SUNPOC®

Hardness Tester

Vickers Hardness Tester

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★ RS232 interface for connecting to PC (Z Series)

★ Optional LCD video measuring device

Feature:

- Load range from 0.3kgf up to 50kgf
- Load cell, force feedback, closed-loop system
- Direct display of the test mode, test force, indentation length, dwell time, test times
- Measuring confirmation button fixed on digital measuring eyepiece
- Test results storage in real time
- Integrated stylus printer for test results printout (Z Series)
- RS232 interface for connecting to PC (Z Series)
- Optional LCD video measuring device
- Optional HV1.0/2.0/3.0 Vickers measuring software

Standard Compliance: ISO 6507; ASTM E92; JIS Z2244; GB/T 4340.2

Measurement in many ways, widely used

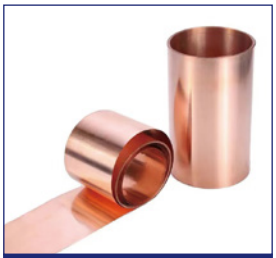
Application:

Ferrous metal; Non-ferrous metals; IC thin sections; Coatings; Ply-metals; Glass; Ceramics; Agate; Precious stones; Thin plastic sections etc.; Hardness testing such as that on the depth and the trapezium of the carbonized layers and quench hardened layers.


Gold metal


precious stones

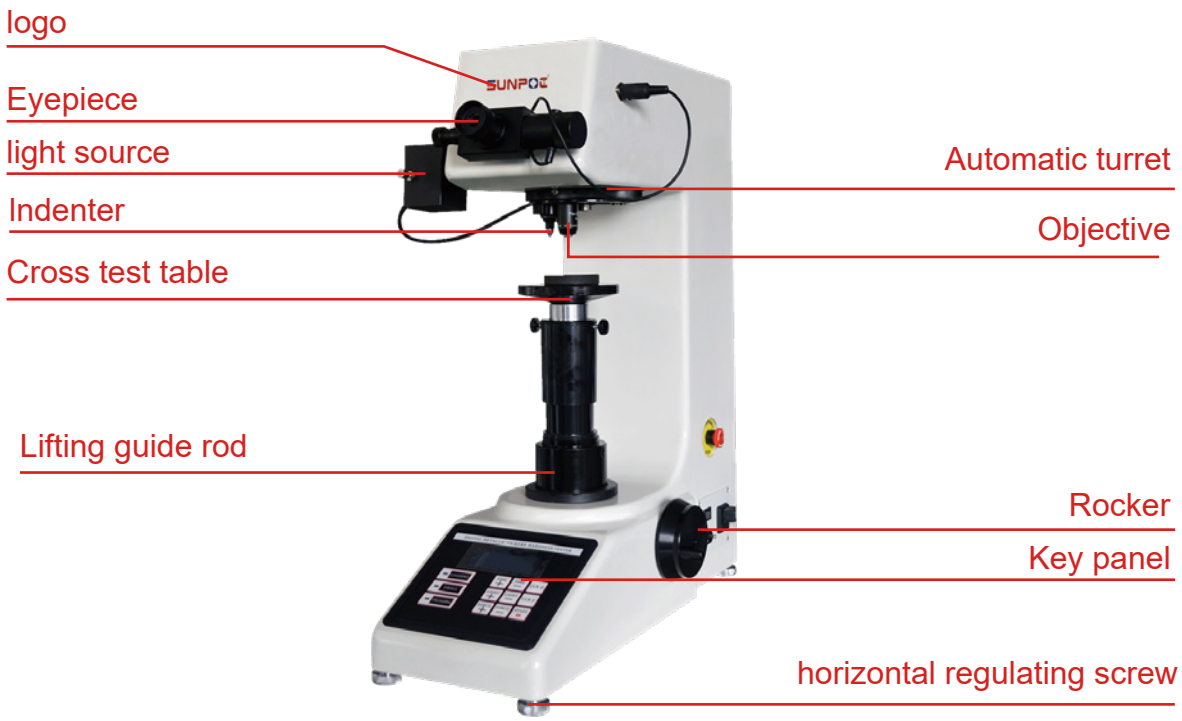

Small parts


Copper sheet


Screw

Product structure diagram

(SHVS-5000/5000Z Digital Vickers Hardness Tester)



Technical Specification:

