



# UTM-H300/H600/H1000

**Computerized Electro-Hydraulic Servo  
Hydraulic Universal Testing Machine**



## Contact us

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# Features and Applications

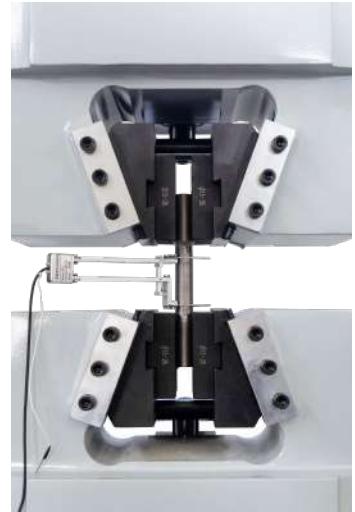
## Product Features

- Suitable for tension, compression, bending and shear tests of metals and non-metals (including composite materials).
- Adopts electro-hydraulic servo closed-loop control, which can accurately control the flow of hydraulic oil through the servo valve and apply load through the oil cylinder
- Oil cylinder lower-mounted main machine, with tension test space on the upper part and compression/bending test space on the lower part.
- The motor drives the lead screw to rotate to control the lifting of the crossbeam, so as to adjust the tension and compression space.
- Equipped with a special electro-hydraulic servo oil source control cabinet, with indicating instruments, control buttons and emergency stop buttons.
- Built-in controller, which can realize constant speed test force, constant speed displacement, constant speed strain, constant speed load cycle and other tests.
- Equipped with a wired remote control box, which can control the opening and closing of the fixture to clamp the sample.
- Four-column and two-lead screw design, with stable structure and high rigidity, which can meet high-strength testing requirements.
- Equipped with a metal wire protective cover to prevent splashes from causing harm to experimenters when the sample breaks.
- It has multiple protection functions such as overload and overpressure emergency stop protection, as well as mechanical limit devices.
- Cooperating with special measurement and control software, it can realize real-time measurement and display of experiments, real-time control, data processing, result output and other functions.
- The software supports multiple operating systems such as Win7, Win10 and Win11.
- The software has the function of automatically judging sample breakage and will stop automatically.
- The report template is editable and supports multiple output formats.
- After the test, it can return to the initial position manually or automatically at high speed
- A variety of optional fixtures are available. In addition to the standard tension and compression fixtures, fixtures can be customized according to user needs.
- Supports the use with extensometers (optional).
- The design meets the standards: ASTM E4, ISO 7500-1, EN 10002-2, BS 1610, DIN 51221, etc.

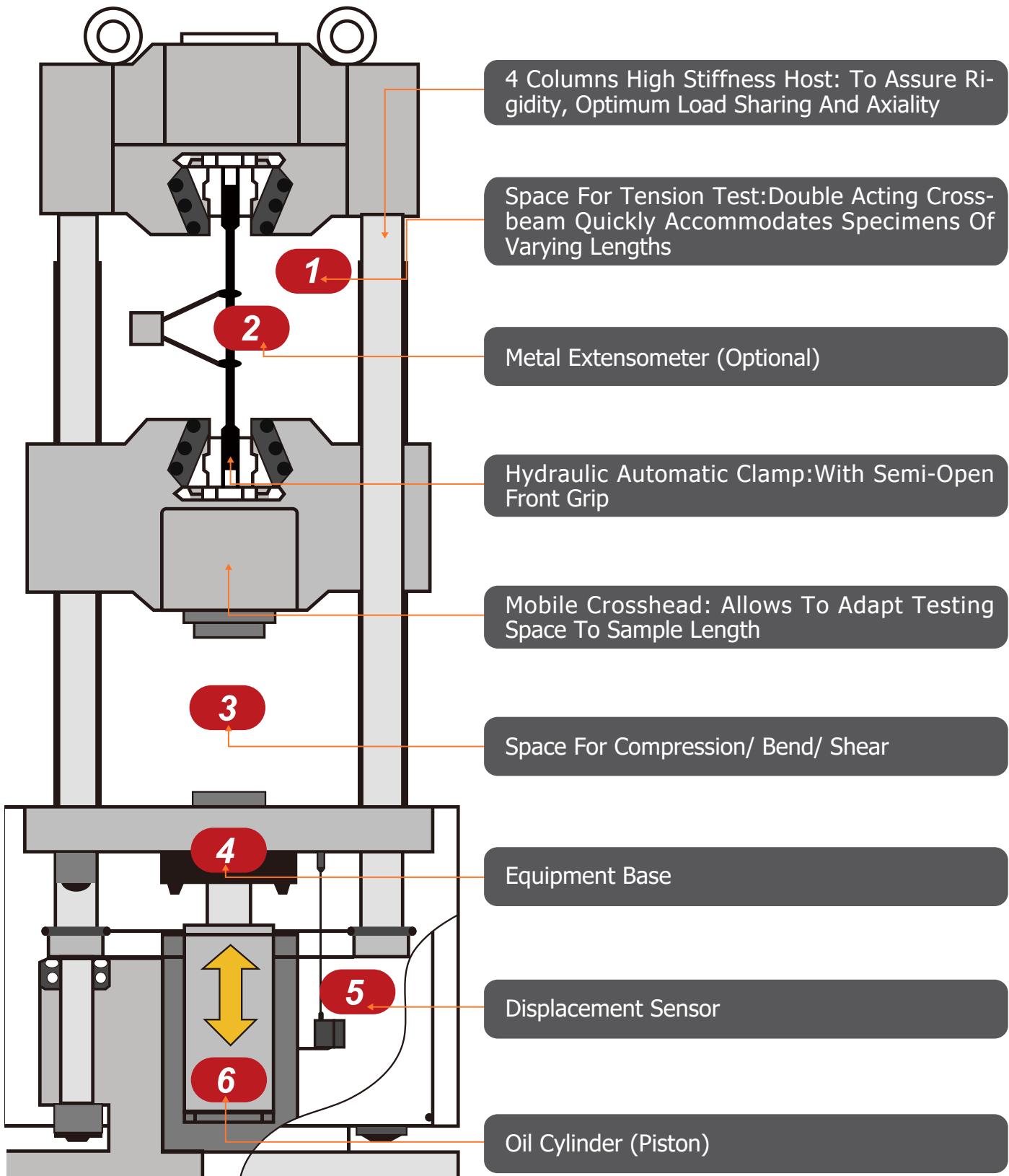
## Features and Applications

### Product Applications

- Basic mechanical property testing of metal materials.
- Performance and structure verification of composite materials.
- Quality inspection of construction and civil engineering materials.
- Reliability and failure analysis of auto parts.
- Ultimate performance verification of aerospace and high-end equipment.



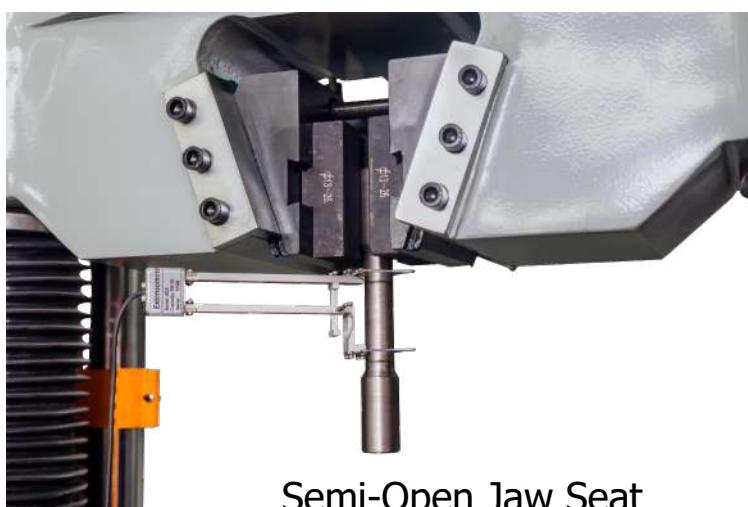
# Instrument Appearance



# Product Details



- Equipped with a special electro-hydraulic servo oil source control system, installed with indicating instruments to monitor the equipment parameters in real time, including clamping pressure, system pressure and oil temperature
- The button on the right can control the on/off of the oil pump, with an electro-hydraulic indicator light to prompt the user of the current state of the equipment, and an emergency stop switch is also installed



Remote Control

- Adopts a semi-open jaw seat, and a backing plate is set between the jaw clamp plate and the jaw seat to prevent the jaw seat from being worn
- The wired remote control box cooperates with the jaws to realize the clamping of samples and the adjustment of the experimental space

## Product Details



- Professional microcomputer control measurement and control system, used to connect the computer and the testing machine, and realize the control of the testing machine on the computer through the measurement and control system.
- Each part has a special interface, which is on the back of the measurement and control box, and the types are different to avoid control failure caused by wrong connection.



