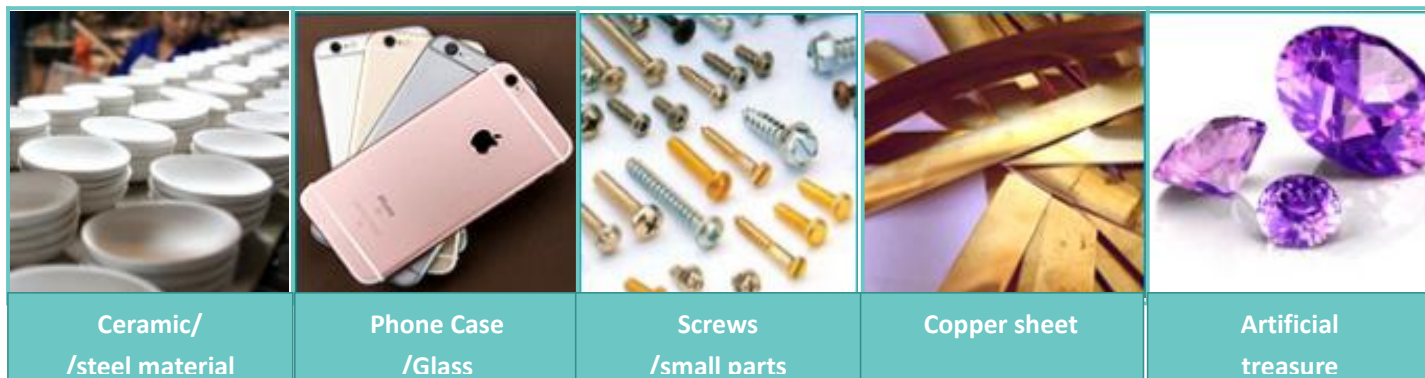


Micro Vickers hardness tester



The automatic turret Vickers hardness tester features automatic switching between the indenter and the objective lens during testing, precise positioning of test points, and integral casting of the housing, laying a good foundation for the high accuracy and stability of the machine. The light source adopts a high-resolution imaging light source system, with uniform and clear brightness of the light field, thereby reducing the micrometer error of printing indentation. The operation interface adopts a menu structure. You can select the hardness scale HV or HK on the operation panel, test the hardness value, and manually input and display it. Various hardness values can be converted to each other. The micro Vickers hardness test is also used for testing very small or extremely thin parts, which can be as thin as 3 um in thickness.



It is widely used to measure the microhardness of micro and thin specimens, surface infiltrated coatings, and other specimens, and to measure the Knoop hardness of brittle and hard materials such as glass ceramics, agate, and artificial gemstones. It is an ideal hardness testing instrument for research and testing of materials by scientific research institutions, factories, and quality supervision departments. Scope of application: Heat treatment, carbonization, quenching and hardening layers, surface coatings, steel, non ferrous metals, and micro and thin parts. Equipped with a Knoop indenter, it can measure the Knoop hardness of brittle and hard materials such as glass, ceramics, agate, and artificial gemstones.

Product Features



Autoturret

Observation of an automatic turret micro Vickers hardness tester - testing - measurement is accomplished using an automatic turret.

Dual channel measurement

It can be used with fashion goggles and USB cameras, can be connected to a desktop or laptop computer, high-definition software, and professional measurement systems.

Automatic conversion function

Automatic hardness conversion function, 14 hardness scales (HRA, HRBHRC, HRD, HRF, HV, HK, HBW, HR15NHR30N, HR45N, HR15T) can be selected to avoid the trouble of table lookup

Easy to operate

Directly input the indentation diagonal length, and the instrument automatically calculates and displays the hardness value.

