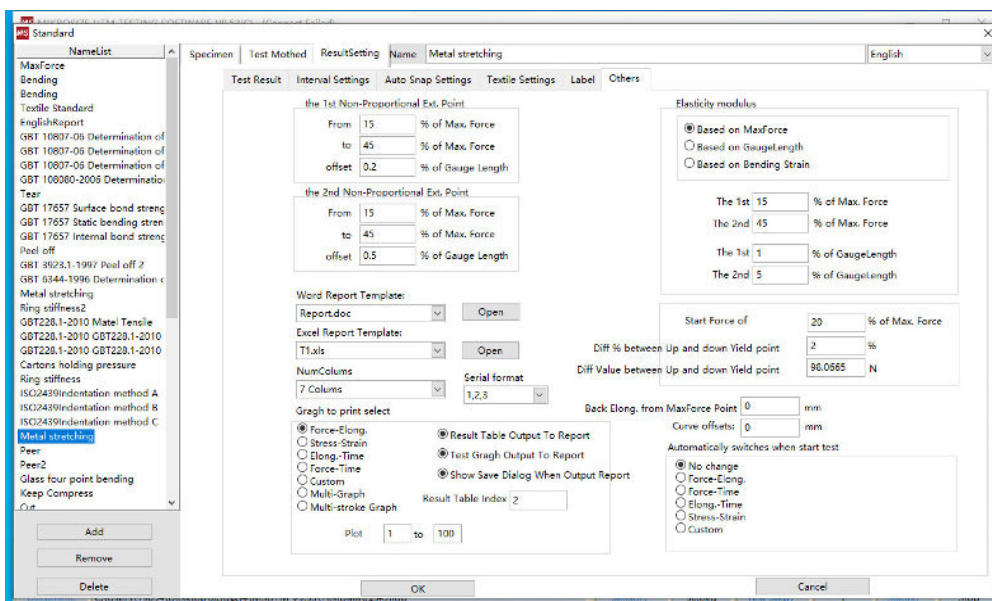
## Mikrosize Software Interface

### 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 re-

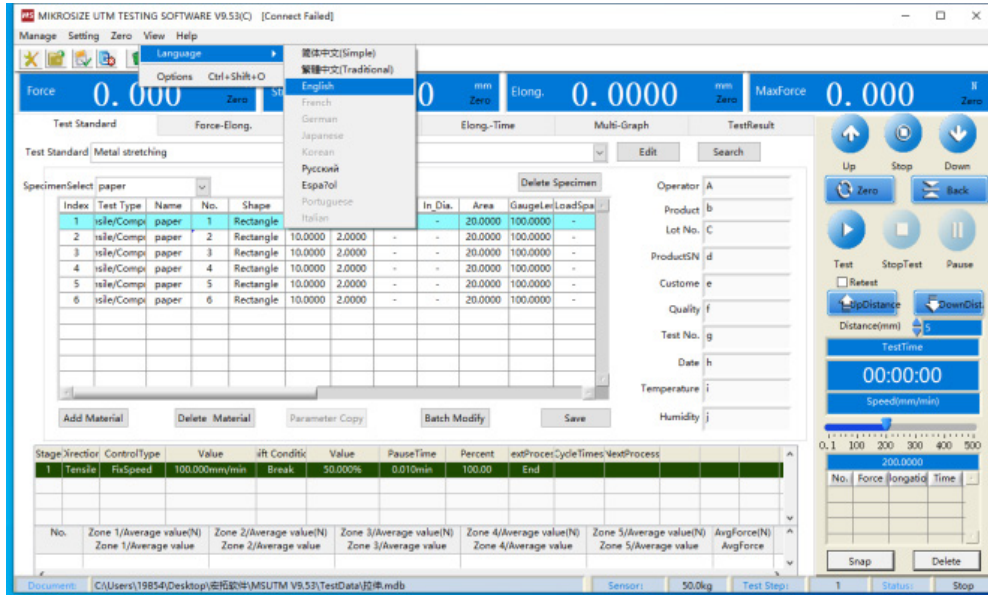
### Others



- 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.