- The oil pump drives the bottom piston as the power source to generate load.
- The maximum piston stroke is 250mm, and the piston moving speed is 0-80mm/min.



## Product Details



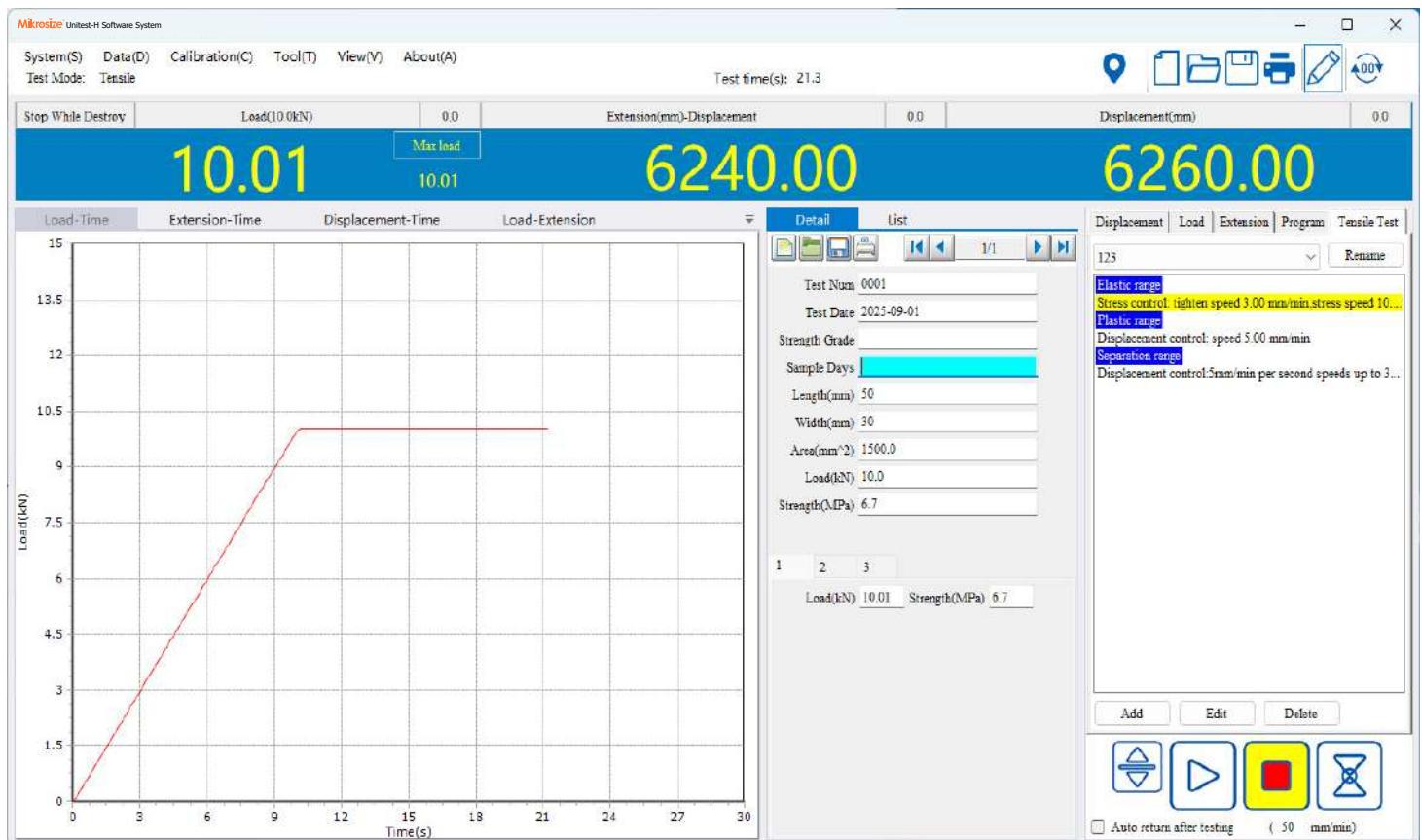
- The oil cylinder is installed at the lower part, making full use of the space of the control cabinet
- An oil level indicating device is installed on the front to prompt the user to add hydraulic oil to the appropriate position and indicate the remaining hydraulic oil capacity in the oil tank



- Standardly equipped with a metal protective cover to prevent splashes from causing harm to personnel during the experiment

# Software Interface

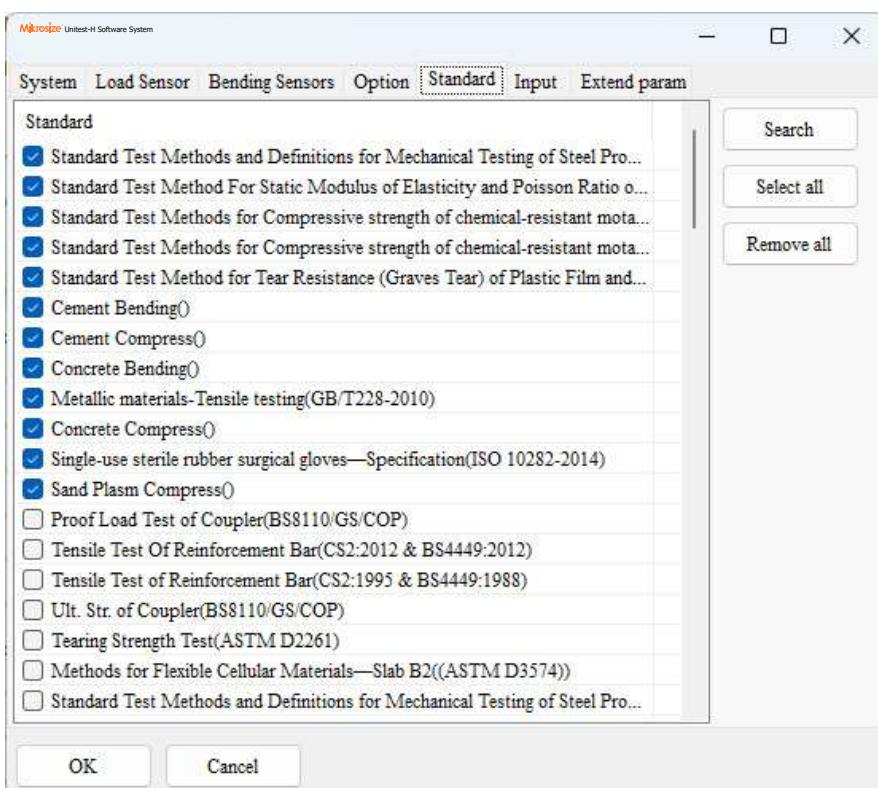
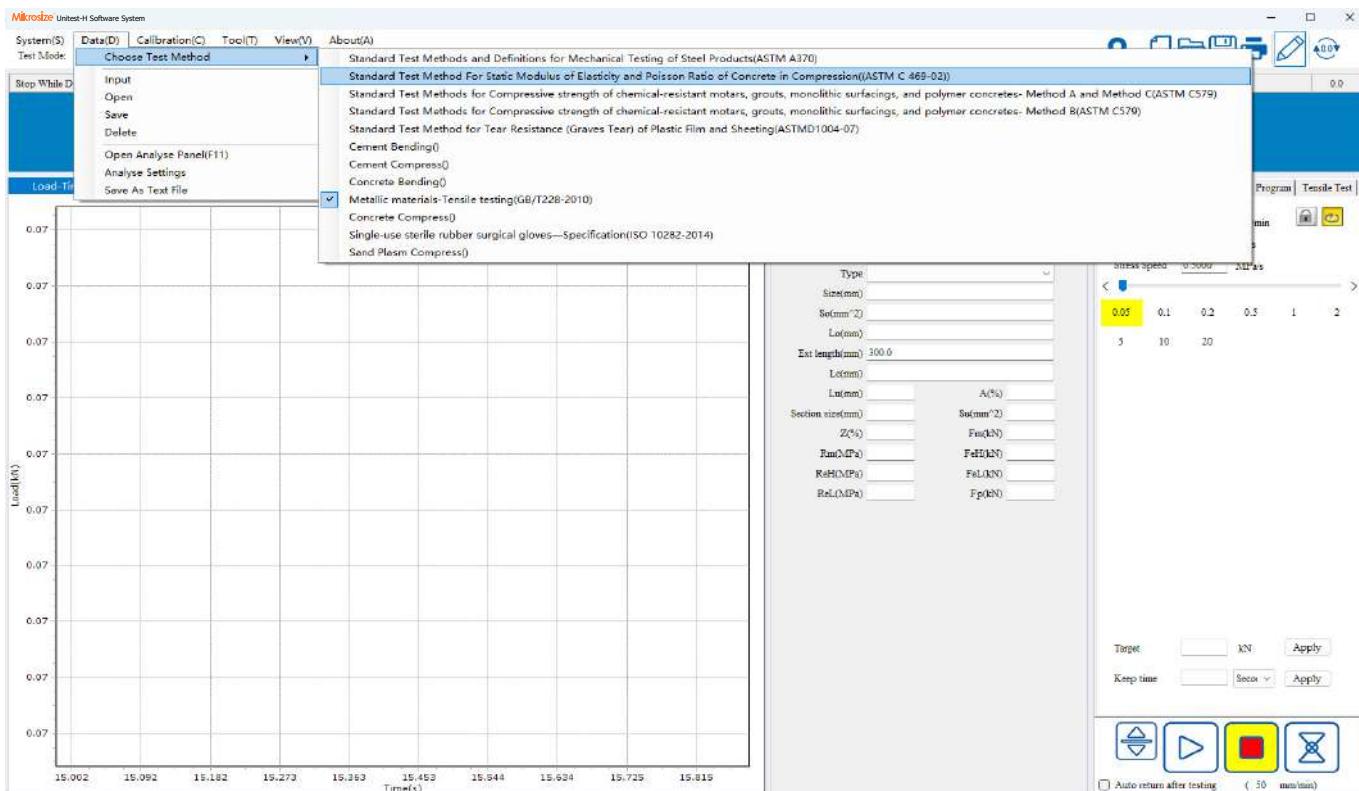
## Main Interface



