



Universal Tensile Testing Machine

Operator's Manual

Read before Operation

Before operation this machine, please read this manual thoroughly, and keep a copy with the machine for future reference. This manual is to be considered part of your machine.

Model: NG-106

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I. Foreword

Thank you for your chosen our company's products, we not only provide your company good quality products, and will provide reliable service.

To ensure the use of personnel safety and equipment integrity, before using this instrument ,please fully view this operation manual.

For the manual, do pay attention to the precautions on its use. This manual details the design principles of this instrument,according to the standard, construction, operation specifications, calibration, maintenance, possible faults and remedy the situation, electrical plans, etc.

If in the manual mentioned in the various "test rule ", the standards are for reference only, if you have any objection please review standards or information by your own.

Special notes:

- This manual can not be the basis for any requirements.
- We reserve the right for this operating manual.

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II. Notice

2.1 Please comply with the following signs of warnings, dangers and attentions for the sake of prevention of accidents and dangers when using the apparatus.

 Danger	The operator may be hurt if he does not comply with the specification.
 Warning	The apparatus may be damaged if the operator does not comply with the specification.
 Note	Using specification of the apparatus is added here.
 Attention	Testing quality and results may be influenced.

2.2 The warning and attention sign of instrument.

	Warning	Please refer to the manual if necessary.
	Dangerous Voltage	There is high voltage.
	Grounding Protection	The apparatus should be connected to the grounding terminal.

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III.Summary

- 3.1. Computer-type material testing machine, system-wide computer system control, finished products or materials for tension, compression, bending, shear, peel, tear and other static properties of the test, the computer input, control, execute:
- (1) rate control, etc.
 - (2) continuous load function
 - (3) The true strain rate control
 - (4) After the test, automatic shutdown, automatic return function
 - (5) Capacity choice function automatically transform test
 - (6) over the load current limit protection
 - (7) set itinerary, load and hysteresis control
 - (8) It can work with Extensometer ,distinction the full displacement and and extension test.(Optional)
- 3.2. Test results data processing system, can provide a standard measurement data and graphical analysis functions, and can be based on various types of test specifications, test modules and other self-setting, multi-functional software for different options, with various units show a conversion function, and use of color display and interactive control, simple and practical.
- 3.3. The test machine for the industry, including: rubber, plastics, shoes, paper, packaging, machinery hardware, building materials, automobile parts, wire and cable industries for products such as: bicycles, motorcycles, racket, bat, construction hardware and other materials, parts, chains,gears, steel, ceramics, composites, plastics, cotton yarn, non-woven, ribbon, wire and other products
- 3.4. This product complies with ISO 9001 international quality certification compliance, and ISO-GUIDE 25 pass inspection and certification, product quality assurance.

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IV. Specifications and Structure

4.1 Specification:

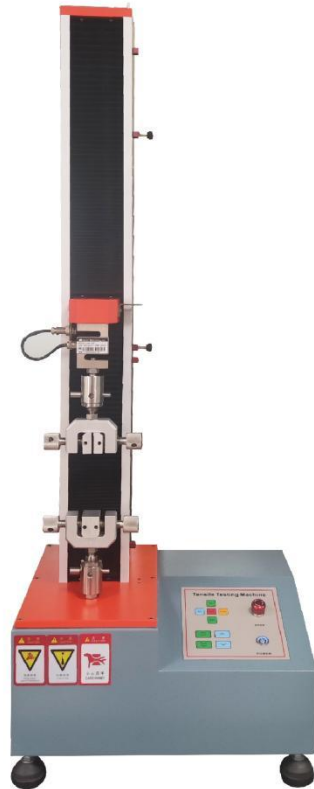
Capacity	200Kg
Load accuracy	+/-0.5%
Effective stroke	500mm
Testing speed	0.1-500mm/min
Transmission Control	servo motor
Dimension	480*360*1280mm
Power	220v,50HZ
Clamp	According to the specimen
Protector	Upper and lower travel limit devices, automatic stop function breakpoints
Display	Computer display
Resolution	1/250000

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4.2 Structure

1、.Structure of the machine and the spare parts:



2、 Structure

2.1. Structure summary:

From the base of the machine, table, beam joint plate, screw and screw protection guards, twin-screw with joint board, with the screw rotation movements. Under the joint board configuration fixture, such joint board to rise, that is generated in the table between the directions of force against each other; if gripping an object, then the pull effect produced; empathy joint between plate and table compression plate configuration, if the intermediate set Objects are compressed into the role of produce.

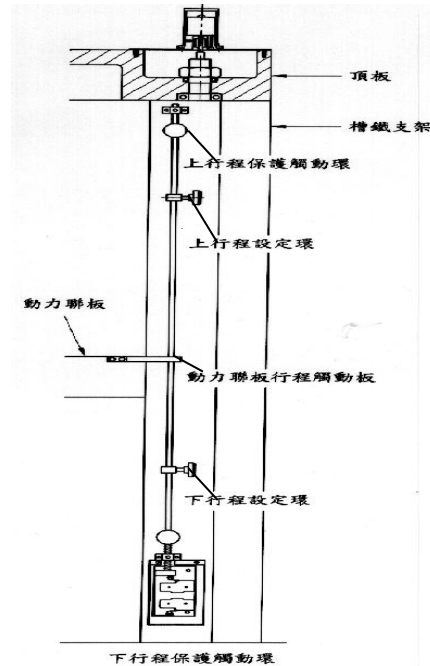
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2.2. Load sensor ,displacement and other structure:

The sensor for the load sensing design, use of detector deformation after the force sensor (GAUGE) output signal transmitted to the signal amplifier, the territory to A / D signal converter, the analog signal converted to digital signals, read by the computer, processing and display monitors Amp load value or to read and display processing load and displacement.

Displacement sensors (ENCODER) device in the screw top, and screw rotation at the same time the pulse signal caused by the operation, joint board moved a distance determined in accordance with screw teeth from, for example, from dental screw is 5mm, ENCODER is 1000P / R was the smallest displacement sensor resolution is 0.005mm (5/1000mm).



2.3. Servo motor and controller (Optional):

Imported SERVO MOTOR, controller using closed loop control method can achieve accurate position control, speed control, constant loading rate of increase control, constant stress rate of increase control, constant strain rate of increase control, control mode (based on the software may be provided), normal operation of joint board rise and fall can be directly controlled by the computer keyboard.

2.4. Specimen and clamp:

The clamp is manufactured by the specimen or sub-standard product .

Note: The fixture used to be proper, otherwise it will cause damage.

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V. Installation

5.1. Installation and handling precautions:

- (1) . Machine haulage should be noted that the structure of the lifting position, hanging from the roof to move or to move from the base, which to avoid hitting distorted transmission.
- (2) . The machine should shall be smooth and adjust the level of the fixed base and fixed steady.
- (3) . Follow the marked power, input power supply and electrical control system power. (Note that the phase input power to correct, or will cause leakage phenomenon)

VI. Notice

6.1. URGENT STOP button for the emergency stop button, to prevent operating loss of control was too late to close the operation of all keys, just press this button to cut off all the control keys of power, the instrument operator to stop, to be ruled out properly and recovery controls RESET then rotate the arrow to release the emergency stop state, back to normal.

6.2. Button switch operation, can not beat the use of force, or be damaged.

6.3. Replace the fixture, be sure to adjust the minimum security settings, Central location, to prevent collisions.

6.4. The instrument used by the power, please mark the correct input, and pay attention to grounding wire connected to prevent leaks of security.

6.5. Operators have well-known method of operation and maintenance of the machine, and pay attention to use.

6.6. LOAD CELL sensors for the tension and compression of dual-use type, the test do not exceed the allowable load to avoid damage.

6.7. The machine control and display system for the precision electronic components, should be an independent power supply and to prevent external interference.

6.8. To place the environment should be kept clean, and do not wet.

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- 6.9. Necessary to transfer, please pay attention to handling, do not hurt parts.
- 6.10. Replace the fixture to be careful to take place, to avoid falling, collision parts.
- 6.11. Regularly to view the drive belt is loose, and adjustments.
- 6.12. Please apply for an inspection regularly calibrated to ensure accuracy.

VII. Maintenance

- (1). The machine appearance should often wipe and keep clean.
- (2) (2). For the electroplating parts please use the oil clean to prevent rust, to ensure bright.
- (3) (3). Please add oil to protect transmission of sensitive for Power screw and the screw part,. (Oil mixed with butter and add a little oil)
- (4) (4). A variety of fixtures and fittings, please properly set, and wipe the rust oil to prevent rust.
- (5). Gear box should be checked for leakage every year fixed period, and check for gear oil, belts, chains should be adjusted once half a year.

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VIII. System

Anomalies	Solve method
The machine can not working	1. Wires, connectors, fuses, switches, is damage or not. 2. Limit limit switches are connected. 3. Break point stop function is set to leave. 4. Wiring line fault, the magnetic field voltage.
Machine can only be one-way operation in conjunction board	1. Limit upper and lower switch is abnormal, stuck,damaged or loose contacts error 2. Operations button feature is lack of lubrication oil, replace the supplement. 3. Electromagnetic switch damaged
Machine can working but with different sound	1. Screw lack of lubrication 2. Whether the lack of lubrication of gear box oil, replace the supplement. 3. Drive belt or chain is loose, should be adjusted, the chain should be lubricated. 4. Motor and control parameter settings are normal, or not, should be adjusted settings.
The speed can't setting or control	1. Control settings are abnormal 1. Control fine-tune the resistance of the substrate potential damage. 2. Control circuit fuse blows, replace and check the transformer

※Notice:

- (1). Transmission and servo control system for each shutdown / boot, at least more than 15 seconds apart.
- (2). Load sensors proposal should be calibrated annually.
- (3). The abnormal condition or damage, please stop using the machine and inform the company to arrange technical engineer to repair.

Please also kindly check the instruction of the software nex package, thanks.

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2 TM2101 Software Installation and Upgrade Guide

2.1 The minimum hardware configuration requirements for the computer hardware:

1. CPU for the Intel Celeron (Celeron) 2GHz or more CPU
2. Memory at least 512MB, recommended more than 1GB
3. Hard disk space above 2GB
4. Display resolution of 1024 × 768 or more.
5. Printer compatible with the operating system (if output reports are required)

2.2 This software on the computer software system requirements:

1. Applicable operating system for Microsoft's Windows XP, Windows 7, Windows 8.
2. If you need to output the report in Word format, you must install Microsoft's MicroSoft Word 2003, 2007, 2010 version of the software.

2.3 Software installation CD content

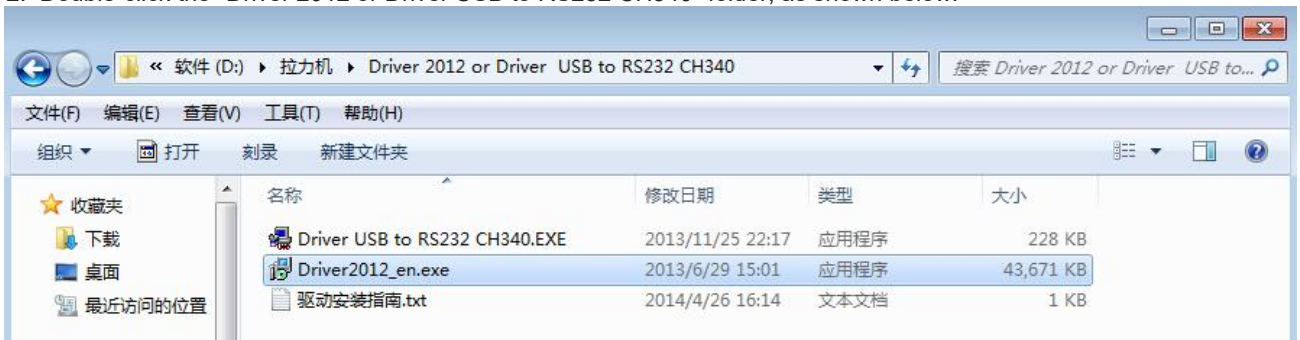
The installation CD should include the following two folders:

1. "TM2101Vx.xx": This folder is TM2101 software, this software is green software, without installation, copy the entire folder directly to the computer anywhere.
2. "Driver 2012": This folder for the driver, the computer must be installed on this driver, can run TM2101 software.

2.4 Software Installation Guide:

To use this software for the first time on a computer that has not used this software, you need to install the software driver first. The software installation process is as follows:

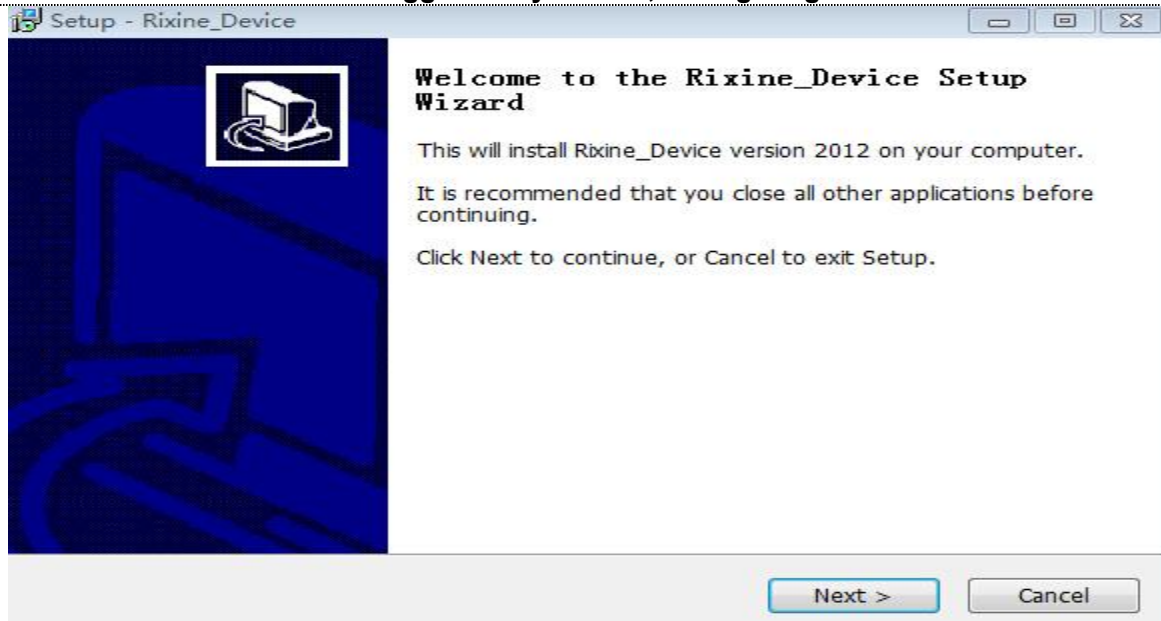
1. If Windows is running other programs, close all applications
2. Double-click the "Driver 2012 or Driver USB to RS232 CH340" folder, as shown below:



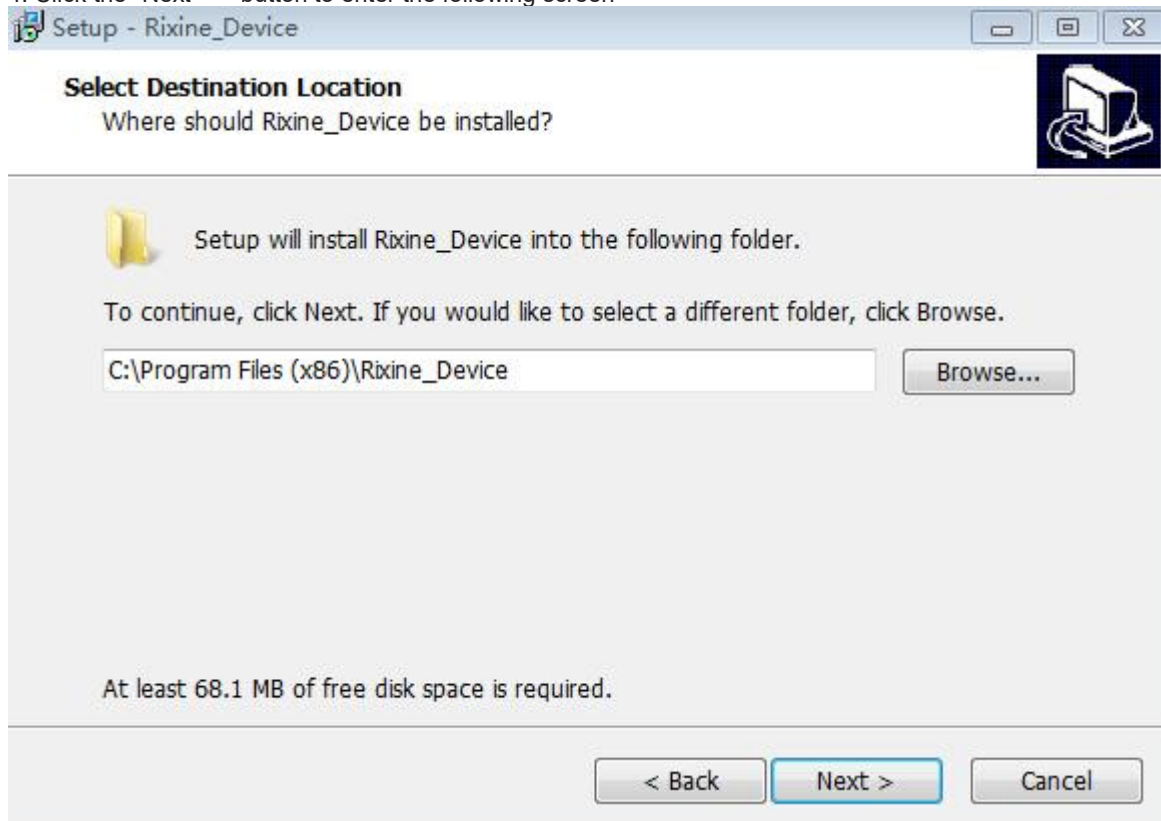
3. If you have any questions, please double-click the "Driver Installation Guide" for installation instructions.
4. Double-click "Driver2012_en.exe", the installation program starts, start the installation, a welcome screen, as shown below:

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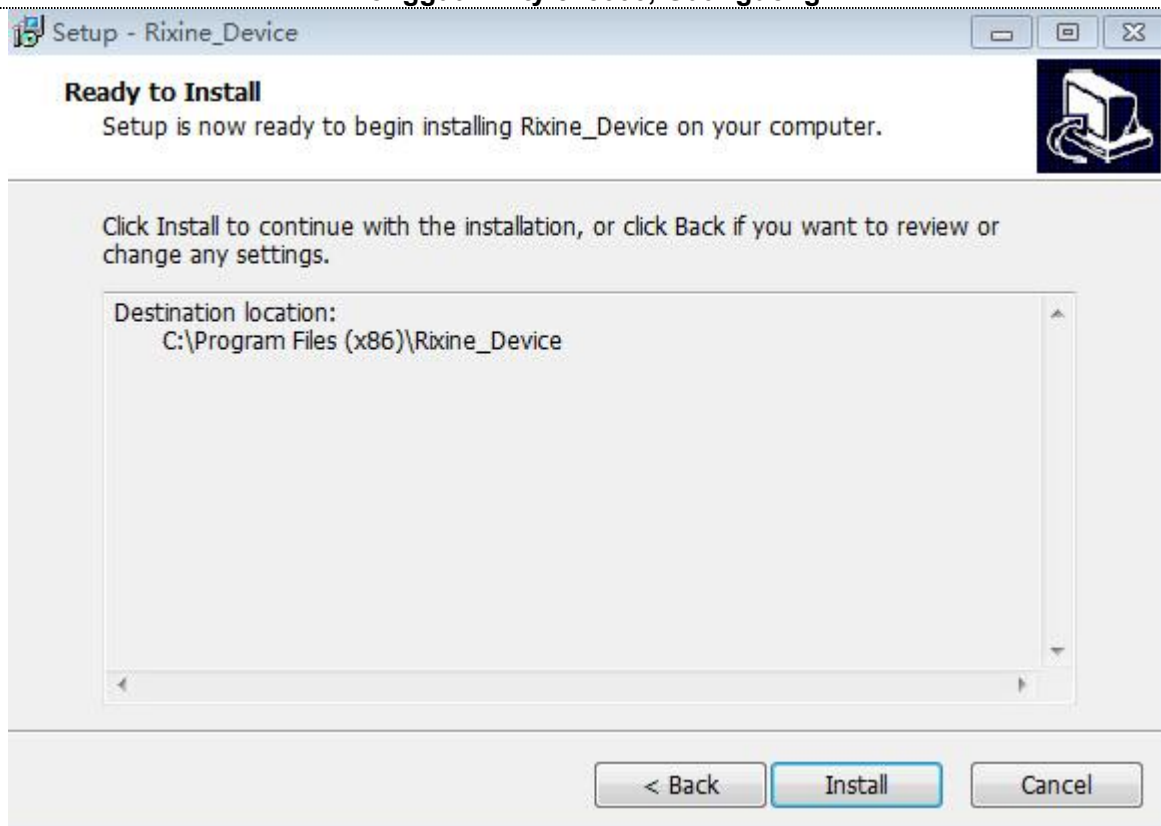
4. Click the "Next >>" button to enter the following screen



