

# **Tablet hardness tester**

## **User's Manual**

Table of Contents	
Table of Contents	1
Introduction	2
Product registration	2
Technical service	2
Proper operation	2
Contact Us	2
Introduction	3
Brief introduction	3
Function description	4
Specification	6
Environment requirement	6
Power supply	6
Installation	6
Check	6
Instrument settle	6
Connect to the power supply	6
Offset adjustment	6
Zero rigidity adjuster	6
Hardness value is rectified	7
Operation	7
Power on	7
Mode preset	7
Test	7
Power off	8
Demonstration	8
Maintenance	8
Troubleshooting	8
Packing list	9
Product quality guarantee	1 0
Using instruction	1 0
Registration card	1 0

## Introduction

Thanks for purchasing the product Tablet hardness tester designed and manufactured by us.

Please read user's manual carefully before using the product. It will help you operate it properly and efficiently.

## Product Registration

Prior to use the product, please fill up the user's registration card and mail to us, in order to get our service in future.

## Technical Service

Pls. contact our marketing department for any service during warranty. Be sure that you have sent back the user's registration card.

If you have any problems, Pls. Try to find answers in user's manual first, or you can call our marketing department.

## Proper Operation

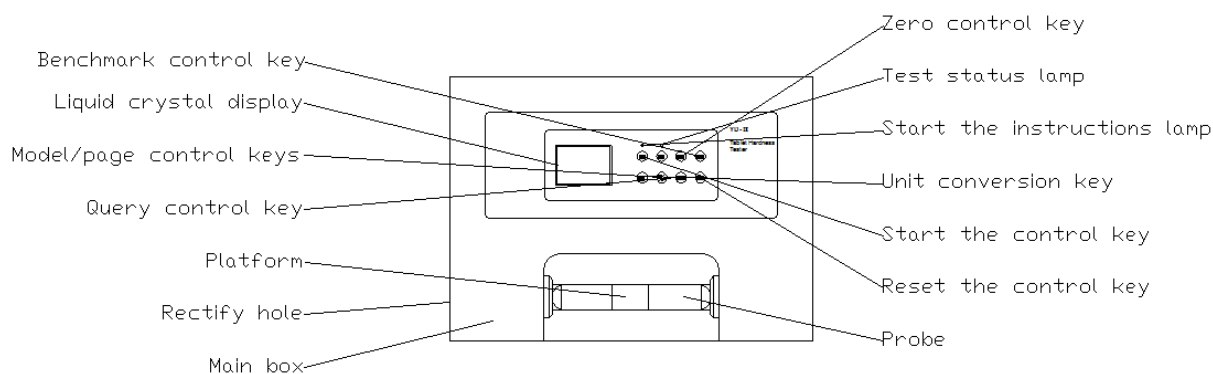
Make sure you have read this manual carefully before installing/operating the instrument. For any concerns pls. Contact us.

- Transport with care. Any incline, convert, and hit are prohibited.
- Check and protect all safety related labels.
- It is prohibited to use any damaged product and power cord.
- Turn off the power before maintenance, or moving.

## Contact Us

Tablet hardness tester consist of main box, control system, sensor, transmission part, probe part, printer etc. and centrally controlled by precision auto-control system consisted by MPU. It has features of high-auto-operation, simplified control, and convenience for operation, high accuracy, high sensitivity, concision style, low noise.

Tablet hardness tester consist of bottom, main box, front panel, rear panel etc.



Front panel include:

- Liquid crystal display
- Test control key
- Test status lamp
- Model/page control keys
- Start the instructions lamp
- Start the control key
- Query control key
- Unit conversion key
- Reset the control key
- Zero control key
- Benchmark control key
- Product
- Manufacturing

Rear panel includes:

- Power on switch
- AC socket (fuse jack included)

## Function description

- Liquid crystal display

Tablet hardness tester display module design, starting from the need of large amount of information and high intelligent matching the high resolution LCD screen, the user can according to the screen prompt enjoy intelligent operation, each process characters suggest and quantitative indicators are given.

- Test control key

Test status button to start the measurement condition of function keys, into the state, may realize the instrument zero and benchmark of instrument calibration.

- Test status lamp

Test indicator light to show the system working status indicator light. The set-up of the calibration indicator, said systems, can be in this state under zero and calibration work, in this state, no peak locking function. When the calibration indicator lights out, into the normal test state hardness value.