- The software has rich functions and adopts a shortcut module design. Common functions are directly displayed on the home page, avoiding the need to enter the secondary menu interface every time, saving user time and improving experimental efficiency.

# Software Interface

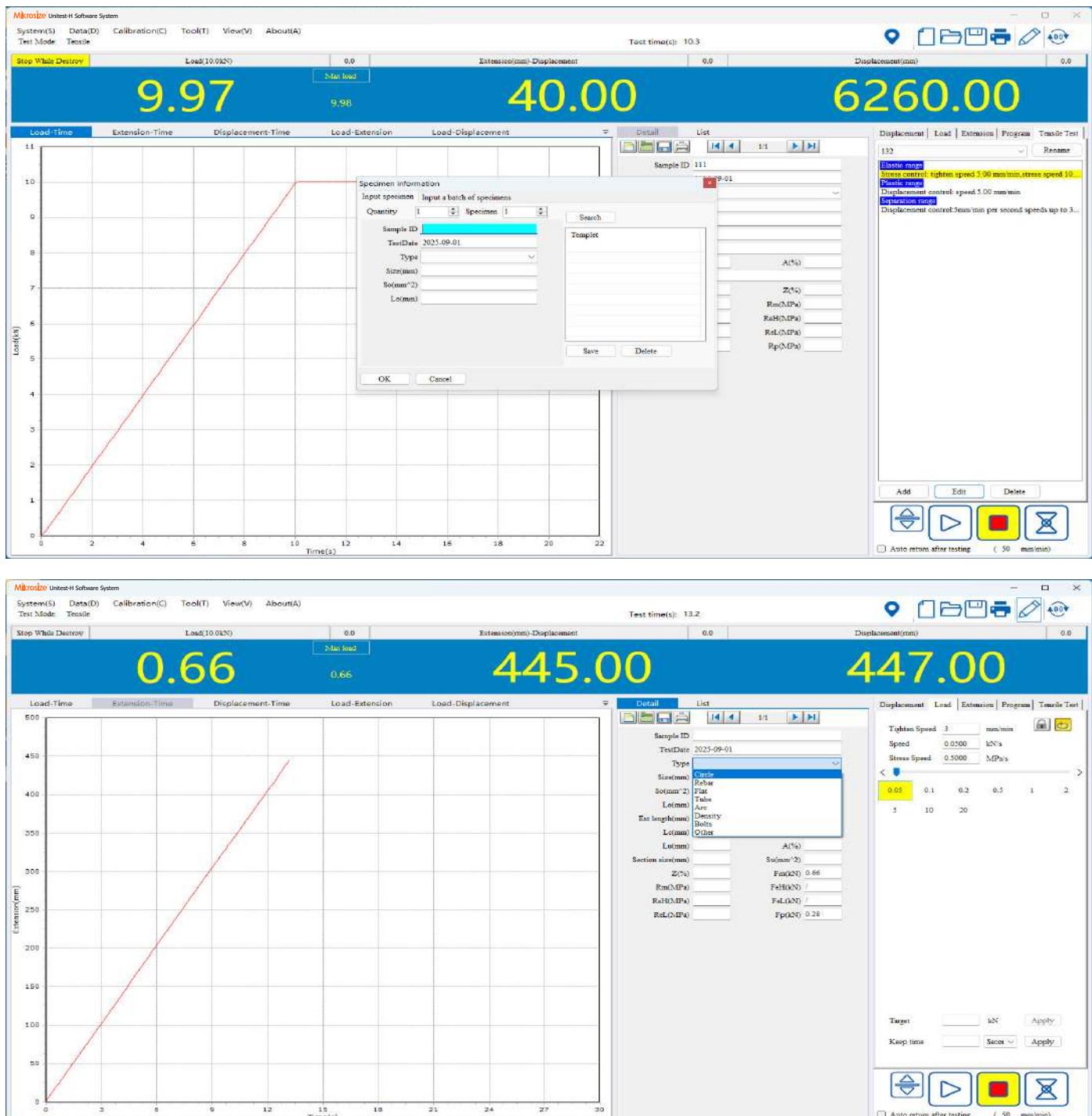
## Select Test Standard



- First, you need to select the appropriate test standard. Users can add commonly used standards from the standard library to the software, and just check them in the standard library to add

# Software Interface

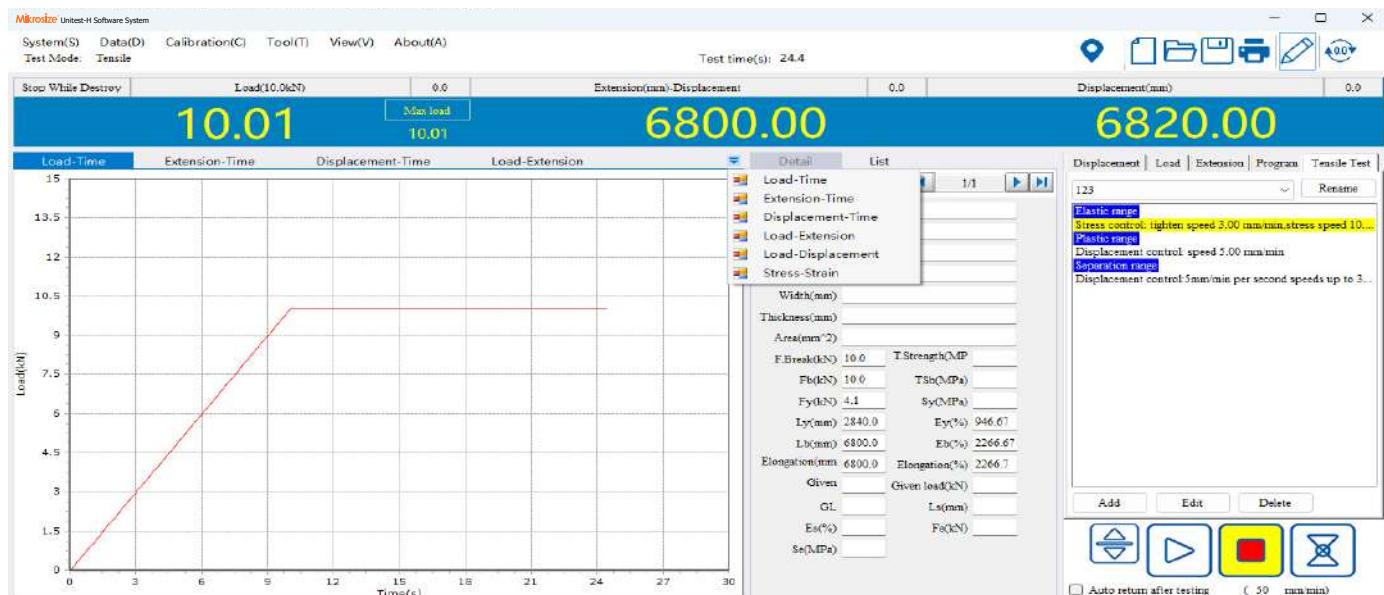
## Create New Sample



- After selecting the appropriate test standard, you need to create new sample information, including: sample name, test date, sample type, sample size, etc.
- The software has built-in multiple sample shapes, including bars, plates, pipes, bolts, etc., which can meet user needs.