5. Click the "Next >>" button to enter the following screen

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6. Continue to click "Install" button to start the installation process, the installation process may take a few minutes, please be patient, until the screen shown below



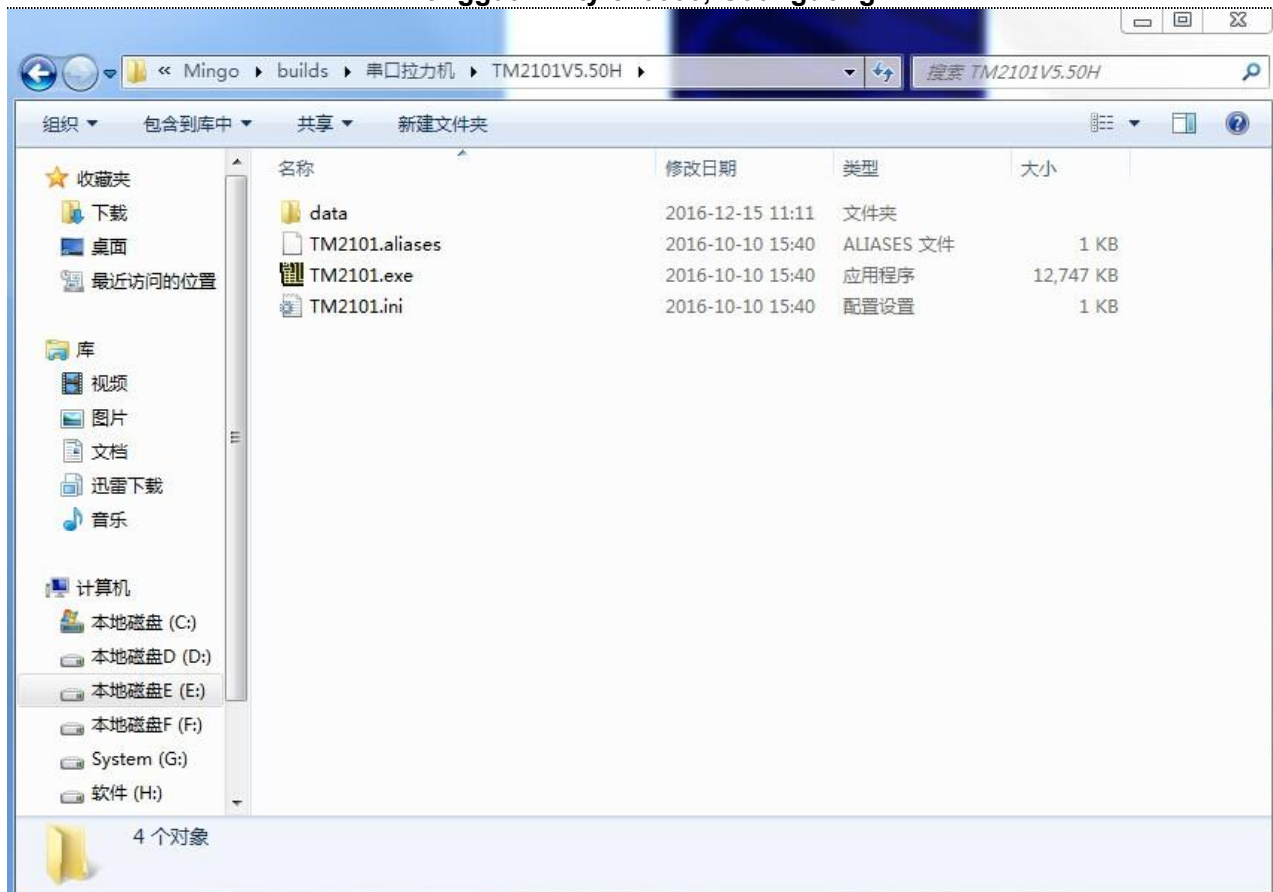
7. Click "Finish" button, the computer will automatically restart to complete the installation.

8. Click "OK" button to restart the computer.

9. Copy the "TM2101V5.xx" folder to any location on your computer, and then double-click the "TM2101V5.xx" folder, as shown below

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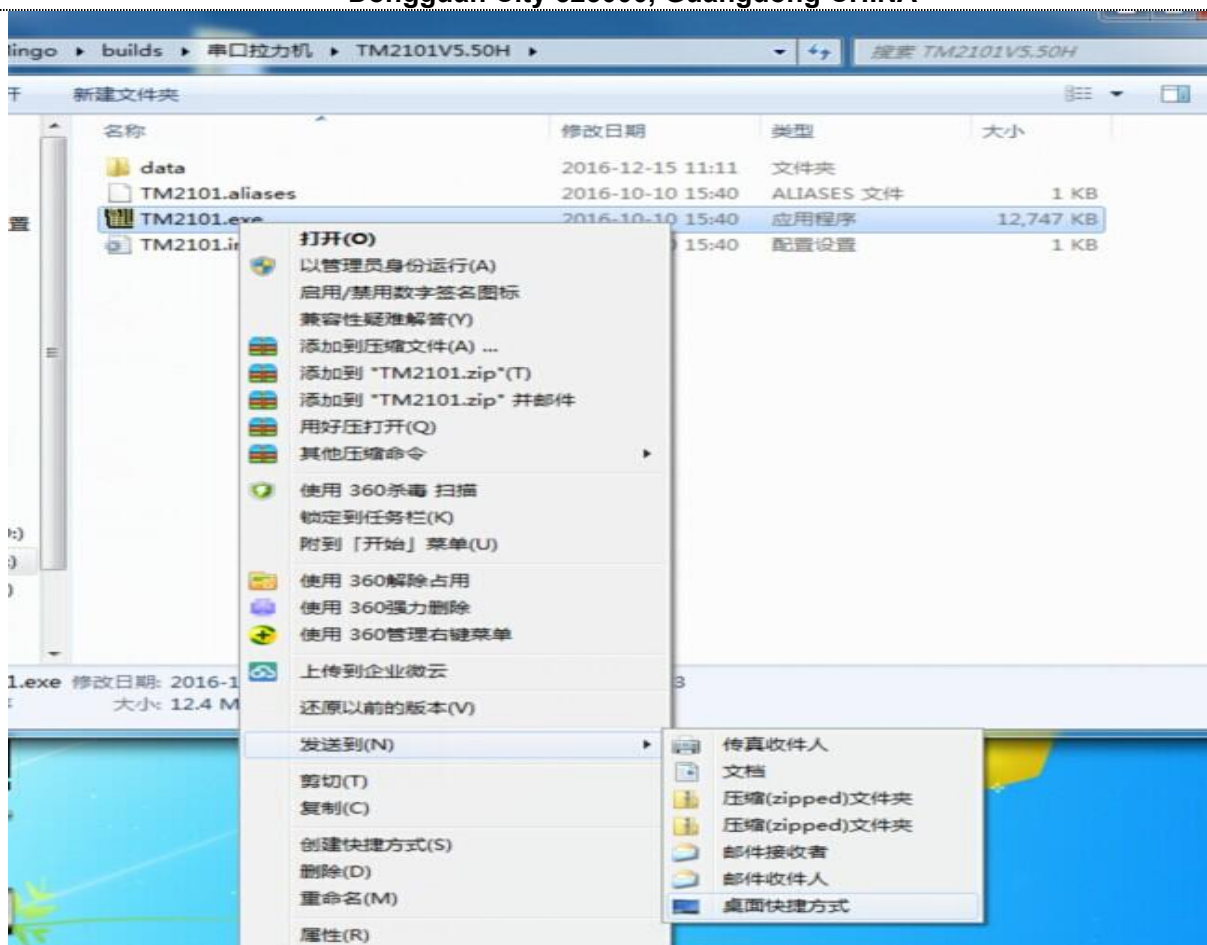


10. Right-click "TM2101.exe" program, click on the following figure shows the "desktop shortcut" option for the software on the desktop to make a shortcut

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11. The software installation is complete.

2.5 Software Upgrade Guide:

If you already have drivers installed on your computer and you have older versions of the TM2101 software available, follow the steps below to learn how to upgrade to a newer version of the software: "TM2101 V5.29", TM2101 V5.50".

1. Copy the new version of the software folder "TM2101 V5.50" to any location on your computer.
2. to find the old software "TM2101 V5.29" location, if you do not know the location of the old software stored in the following method can be found,
Right-click the software shortcut "TM2101.exe" on the desktop.

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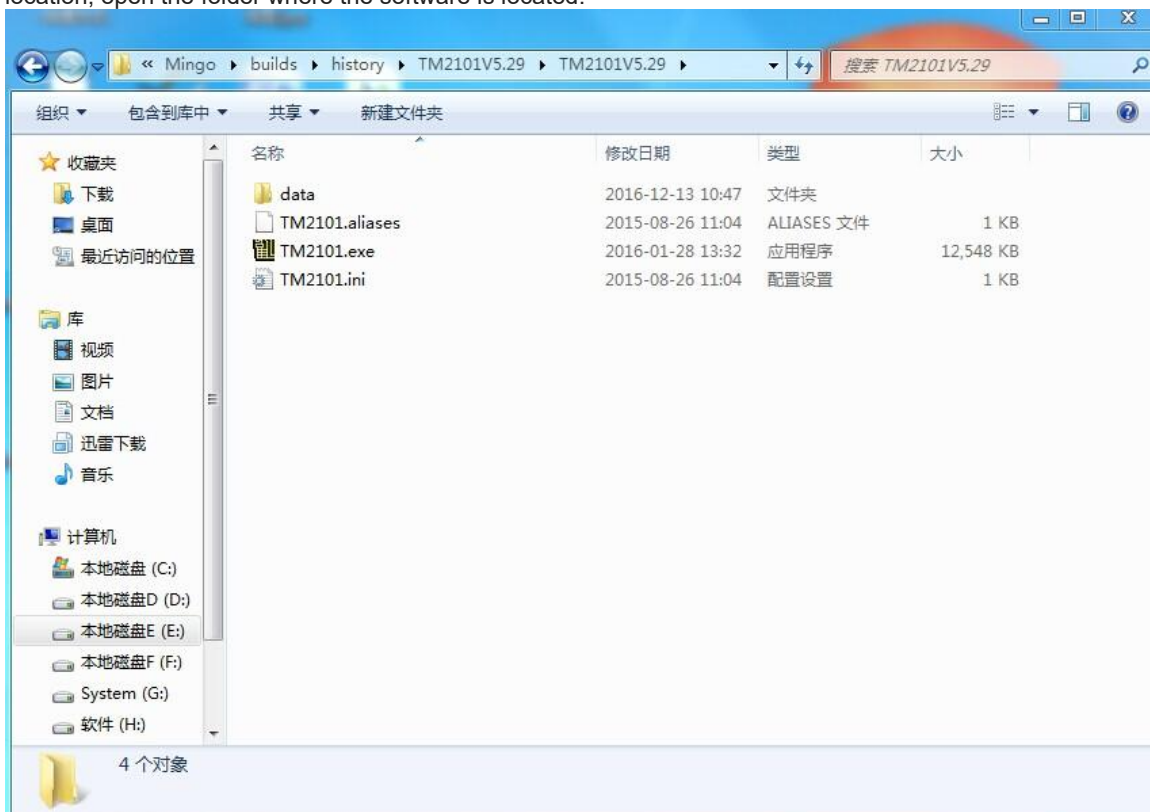
And then left-click "Properties" option, pop-up Properties dialog box:

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And then click the "open file location (F)" Win XP this button called: "Find the target (F) ..." button to find the software location, open the folder where the software is located:

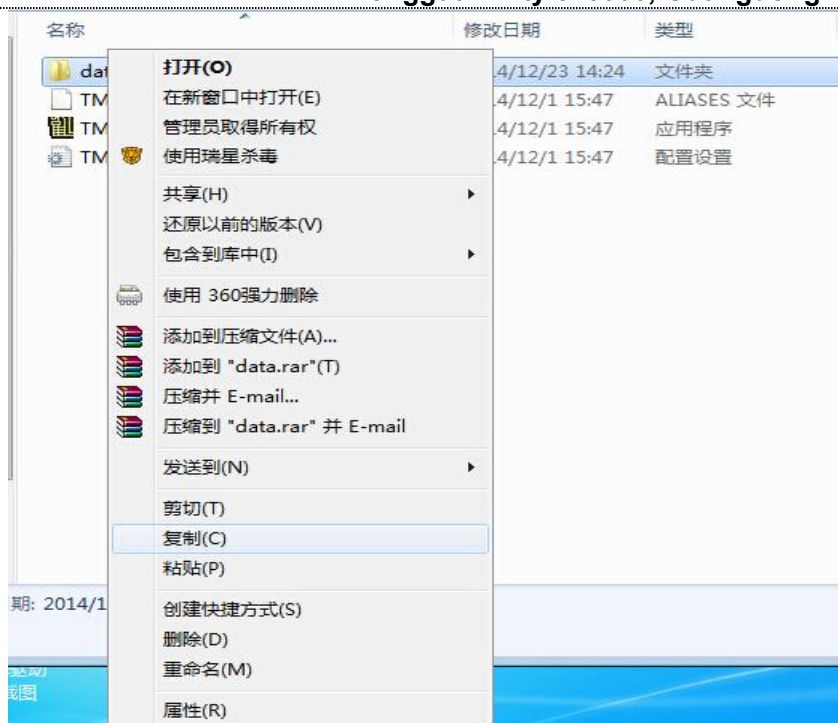


3. Right-click the old "software" folder in the "data" folder, left-click "Copy" option, as shown below:

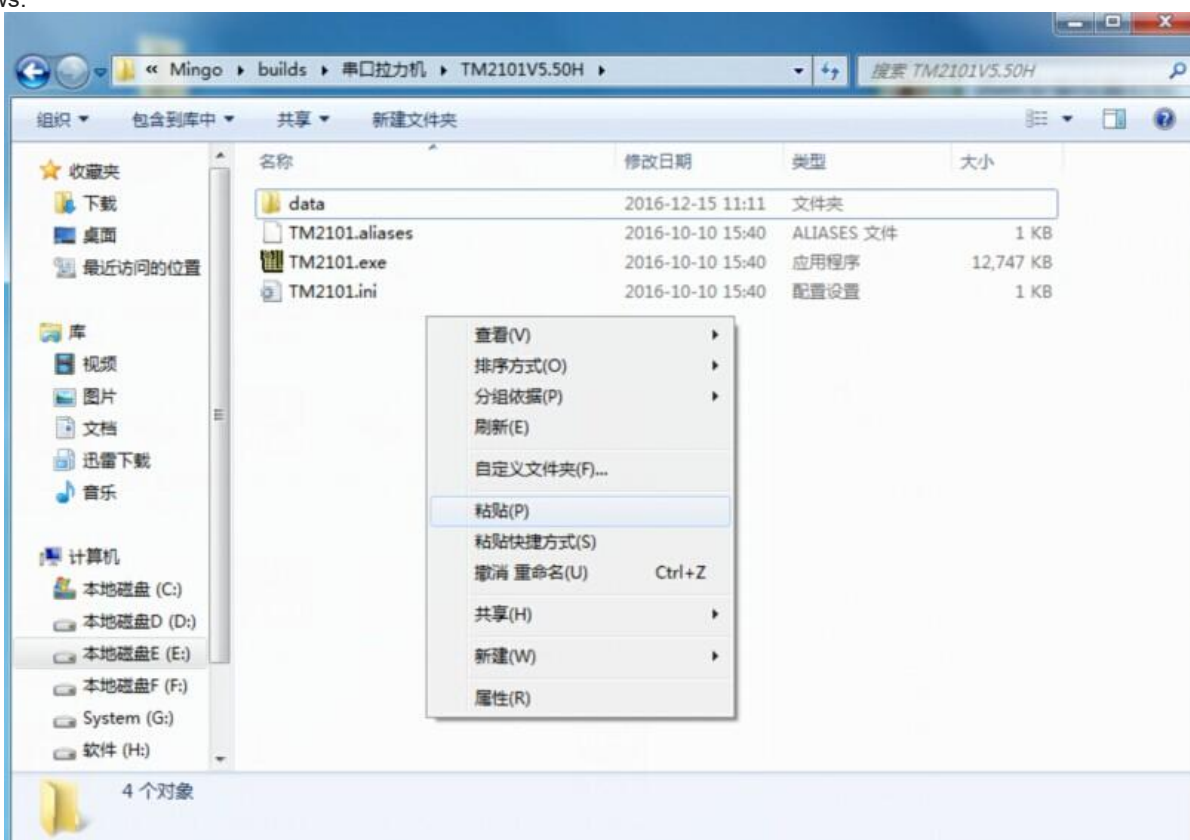
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4. Double-click the folder of the new version of the software "TM2101 V5.50", click the right mouse button, and then left-click "Paste" option to the new software Data folder replace all the old version of the software can be, as follows Figure shows:



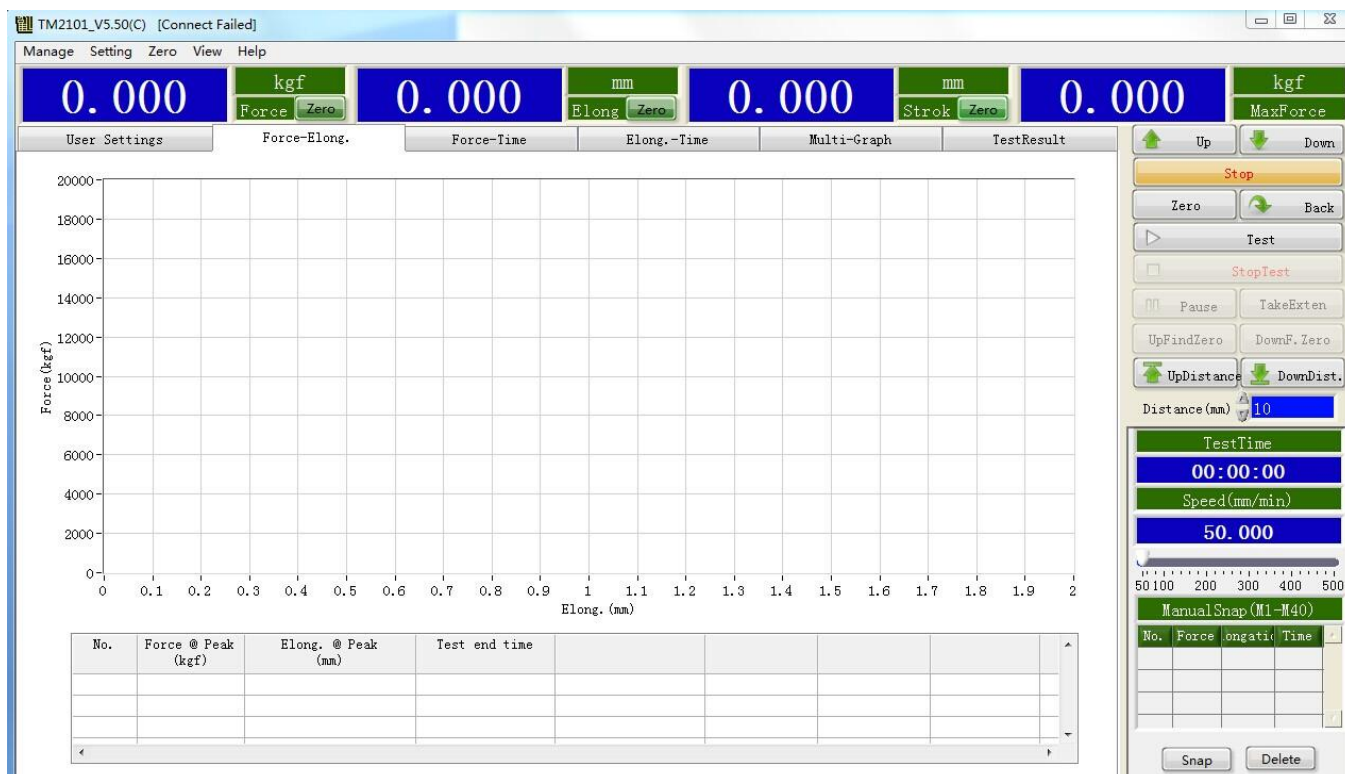
5. Then delete the desktop shortcut "TM2101.exe", and then make a new shortcut for the new version of the software: Right-click the new version of the software folder where the "TM2101.exe" program, then the left mouse button Click on the "desktop shortcut" option, the desktop will have a new version of the software shortcut.