Model	SHVS-500 SHVS-500P SHVS-500Z	SHVS-1000 SHVS-1000P SHVS-1000Z	SHVS-3000 SHVS-3000P SHVS-3000Z	SHVS-5000 SHVS-5000P SHVS-5000Z
Testing force	1.961N (0.2kg) 2.942N (0.3kg) 4.903N (0.5kg) 9.807N (1kg) 19.61N (2kg) 24.52N (2.5kg) 29.42N (3kg) 49.03N (5kg)	2.942N (0.3kg) 4.903N (0.5kg) 9.807N (1kg) 19.61N (2kg) 24.52N (2.5kg) 29.42N (3kg) 49.03N (5kg) 98.07N (10kg)	4.903N (0.5kg) 9.807N (1kg) 19.61N (2kg) 24.52N (2.5kg) 29.42N (3kg) 49.03N (5kg) 98.07N (10kg) 196.1N (20kg) 294.2N (30kg)	9.807N (1kg) 19.61N (2kg) 24.52N (2.5kg) 29.42N (3kg) 49.03N (5kg) 98.07N (10kg) 196.1N (20kg) 294.2N (30kg) 490.3N (50kg)
Objective	20x, 40x	10x, 40x	10x, 20x	10x, 20x
Magnifying	200×/400×	100×/400×	100×/200×	100×/200×
Resolution	0.125 μm, 0.0625μm	0.25μm , 0.0625μm	0.25μm , 0.125 μm	0.25μm , 0.125 μm
Test table	100×100 cross table: range 25×25/0.01mm		big plane test table and V table	
Max. Height	170mm			
Instrument throat	130mm			
Eyepiece	10x digital eyepiece			
Testing range	1hv-2967HV			
Conversion scale	SHV-M Conversion scale: HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HB			
Objective/indenter switch	SHVS SHVS-P manual switch of objective and indenter			
	SHVS-Z SHV-M is automatic (auto-turret)			
Printer	SHVS-P SHVS-Z, SHV-M with printer, RS232			
Loading control	automatic (loading / dwell / unloading)			
Dwell time	5 ~ 60s			
Power supply	AC220V/50HZ; AC110V/60HZ			
Dimension(LWH)	machine size 530×280×630mm, packing 620x450x740mm			
Weight	net weight: 35kg, gross weight: 47kg			

Show details

Cross microscopic eyepiece

10x micro eyepiece, adjustable wheel eye mask, cross line definition: left and right drum cross line calibration system, easy to lock the position.

Automatic turret and optical microscopic objective

Observation of micro Vickers hardness tester - the position change of measurement on one side is accomplished by automatic turret.Total magnification of test microscope 100/400x (objective lens 10/40x multiplied by eyepiece 10x magnification);

8 weights, 10g load gear

8 weights correspond to 8 test forces, and the hardness can be measured with 10g load, which can accurately measure the hardness value of 0.01.Humanized and menu operation panel, fast and convenient setting.Intelligent sleep function to prolong the service life of optical and electronic components.

Cross displacement of micro head of import linear guide rail

The lifting shaft is installed with imported linear guide rail.The cross slider strut is carefully designed, combined with the length displacement of the differential head, simple operation, and accurately grasp the measurement position Rotary handle The lifting rotary handle can raise and lower the worktable Stainless steel bench column Stainless steel test bench column, carefully designed 2MM rectangular thread, smooth lifting can improve the bearing strength. Rotate the handle to raise and lower the workbench.

Optional configuration

measuring eyepiece

Weights+Weights shaft

Wafer clamp

Jaw clamp

Level + bulb + fuse

Hardness block

Power cord + anti-dust cover

Connecting a desktop computer

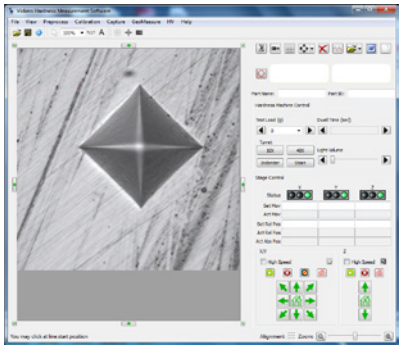
Connect notebook

CCD Camera

USB cable

USB Softdog

Software interface

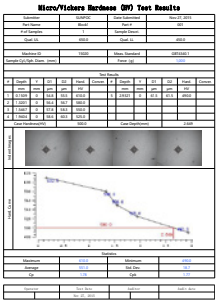


Indentation image import computer system

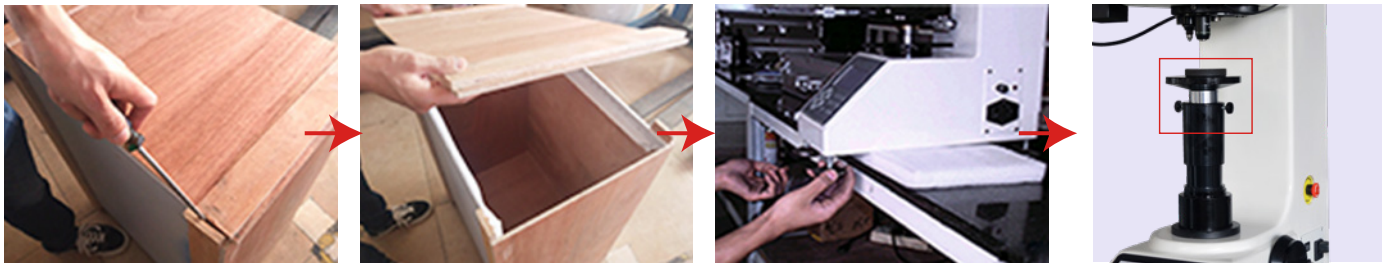
The operation is simple, the diagonal length of the indentation is directly input, and the instrument automatically calculates and displays the hardness value. Accurate correction and output of measurement data,Images, metallographic graphics and hardness gradient diagrams can be printed or saved.
The hardness value of the test indentation is measured through the conversion of the signal by the software.