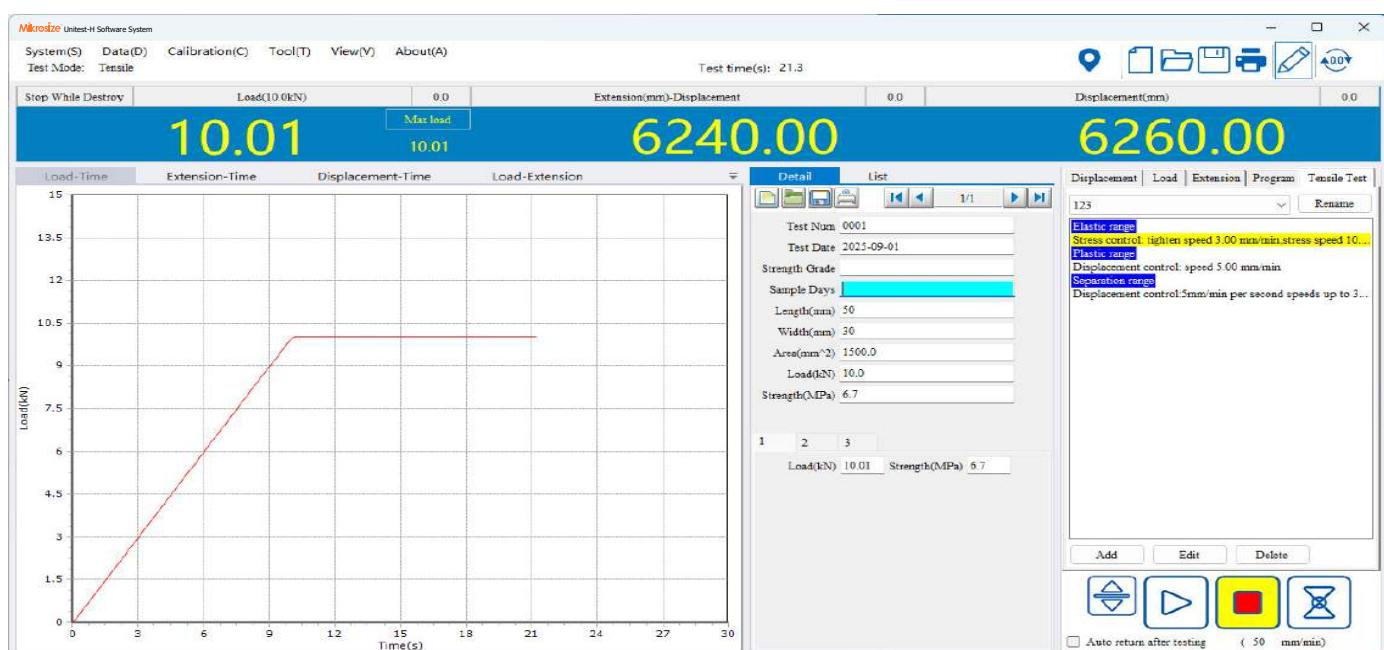
# Software Interface

## Curves



- The software can generate curves in real time. The software has four default types of curves: Load-Time; Extension-Time; Displacement-Time; Load-Extension
- Curve coordinate parameters are optional.

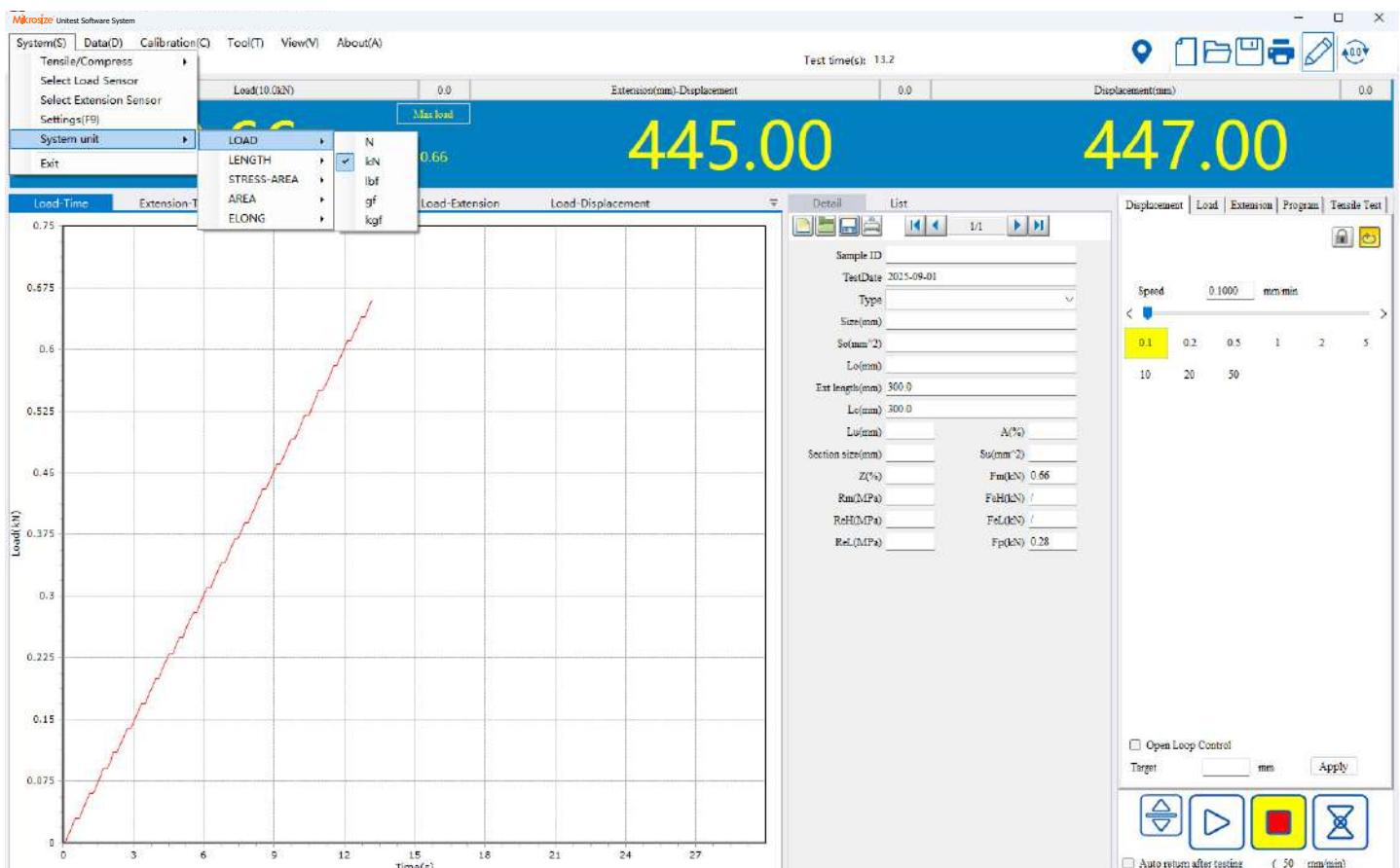
## Common Parameters



- The top of the software displays three most commonly used experimental parameters in eye-catching colors, which is convenient for users to obtain information in time.
- Load; Extension; Displacement.