Intelligent hibernation function

Intelligent sleep function, extending the service life of optical and electronic components

Simple operation panel

Humanized, menu type operation panel, quick and convenient setting

TECHNICAL PARAMETER



Product model	HV-1000Z
Test force	10gf(0.098N)5gf(0.245N)、50gf(0.49N)、100gf (0.98N)、200gf (1.96N)、300gf(2.94N)、500gf (4.9N)、1kgf (9.8N)
Exchange Scales	HRA、HRB、HRC、HRD、HRF、HV、HK、HBW、HR15N、HR30N、HR45N、HR15T、HR30T、HR45T
objective	10X (observation), 40X (measurement)
Minimum test unit	0.031um
Hardness test range	5~3000HV
Test force application method	Automatic (loading, holding, unloading)
Test microscope magnification	100X (observation) 400X (test)
Test force holding time	Automatic (loading, holding, unloading)
X/Y platform	100X (observation) 400X (test)
data output	0~605
Height of test piece	Measurement: 100x100mm, trip: 25x25mm
Distance from the center of the indenter to the outer wall	LCD Display readout
source	80mm
Overall dimensions	95mm
Host weight	AC220V+5%, 50-60Hz
Standard accessories	405x290x480 (mm) L x W x H
Host weight	About 40kg
Standard accessories	1 main machine, 1 microscope Vickers indenter, 6 weights, 1 weight rod, 1 cross working table, 1 thin plate, 1 flat clamping table, 1 level gauge, 1 micro Vickers hardness block (HV1, HV0.2), 1 objective lens (10X, 40X), 2 screwdrivers, 4 horizontal adjustment screws, 1 external power cord, 1 10X test eyepiece, 2 fuses (1A), 1 dust cover, 1 product operation manual, and 1 certificate of conformity
Optional configuration	Configuration 1: host+eyepiece

PRODUCT DETAILS

1

Double channel measuring cross microscope eyepiece

Dual channel measurement, available with fashion goggles and USB cameras. Cross eyepiece 10x microscope eyepiece wheel type eyepiece adjustable, cross line clarity; The left and right drum cross marking calibration system allows easy positioning.