6. The software upgrade is complete.

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3 TM2101 Software Operation Guide



3.1 Quick grasp

A complete test process consists of three steps: setup before the test, perform the test and get the test results.

1, before the test set:

- ① Select the sample data or edit a new sample data, as shown in Figure 2
- ② choose a test program or edit a new control scheme, as shown in Figure 2

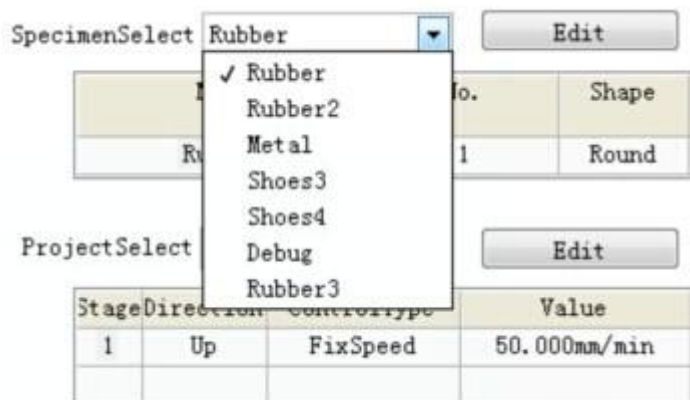


图 2

2, the implementation of testing:

Click the Start Test button, or press the Start test shortcut F7 (refer to 4.1 Shortcut Description) to start the test button into the green pull-up state, indicating that the current testing process, waiting for the test to automatically end or manually end the test.

3, get the test results: After the test, will automatically get the test results. You can also select different items in the test result selection drop-down list to get different test results. As shown below:

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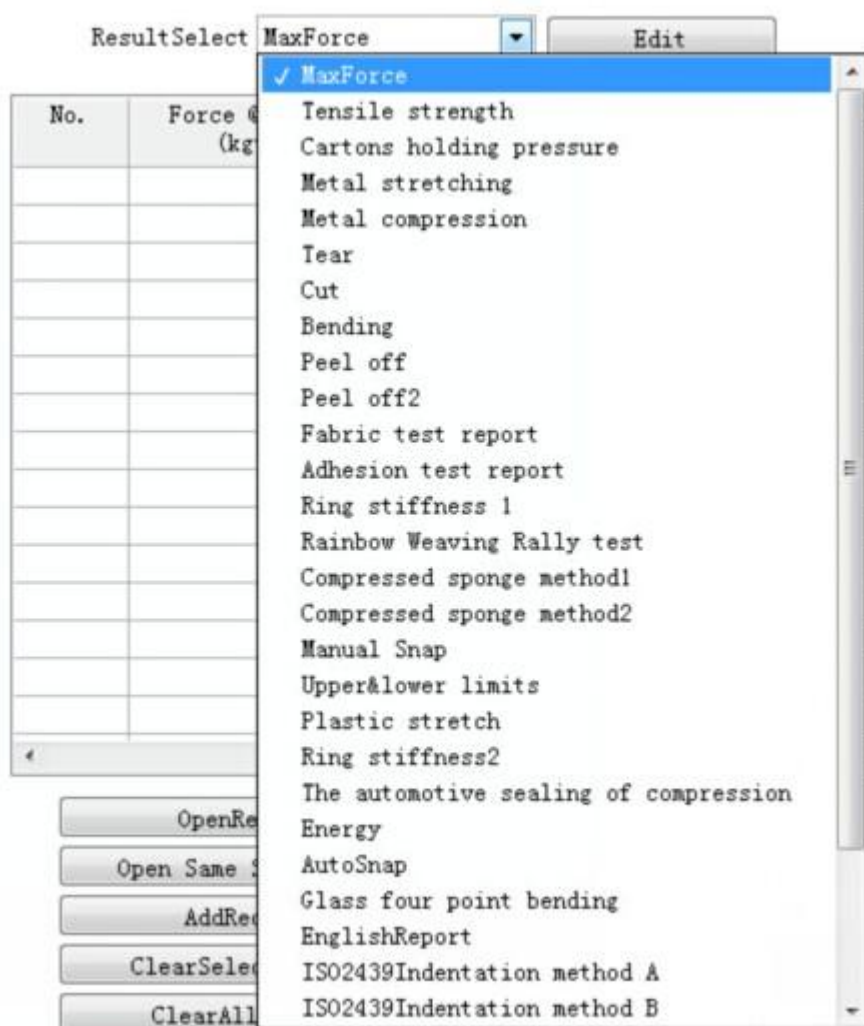


图 3

Note: The test must be performed with online success.

3.2 Main interface Introduction

The main interface as shown in Figure 1 and Figure 2:

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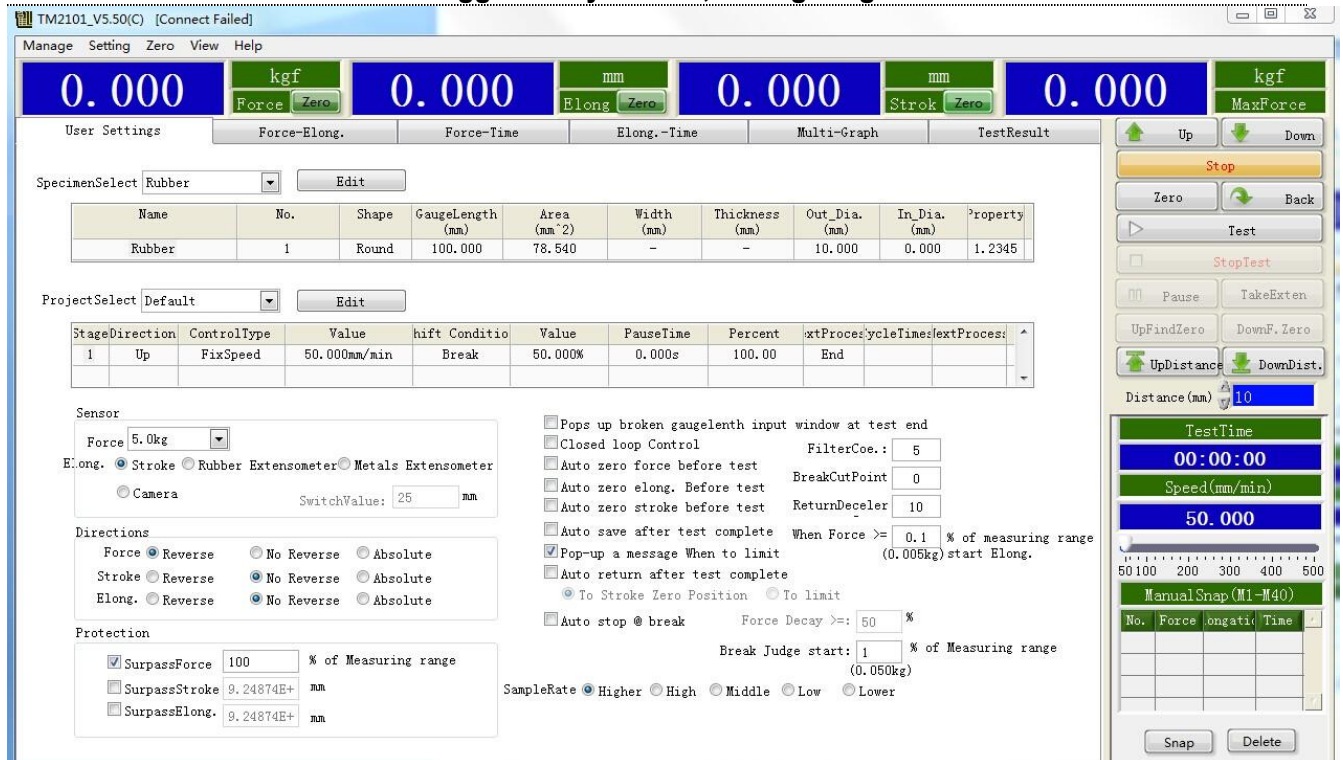


图 1

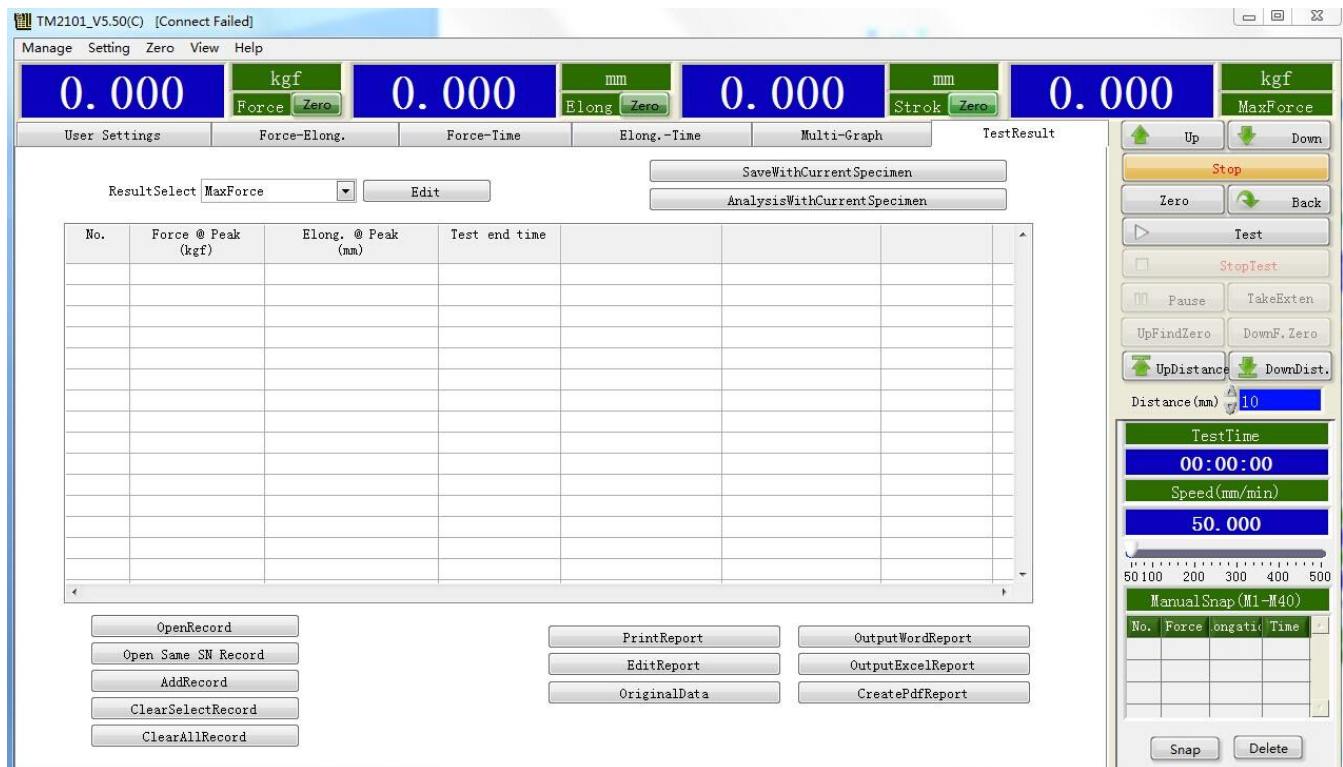


图 2

The software includes the title bar, the menu bar, the current volume display bar, the control panel, the test time display, the machine speed, manual point, material selection and modification, , The results show that the table, the history of operations, reporting operations and power - displacement curve display.
Title bar: software name, version and other information

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Menu bar: the management of the software and function operation, etc., see 3.3 menu introduction

Current amount display column: Display the current value of force, displacement, etc., you can select the items to be displayed by the drop-down list, as shown in Figure 3

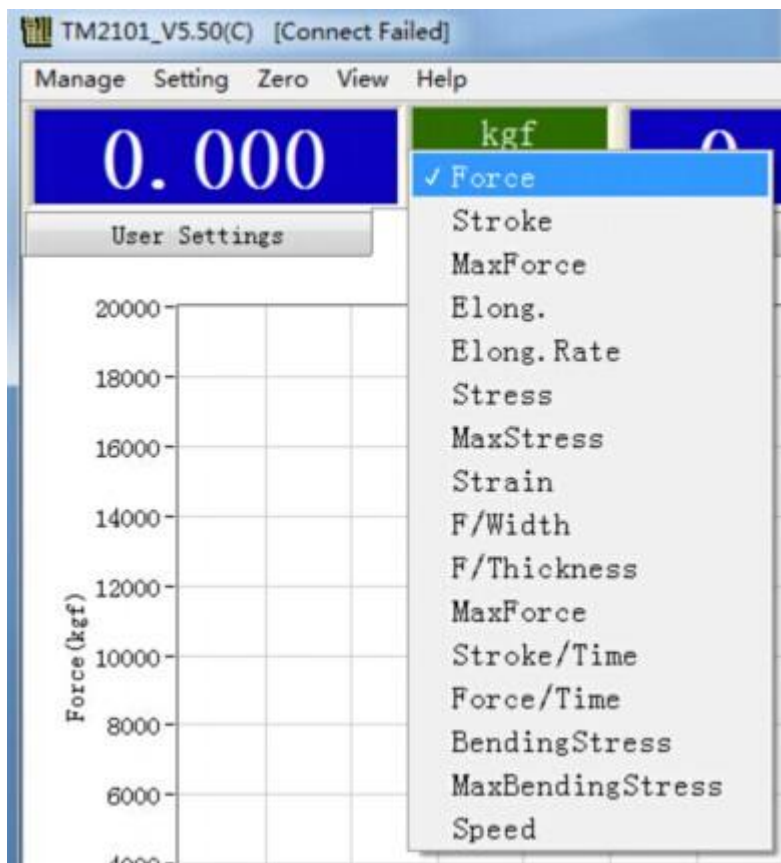


图 4

Control Panel: Control the machine to rise, fall and perform tests and other operations

Machine lifting speed: adjust the rate of machine up and down

Manual Snap: manually crawl feature points on the curve, see details of the 3.4 function of the manual take point

Material selection and modification: For details, please refer to 3.4

Test method selection and modification: For details, refer to 3.4 Control method of each function

Control parameter selection and modification: For details, refer to 3.4 Control Parameters

Result selection and modification: For details, refer to 3.4 Test Results

Result Display Table: Get the results required for the test

History operation: open a record that is open a historical test records, can only open a record, when repeated open will overwrite the last open records; delete records that delete one or more selected records; add records in the last Based on the new open one or more records.

Report operation: print the report that the output report to the printer to print; edit the report that is open the report for editing; Word report that is based on the Word report template to produce a Word format report

Force - displacement curve display: show the test curve, see details of the 3.4 detailed graphics operations

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3.3 Menu Introduction

Menu List:

main menu	Submenu 1	Description	Submenu 2	Description
managemen t M)	Login	For details, please refer to 3.4		
	authority management	For details, please refer to 3.4		
	Modify password	For details, please refer to 3.4		
	Exit	Exit the software, shortcuts (Ctrl+Q)		
Settings (S)	Unit System	For details, please refer to 3.4		
	calibration	For details, please refer to 3.4		
	online	For details, please refer to 3.4	COM1-COM12	For details, please refer to 3.4
	Disable the machine control shortcut	Disable the software shortcut control key		
Zero(Z)	Force zero	The current force value is reset to zero		
	Strok zero	The current strok value is reset to zero		
	Elong zero	The current elong value is reset to zero		
	All zero	The current force strok elong value is reset to zero		
	Rise to find a zero	Special testing of special materials, the basic do not have access		
	Down to find a zero			
View(V)	Language		Simplified Chinese	Switch the software language to the selected language For details, please refer to 3.4
			traditional Chinese	
			English	
	Option	For details, please refer to 3.4		
Help(H)	Help document	Open the help document		
	About...	Displays information about the test system		
	registered	For details, please refer to 3.4		
	activation	For details, please refer to 3.4		
	Update the calibration data	Read the calibration data of the acquisition card to the software		
	Write the calibration data to the acquisition card	Write the data of the software to the acquisition card		
	advanced settings	Enter the correct password to enter the advanced function settings		

3.4 Detailed function

- 1、Login
- 2、Authority management
- 3、Modify the login password
- 4、Unit System
- 5、Calibration
- 6、online
- 7、Language system
- 8、Option

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9、Registered

10、Activation

11、Material Editing

12、Control Method

13、Control parameters

14、Test Results

15、Report Editing

16、Word Repot

17、Manual Snap

18、Graphics operations

1. Login

Click menu "Manage" à "Login", or hold down the key combination Ctrl + L (3.5 list of shortcuts), you can enter the login screen, as shown in Figure 1:

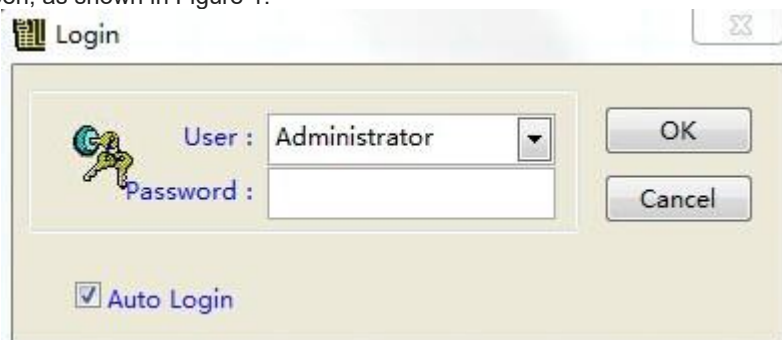


图 1

Select the user, enter the correct password, click OK, you can use the appropriate user rights under the software. The administrator has the highest user rights, anonymous minimum. When "Always log on with this user" is selected, the software will automatically log in to the user at the next startup.