# Software Interface

## Common Parameters

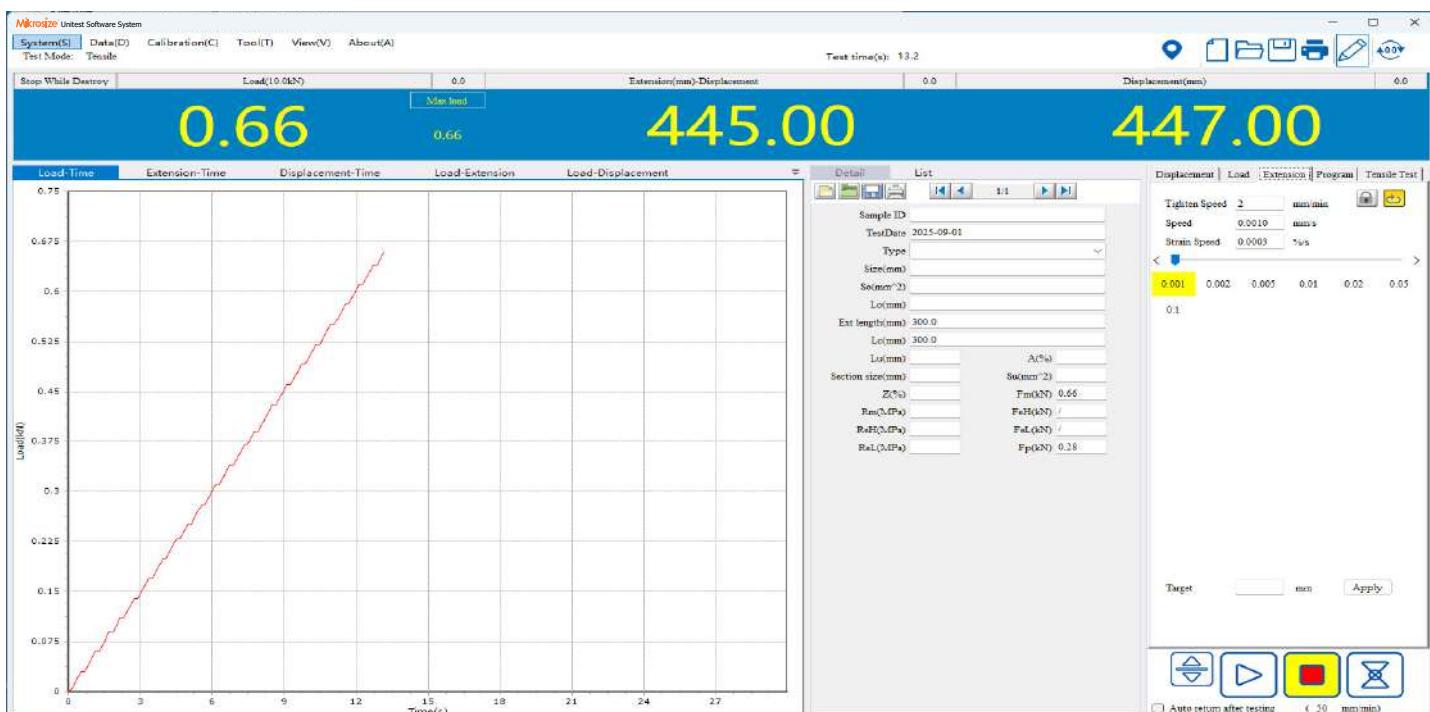
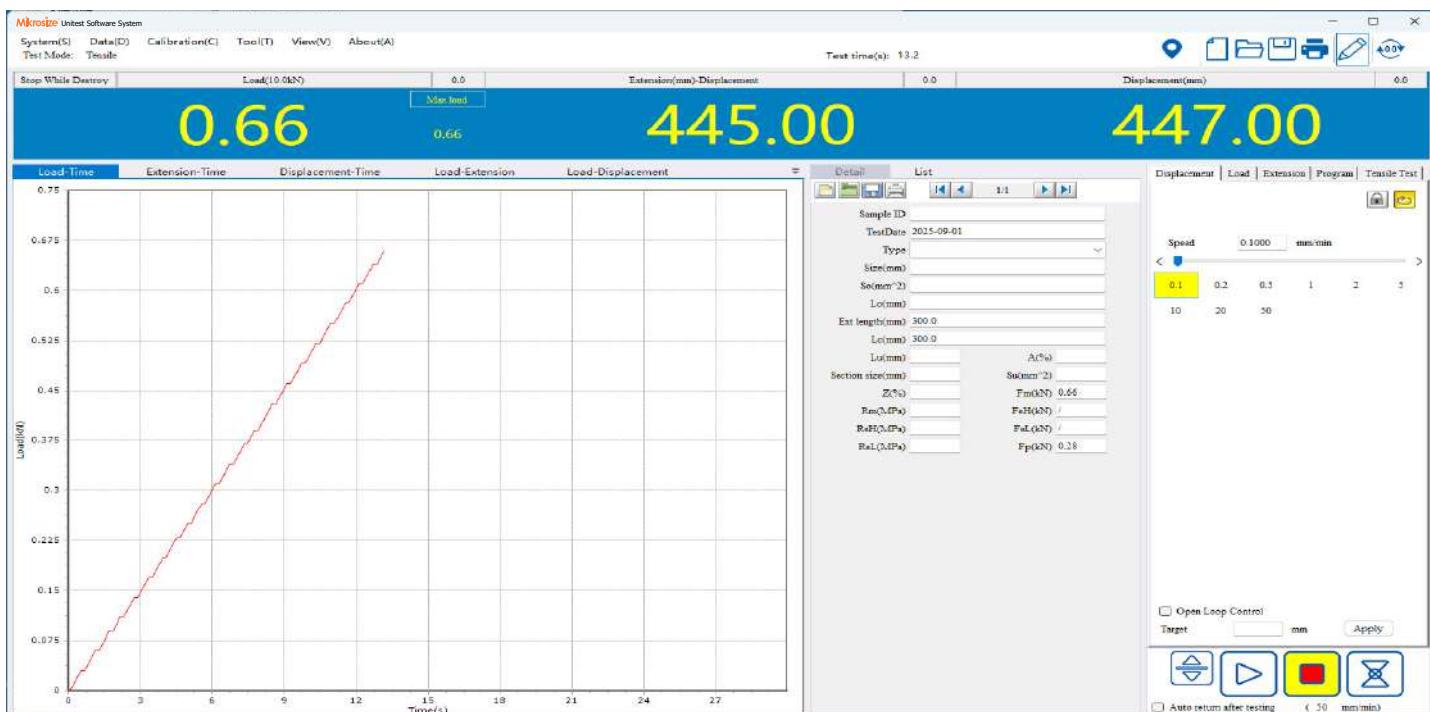


- Each parameter has multiple units optional
  - Load: N; KN; lbf; gf; kgf
  - Length: mm; m; in
  - Stress-area: MPa; PSI
  - Area: mm<sup>2</sup>; in<sup>2</sup>
  - Elong: mm; m; in