- Model/page control keys

By number of pieces of key, can choose cycle system in a single chip test or a group of test mode.

Single chip test mode, 1 pill each time measuring; Group multiple test mode is divided into 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, a total of 10 kinds of ways, each group measured corresponding of the number of tablets, and numerical data for each set of test statistics and data processing.

In the state of the query, the key used to flip key use, test data used for query of many experiments, recycling page function.

- Start the instructions lamp

Start the indicator lamp  $\odot$ , indicator light to show the system work mode. Total of start, stop, two kinds of patterns. Start the indicator, the system described in test mode; Start the lamp out, the said system is in stop mode.

- Start the control key

Start for the status of the control system test function keys. Press the start key, can start the system began to test work; Then press the start key, can stop the testing work.

- Query control key

Query control keys for control system query to the data of test data or printing function keys. After completion of the test according to the query key, can query to the previous experimental data.

- Unit conversion key

Hardness value, unit conversion key units of the hardness value measurement Newton (N), and conversion of kilograms (KG). This function can be used before and after measurement.

- Reset the control key

Reset button to reset control, for the status of the control system test function keys. Press reset key, can stop the test, and return to the original state.

- Zero control key

Zero function keys, the instrument did not test, if appear hardness value display is not zero. Press this button, the screen, display for 0000. This function should be used in entering the calibration status.

- Benchmark control key

Benchmark function keys. To benchmark parameters calibration for instrument. This function should be used in entering the calibration status.

- Power on switch

Power on switch is main power switch, in on position, tester is in stand by status, OFF position, tester stop working.

*Before connecting to AC power, please ensure it's in OFF position!*

- AC socket

Ac socket is connected to the power supply with power cord offered in this tester.

Fuse is under the ac socket, attached one 1A fuse and backup one is offered. This is to prevent damage to this tester in suddenness case happened.

*Please make sure ac power supply is connected properly!*

*When change fuse, make sure same spec part is used for tester safety!*

- Control system

Control system is composed of transformer, control board, display board. It controls other part of the instrument in working step.

- Sensor unit consist

Sensor unit consist of precision pressure sensor. It changes pressure into electronic signal.

- Composed

Composed of motor and transmission set, transmission unit is used to add pressure on tablet.

- Probe unit consist

Probe unit consist of probe and plate etc. Probe is connected to transmission unit. Plate is connected to sensor unit and used to place tablet. Special attention must be paid on the pressure added on the probe and plate. The pressure must be less than 20KG.

### Specification

Test range:	0 . 2 ~ 2 0 K G
Test accuracy:	± 0 . 0 5 K G
Probe procession range:	4 0 M M
Test period:	≧ 3 0 S / P
Max number in each group:	1 0 0 P
Continuous working:	> 2 4 H r
Power:	2 2 0 V / 5 0 H z / 4 0 W
Dimension:	4 0 0 × 2 4 0 × 1 4 0 M M <sup>3</sup>
Weight:	1 0 K G

### Environment requirement

Usage temperature	+ 1 8 ° C ~ + 2 8 ° C
Store temperature	- 1 0 ° C ~ + 5 0 ° C
Humidity	2 0 % ~ 8 0 %

### Power supply

Range of input power supply	2 2 0 V ± 1 0 % V A C	5 0 H z
Max input power		4 0 W

## Installation

### Checking

Open the package and take out manual, tester, and accessories. Check items according to packing list. If any mismatch/damage happened, please contact marketing department immediately.

### Tester settle

Tester must be placed on stable work station/ table and put damping pad between table and tester.

Clean tester periodically to assure the instrument in normal operation.

### Connect to the power supply

Link the socket & AC power supply source with attached power cord.

### Offset adjustment

#### Hardness zeroed

Turn on the instrument. After 20 minutes preheat, adjust the zero-regulator while the hardness displayed as 00.00. Rotate the regulator clockwise, the displayed value is increased, otherwise, the value is decreased.