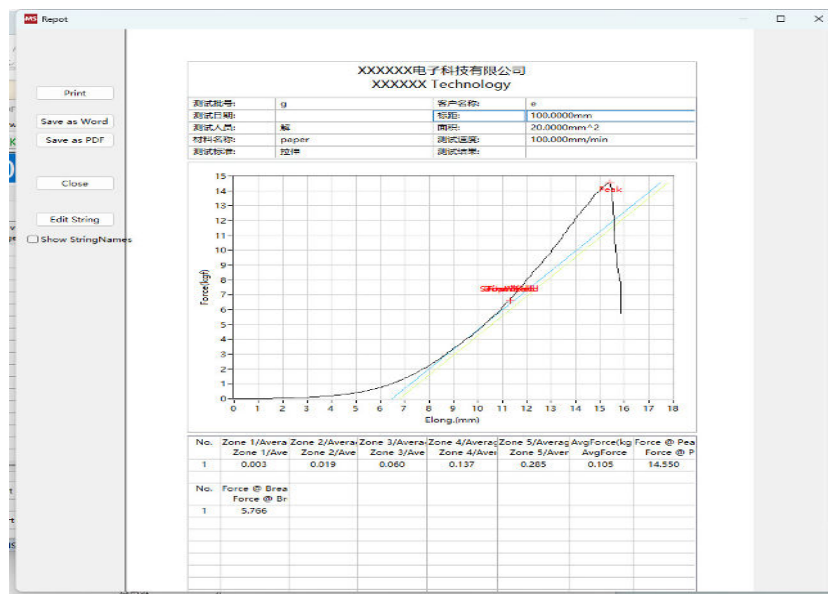
## Mikrosize Software Interface

### Language Selection



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

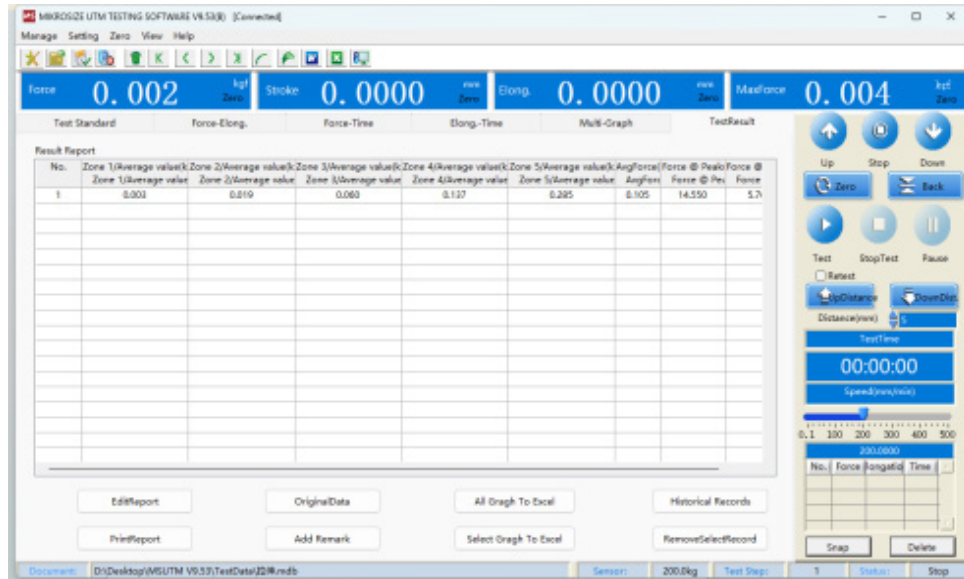
### Report Output



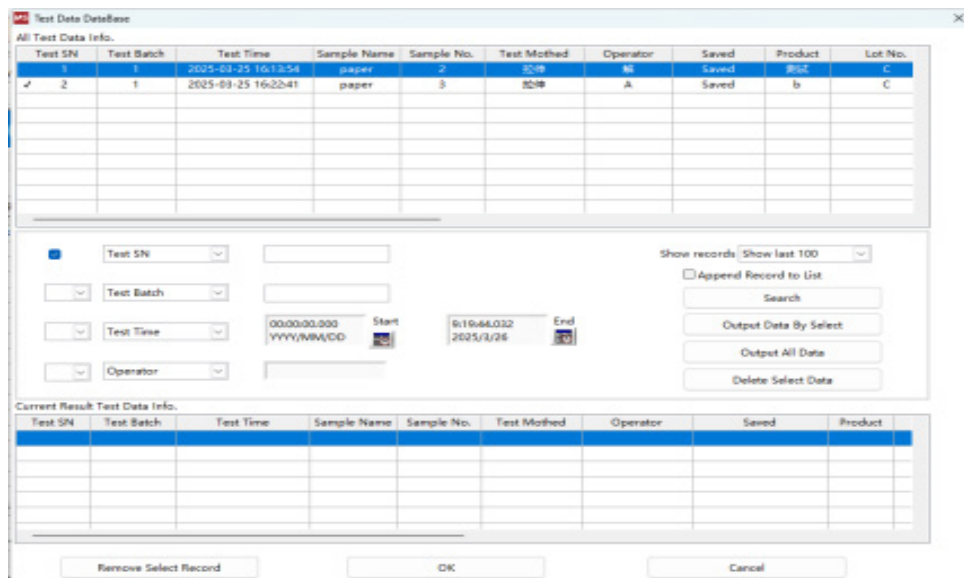
- The software comes with a simple result report, and users can edit the report. The output formats are PDF and Word. Users can also choose to output the report through the shortcuts on the top of the software, with options of Word and Excel.