# Software Interface

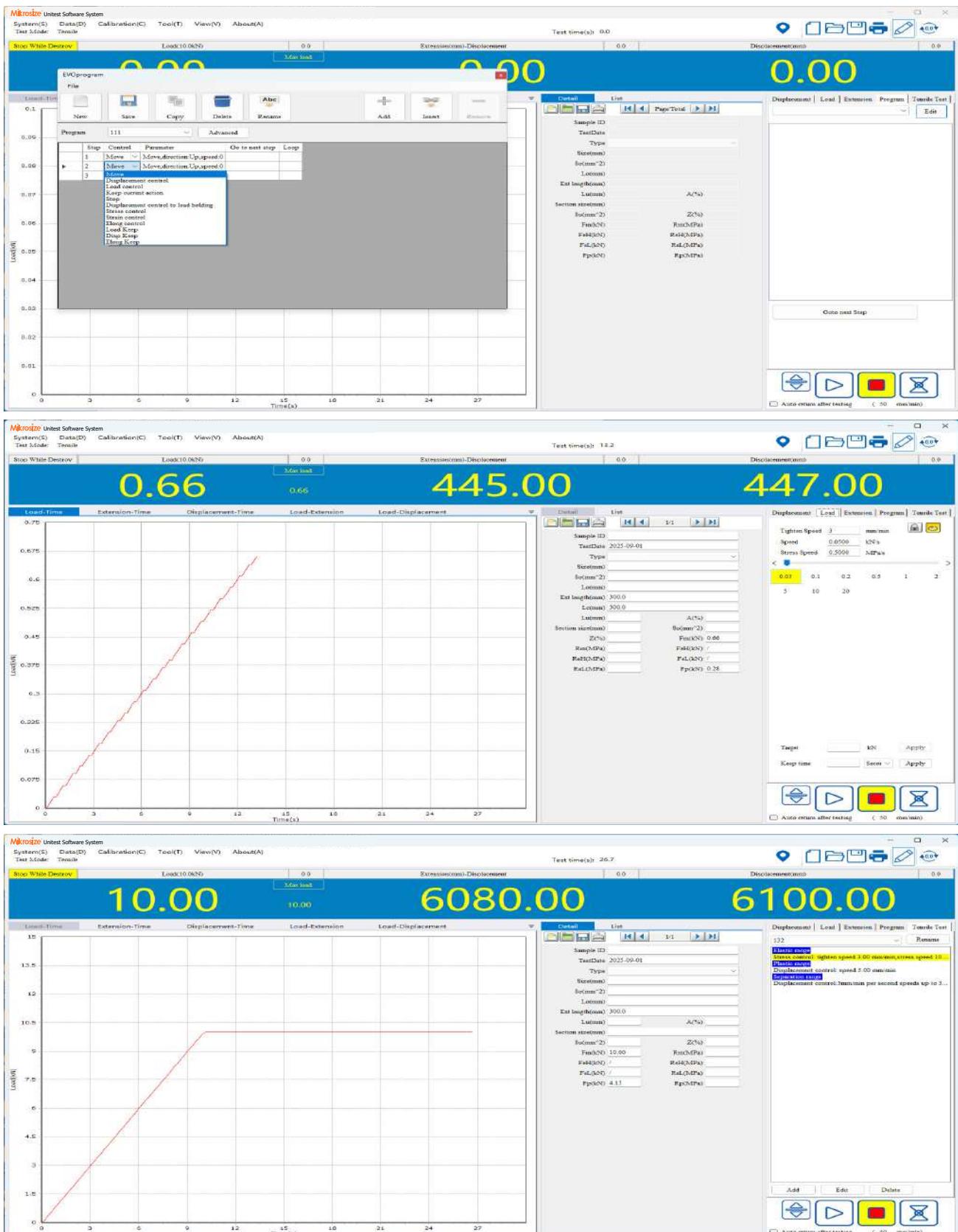
## Control Modes

- The software includes five control modes: force value, displacement, deformation, program control, and tension scheme
- For simple experiments, constant displacement and constant force control can be selected; for multi-step complex experiments, users can edit the experimental steps by themselves



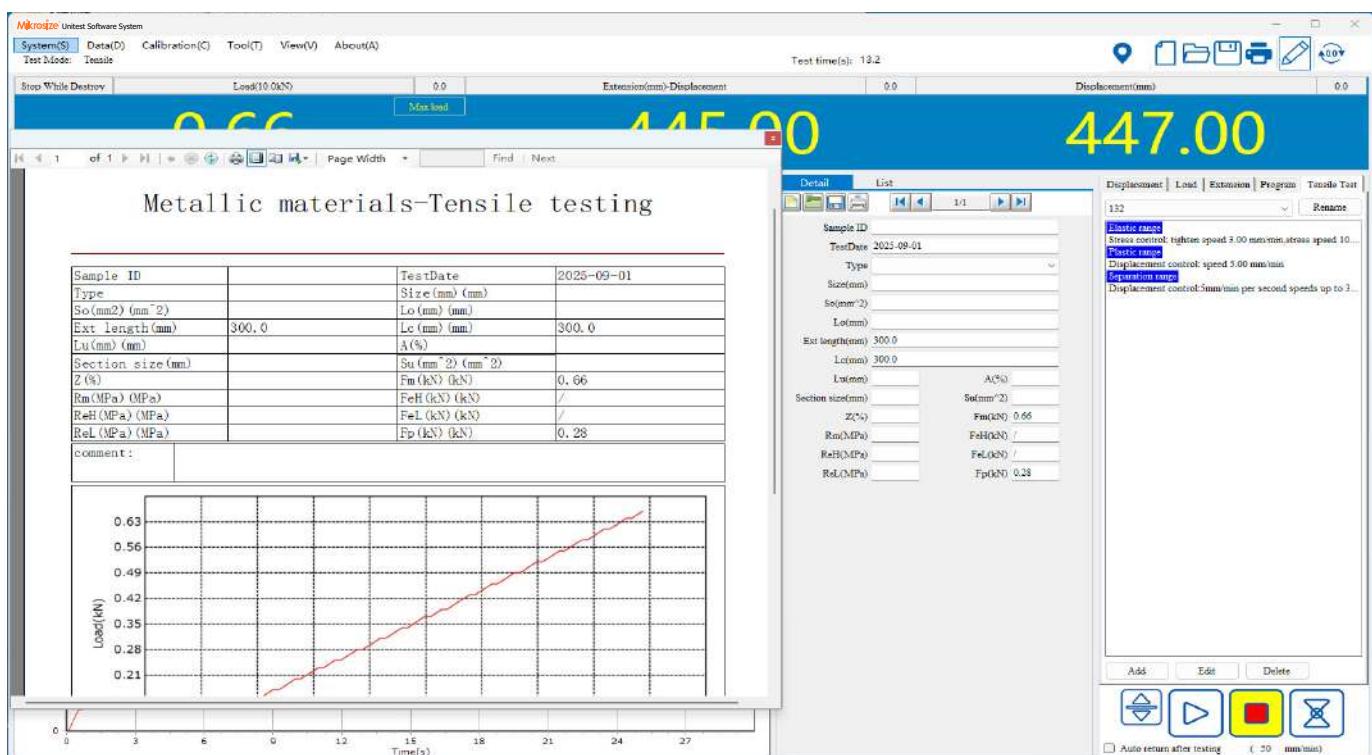
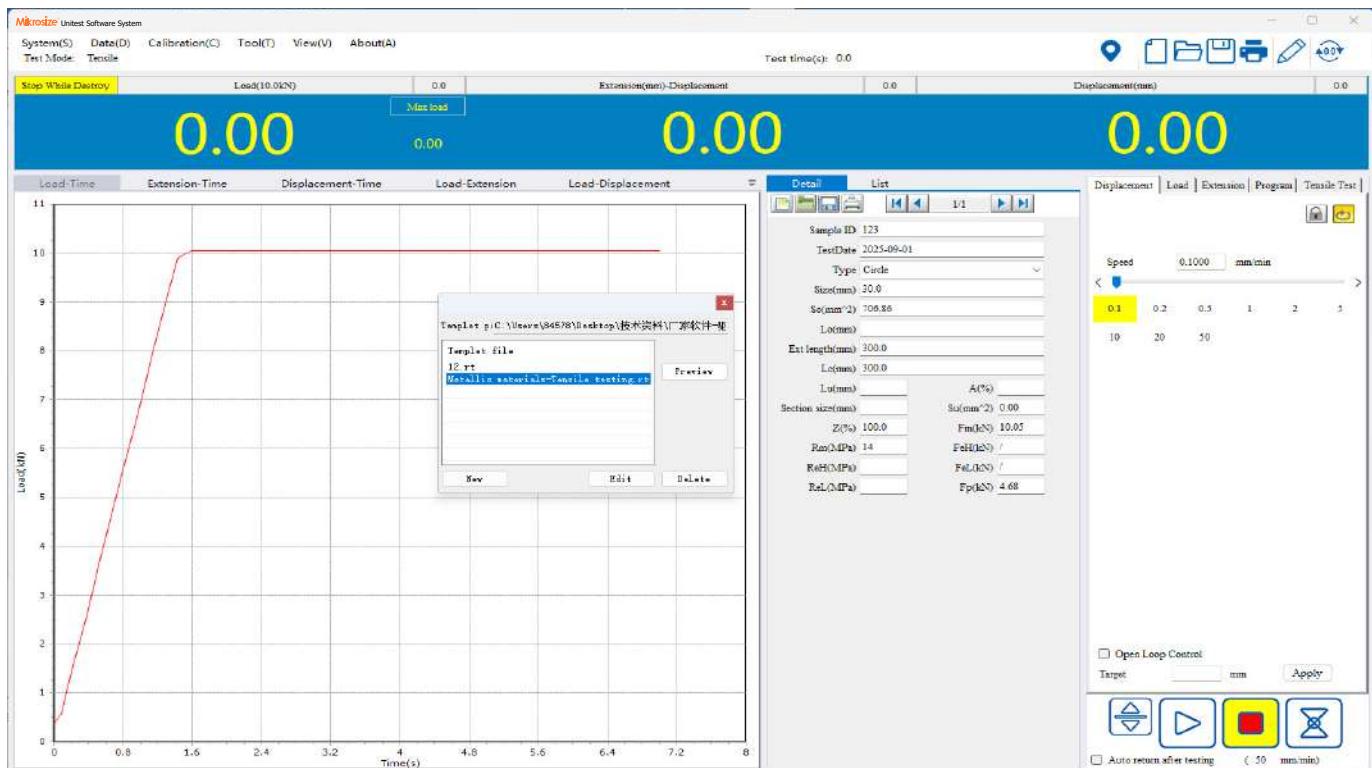
# Software Interface

## Control Modes



# Software Interface

## Data Printing and Output



- The data and curve graphs obtained after the experiment can be directly printed out by the printer