#### Hardness value is rectified

- ① Tear the circular grey membrane on rear board, show hardness value rectify-regulator.
- ② Install weight hook to the rectify hole in machine left side.
- ③ Erect the tester left on the table and support with hands, make the weight hook outside table.
- ④ Power on the tester, adjust the zero-regulator on the rear panel to make the hardness displayed 000.0N.
- ⑤ Load standard weights 5KG on the hook and it must display 49N ( $\pm 0.5N$ ). Don't over load please.
- ⑥ If display were wrong, adjust the rectify-regulator to make the hardness displayed 049.0N ( $\pm 0.5N$ ).
- ⑦ Remove the 5KG weights and adjust the zero-regulator to make the hardness displayed 000.0N.
- ⑧ Repeat steps ⑥—⑦ until the hardness displayed 000.0N when unload and 049.0N.
- ⑨ unload the weight hook, paste the circular grey membrane on the rectify-



regulator.

## Operation

### Power on

Turn the power switch to ON position, the indicator light, initialize the tester for 10 minutes, then it's readiness.

### Mode preset

The system is in initialize status after turn on the instrument. The default mode is single test mode, that is only test one tablet each time.

If you want to change the default mode, press the MODE button and the mode changes into multi-group test mode, that is test 10 tablets in every testing time. Press the MODE button repetitively, the mode can be in turn changed into 1、10、20、30、40、50、60、70、80、90、100 per test group mode.

### Test

First, place the tablet between the probe and the test plate. Press the START button and the probe move left automatically. The tester begin to test the diameter of the tablet and add pressure onto the tablet while the displayed value come to increased. When the tested tablet is shattered, the displayed value is turned to maximums and locked by the system. The beep sound means the first test is completed and at this time the displayed value is the hardness of the tested tablet.

If multi-group test mode is selected, the instrument begin secondary test automatically. The probe changes direction automatically and move right about 10mm. Then the probe changes direction and move left to begin the secondary test. In this process, clean the shattered tablet with the attached brush and place the second tablet on the test plate.

In multi-group test mode, the displayed amount of the tested tablet decreased after each test. The displayed amount is the remainder of this tested group.

### Power off

Turn power switch to OFF position, the indicator is off, tester stop working.

### Demonstration

- ① Power on and preheat the tester.
- ② Zero adjustment.
- ③ Preset the mode.
- ④ Place the tablet on the test plate, begin testing and read the hardness.

- ⑤ Clean the shattered tablet.  
Please repeat step ④ when in multi-group test mode.
- ⑥ Print out test result after multi-group test.
- ⑦ Same with above portion repeat 2-4 steps.  
Clear test, please press reset button.
- ⑧ Turn off the tester after test completed.

## Maintenance

Must clean box and parts periodically, do not use steel brush, it result in damage to the tester.

After each test, pls. Clean up probe unit and transmitter unit and make sure it is clean enough to avoid damage to the tester.

## Troubleshooting

- Can not power on

Check whether the voltage is OK and fuse is OK. Please refer to the rating marked in nameplate while installation.

If the tester does not work after checking above items, please don't repair it by yourself, contact our market department please.

## Packing list

The Tablet hardness tester include following items typically:

- Tester----- 1
- 220V AC power cord----- 1
- brush ----- 1
- box ----- 1
- hook----- 1
- User's manual ----- 1
- Product quality guarantee ----- 1
- User registration card----- 1

## Product quality guarantee

- This quality guarantee covers the scope of Tablet hardness tester.
- Start from purchasing date; warranty period is one year.
- This quality guarantee is effective from receiving registration card filled by users.
- During warranty, we offer free charge service for troubleshooting in normal cases, but for any cases caused by flood, fire, earthquake, or other calamity, is excepted.
- During warranty, in one of the following cases, we will charge for material/service:
  - No product quality guarantee, mismatch with this guaranty or wrong record/remark.
  - Damages caused by unusual working environment.
  - Damages caused by disassembly, install, extend, move or modify without our permission.
  - Damages caused by repairing without our permission.
- Keep this guarantee in proper place and any other issue is provided.
- The guarantee is only applicable in Chinese mainland.

## Using Instruction

- Proper operation & maintenance will prolong the working time of the instrument. Please follow the manual's instruction carefully.
- When the power supply is unstable, pls. Use AV regulator. Pay special attentions to the information related to power supply, temperature, humidity in the manual.
- Always keep the instrument cleaning. Disassembly/move any parts of the tester is prohibited.
- In case of trouble present, pls. Stop using, call us or dealer for help.

## Registration card

Name	
Address	
ZIP	E-mail
Tel	Fax
Product	
Model	S/N