

## Visual Micro Vickers Hardness Tester MHVS-1000V

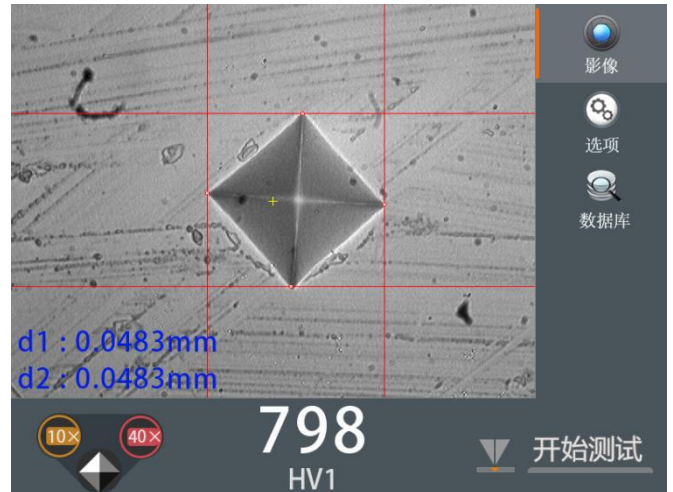


### Introduction

Different from the traditional micro Vickers hardness tester, this vision series micro Vickers hardness tester cancels the use of measuring eyepiece, projects the Vickers indentation image to the operation screen, and can measure the indentation diagonal on the screen. The test process is faster and more intelligent to meet your demand for efficient, convenient and accurate hardness testing.

### Visual system characteristics

- **Objectivity:** The visual system has objectivity, and the results of analysis are not affected by subjectivity.
- **High gray resolution:** human eyes generally have 64 gray scales, and machine vision can reach 256 gray scales.
- **Embedded image technology** replaces traditional measuring eyepiece, using camera + display mode, indentation image, direct display screen.
- **Type of Visual Chip:** Industrial-grade Special High Definition Camera
- **Contrast, brightness, white balance and other adjustments** are available.
- **Visual analysis model** simplifies manual operation process, reduces operator fatigue, and makes measurement data more intuitive and convenient.
- **Optimizing each link** greatly improves the overall performance of the hardness tester and saves 50% of the time compared with the traditional hardness tester.



### Advantages of vision system relative to eyepiece measurement

- There is no visual error when measuring directly on the surface that needs to be measured. The hardness tester of traditional structure is measured by eyepiece. The calibration line and indentation are not on one plane. Under different angles of view, the calibration position and indentation position will produce visual difference, which will lead to different angles of view and different results of personnel measurement.
- High measurement accuracy: there is no problem of mechanical eyepiece error. The calibration resolution of mechanical eyepiece helical microstructures is about 10 m, and there is mechanical backlash, so it is necessary to define the measurement method strictly. Pixel spacing of image sensor in vision system is 7.5 m, which has high precision and good measurement consistency.
- It can provide two-dimensional simultaneous measurements of various measurement modes, simplify the measurement process and improve the measurement speed.
- With rectangular tangent measurement method
- No visual fatigue, reduce the measurement of labor intensity. The vision system adopts 65K true color TFT LCD screen, which is comfortable to observe and not fatigued, and can be measured by many people at the same time.

### Technical parameters

Model	MHVS-1000V
Test force (kgf)	10gf、25gf、50gf、100gf、200gf、300gf、500gf、1kgf

	0.098N、0.245N、0.49N、0.98N、1.96N、2.94N、4.9N、9.8N
Loading method	Automatic loading and uploading
Test force switch	Automatic
Language	CH-EN
Dwell time	0-60s
Indenter and objective switch	Automatic
Testable parameters	HV
Objective lens	10X、40X
Maximum measurement length	400μm
Minimum resolution	0.0625μm
Maximum sample height	100mm
Distance from the center of indenter to the body	95mm
Conversion scale	HV、HB、HK、HRA、HRB、HRC、HR15N、HR30N、HR45N、HR15T、HR30T、HR45T
Operation panel	Image, force curve, options, database, control, loading start, light adjustment, objective switch
Display	D1、D2、force value、hardness value、conversion value、dwell time、test times
Light source	5V/3W white light LED
Communication interface	RS 232
Executive standard	JJG151,GB/T 4340, ISO6507, ASTM E-384
Photographic device	Built in HD camera
Power supply	AC90-240,50-60Hz
Dimensions	520*260*550mm
Weight	About 40kg

### Sample requirements

Although Vickers hardness can be used to measure both soft and hard materials, it also has its own requirements for specimens. Only by choosing the appropriate sample can the error be avoided and the accurate Vickers hardness value be obtained.

### Sample appearance requirements

The surface of Vickers hardness specimen should be smooth and smooth, no oxide scale and impurities, no oil stain. Generally speaking, the surface roughness parameter Ra of Vickers

hardness specimen is not more than 0.40 $\mu$ m, that of small load Vickers hardness specimen is not more than 0.20 $\mu$ m, and that of micro Vickers hardness specimen is not more than 0.10 $\mu$ m. ( $\mu$ m is the unit of surface roughness parameter Ra.)

### Requirements for sample preparation

During the preparation of Vickers hardness specimen, the influence of superheat or cold hardening on surface hardness should be minimized.

In addition, for specimens with small cross-section or irregular shape, such as spherical or conical, it is necessary to mosaic the specimens or use special platforms.

### Host configuration

Name	Quantity	Name	Quantity
XY table	1	Wafer holder	1
Flat clamping table	1	Filament holder	1
bolt driver	2	Horizontal adjusting screw	4
inner hexagon spanner	2	Micro Vickers hardness block	2
Level	1	Spare fuse	2
Manual book	1	Product certificate	1