# Software Interface

## Experimental Report

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54

+

Metalllic materials-Tensile testing

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Sample ID	123	TestDate	2025-09-01
Type	Circle	Size (mm) (mm)	30.0
S <sub>0</sub> (mm <sup>2</sup> ) (mm <sup>2</sup> )	706.86	L <sub>0</sub> (mm) (mm)	/
Ext length (mm)	300.0	L <sub>c</sub> (mm) (mm)	300.0
L <sub>u</sub> (mm) (mm)	/	A (%)	/
Section size (mm)	/	S <sub>u</sub> (mm <sup>2</sup> ) (mm <sup>2</sup> )	0.00
Z (%)	100.0	F <sub>m</sub> (kN) (kN)	10.05
R <sub>m</sub> (MPa) (MPa)	14	F <sub>eH</sub> (kN) (kN)	/
R <sub>eH</sub> (MPa) (MPa)	/	F <sub>eL</sub> (kN) (kN)	/
R <sub>eL</sub> (MPa) (MPa)	/	F <sub>p</sub> (kN) (kN)	4.68

comment:

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Load(kN)

Extension(mm)

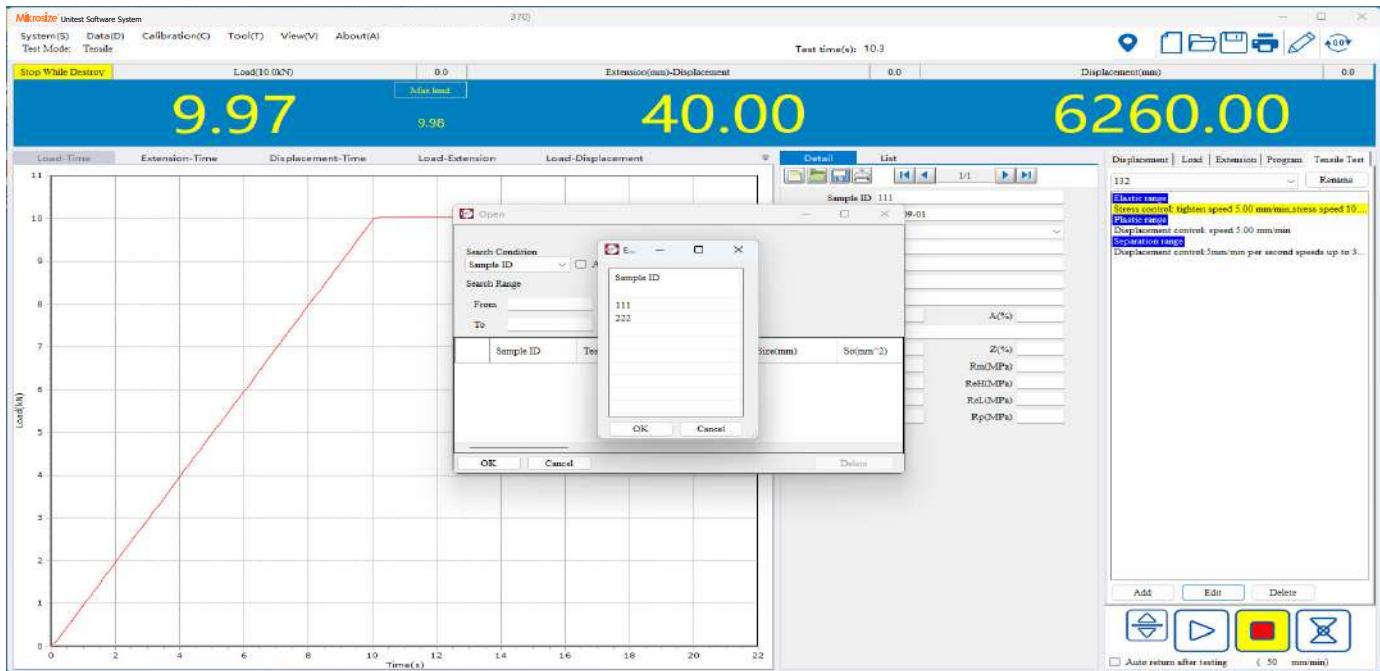
Checker: \_\_\_\_\_ Approver: \_\_\_\_\_ Tester: \_\_\_\_\_

Printed in: 2025-09-01

- Experimental data can also generate reports, and the reports have three output formats: Word, Excel, PDF.

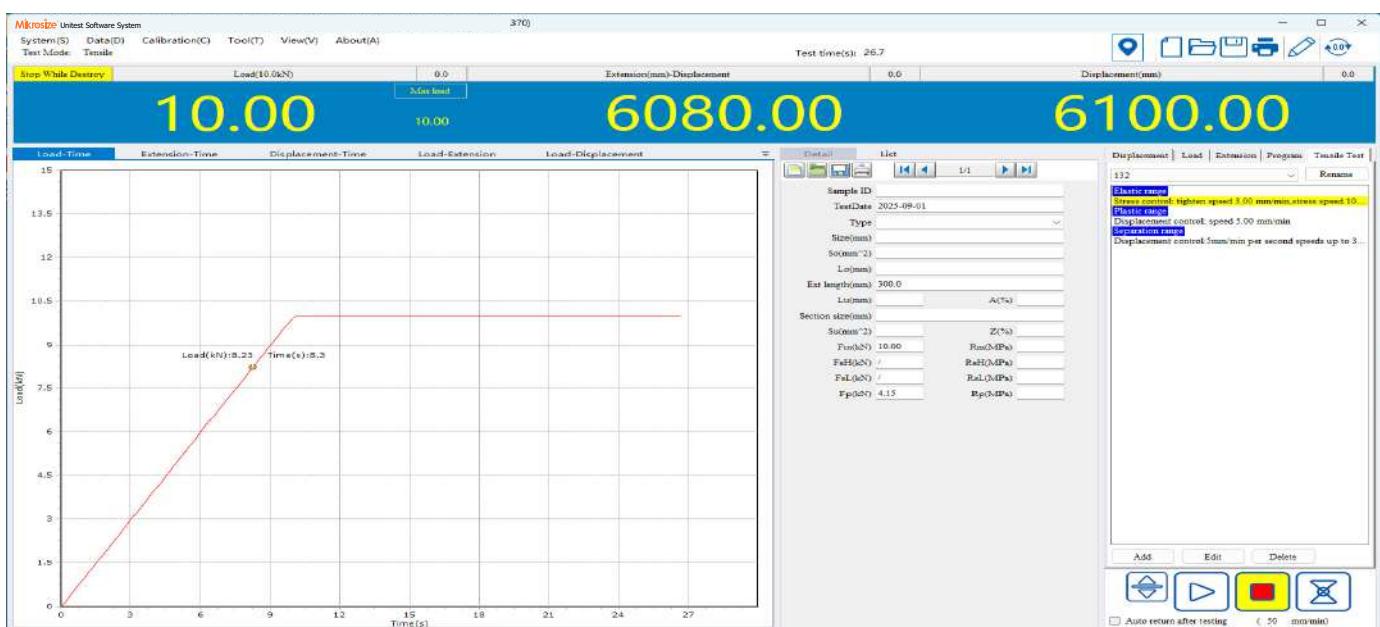
# Software Interface

## Search Historical Data



- It has the function of searching historical data, supporting search by different parameters such as sample name and test time