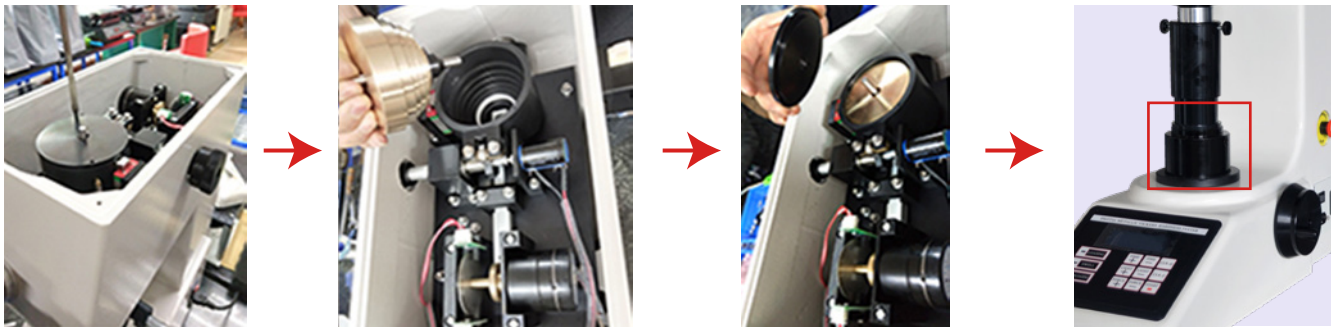
Report format generated by hardness tester software

The image file and data file can be opened, saved, printed into English, and the data can be transferred into word document.



Hardness tester installation





- 1. Pry the nails on the upper cover of the outer box with a screwdriver or other tools.
- 2. Open the upper cover of the outer box, take out the instrument, and pay attention that the outer box cannot stand upside down and do not tilt too much.
- 3. Take out 4 adjusting screws from the accessory box and install them at the bottom of the instrument housing.
- 4. Take out the "level" and put it on the "mobile platform" to see that the left, right, front and rear directions of the platform are all right
  Whether it is horizontal, if not, the height of 4 screws can be adjusted. After adjustment, confirm that the instrument does not shake and put it on the workbench.
- 5. Open the upper cover of the instrument and remove the weight cover. Stack the weights in order and put them into the weight tray,Then cover the weight cover. Finally, close the upper cover of the instrument.
- 6. Remove the fastening screws of the elevator.

Hardness tester steps

- 1. Rotate the brick tower, rotate the "40x measurement" objective lens to the front and position it in the clamping slot.
- 2. Place the ground sample on the workbench under the 40x objective lens, and rotate the lifting handle of the workbench until See the clearest image in the field of view. If the image is defective, move the X 、Y direction on the workbench Adjust the micrometer head.
- 3. Rotate the turret 90 ° to the right, turn the indenter to the front and position it in the clamping slot.
- 4. Press the (start) key to start the test. When the instrument makes a roar, the display enters the measurement state,Explain the end of the test process of "loading", "holding" and "unloading".
- 5. Rotate the turret 90 ° to the right, rotate the "40x measurement" objective lens to the front and position it in the card slot.Measure the length of the indentation diagonal D1 in the field of view through the micrometer eyepiece and input the data,Press the "OK" key to confirm, then measure the length of another D2 of the indentation in the field of view, enter the data, and press the "OK" key to confirm.
- 6. The value displayed on the control panel display is the hardness value of the sample.

Attention

- ▲1. If you accidentally press the (start) key by mistake, you can't turn any parts at this time. The correct way is to wait for the instrument to execute automatically
  After the whole test process and entering the test state, other operations can be carried out. Otherwise, the instrument will be damaged.
- ▲2. Handle with care when placing or taking out samples and operating instruments.
- ▲3. Waterproof, dustproof and regular maintenance.

Maintenance

*The diamond probe can move up and down freely, but it shall not be twisted artificially.

- ▲1. The diamond indenter is a very important part of the instrument, so be very careful in operation, do not casually touch the indenter.
- ▲2. The center position of the light source will directly affect the pixel of the indentation. If the image quality is blurred or the illumination is uneven,Need to adjust the light source center. Can carry on up and down, left and right fine tuning. Center the light source of the bulb.
- ▲3. The specimen surface must be clean. If the surface is stained with grease and dirt, the measurement accuracy will be affected. While cleaning the sample,Scrub with alcohol or ether.

*Note when placing or taking:

- ▲1. When placing or removing the specimen, it will inevitably pass through the area between the indenter and the test table. As the parts of the machine move,Be sure not to touch the dangerous area in front of the indenter and test stand. Ensure that all test pieces are placed and removed slowly.
- ▲2. Please remember to cover the dust cover when the instrument is not in use. Microhardness tester is a precision optical instrument.If there is dust on the surface of optical glass or lens, it will directly affect the use and accuracy of the instrument.