2. Authority management

Click on the menu "management" à "rights management", you can enter the rights management interface, as shown in Figure 2:

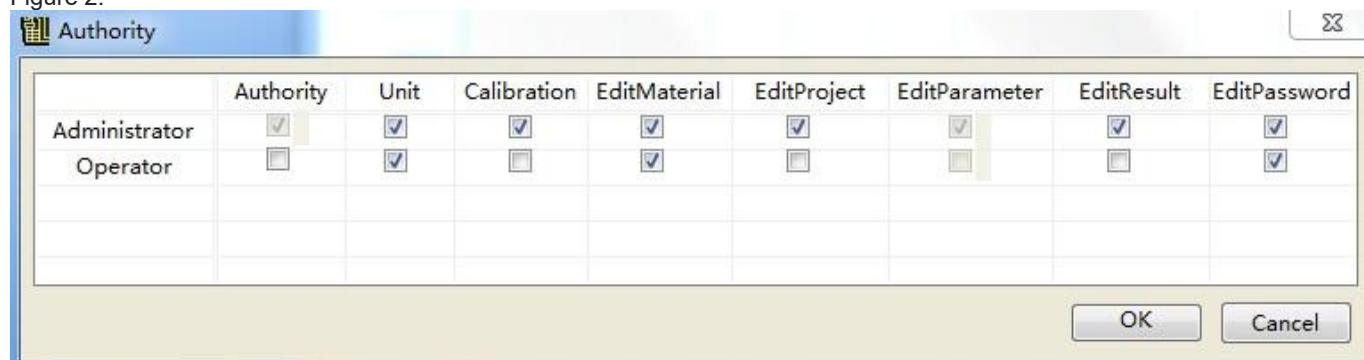


图 2

The current login user is anonymous, the rights management is disabled, because the anonymous has the lowest administrative rights, does not have permission management permissions. Users of the functions of the use of permissions can be set in the rights management, when an item is selected, that has the right, otherwise do not have. For example, in the "Rights Management" item in the above figure, the administrator is selected and the tester is not selected, which indicates that the administrator has authority to manage rights, while the tester does not.

3. Modify the login password

Click on the menu "management" à "modify the login password", you can enter the login password modification interface,

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as shown in Figure 3:



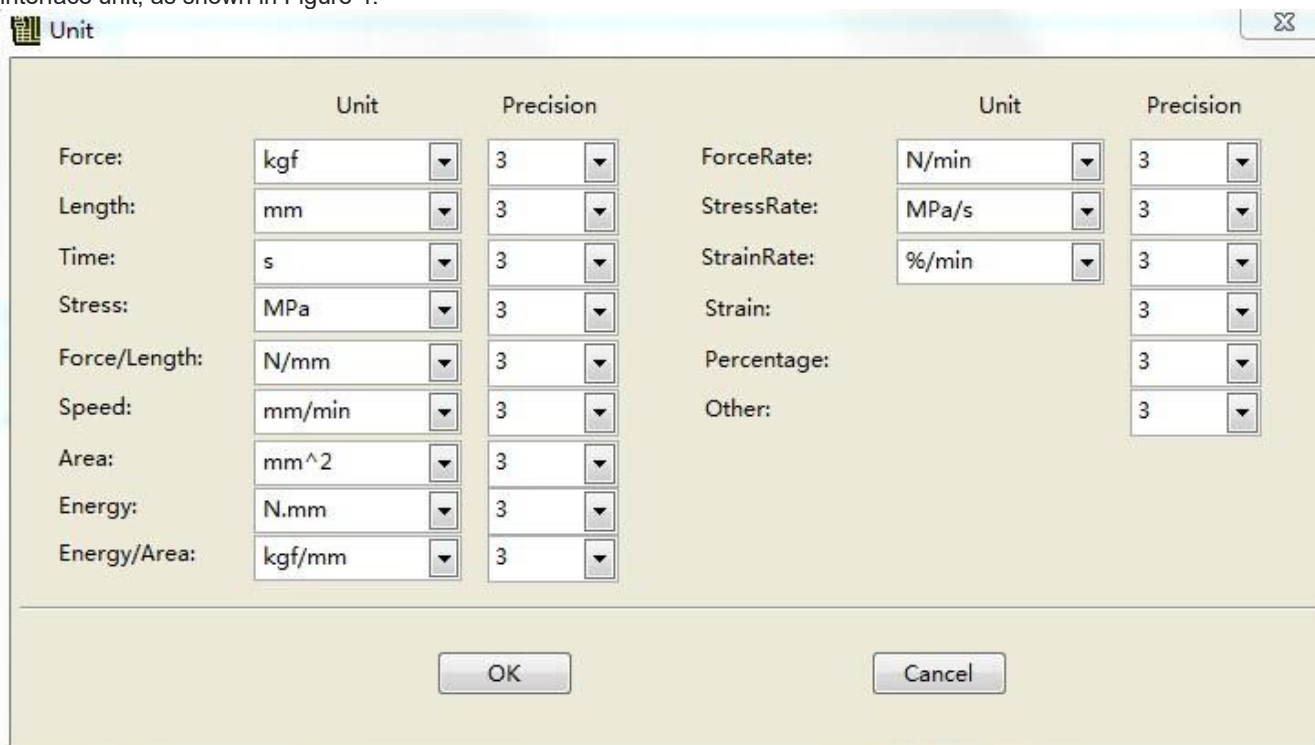
The image shows a software dialog box titled "EditPassword". It contains two text input fields. The first field is preceded by the text "Please enter the new password:". The second field is preceded by the text "Please enter again:". Below the input fields are two buttons: "OK" and "Cancel".

图 3

The modified password is the password of the currently logged on user. For example, if the currently logged-in user is an administrator, the password of the administrator is modified. If the login user is a tester, the password of the tester is modified.

4. Unit System

Click on the menu "Settings" à "Unit System", or press and hold Ctrl + U (3.5 list of shortcuts), you can enter the system interface unit, as shown in Figure 4:



The image shows a software dialog box titled "Unit". It contains two columns of settings. Each column has a header row with "Unit" and "Precision". Below the headers are several rows of settings, each with a label, a unit selection dropdown, and a precision selection dropdown. The settings are as follows:

	Unit	Precision
Force:	kgf	3
Length:	mm	3
Time:	s	3
Stress:	MPa	3
Force/Length:	N/mm	3
Speed:	mm/min	3
Area:	mm^2	3
Energy:	N.mm	3
Energy/Area:	kgf/mm	3
ForceRate:	N/min	3
StressRate:	MPa/s	3
StrainRate:	%/min	3
Strain:		3
Percentage:		3
Other:		3

At the bottom of the dialog box are two buttons: "OK" and "Cancel".

图 4

You can select a unit from the drop-down list and select a precision, which indicates the number of digits after the decimal point. Unit system determines the entire system of units, all the amount of the reality and operation of this unit system to perform.

5. Calibration

Click menu "Settings" à "Calibration", or press and hold Ctrl + Shift + C (3.5 list of shortcut keys), you can enter the calibration password input interface, as shown in Figure 5:

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Enter the correct password, you can enter the calibration interface, as shown in Figure 6:



图 5

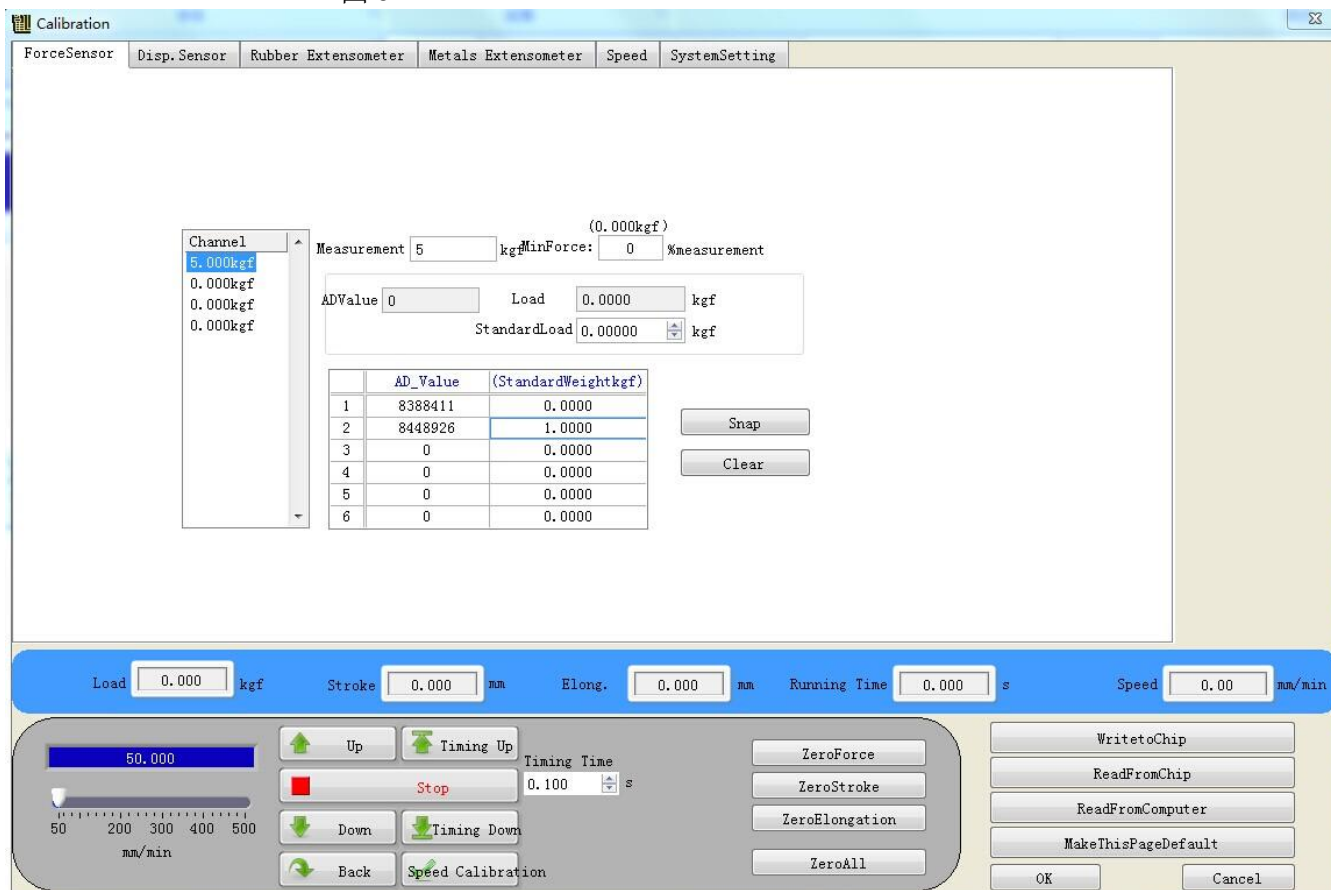


图 6

Calibrate the interface The five tabs of the force sensor, the stroke sensor, the rubber extensometer, the metal extensometer, and the system settings, select the respective tab for the respective sensor calibration or settings.

1, the calibration force sensor

Select the Force Sensors tab, as shown in Figure 6. There are four force sensor channels shown on the left: "50kg", "0.0kg", "0.0kg", "0.0kg".

The calibration procedure is as follows:

1. Plug in the force sensor to be calibrated, such as a 50 kg force sensor, select a force sensor channel on the left;
2. Enter the range of the sensor in the "Range" input box, eg "50" kg;
3. Enter the zero force of the sensor in the "Zero Value" input box, and input "0".
4. Click the Empty button to empty the calibration table.
5. Calibration point 1: Load the sensor in the "Standard weight value" on the right of the input box, enter "0" kg, then click "take point" button, the first point AD value and standard weight The value is taken into the calibration table;

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6. Calibration point 2: load the sensor load of a certain value, such as hanging 5kg of weight, and the "standard weight value" on the right side of the input box input load value of "5" kg, and then click "take point" Button, the second point of the AD value and the standard weight value is taken into the calibration table;

7. Calibration point 3: method with the first two points, if you continue to calibrate the first three points, the "AD value" and "standard weight value" can only be larger than the first two points, otherwise the calibration will be inaccurate;

8. Calibration point 4: method with the first two points, if you continue to calibrate the first four points, the "AD value" and

"standard weight value" can only be larger than the first three points, otherwise the calibration will be inaccurate;

9. Calibration point 5: method with the first two points, if you continue to calibrate the first five points, the "AD value" and "standard weight value" can only be larger than the first four points, otherwise the calibration will be inaccurate;

10. Calibration point 6: method with the first two points, if you continue to calibration point 6, the "AD value" and "standard weight value" can only be greater than the first 5 points, otherwise the calibration will be inaccurate;

11. Click the "Write calibration data to capture card" button. If prompted "Write successful", complete the calibration of a force sensor. If prompted "Write failed", please try again.

12. If you need to connect the second force sensor, repeat steps 1 to 11 above. Otherwise, set the range of all other sensors to 0, and click the button "Write calibration data to capture card".

Note: At least two points should be calibrated. Steps 7 to 10 may not be performed. According to the current characteristics of most of the sensors, the general point calibration can achieve very good accuracy, the second point of the general value of the sensor range of 3 to 5%, the first three generally take the sensor range of 30 to 50% . If you calibrate more than 3 points (including 3 points), you must ensure that the "AD value" and "standard weight value" of the latter point must be larger than the previous point, otherwise the calibration will be inaccurate. If the "standard weight value" increases, the "AD value" becomes smaller and can be increased by exchanging the two signal lines of the force sensor. AD value is generally about 8400000, the sensor load "AD value" is proportional to change, if the load "AD value" unchanged, indicating the hardware is not working properly, may be damaged or the sensor card is a collection card Fault, please contact the manufacturer to replace.

If the measured force value is found to be slightly different from the standard weight after calibration, it can be corrected by recalibrating once, or by directly modifying the standard weight value data in the calibration table. If the measured value of the software is larger than the standard weight value , You can change the standard weight value of the second point in the calibration table to a smaller value, and then click the "Write calibration data to capture card" button, and then clear the alignment again until the two values are equal.

2, the calibration stroke sensor

Select the Stroke Sensor tab, as shown in Figure 7:

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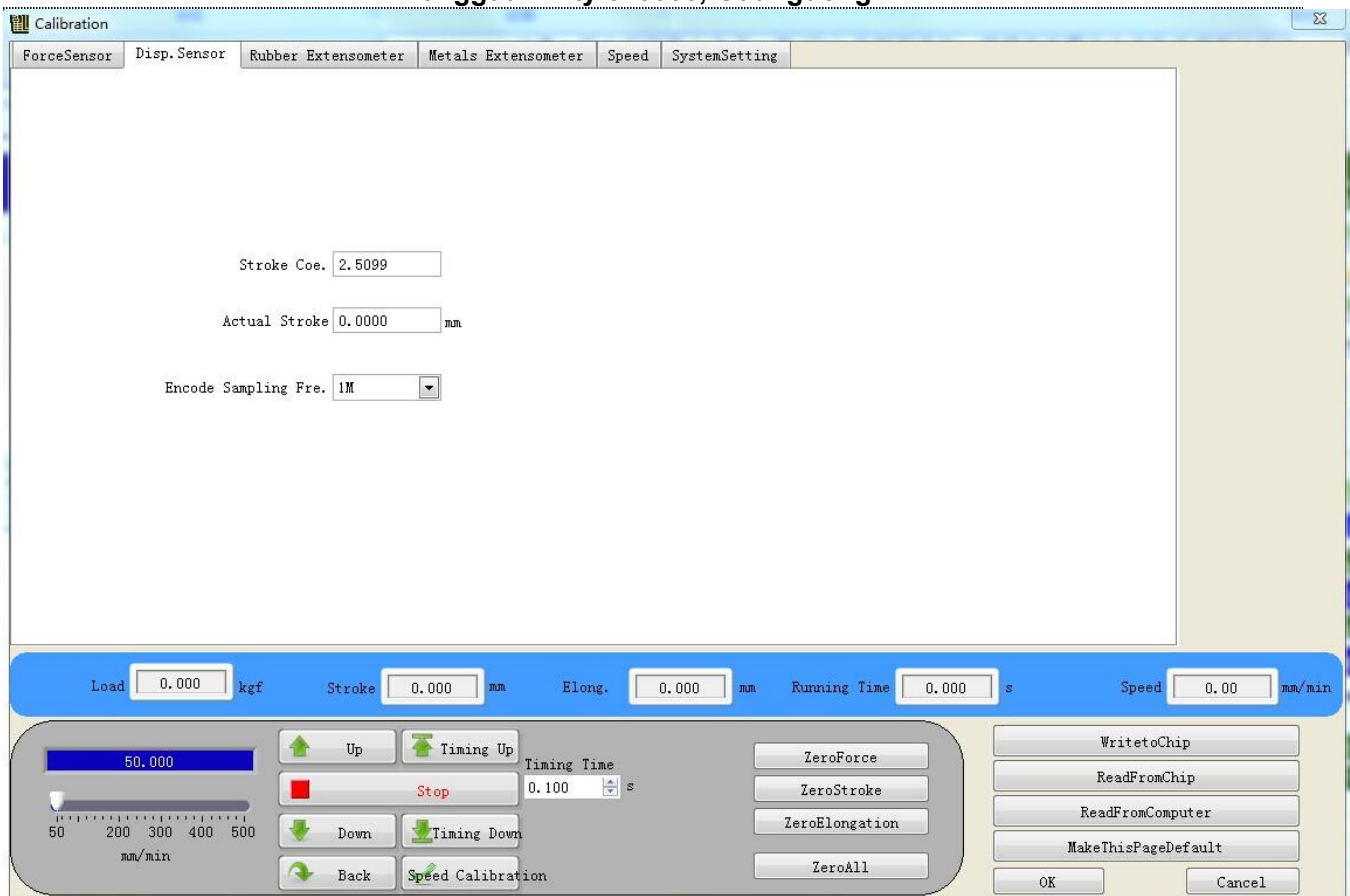


图 7

1. Click the "Displacement Zero" button to reset the "Current Shift".
2. Click the "up" or "down" button to make the machine walk a certain distance, measure the distance with the ruler;
3. Input the measured data into the box after "Actual Displacement", then click the button "Write Calibration Data to Acquire Card". When the dialog box "Write successfully" is clicked, the calibration will be completed.
4. Repeat step 1-2 to see if the travel value of the machine is equal to the current displacement value displayed by the software. If it is equal, complete the calibration of the displacement sensor, otherwise go to step 5;
5. Repeat steps 1 to 4 until the value of the machine travel is equal to the value of the Current Displacement.

3. Calibrate the rubber extensometer

If the machine is connected with a rubber extensometer (also known as a large deformation), you need to calibrate the rubber extensometer in the calibration before the first be sure to "User Parameter Settings" -> "Control Parameters" -> "Sensor" Of the "displacement" select "rubber extensometer", or can not be calibrated rubber extensometer. Rubber extensometer calibration interface shown in Figure 8:

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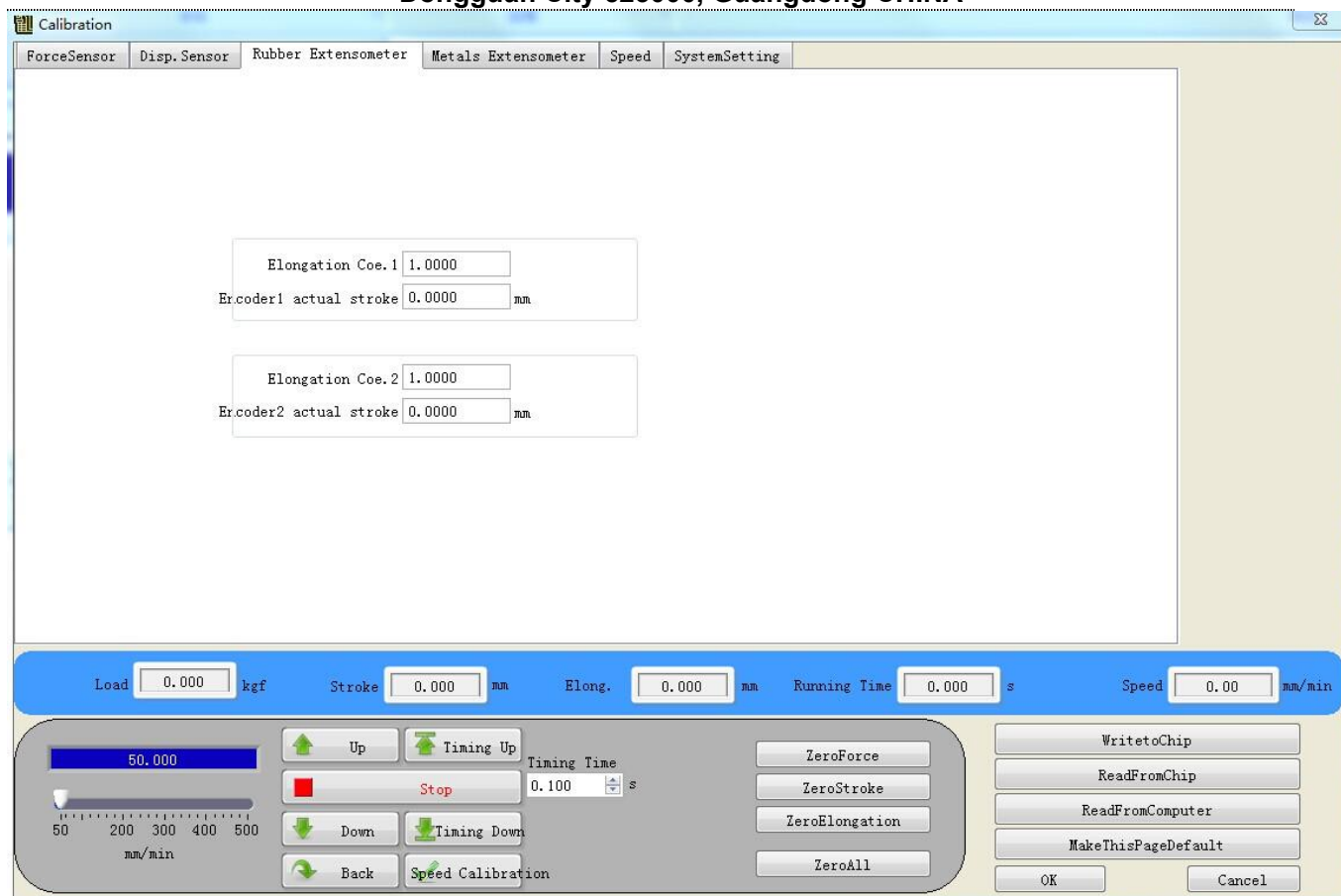


图 8

Rubber extensometer calibration process with the travel sensor.