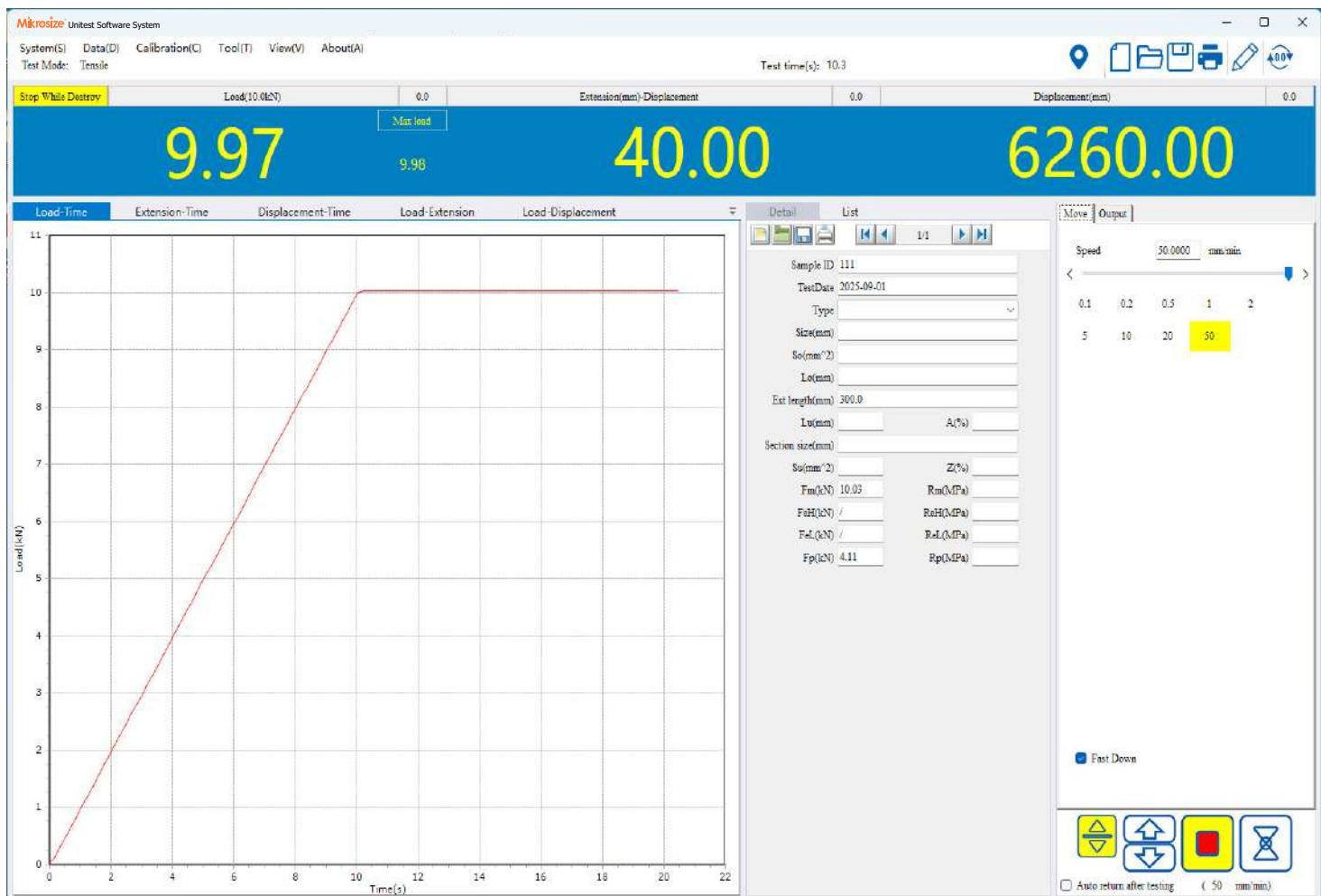
## Display Coordinates



- Supports the coordinate display function. After opening, click any point on the curve graph to display the coordinate value of that point, and the specific parameter value can be obtained according to the curve XY axis parameters

# Software Interface

## Crossbeam Control



- Click the leftmost button in the red box. After the button lights up, enter the crossbeam control interface
- The experimental space can be changed by controlling the lifting of the crossbeam, which can be used to clamp the sample
- Supports the function of automatically returning to the initial position after the test is completed, which needs to be manually checked.

## Ordering Information



UTM-H300 Computerized Electro-Hydraulic Servo Hydraulic Universal Testing Machine

UTM-H600 Computerized Electro-Hydraulic Servo Hydraulic Universal Testing Machine

UTM-H1000 Computerized Electro-Hydraulic Servo Hydraulic Universal Testing Machine

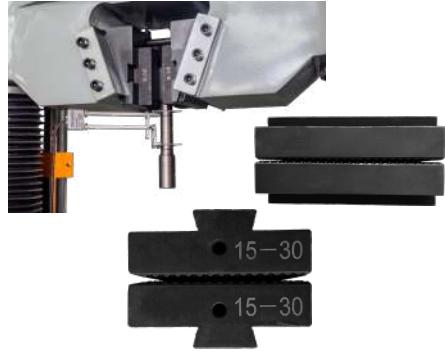
# Technical Specification

<b>Name</b>	Computerized electro-hydraulic Servo hydraulic universal testing machine		
<b>Model</b>	UTM-H300	UTM-H600	UTM-H1000
<b>Number of Columns</b>	4 (2 columns and 2 screws)	6 (4 columns and 2 screws)	
<b>Load Capacity</b>	300KN/30000kgf	600KN/60000kgf	1000KN/100000kgf
<b>Calibration Standard</b>	Class 1 (optional class 0.5)		
<b>Testing load Accuracy</b>	±1% (optional ±0.5%)		
<b>Load Measuring Range</b>	1%~100%F.S		
<b>Load Resolution</b>	1/500,000 of FS		
<b>Displacement Resolution</b>	0.001mm		
<b>Displacement Accuracy</b>	≤±0.5% of indicating value		
<b>Deformation Measuring Range</b>	1%~100%FS		
<b>Deformation Resolution</b>	1/±500000fs of the max deformation		
<b>Deformation Accuracy</b>	≤±0.5% of indicating value		
<b>Overload Protection</b>	≥5% of full range		
<b>Max. Tensile Testing Space</b>	550mm	600mm	650mm
<b>Max. Compression Testing Space</b>	500mm	550mm	550mm
<b>Distance Between Two Columns</b>	400mm	400mm	550mm
<b>Max. Piston Stroke</b>	200mm	250mm	250mm

# Technical Specification

<b>Testing Speeds</b>	0-80mm/min	0-80mm/min	0-80mm/min
<b>Cross Beam Adjustment for Max Speed</b>	About 200 mm/min	About 200 mm/min	About 200 mm/min
<b>Control Mode</b>	Force closed loop control, deformation closed loop control, displacement closed loop control		
<b>Force Control Controls The Speed Range</b>	0.001%~5%FS/s		
<b>Deformation Control Controls Speed Range</b>	0.001%~5%FS/s		
<b>Clamping Mode</b>	Built-in wedge type hydraulic automatic clamping		
<b>Overall Dimensions of The Jaws</b>	70*70mm	80*80mm	80*80mm
<b>Round Specimen Clamping Dia. Range</b>	Φ4-Φ10mm, Φ10-Φ20mm (Optional: Φ20-Φ32mm)	Φ13-Φ26; Φ26-Φ40mm (Optional: Φ6-13mm)	Φ13-Φ26 (Optional:Φ26-Φ40mm;Φ6-13mm)
<b>Flat Specimen Clamping Thickness Range</b>	0~15mm	0~15mm (Optional:15~30mm)	0~15mm (Optional:15~30mm)
<b>Compression Plate Dimensions</b>	Φ160mm	Φ160mm	Φ160mm
<b>Load Frame Dimension (L*W*H)</b>	730*590*1900mm	780*650*2000mm	900*660*2150mm
<b>Oil Power Dimension (L*W*H)</b>	1250*1000*1000 mm	1250*1000*1000 mm	1250*1000*1000 mm
<b>Power Supply</b>	3P 380V±10%,50-60HZ,2.3kW	3P 380V±10%,50-60HZ,2.3kW	3P 380V±10%,50-60HZ,2.3kW
<b>N.W.</b>	1400kg	1550kg	1780kg
<b>Operating Temperature</b>	0 to +38° C (+32 to +100° F)		
<b>Humidity Range</b>	10% to 90% non-condensing		

# Standard Delivery

Name	Qty	Photo
<b>Host Frame</b>	1 set	
<b>Hydraulic Automatic Wedge Tensile Grip</b>	1 set/each	
<b>Φ160mm Compression Fixture</b>	1 set	
<b>3-Point Bending Fixture</b>	1 set	
<b>Safety Screening</b>	1 set	
<b>Control Cabinet</b>	1 set	
<b>Oil Box</b>	1 set	

# Standard Delivery

Name	Qty	Photo
<b>Servo Motor And Drive System</b>	1 set	
<b>Plunger Pump</b>	1 set	
<b>Hydraulic Integrated Valve Block</b>	1 set	
<b>Pressure Gage</b>	1 set	 Clamping pressure      System pressure
<b>High-Pressure Oil Pipe</b>	1 set	
<b>Magnetic Exchange Valve</b>	1 set	
<b>Measure and Control Software</b>	1 set	
<b>Control System</b>	1 copy	

# Standard Delivery

Name	Qty	Photo
Load Cell	1 set	
Hand-Held Controller	1 set	
Displacement Sensor	1 set	
HP Computer	1 set	
HP Printer	1 set	
Instruction Manual	1 copy	
Warranty Card	1 copy	
Product Certificate	1 copy	
Calibration Certificate	1 copy	

# Optional Delivery

Name	Qty	Photo
Electronic Extensometer	1 set	
Other Force Sensors with Different Ranges	1 set	
Other Fixtures of Various Models	1 set	

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