## Mikrosize Software Interface

### Data Viewing and Searching



Test Results

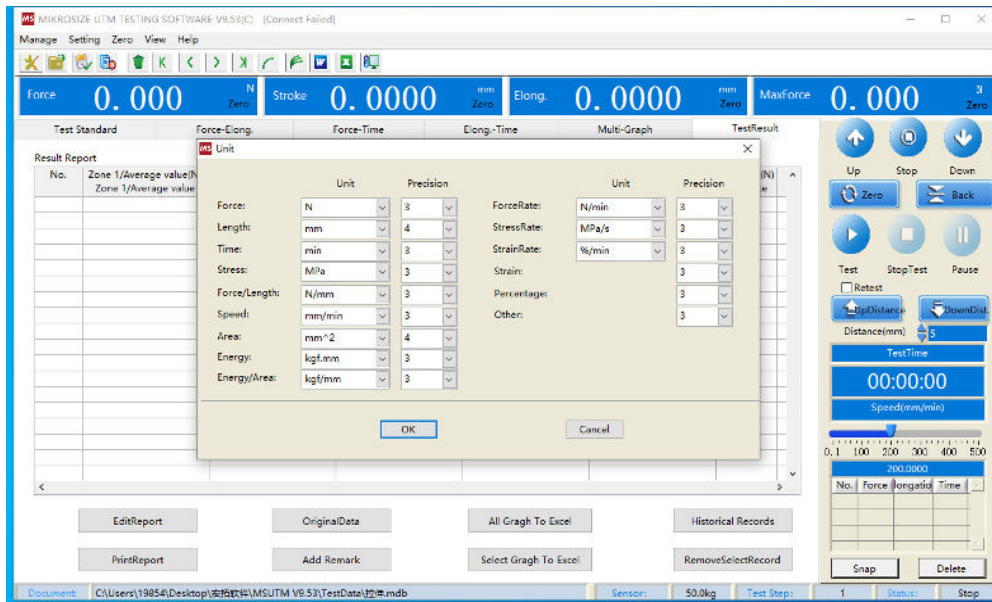


Historical Data

- 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

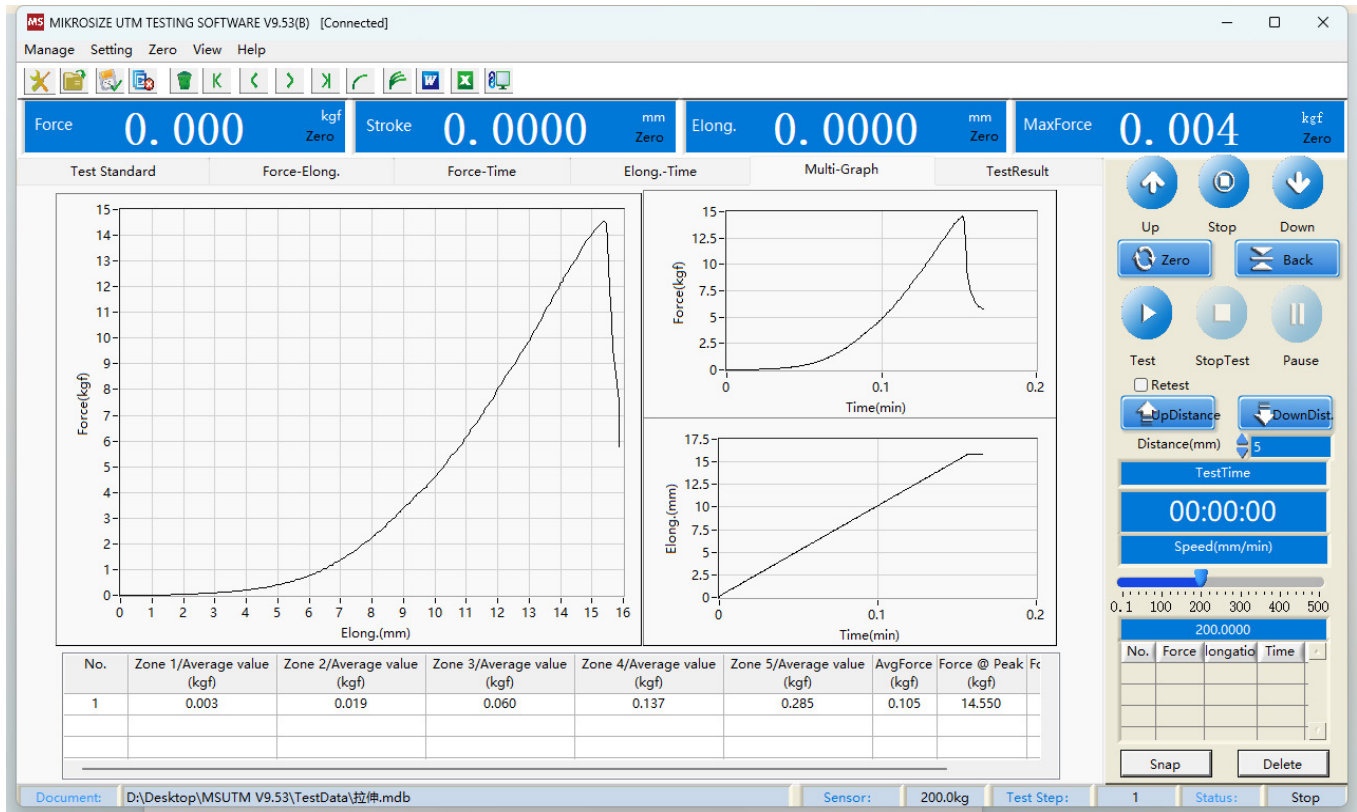


- There are multiple different units available for each parameter.
- Precision represents the number of decimal places.
- The parameter units determine the unit system of the entire system, and all parameter operations are performed based on this unit system.