4, the calibration of metal extensometer

If a metal extensometer is connected to the machine, it is necessary to calibrate the metal extensometer. Before calibration, be sure to select "Metal" under "User Parameter Settings" -> "Control Parameters" -> "Sensor" Extensometer ", or can not be calibrated metal extensometer. The metal extensometer calibration interface is shown in Figure 9:

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Calibration

ForceSensor Disp. Sensor Rubber Extensometer Metals Extensometer Speed SystemSetting

Measurement: 50 mm MinForce: 0.004 (0.002mm) %measurement

ADValue: 0 Curr_Elong.: 0.0000 mm StandardLength: 0.00000 mm

	AD_Value	(StandardLength)mm
1	8360884	0.0000
2	9166369	5.0000
3	0	0.0000
4	0	0.0000
5	0	0.0000
6	0	0.0000

Snap Clear

Load: 0.000 kgf Stroke: 0.000 mm Elong.: 0.000 mm Running Time: 0.000 s Speed: 0.00 mm/min

50.000 mm/min

Up Timing Up Timing Time 0.100 s Stop Down Timing Down Back Speed Calibration ZeroForce ZeroStroke ZeroElongation ZeroAll WritetoChip ReadFromChip ReadFromComputer MakeThisPageDefault OK Cancel

图 9

Metal extensometer calibration process with the force sensor.

5. Speed Select the Speed tab, as shown in Figure 9-1:

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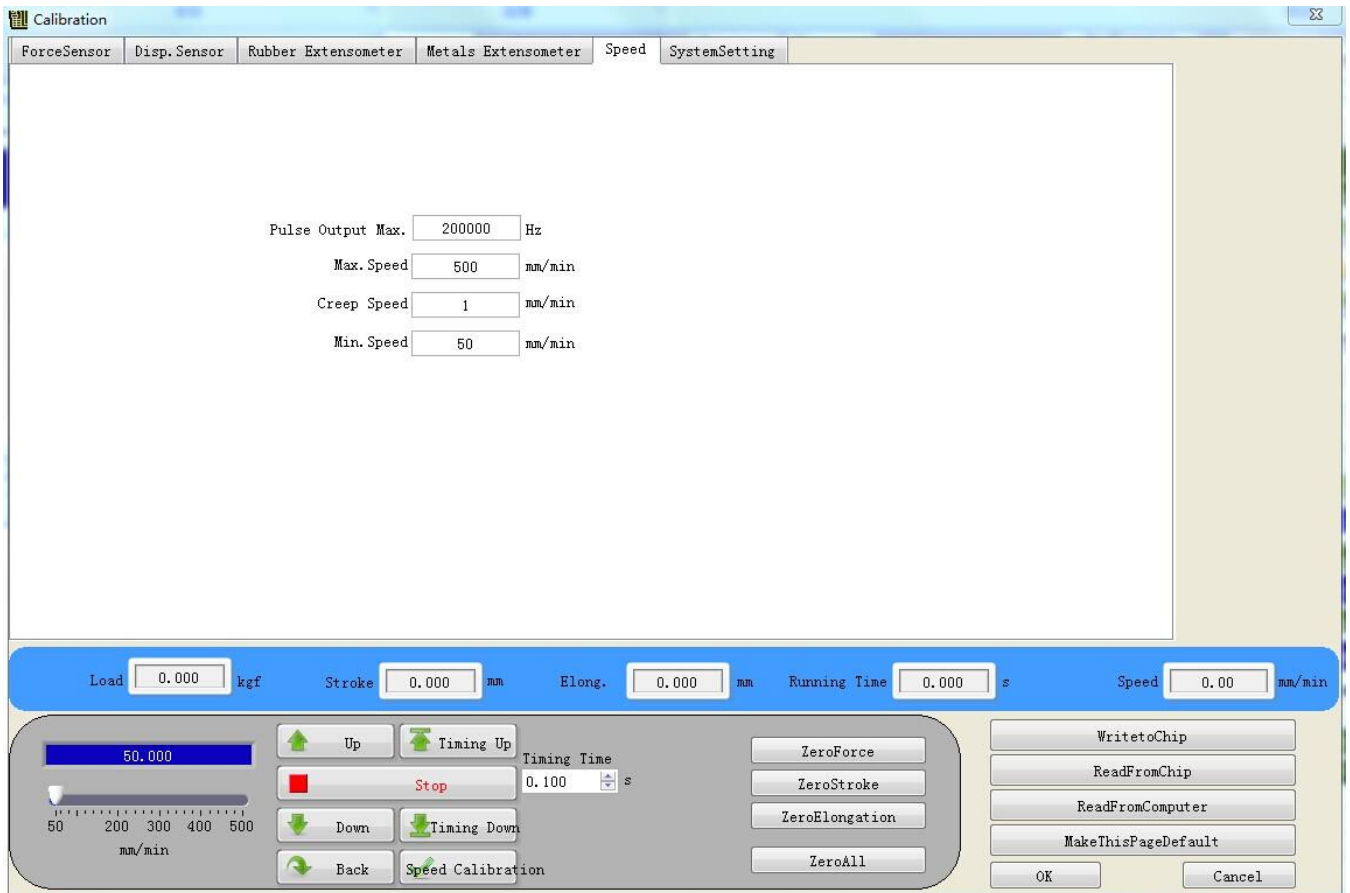


图 9-1

Before calibrating the speed of the machine, please calibrate the stroke sensor. Before calibrating the speed, be sure to check the "Pre-test setting item" -> "Control scheme selection" -> "Control parameter" page before "Speed closed-loop control", Or can not be speed calibration.

1. Under the condition that the displacement has been calibrated, in the control panel of the current tab, the default value is 500mm / min, click the button "Reset to zero";
2. Then adjust the speed of the machine given a speed;
3. Click the button "Up" or "Down" to make the machine walk a distance (the displacement must be positive) and then click the "Stop" button to stop the machine;
4. Click the "Speed Calibration" button, then click the button, "calibration with the maximum speed" value will change;
5. Click the button "Write calibration data to capture card" to complete speed calibration.
6. Repeat steps 1-5 until the speed is accurate.

Note: The maximum output frequency is 200000. If the calibrated value is more than 200000, it means the maximum calibration speed can not be achieved. It is necessary to adjust the motor deceleration ratio. If it can not be reached, it is necessary to confirm whether the selected motor speed meets the requirements.

Before calibrating the speed of the machine, please calibrate the stroke sensor. Before calibrating the speed, be sure to remove the "hook" in the "User parameter setting" -> "control parameter" page before "open speed closed loop control". Otherwise, the speed can not be carried out. calibration.

6, the system settings

Select the System Settings tab, as shown in Figure 10:

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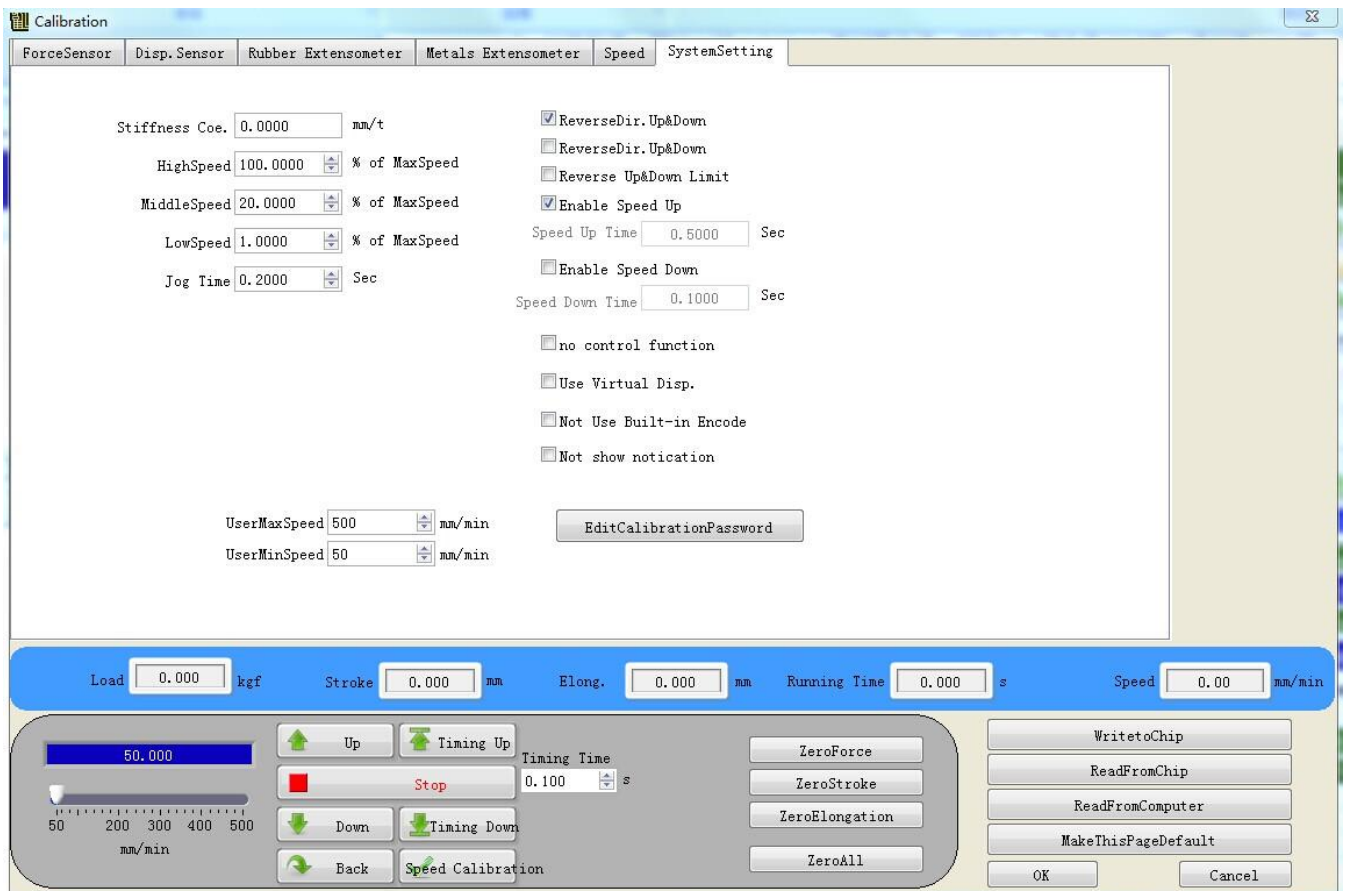


图 10

Speed Limit: Sets the maximum speed and minimum speed for the machine to run.

Tension Compression Direction Reverse: Whether to reverse the current compression compression direction.

Rise and Fall Direction Reverse: whether to let the machine rise and fall in the opposite direction.

Modify Calibration Password: Change the password when entering the calibration interface.

Modify the registration code: modify the software registration code.

Write the calibration data to the acquisition card: All the calibration data is written to the acquisition card. The calibration data is valid only when the acquisition card is successfully written.

Read calibration data from the capture card: Read calibration data from the capture card to the current display.

To read calibration data from a computer: Read the calibration data from the PC to the current display.

OK: All current data is saved to the computer and the force sensor channel is switched to the currently selected channel. And calibration data written to the acquisition card is independent, determine and can not explain the current calibration data is valid, only successfully written into the capture card is considered effective.

Cancel: All data is not saved to the computer, the setting is invalid.

6. Online

When the machine is powered on, the software will automatically go on-line. Click on the menu "Settings" à "Online" to select the correct COM port for connection, as shown in Figure 11:

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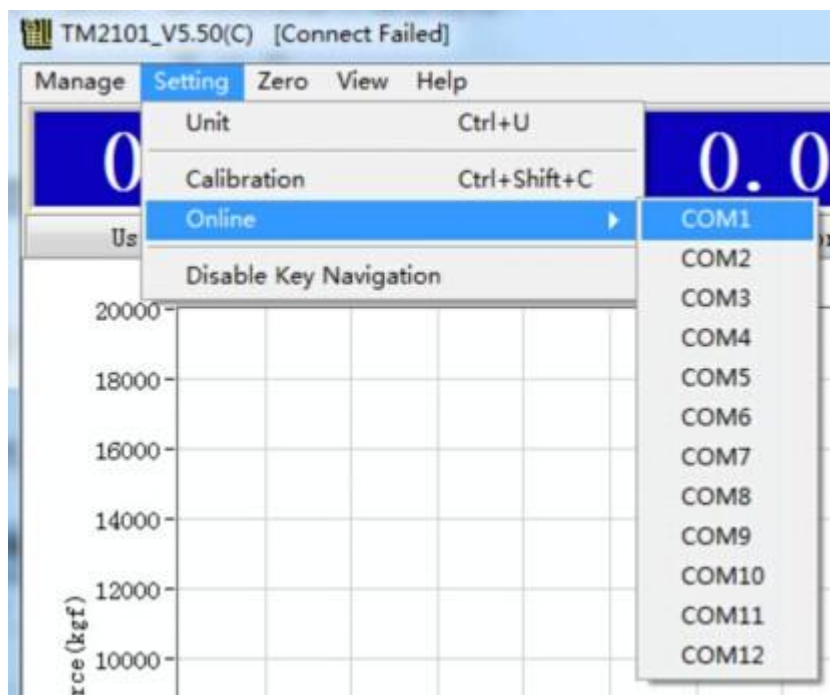


图 11

If the connection fails, a failure prompt window will pop up (Figure 12). If the connection is successful, no prompt will pop up. If the connection is successful, the software will automatically be connected to the COM port at the next software startup. Only when the connection is successful, the software can be tested.



图 12

7. Language system

Click the menu "View" à "Language" to switch the software language, as shown in Figure 13:

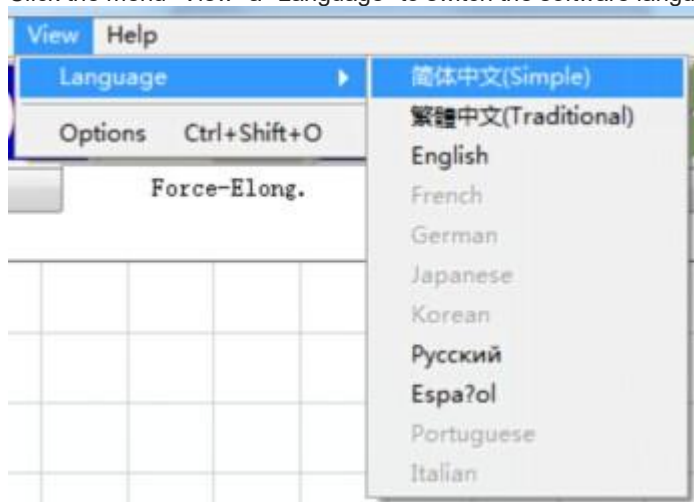


图 13

Standard Edition software with Simplified Chinese, Traditional Chinese and English three languages. Advanced function

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version of the software with 10 languages, if any special needs, please contact us.

8. Option

Click menu "View" à "Options", or press and hold the key combination Ctrl + Shift + O (3.5 shortcut list), you can enter the options interface, as shown in Figure 14:

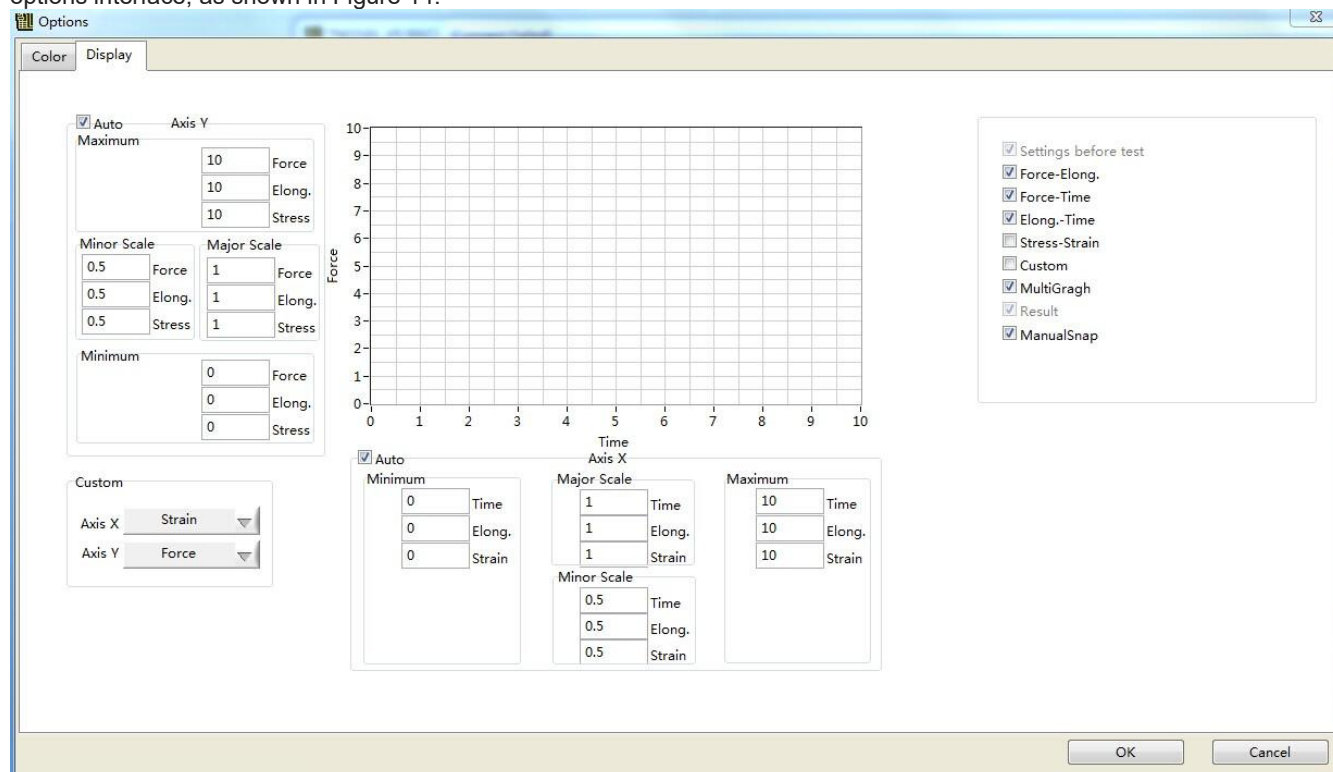


图 14

Options in the color and display two tabs, respectively, for a number of colors and display settings.