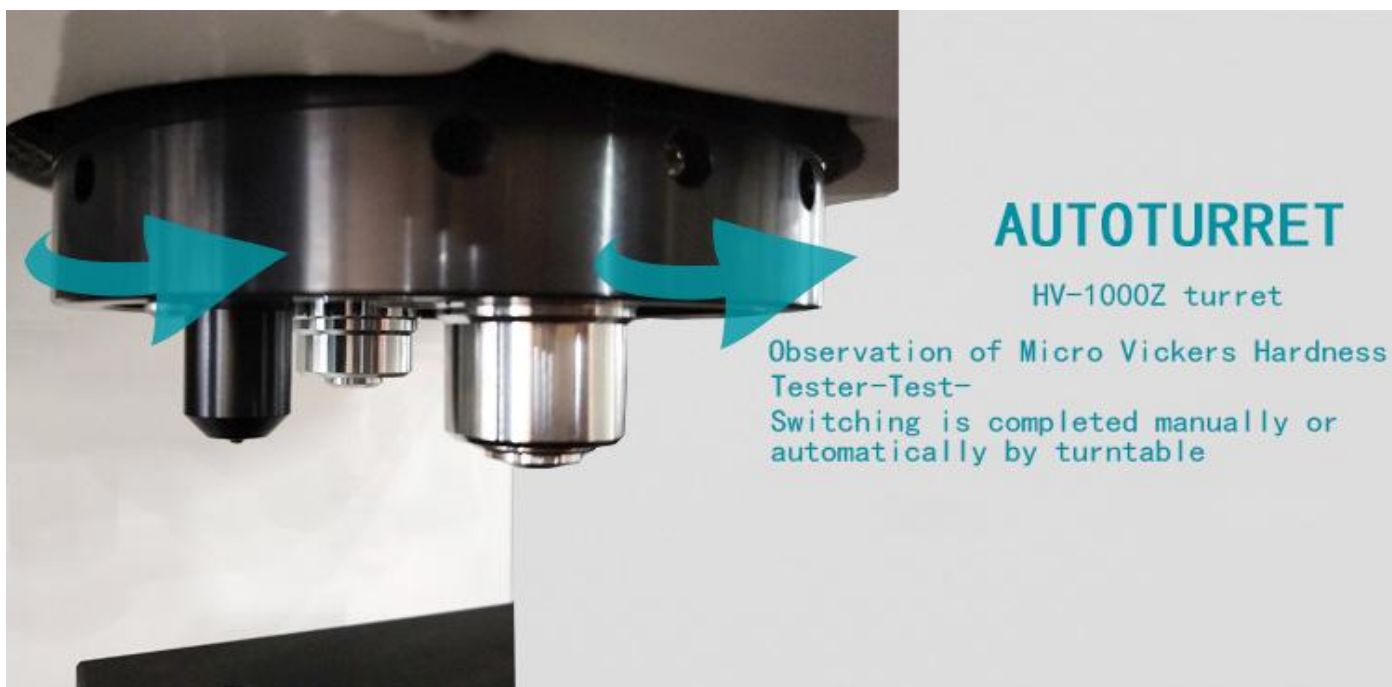


2

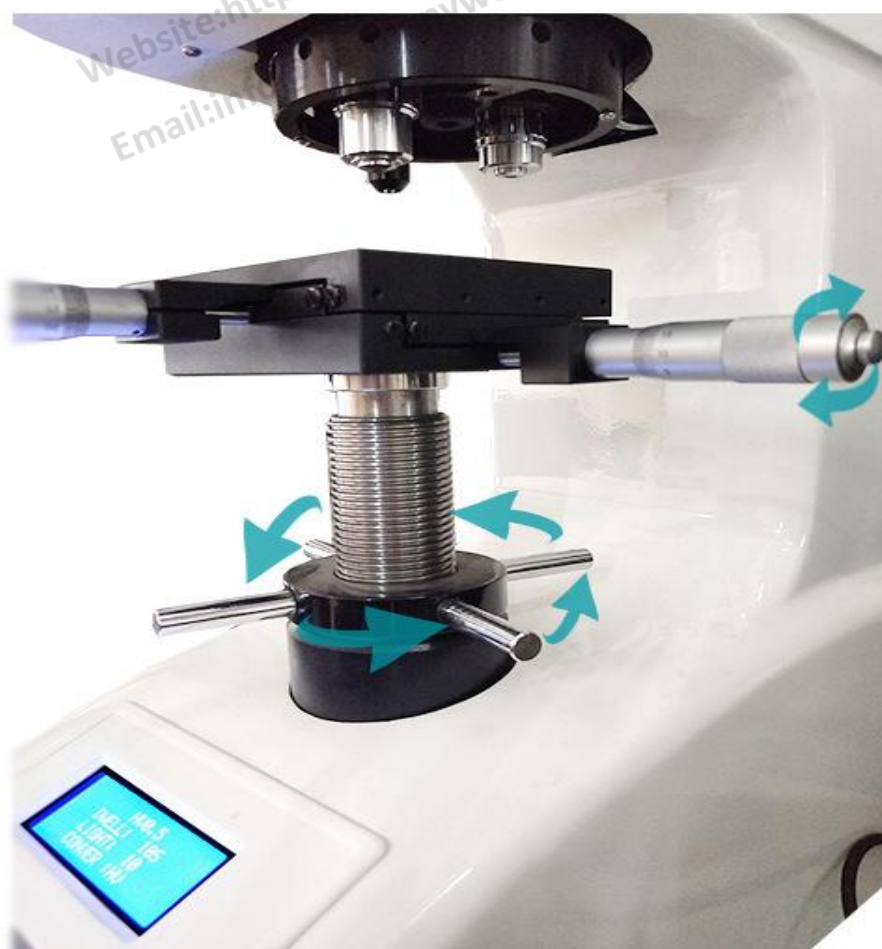
OPTICAL MICROSCOPE OBJECTIVE

Total magnification of test microscope 100/400 times (Objective lens 10/40 times eyepiece 10 times magnification); During the test, the indenter and objective lens automatically switch, and the test Accurate point positioning.