<b>Force</b>	gf, kgf, N, kN, tf(SI), lbf, tf(long), tf(short), ozf, cN, mN
<b>Length</b>	mm, cm, m, in, km, $\mu$ m
<b>Time</b>	s, min, h
<b>Stress</b>	Pa, kPa, MPa, GPa, $\text{kN/m}^2$ , $\text{N/m}^2$ , $\text{N/cm}^2$ , $\text{N/mm}^2$ , $\text{kgf/m}^2$ , $\text{kgf/cm}^2$ , $\text{kgf/mm}^2$ , $\text{gf/cm}^2$ , $\text{gf/mm}^2$ , psi, kpsi, $\text{lbf/in}^2$ , $\text{lbf/ft}^2$ , $\text{gf/in}^2$ , $\text{gf/m}^2$
<b>Force/Length</b>	$\text{N/mm}$ , $\text{N/cm}$ , $\text{N/m}$ , $\text{kgf/mm}$ , $\text{kgf/cm}$ , $\text{kgf/m}$ , $\text{gf/mm}$ , $\text{gf/cm}$ , $\text{kN/m}$ , $\text{lbf/in}$ , $\text{gf/in}$ , $\text{kgf/in}$ , pli, $\text{kN/mm}$ , $\text{N/in}$
<b>Speed</b>	$\text{mm/min}$ , $\text{mm/s}$ , $\text{cm/min}$ , $\text{cm/s}$ , $\text{in/min}$ , $\text{in/s}$
<b>Area</b>	$\text{mm}^2$ , $\text{cm}^2$ , $\text{m}^2$ , $\text{in}^2$ , $\text{ft}^2$
<b>Energy</b>	$\text{kgf.mm}$ , $\text{kgf.cm}$ , $\text{kgf.m}$ , $\text{N.mm}$ , $\text{N.cm}$ , $\text{N.m}$ , $\text{lbf.in}$ , J, kJ, cal, kcal, $\text{gf.mm}$ , $\text{gf.cm}$ , $\text{gf.m}$
<b>Energy/Area</b>	$\text{gf/mm}$ , $\text{gf/cm}$ , $\text{kN/m}$ , $\text{lbf/in}$ , $\text{gf/in}$ , $\text{kgf/in}$ , pli

## Mikrosize Software Interface

### 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.






# Technical Specification

<b>Model</b>		UTM-TDC							
<b>Name</b>		Single Column Electronic Universal Testing Machin							
<b>Subdivision Model</b>		UTM-TSC-5	UTM-TSC-10	UTM-TSC-20	UTM-TSC-50	UTM-TSC-100	UTM-TSC-200	UTM-TSC-500	UTM-TSC-1000
<b>Capacity</b>	<b>KN</b>	0.05	0.1	0.2	0.5	1	2	5	10
	<b>KG</b>	5	10	20	50	100	200	500	1000
	<b>lb</b>	11	22	44	110	220	440	1102	2204
<b>Testing Machine Class</b>		Class 1							
<b>Force Unit</b>		g、Kg、lb、N、KN							
<b>Displacement Unit</b>		Inch、cm、mm							
<b>Effective Test Force</b>		0.4%~100%FS							
<b>Force Accuracy</b>		Within $\pm 1\%$ of Indication Value							
<b>Force Resolution</b>		1/300000							
<b>Displacement Accuracy</b>		Within $\pm 1\%$ of Indication Value							
<b>Displacement Resolution</b>		0.001mm							

# Technical Specification

<b>Deformation Measurement Range</b>	2%~100%FS
<b>Deformation Indication Accuracy</b>	Within $\pm 1\%$ of the indicated value
<b>Maximum Test Speed</b>	500mm/min (Optional 1000mm/min)
<b>Minimum Test Speed</b>	0.1mm/min
<b>Speed Accuracy</b>	Within $\pm 1\%$ of the indicated value
<b>Crossbeam Stroke</b>	No - fixture test stroke: 920mm
<b>Fixture Configuration</b>	Configured according to customer requirements
<b>Return Method</b>	Manual, Automatic
<b>Stop Method</b>	1. Automatically stop at the maximum fracture value 2. Stop when the upper and lower limit safety settings are reached
<b>Safety Device</b>	1. Mechanical travel switch protection 2. Emergency stop switch for emergency braking
<b>Overload Protection</b>	When reaching 100% of the maximum load, the machine automatically stops for protection
<b>Power Supply Voltage</b>	220V.AC/50Hz (Can be selected as 110V.AC/60Hz according to the country)
<b>Machine Size/Weight</b>	L*W*H:500mm*350mm*1160mm About 50kg
<b>Packaging Size/Weight</b>	L*W*H:550mm*500mm*1400mm About 73KG

## Standard Delivery

Name	Qty	Photo
Machine Mainframe	1pc	
Tensile Fixture	1pc	
Power Cord	1pc	/
Horizontal Adjusting Feet	4pcs	/
Instruction Manual	1copy	
Warranty Card	1copy	
Product Certificate	1copy	

## Optional Delivery

### Optional

Small deformed extensometers

Large deformation extensometer

Mini printer

Testing Software

Other types or customized fixtures

Computer

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