9. Registered

Click menu "Help" à "Register", or press and hold the key combination Ctrl + R (3.5 list of shortcuts), you can enter the registration interface, as shown in Figure 15:

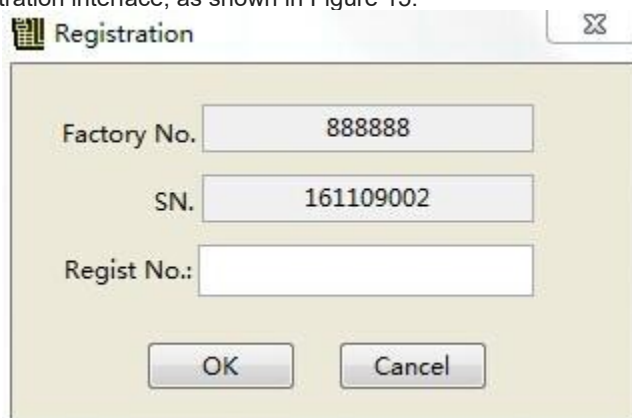


图 15

The software will have a trial period, when the expiration of the registration code to enter the correct registration before they can continue to use

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10. Activation

Press Menu "Help" à "Activate", or press and hold Ctrl + Shift + A (3.5 list of shortcuts) to enter the activation interface, as shown in Figure 16:

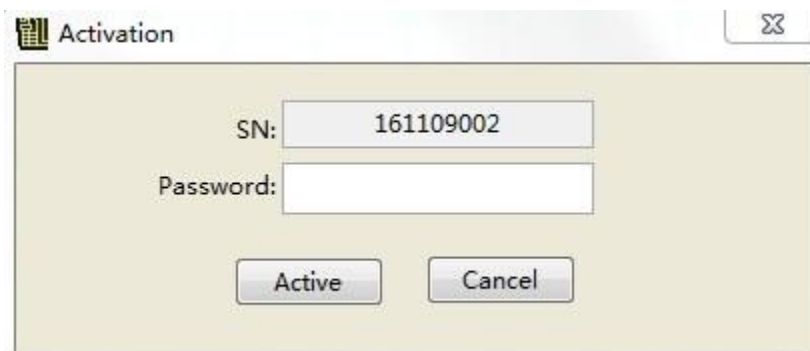
The image shows a software activation window titled "Activation". It contains two input fields: "SN:" with the value "161109002" and "Password:" which is empty. Below these fields are two buttons: "Active" and "Cancel".

图 16

According to the serial number of the system, enter the correct activation code, the software can be activated for the high-functional version. If the connection fails, the serial number is displayed as 0, and only when the connection succeeds. If the software function can not meet your test requirements, need to upgrade to high-function version, please contact us.

11. Material Editing

You can select an existing sample from the drop-down list in Sample Data Selection (Figure 17), or click Modify to add or edit sample data (Figure 18).

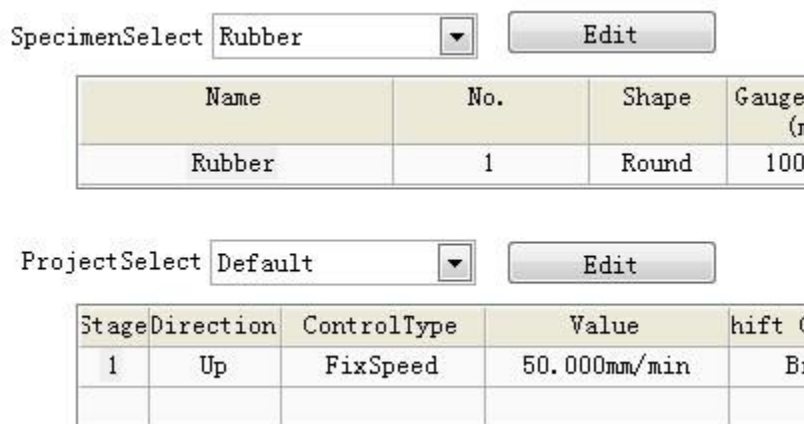
The image shows the "Material Editing" interface. It has two sections. The first section is labeled "SpecimenSelect" and has a dropdown menu showing "Rubber" and an "Edit" button. Below it is a table with 4 columns: Name, No., Shape, and Gauge (mm). The table has one row with the data: Rubber, 1, Round, 100. The second section is labeled "ProjectSelect" and has a dropdown menu showing "Default" and an "Edit" button. Below it is a table with 5 columns: Stage, Direction, ControlType, Value, and Shift (mm). The table has one row with the data: 1, Up, FixSpeed, 50.000mm/min, B.

图 17

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Name	No.	Shape	GaugeLength (mm)	Area (mm ²)	Width (mm)	Thickness (mm)	Out_Dia. (mm)	In_Dia. (mm)
Rubber	1	Round	100.000	78.540	-	-	10.000	0.000
Rubber2	2	Round	50.000	0.000	-	-	0.000	0.000
Metal	3	Round	12.500	0.785	-	-	1.000	0.000
Shoes3	4	Round	100.000	0.000	-	-	0.000	0.000
Shoes4	5	Round	100.000	0.000	-	-	0.000	0.000
Debug	5	Round	1.000	706.858	-	-	30.000	0.000
Rubber3	1	Ring	100.000	2827.433	-	-	100.000	80.000

Name: Rubber Shape: Round
 No.: 1
 GaugeLength: 100 mm BrokenGaugeL: 12.345 mm
 Area: 78.54 mm² RoundRadius: 0 mm
 Width: 0 mm Thickness: 0 mm
 Out_Dia.: 10 mm BrokenDia.: 0 mm
 Para1: 1 Para2: 1 Quantitative: 10 g/m² Weight: 1 kgf Property: 1.2345

Test No. NO6
 Material Quality
 Test Direction
 Product NO.
 Goods NO.
 Product Name
 Lot No.
 Product SN
 Order No.
 Customer Name 你好
 Operator
 Test Standard
 Ambient Temperature
 Ambient Humidity
 Test Type
 Material Quality
 Material Type
 Production Data
 Inspection Unit

Add Delete OK Cancel

图 18

Add: Add a new material

Delete: Deletes the selected material

OK: Save all changes

Cancel: Do not save changes

12. Control Method

You can select an existing control method from the drop-down list in Control Method Selection (Figure 19), or click Modify to add or edit a control method (Figure 20).

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ProjectSelect Default Edit

Stage	Direction	ControlType	Value	Shift Condition
1	Up	FixSpeed	50.000mm/min	Break

Sensor

Force 5.0kg

Elong. ☒ Stroke ☐ Rubber Extensometer ☐ Metals Extensometer

☐ Camera

SwitchValue: 25 mm

Directions

Force ☒ Reverse ☐ No Reverse ☐ Absolute

Stroke ☐ Reverse ☒ No Reverse ☐ Absolute

Elong. ☐ Reverse ☒ No Reverse ☐ Absolute

Protection

☒ SurpassForce 100 % of Measuring range

☐ SurpassStroke 9.24874E+ mm

☐ SurpassElong. 9.24874E+ mm

图 19

Project

NameList

Default

Extrude

Compression

Stretch one minute

1 minute Compression

1kg 1 minute holding

Cartons holding press

Peel off

Bending

Five chairs frame

ISO2439Indentation me

ISO2439Indentation me

ISO2439Indentation me

Rainbow weaving stret

Sponge compression te

Sponge compression te

The automotive sealir

Glass four-point bend

Debug

TestMethod

ControlPara

Name: Default English

Stage	Direction	ControlType	Value	Shift Condition	Value	PauseTim	Zero	Percent	NextProcess	CycleTim	NextProcess	
1	Up	FixSpeed	50	mm/min	Break	50	%	0	s	No Zero	100	End

Start plot from stage 1 to sta 20

☐ PreSpeed (0.003kgf)

☐ Auto stop @ break

Force Decay >=: 50 %

Break Judge 1 % of Measuring range (0.050kgf)

When Force >= 0.1 % of measuring range start Elong. (0.005kgf)

Pre-load 0.05 % of Measuring

50 mm/min

MakeThisPageDefault

Add

Delete

OK

Cancel

图 20

Control mode value: the value of the control mode in steps 1-20 of the result parameter list

Toggle Conditional Value: Toggle condition values in steps 1-20 of the result parameter list

Conversion condition: when the percentage of the switching value is reached, the conversion is carried out to the next step

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Name list: Lists all existing test methods

Preload Force: When not selected, defaults to maximum speed

Add: Add a new test method

Delete: Deletes the selected test method

OK: Save all changes

Cancel: Do not save changes

13. Control parameters

You can select a group of existing control parameters from the drop-down list in "Control method selection" (Figure 21), or click Modify to add or edit the control parameters (Figure 22).

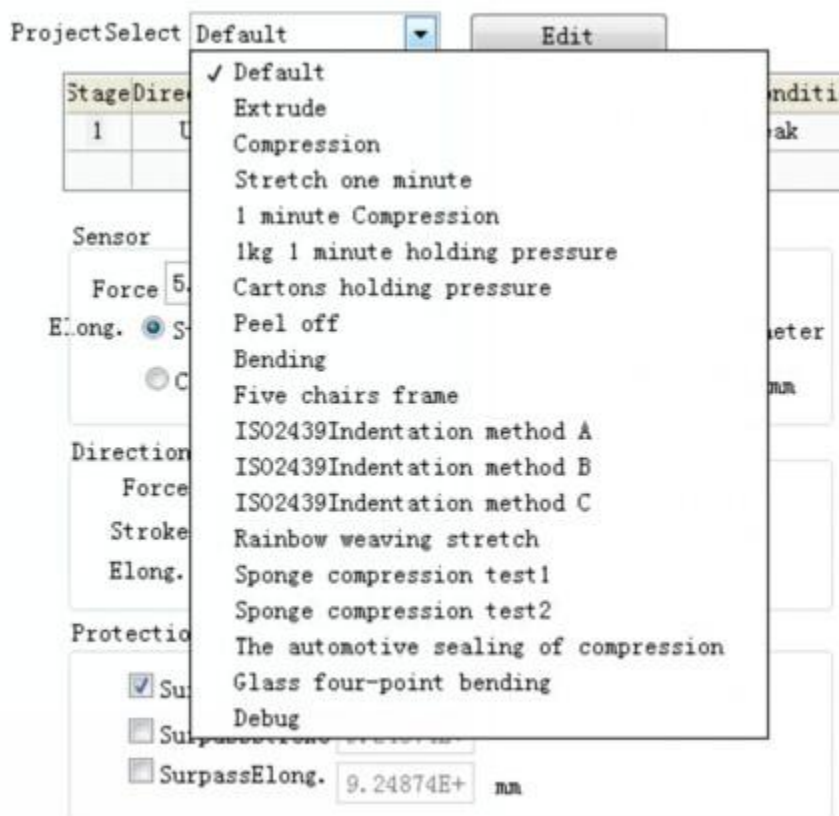


图 21

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图 22

Sensors: Selection of force and displacement sensors

Direction: whether the force, stroke and displacement values are negative or absolute

Protection: When the current value exceeds the protection value will automatically shut down, selected to enable the protection

Sampling rate: the number of sampling points per second, for a long time constant load test can choose a lower sampling rate

Test result save path: The test data will be saved in this path

Filter coefficient: filter out unstable data, 0 or 1 that does not filter

Fracture removal points: the final sample points to remove the sample fracture

Power Resolution: The higher the resolution, the higher the accuracy

Name list: Lists all existing test methods

Use default: Use the default control parameters

Add: Add a new set of control parameters

Delete: Deletes a group of selected control parameters

OK: Save all changes

Cancel: Do not save changes

14. Test Results

You can select a set of existing test results from the drop-down list in "Test result selection" (Figure 23), or click Modify to add or edit test results (Figure 24).

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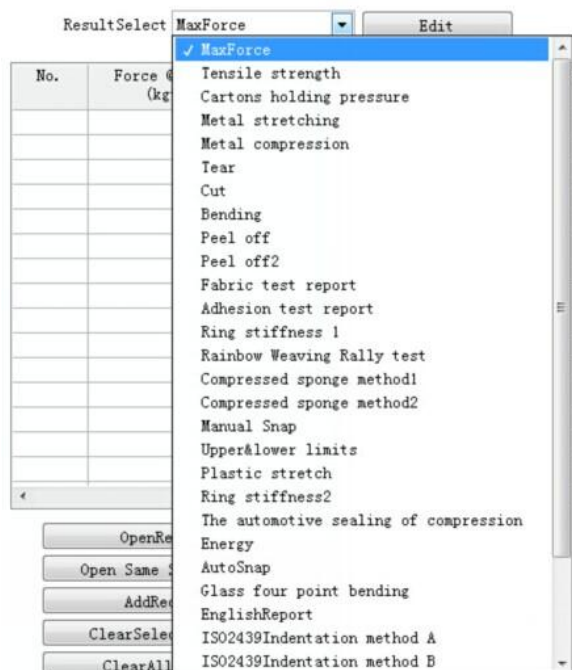


图 23

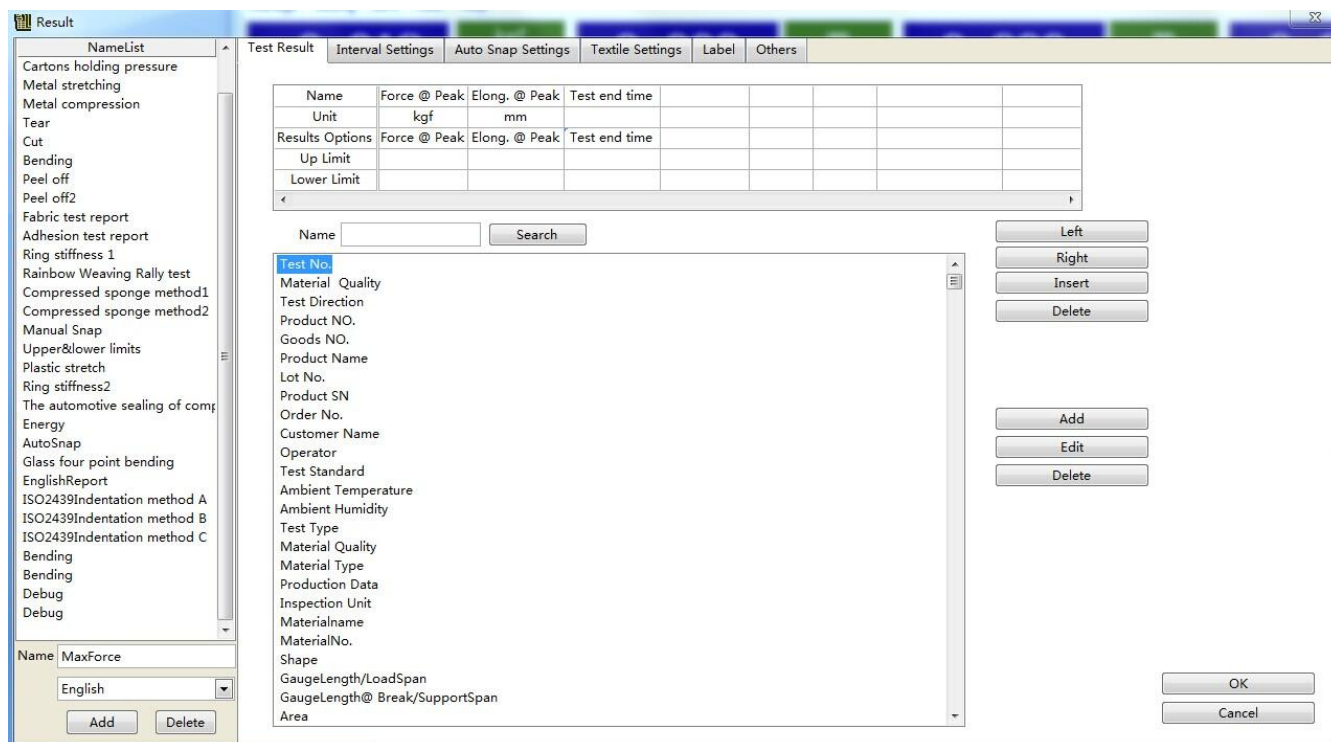


图 24

Name list: List all existing test results

Add: Add a new set of test results

Delete: Deletes a group of selected test results

OK: Save all changes

Cancel: Do not save changes

Results In the project table, you can select one from the list of parameters to add to the table, or click on a table to delete, move left, and right. The Add, Edit, and Delete buttons in the right side add, edit, and delete the parameter list. For

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example, select the tensile strength in the resulting parameter, click Edit or double-click the tensile strength of the mouse to bring up the parameter editing interface, as shown in Figure 25:

The screenshot shows the 'EditFormula' dialog box with the 'BasicExplanation' tab selected. It contains a table of parameters and a formula editor at the bottom.

Symbol	Name	Symbol	Name	Symbol	Name	Symbol	Name
m1	Materialname	y1	Force @ UpYield	Q8	Lower limit	foe	Load of Elong. Diff
m2	MaterialNo.	y2	Elong. @ UpYield	Q9	Test end time	fsp	Fixed Slip
m3	Shape	y3	Force @ DownYield	Q10	Test file name	ed	Elong. Difference
m4	GaugeLength/LoadSpan	y4	Elong. @ DownYield	Q11	The slope between Max	sr	Slip Resistance
ep	GaugeLength@ Break/Supp	y5	Force @ First Non-Proportional	Q12	Reserved	nmf	MaxForce@Manual Snap
m5	Area	y6	Elong. @ First Non-Proportional Ext.	Q13	MaxForce @ Peel inter	smf	MinForce@Manual Snap
m6	Width	y7	Force @ Second Non-Proportional			anf	ArgForce@Manual Snap
m7	Thickness	y8	Elong. @ Second Non-Proportiona			rmk	Test Remark Info.
m8	OutDia.	e	ElasticityCoe.			ft2	MaxElong. 2
m9	InDia.	t	TestTime			ft3	MaxElong. 3
m10	MaterialProperty	x1	Force @ Valley			ft4	MaxElong. 4
m11	Paral	x2	Elong. @ Valley			ft5	MaxElong. 5
m12	Para2	ft	MaxElong.			saf	Force@SATRA TM102
m13	Quantitative	Q1	Energy @ 1st Stage			sae	Elong.@SATRA TM102
m14	Weight	Q2	Energy @ 2nd Stage				
s	Speed	Q3	Energy @ 3rd Stage				
h1	Force @ Peak	Q4	Energy @ 4th Stage				
h2	Elong. @ Peak	Q5	Energy @ 5th Stage				
b1	Force @ Break	Q6	Energy @ 6th Stage				

Below the table, the 'Name' field is set to 'Tensile strength', 'UnitType' is 'Force/Length', and 'English' is selected. The 'Formula' field contains 'b1/m6'. A list of known operators is provided: +, -, *, /, %, (,).

图 25

The name for the tensile strength, tensile strength = maximum force / area in the above table to find the maximum force to replace the symbol h1, the area instead of the symbol m5, so the formula h1 / m5, unit type stress (intensity) , After the completion of editing parameters to determine. The above list is the basic parameter symbol description, the user can edit the extended parameters.

Interval settings, automatic take point settings and other tabs can be filled in as required.

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Interval settings:

Interval Type: ☐ Elong.(mm) ☐ Time(s) ☒ Percentage of Max. Elong.