3 Differential head cross displacement stainless steel column





OPTIONAL CONFIGURATION 1: HOST+EYEPIECE (STANDARD MACHINE)



Optional configuration 2: host+eyepiece+software



Encryption lock



USB camera



USB line

software interface

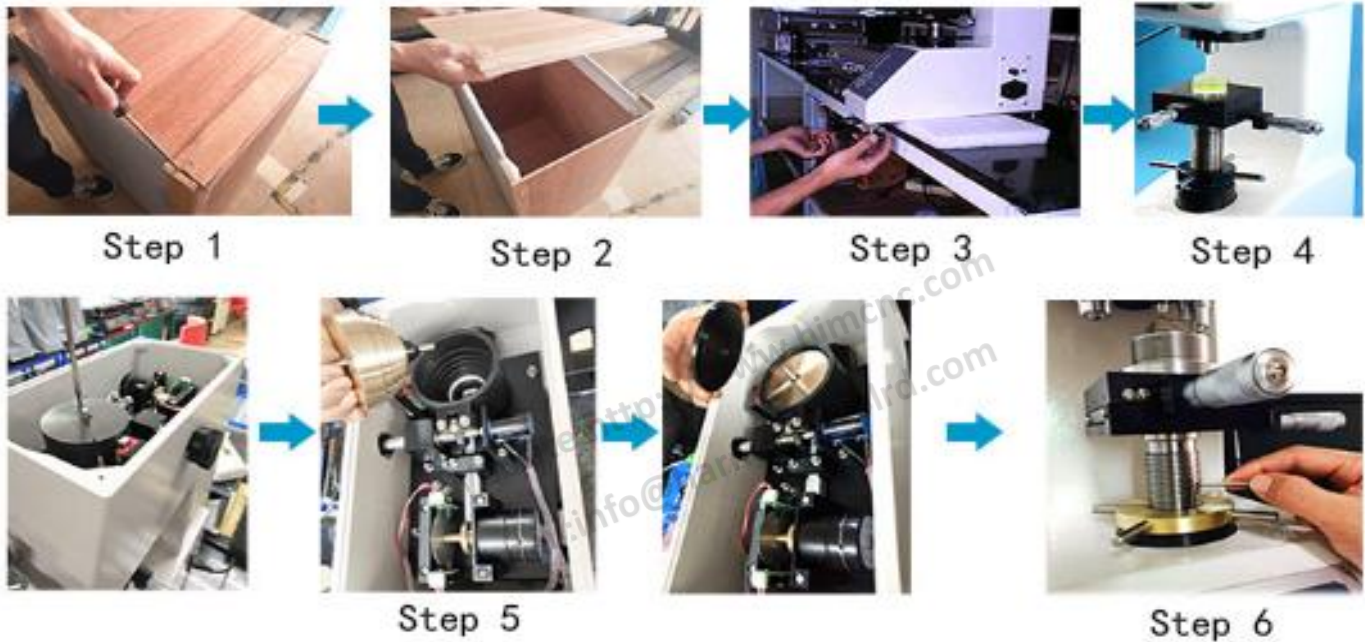
Computer system for importing indentation images

The operation is simple, with direct input of indentation diagonal length, and the instrument automatically calculates and displays hardness values. Accurate correction and output of measurement data, images, metallographic patterns, and hardness gradient maps, which can be printed or saved. The hardness value of the test indentation is measured through software conversion of the signal.

Hardness tester software generation report format

Image files and data files can be opened, stored, and reports can be printed in both Chinese and English, and data can be transferred to Excel files.