Valley Peak Value Min.% @ Peel interval: 5 %
Peak Valley Value Min.diff @ Peel interval: 0.005 kgf

	Interval 6	Interval 7	Interval 8	Interval 9	Interval 10	Interval 11	Interval 12	Interval 13	Interval 14	Peel interval
Start of elong.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
End of elong.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Start of time	300.000	360.000	420.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
End of time	360.000	420.000	480.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Start of % of Max. Elong.	0.000	33.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.000
End of % of Max. Elong.	0.000	66.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	80.000

☐ Set manualsnap1 and manualsnap2 as peel interval

☐ Mark the 1st interval on the graph ☐ Mark the 7th interval on the graph ☐ Mark Peak Number: 5

☐ Mark the 2nd interval on the graph ☐ Mark the 8th interval on the graph ☐ Mark Top N Peak

☐ Mark the 3rd interval on the graph ☐ Mark the 9th interval on the graph ☐ Mark Least N Peak

☐ Mark the 4th interval on the graph ☐ Mark the 10th interval on the graph ☐ Mark Valley Number: 5

☐ Mark the 5th interval on the graph ☐ Mark the 11th interval on the graph ☐ Mark Top N Valley

☐ Mark the 6th interval on the graph ☐ Mark the 12th interval on the graph ☐ Mark Least N Valley

☐ Mark the peel interval on the graph ☐ Mark the 13th interval on the graph ☐ Mark Max Peak

☐ Mark mean value @ peel interval on the graph ☐ Mark the 14th interval on the graph ☐ Mark Min Peak

☐ Mark the ISO3377 interval on the graph

☐ Mark the ISO6133 interval on the graph

☐ Mark upper limit: 0.555 kgf 0 kgf 0 kgf 0 kgf 0 kgf 0 kgf 0 kgf

0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm

☐ Mark lower limit: -0.225 kgf 0 kgf 0 kgf 0 kgf 0 kgf 0 kgf 0 kgf

0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm

☐ Mark Standard Value: 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm

3 kgf

OK Cancel

图 25-2

Interval mode: the software supports three types of division of the model, deformation, time, deformation percentage;
Peaking interval drop peak to valley ratio: only when the peak valley drop ratio is greater than the set value, this peak as the effective peak;

Peeling interval minimum drop strength: when the peak valley drop value is greater than the set value, only the peak as the effective peak;

Note: The above two parameters, mainly for small fluctuations in the value of filter out, but if this value is set too large, will not get the peak and valley.

Take the first and second manual take point value as the peeling interval: Take the point 1 and the take point 2 as the starting point and the end point of the peeling section manually

Marking force limit: the upper limit of the line of force shown in the curve, the ceiling line is set with two points connected into a line.

Marking force lower limit: The lower limit force line is displayed on the curve, and the upper limit line has two points that are set as one line.

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Auto Snap setting:

Test Result	Interval Settings	Auto Snap Settings	Textile Settings	Label	Others																																																																																																																																																																																																																																									
		<table border="1"> <thead> <tr> <th></th> <th>Fixed Force Ff1-Ff20(kgf)</th> <th>Fixed Elong. Fd1-Fd20(mm)</th> <th>Fixed Elong.Rate Fe1-Fe20(%)</th> <th>Fixed Stress Fs1-Fs20(MPa)</th> <th>Fixed Time Ft1-Ft20(s)</th> <th>% of Max. Force Pf1-Pf20(%)</th> <th>% of Broken Elong. Pd1-Pd20(%)</th> <th>Actions</th> </tr> </thead> <tbody> <tr><td>1</td><td>21.414</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0</td></tr> <tr><td>2</td><td>28.042</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0</td></tr> <tr><td>3</td><td>34.670</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0</td></tr> <tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>13</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>14</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>17</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>19</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>20</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>21</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>22</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>23</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>25</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		Fixed Force Ff1-Ff20(kgf)	Fixed Elong. Fd1-Fd20(mm)	Fixed Elong.Rate Fe1-Fe20(%)	Fixed Stress Fs1-Fs20(MPa)	Fixed Time Ft1-Ft20(s)	% of Max. Force Pf1-Pf20(%)	% of Broken Elong. Pd1-Pd20(%)	Actions	1	21.414	0.000	0.000	0.000	0.000	0.000	0.000	0	2	28.042	0.000	0.000	0.000	0.000	0.000	0.000	0	3	34.670	0.000	0.000	0.000	0.000	0.000	0.000	0	4									5									6									7									8									9									10									11									12									13									14									15									16									17									18									19									20									21									22									23									24									25										
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☐ Mark the point @ Fixed Force on the graph ☐ Mark the point @ Fixed Time on the graph
☐ Mark the point @ Fixed Elong. On the graph ☐ Mark the point @ Fixed % of MaxForce on the graph
☐ Mark the point @ Fixed Elong.% On the graph ☐ Mark the point @ Fixed % of Broken Elong. On the graph
☐ Mark the point @ Fixed Stress on the graph

Name: MaxForce
 English
 Add Delete

OK Cancel

图 25-3

Automatic take point setting: The software supports fixed force point, fixed deformation point, fixed elongation point, fixed stress point, fixed time point, maximum force percentage point, fracture deformation percentage take point 7 points Mode, these seven modes can be set at the same time or set separately.

Action: The software also supports points in the back and forth on the curve were taken. An action of 0 means taking a point across the curve. An action of 1 indicates that the point was taken at the first test step. For example, in the first step (to process) and the second step (return) on the deformation points were set, the settings are as follows: :

	Fixed Force Ff1-Ff20(kgf)	Fixed Elong. Fd1-Fd20(mm)	Fixed Elong.Rate Fe1-Fe20(%)	Fixed Stress Fs1-Fs20(MPa)	Fixed Time Ft1-Ft20(s)	% of Max. Force Pf1-Pf20(%)	% of Broken Elong. Pd1-Pd20(%)	Actions
1	0	5.000	0.000	0.000	0.000	0.000	0.000	1
2	0	5.000	0.000	0.000	0.000	0.000	0.000	2

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Textile Testing :

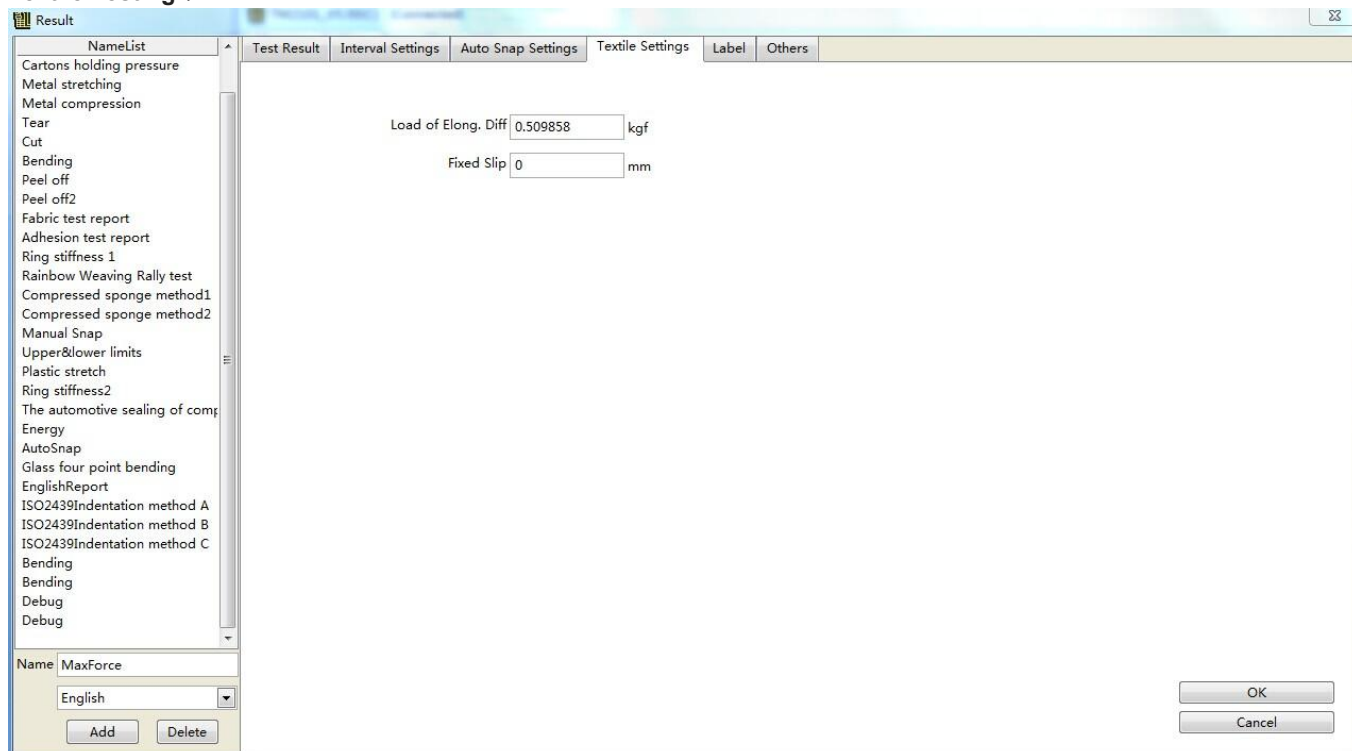
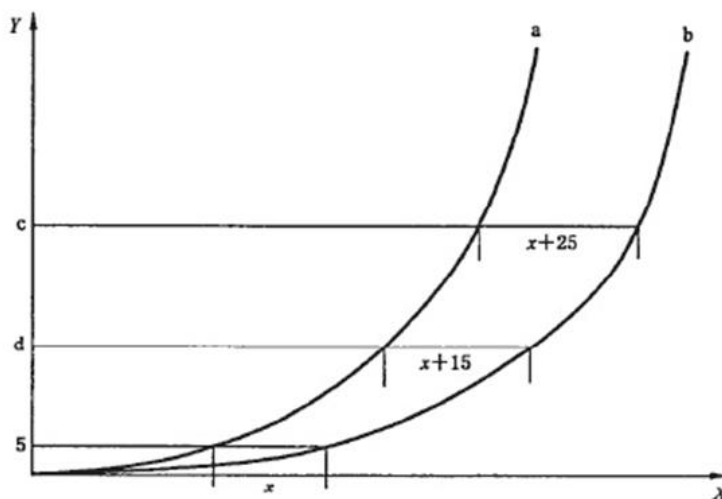


图 25-4

Elongation difference load: calculate the elongation difference of the set parameters, as shown in the figure, the elongation difference load is 5, the elongation difference X

Specified slip: Set the sliding resistance parameters, as shown in the figure, the specified slip is 15, the sliding resistance is d point corresponding to the power value

The specified slip is 25, the sliding resistance is the corresponding point C point of the power value.



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Label:

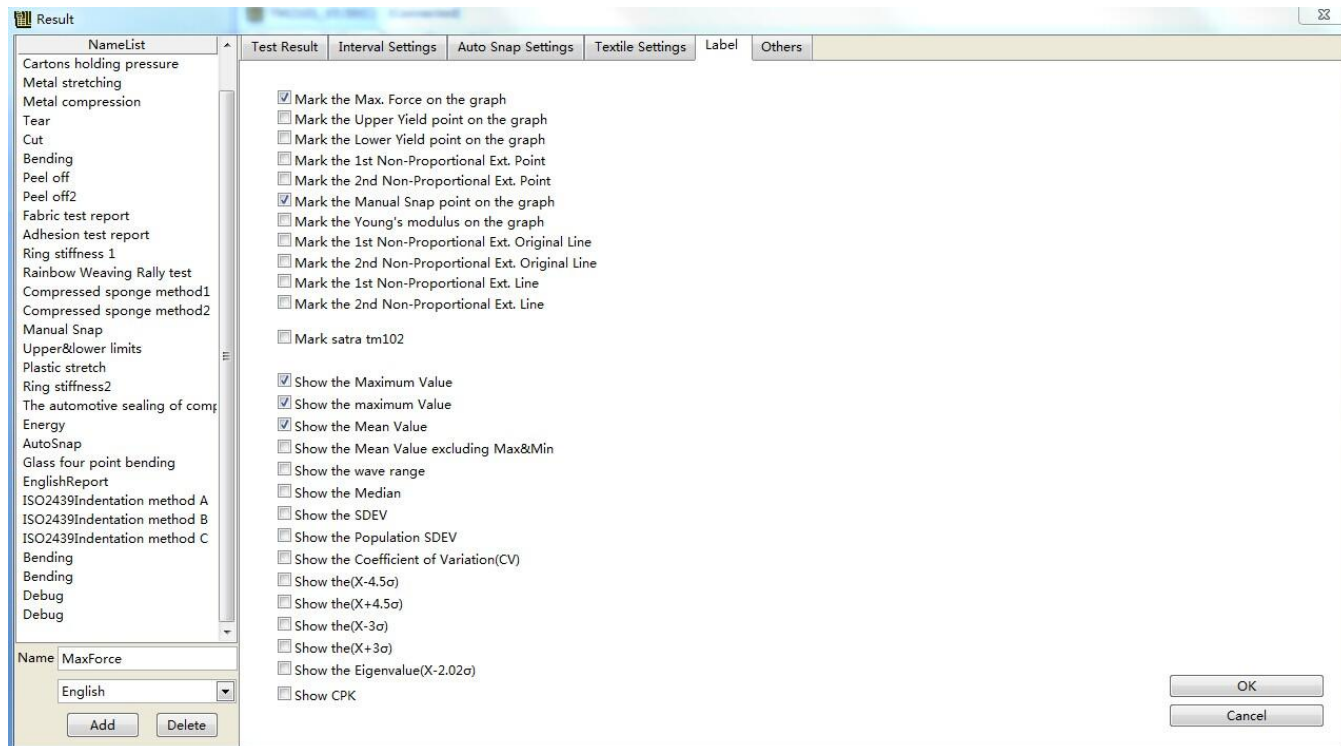
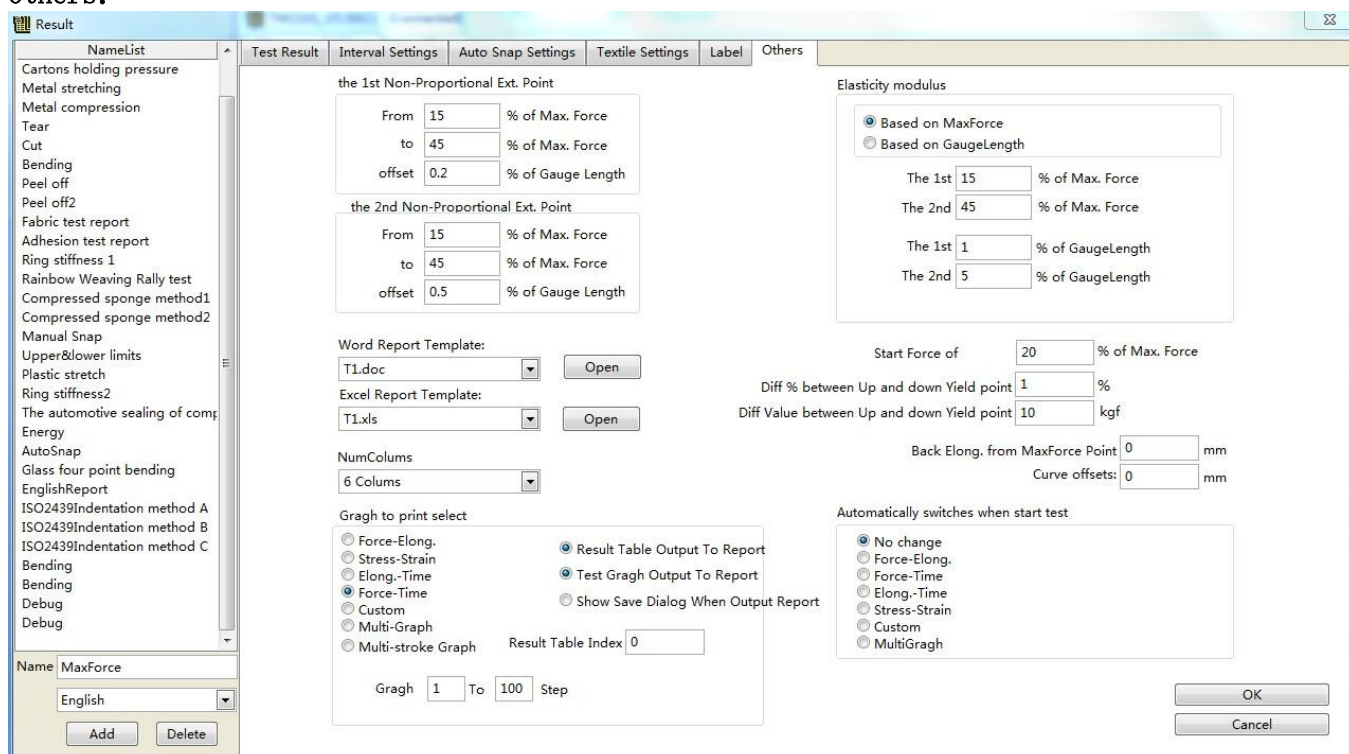


图 25-5

Mark the setting interface, mark the curve on the maximum force and some feature points set, and whether to display multiple test results of the statistical results.

Others:



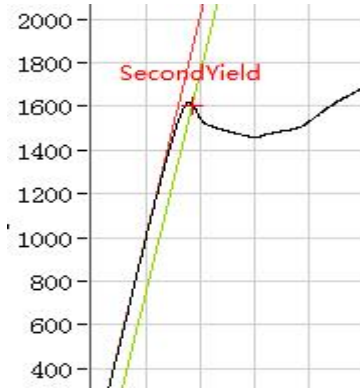
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图 25-6

The first rule is to set the non-column extension point: As shown in the figure above, the starting point of the non-proportional original curve is 15% of the maximum force and the end point is 45% of the maximum force, as shown in the red slash line. Non-proportional original curve parallel offset 0.2% of the corresponding gauge curve, as shown in the following figure yellow slash. Yellow oblique line with the intersection of test curve, that is non-proportional extension point.



Elastic modulus: Used to set the start and end points of the elastic zone. The elastic zone is the best (that is, the straightest) area of the linear section of the force-displacement curve.

Word report template, Excel template: The software can set a variety of report templates, select the template, the test report that the selected template style output report. Also open the template editor, see the report editor.

Report Output Columns: Sets the maximum number of rows displayed in a row.

Report graph selection: Output graph selection in report;

Report Options Test Results Table: Whether to output test results to the report:

The report shows the test curve: whether the curve is output to the test report;

Results Table Number: Test Results Table is the first few tables in the report. 0 indicates the last table.

Yield Point Starting Strength: Starts to calculate the starting point of the yield point:

The yield drop ratio between the upper and lower yield points is calculated as yield point, peak to valley drop ratio, and the drop ratio is greater than the set value.

Upper and lower yield point force drop: calculate the yield point, peak valley drop, and only drop is greater than the set value, be considered as an effective yield point;

Automatically switch to: When testing, switch to the specified interface

15. Report editing

Click edit report to enter the report editing interface, as shown in Figure 26:

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16.1 Word Repot

Click the Word Report button to generate a Word report. Users can create their own Word template, in the test results à other à Word report template drop-down list, select the template, the Word report will be the template to produce. The template must have a bookmark called "Gragh" and a two-row, two-column table where the location of the bookmark is the location of the graph and the table is replaced with the test result data, as shown in Figure 27:

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XXXXXX Electric Technology

Tensile Test Report

Customer Name	你好	Test Date	2016-12-15 17:10:07
Operator		Test Standard	
Test Speed	50.000mm/min	Gauge Length	100.000mm

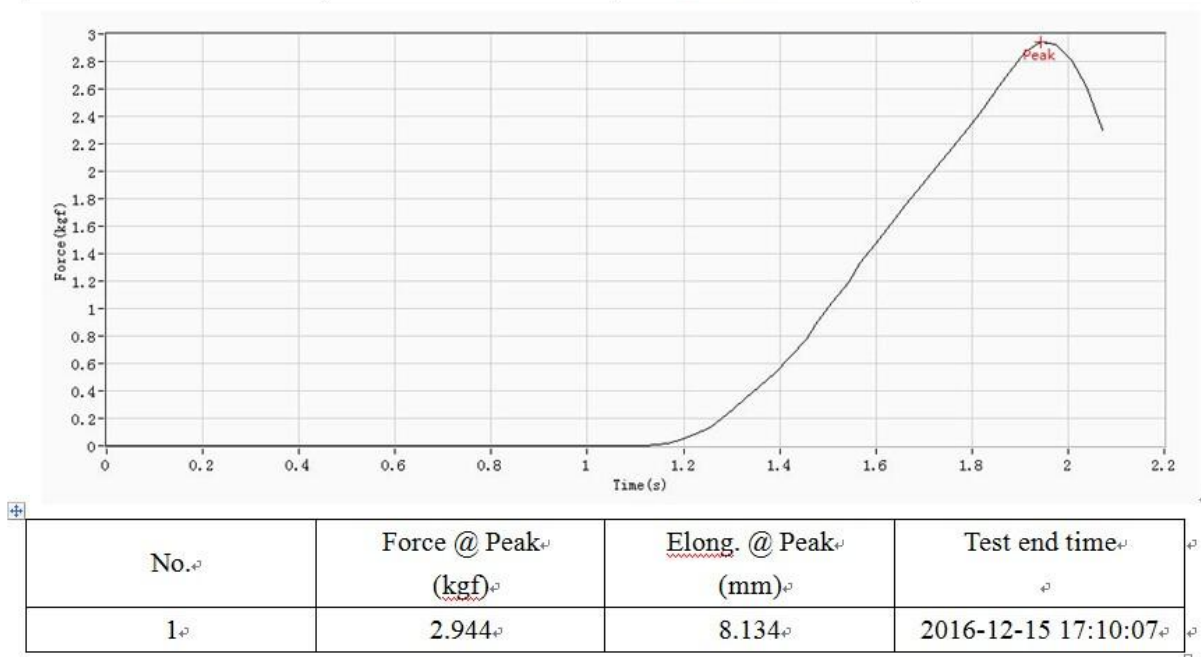


图 27

In Word, click the menu "Insert" à "Bookmarks" to insert a curve, as shown in Figure 28 and Figure 29:

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图 28



图 29

Enter the bookmark name "Gragh", click Add to add the curve to the current cursor position.

In addition, if the template contains text in the format of? ** and the content between the two question marks is the same as the text in the test result formula table, it will be replaced by the actual value of the test result.

Modify the data folder under the Config.ini file NumColumns = 10 can change the report test results of the maximum number of columns.

16.2 Excel Repot

Click the Excel Report button to generate an Excel report. Users can create their own Excel template, in the test results à other à Excel report template drop-down list, select the template, the Excel report will be the template to produce. The template must have a bookmark called "Gragh" and a two-row, two-column table. The location of the bookmark is the location of the graph. The table is replaced with the test result data, as shown in Figure 27-2:

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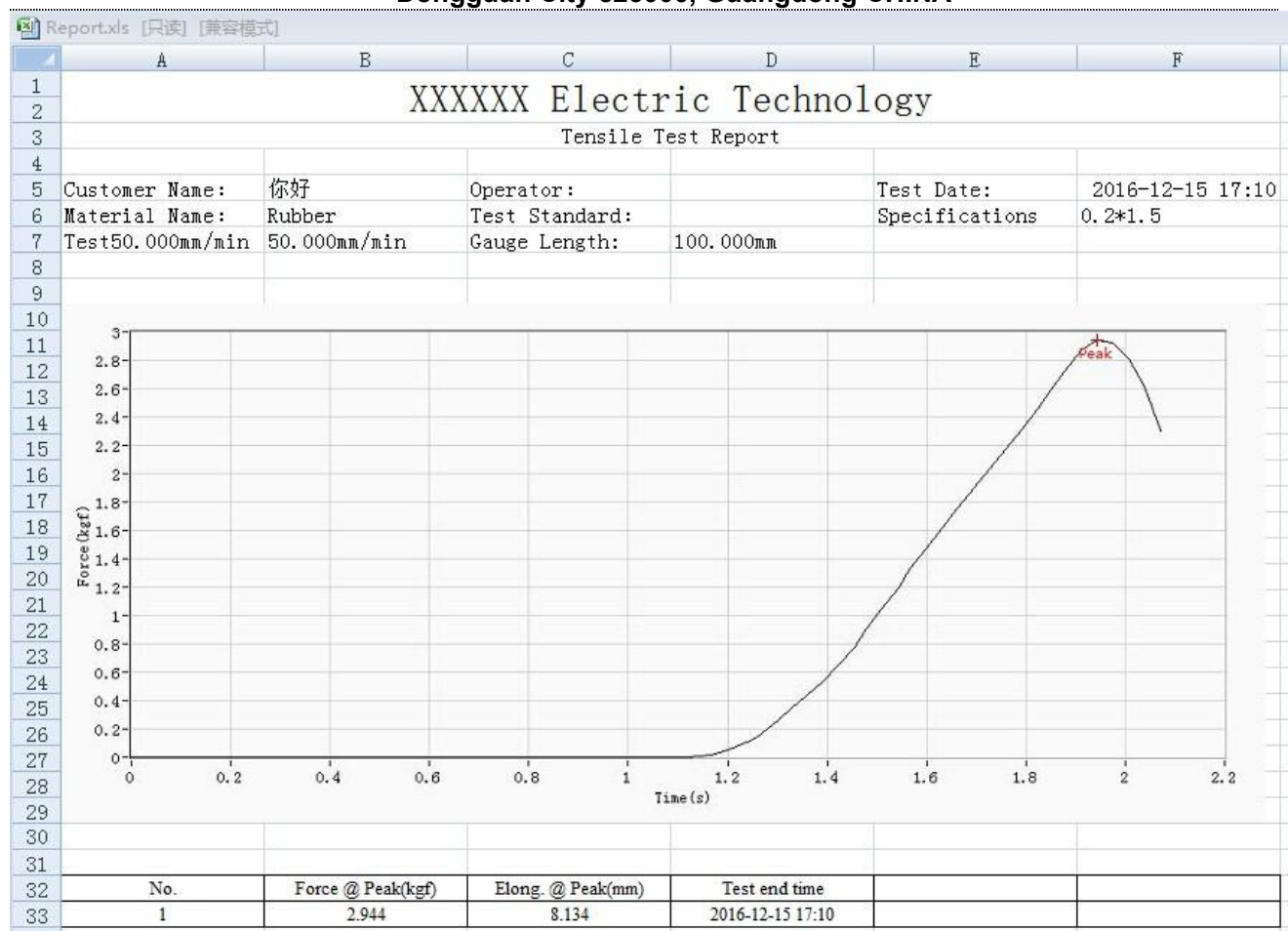


图 27-2

17. Manual Snap

Click the menu "View" à "Options", in the Display tab, select the manual access point to open the manual access point function, as shown in Figure 30 and Figure 31:

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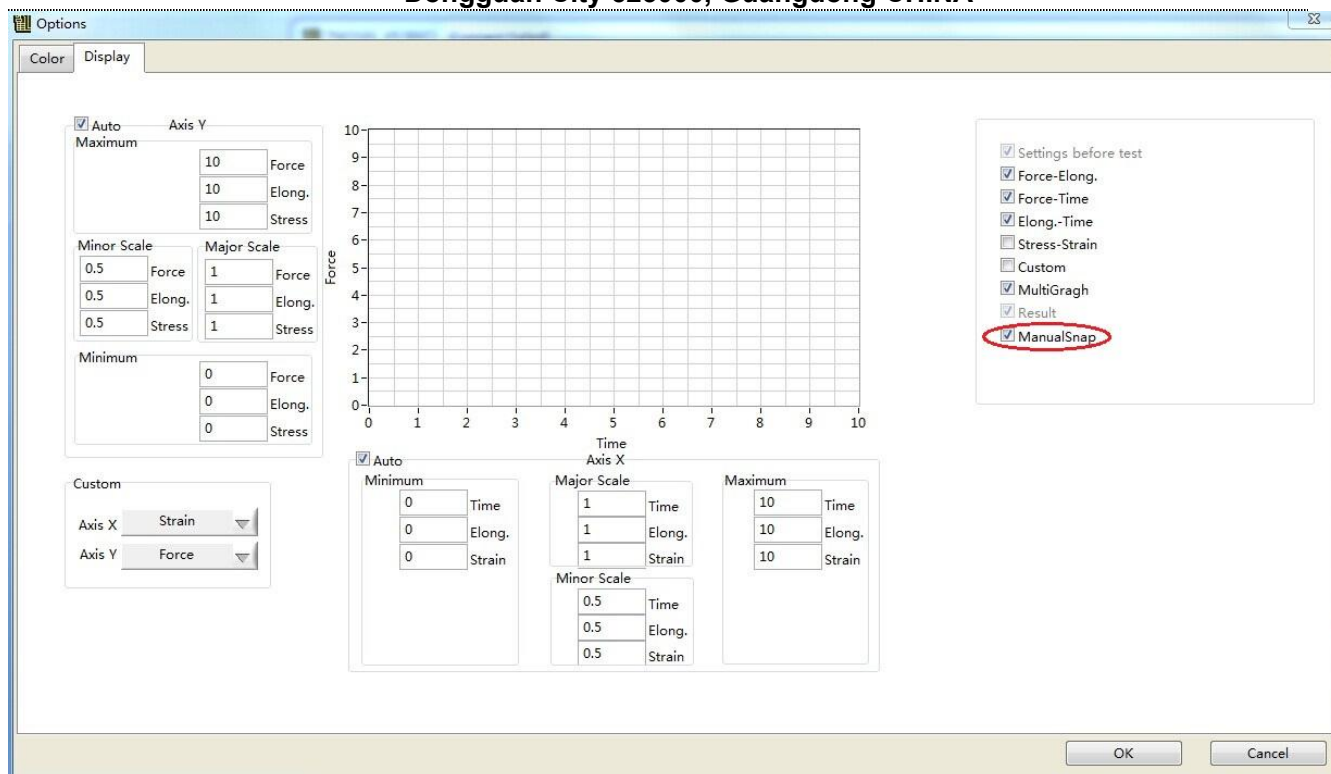


图 30



图 31

During the test, click the point or shortcut key F10, the current force, displacement and time to the table. In the non-test process, click to take points, if the cursor is not visible, the cursor is visible, the first point, if the cursor is visible, the cursor position is the current take point position.

18. Graphics operations

In the curve display window, click the right mouse button, pop-up graphical operation menu, as shown in Figure 32:

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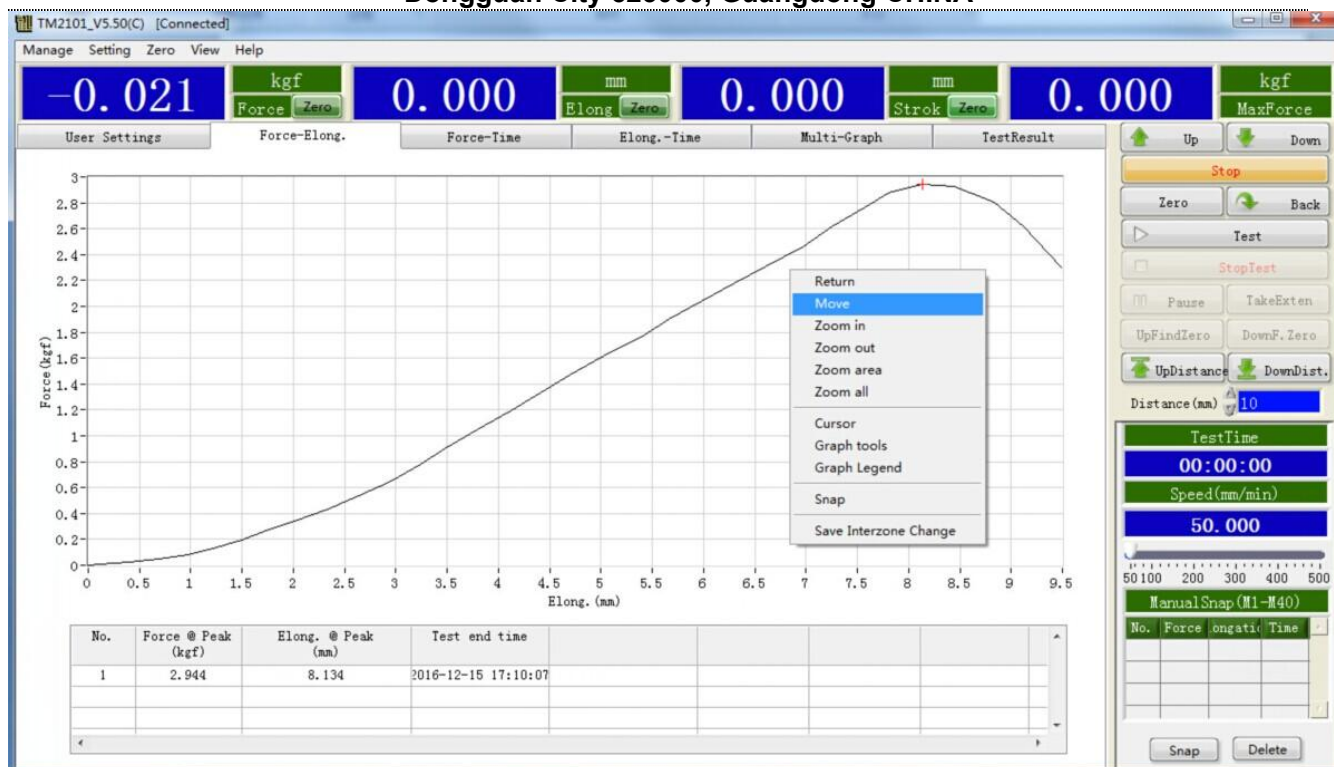


图 32

Returns: Returns the initial state of the mouse. To drag the cursor over the curve, the mouse must return to the initial state

Translation: Translation curve

Zoom In: Enlarge the curve

Zoom out: Reduce the curve

Local Zoom: Hold down the left mouse button, drag a rectangular box to enlarge the curve

All: The entire curve is shown in the figure

Cursor: Cursor is displayed, the current cursor position in the upper corner shown in Figure 32, the blue line marked

Graphic tools: graphical tools are displayed, as shown in Figure 32, the red line, graphical tools can also be translated on the curve, zoom and other operations

Take the point: the same function with the button to take points

3.5 Shortcut list

Shortcut list:

hot key	Features	hot key	Features
F2	Up	Ctrl + L	Login
F3	Down	Ctrl + Q	Exit
F4	Stop	Ctrl + U	Unit System
F5	Zero	Ctrl + Shift + C	Calibration
F6	Return	Ctrl + F	Force Zero
F7	Start testing	Ctrl + S	Strok Zero
F8	Stop testing	Ctrl + E	Elong Zero
F9	Pause Test / Continue Test	Ctrl + Shift + Z	All Zero
F10	Manually Snap	Ctrl + Shift + O	Option
Ctrl + H	Help		
Ctrl + R	Registered		
Ctrl + Shift + A	Activation		

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3.6 Configuration file:

AdFilter = 5 in the Initial.ini file indicates the number of sliding filter points of the AD value of the lower-level machine. It is effective immediately after writing the acquisition card in the calibration interface.
NumCols = 10 in the Config.ini file is used to control the maximum number of columns for report test results.

4 Common problems and solutions

Question 1, why click the start test always pop-up online failure, how to solve?

Answer: Online failure indicates that the software can not connect with the machine successfully. Check whether the serial cable is connected to the computer and whether the machine is powered on. To ensure that the connection is not problematic, click menu "Settings" à "Online" Port, if you do not know the connection COM port, you can choose one by one COM port online, until the successful online so far. If you can not successfully online, exit the software, turn off the machine power, and then restart the machine and software to try.

Question 2, the software always pops up after a period of "use of time has come, please contact the manufacturer," how to solve?

A: That the software has exceeded the period, please contact the manufacturer, obtain registration code, re-registration of the software can be used normally. For details, please refer to 3.4.

Question 3, click the "up" or "down", the machine speed and set the speed does not meet, always running fast, how to solve?

A: Please remove the "√" before "User parameter setting" - "Control scheme" -> "Control parameter" -> "Speed closed loop control". If there is no displacement encoder or no calibration Do not turn Speed Closed Loop Control on.

Question 4, click on the "test" button, the machine just run for a while, the sample just force to shut down, and how to solve?

A: Please set the value of "User Parameter Setting" -> "Control Scheme" -> "Test Method" -> "Initial Judgment Ratio" to be bigger. If it is below this value, do not judge break, In the beginning of the trial due to the wrong judgment fracture and shut down.

Question 5, I did not take the encoder, the machine can automatically return to Mody?

A: No access to the encoder, the machine does not travel value, the machine back to the position by detecting the value of the trip to return to the trip zero, all no value can not return to the trip, and must return to the function code .

Question 6, click the "up" or "down", the machine running direction and settings do not meet the direction of anti-how to solve?

A: Please set "√" in "Setting" - "Calibration" -> "System Setting", and then click the button "Write calibration data to the capture card".

Question 7, the test method selected "stretch" or "compression", the machine running direction and settings do not meet the direction of anti-how to solve?

A: Please set "√" in "Setting" - "Calibration" -> "System Setting", and then click the button "Write calibration data to the capture card".

5 Appendix 1: Explanation of some calculate formula for test result

1. Ring stiffness

Thermoplastic pipe Determination of ring stiffness calculates according to GB/T 9647-2003.

$$S=(0.0186+0.025Y/d)F/(LY)$$

F---Force @ 3.0% elongation percentage. The unit is kN.

L---Sample length. The unit is m.

Y---Elongation @ 3.0% elongation percentage. The unit is m, Em. Y/d=0.03.

Please fill the form input fields with the following values:

Gauge column of sample data--> inside diameter of the measured pipe

Width column--> the length of the tested tube

First point of "test results" "auto sample setting" -->3

2. Elastic modulus:

Calculate according to GB8653-1988

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Elastic modulus=Stress difference/strain difference of any two points in elastic range

The two points for elastic modulus calculation are set up in Tab "Other" in "Test Result".

3. Tensile strength

Tensile strength=the large force/area

4. Fracture gauge

The Distance after sample fracture, need manual input.

5. Elongation after sample fracture

Elongation=(Fracture Distance -Original Distance)/Original Distance

6. Upper yield strength

Upper yield=Force on upper yield point/area.

7. Low yield strength

Low yield=Force on low yield point/area

For the material with no significant yield, use Rp0.2 as yield strength.

8. Provision of non-proportional extension strength

Non-proportional extension strength=Force on non-proportional extension point/area.

9. Provision of the total extension strength

Total extension strength= Force on total extension point/area.

10. Shear strength

Shear strength= Large Force/ (Distance * Width)

11. Shear modulus

Shear modulus= (Young's modulus * Area/ Distance)*Thickness/ (Distance * Width)

12. Maximum bending strength

Maximum bending strength=3 * Large Force * Distance / (2 * Width * Thickness * Thickness)

13. Bending modulus

Bending modulus= (Young' s modulus * Area/ Distance) * Distance * Distance * Distance/ (4 * Width * Thickness * Thickness * Thickness)

14. SDEV (Standard deviation)

SDEV= Radical of $[(x_1-\bar{x})^2+(x_2-\bar{x})^2+\dots+(x_n-\bar{x})^2]/(n-1)$. X_n is the value of each sample, $\bar{x}$ is average of all samples, n is the number of samples.

15. CPK(Process capability index)

$Cpk=Cp(1-|Ca|)$, 其中 $Ca=(X-U)/(T/2)$, $Cp=T/(6\sigma)$, T =Upper specification limit - Low specification limit ;
 $U=(Upper specification limit + Low specification limit)/2$; $\bar{X}$ is the average, σ is standard deviation.

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Quality Assurance

I 、 The guarantee period is 12 months (consumer goods and travel cost are not included).

II 、 The main quality warranty maintenance certificate

1. Please keep this guarantee letter, if you lost it, please connect with us in a month.
2. If this guarantee letter has been altered or it has no our stamp, it is useless.

III、 The following conditions need to pay reasonably even in the assurance period.

1. Natural reasons
2. Operating mistakes
3. Voltage is not fit for our operation instruction
4. Repack it without our guides
5. Damaged for borrowing to others
6. Damaged for authorized machine modification
7. Damaged for authorized calibration
8. Authorized transshipment mistake
9. Serve for long distance area

IV、 Notes:

1. Where the original in Guangdong province installation of our products, if the product moved to outside Guangdong-area use, whether or not within the effective warranty period, the transportation and travel expenses of the service personnel should be paid by the client.

2. All customers outside of Guangdong province, whether or not in the warranty period, the service of transportation and travel expenses paid by the customer.