Hardness meter installation



- Step 1: Use a screwdriver or other tool to pry the nails off the upper cover of the outer box.
- Step 2: Open the upper cover of the outer packaging box, pay attention that the outer box cannot be upside down, and do not tilt excessively. Take out the instrument.
- Step 3: Take out 4 adjustment pins from the accessory box and install them at the bottom of the instrument housing.
- Step 4: Take out the "level gauge" and place it on the "mobile platform" to see if the platform is horizontal in both the left and right directions, front and rear. If not, adjust the height of the four foot studs. After adjustment, make sure that the instrument does not shake, and the table on which the instrument is placed should be firm and not wobble.
- Step 5: Open the upper cover of the instrument and remove the weight cover. Stack the weights in order, place them in the weight tray, and then cover the weight cover. Finally, close the upper cover of the instrument.
- Step 6: Remove the elevator fastening screws

SOFTWARE INSTALLATION



Instrument operation steps

1. Rotate the turret to rotate the "40X measurement" objective lens to the front and position it in the card slot.
2. Place the ground sample on the workbench under the 40X objective lens, and rotate the workbench lifting handle until the clearest image is visible in the field of view. If the image has defects, the micrometer heads in the X and Y directions on the workbench can be moved for adjustment
3. Rotate the turret 90 ° to the right, turn the "pressure head" to the front, and position it in the card slot
4. Press the [START] key to start the test. When the instrument emits a beep, the display screen enters the measurement state, indicating that the testing process of "loading", "maintaining", and "unloading" is over.
5. Rotate the turret 90 ° to the left, 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 the other diagonal D2 of the indentation in the field of view, and input the data. Press the "OK" key to confirm.
6. The numerical value displayed on the display screen of the control panel is the hardness value of the sample.



pay attention to

- ▲ If you accidentally press the START key by mistake, you cannot rotate any components at this time. The correct approach is to wait for the instrument to automatically execute the entire testing process and enter the testing state before performing other operations. Otherwise, the instrument may be damaged.
- ▲ When placing or taking out samples and operating instruments, handle them with care.
- ▲ Waterproof, dust-proof, and regularly maintained.

Maintenance

1. The hardness tester must be installed in a dry and clean place. There should be no vibration source or corrosive gas nearby.
2. When using a hardness meter, it is necessary to measure the hardness within the range specified by the Rockwell test method. To avoid damage to the indenter due to improper use. If the hardness range of the tested sample cannot be determined, a smaller test force should be used for the test first.
3. Before using the hardness tester, the top surface of the lead screw and the upper end surface of the workbench should be wiped clean
4. Regularly check the accuracy of the hardness tester with a standard hardness block.
 - 4.1. Wipe off the workbench and standard hardness blocks, and only allow testing on the working surface with hardness values engraved on the hardness block. Testing on the bearing surface is never allowed.
 - 4.2. If the indication error is large, check whether there are burrs on the bearing surface of the standard hardness block. If there are burrs, polish them with an oil stone to remove them.
 - 4.3. When testing at different positions of the standard hardness block, the hardness block should be dragged on the workbench and should not be held away from the test bench
 - 4.4. The distance between two indentations should be at least four times the diameter of the indentation and not less than 2mm, and the distance between any indentation center and the edge of the test block should be greater than 2.5 times the diameter of the indentation and not less than 1mm.
5. If the hardness indication error is found to be large. Remove the test bench and check whether the contact surface with the lead screw is clean; Check whether the lead screw protection sleeve is jacking up the workbench; Check the indenter for damage.
6. After using the indenter, it should be wiped clean with gauze. The ball indenter should be coated with a small amount of anti rust oil to prevent corrosion
7. Regularly fill a small amount of lubricating oil on the contact surface between the lead screw and the lifting hand wheel, as well as the contact surface of the loading and unloading parts and the load changing parts. Other parts cannot be filled with lubricating oil.
8. The hardness tester should always be kept clean and covered with a dust cover after use to prevent dust from entering the machine.