

### Half Automatic Micro Vickers Hardness Tester with Motorized X-Y Table, Manual Focus



iVick-453MC2 Automatic Micro Vickers Hardness Tester is integrated with several new technologies such as optical imaging, mechanical displacement, electronic control, digital imaging, image analysis, computer processing and so on.

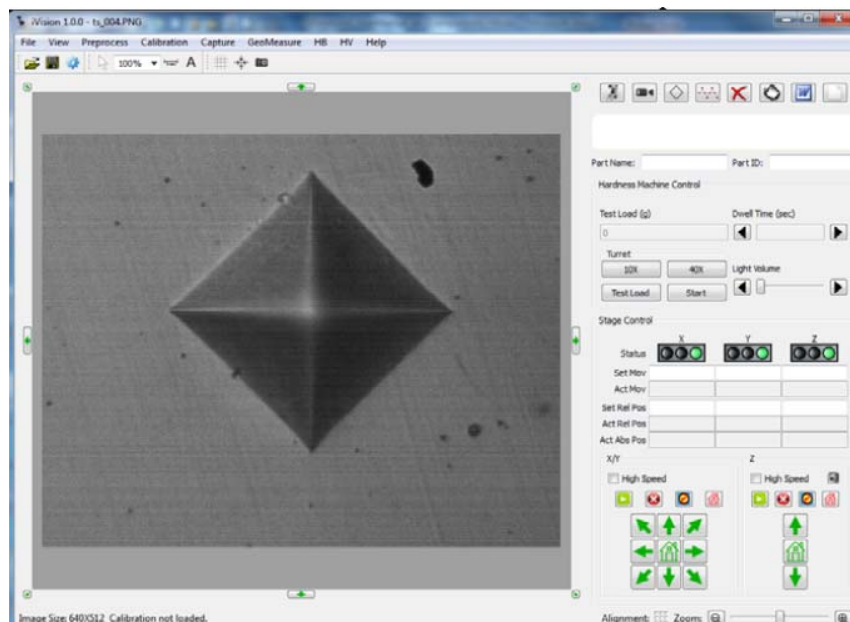
iVick-453MC2 controls the Micro Vickers hardness tester and automatic test table by the computer, and displays the indentation image on the computer screen.

By means of automatic reading and manual reading, it accurately measures the HV hardness, hardening depth, film thickness, distance between two points of metals and some non-metallic materials and various films.

It also can shoot metal surface morphology and taking fixed rate printing etc. This system breaks through the traditional test method, realize the hardness test of semi automatic, high precision, high repeatability, and it is the important equipment for materials analysis.

**Technical Parameters:**

Model	iVick-453MC2	
Test Force	gf	10gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, 1000gf
	N	0.098N, 0.246N, 0.49N, 0.98N, 1.96N, 2.94N, 4.90N, 9.80N
Test Range	1HV~2967HV	
Test Mode	HV/HK	
Loading Method	Automatic (Loading/Dwell/Unloading)	
Turret	Automatic	
Conversion Scale	HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HB	
Data Output	Built-in Printer, WORD or EXCEL Report with Curve Chart	
Hardness Reading	Indentation Displaying and Automatic Measuring on PC	
Objective	10x (Observe), 40x (Measure)	
Eyepiece	10x	
Total Magnification	100x, 400x	
Resolution	0.0625μm	
Dwell Time	0~60s	
Light Source	Halogen Lamp	
Motorized Test Table	Size: 100×100mm; Travel: 50×50mm; Resolution: 0.002mm	
Vertical Space	100mm	
Throat	98mm	
Power Supply	AC220V, 50Hz	
Execute Standard	ISO 6507, ASTM E384, JIS Z2244, GB/T 4340.2	
Dimension	480×325×545mm, Packing Dimension: 600×360×800mm	
Weight	Net Weight: 31kg, Gross Weight: 44kg	

**Software Interface:**


**Software Functions:**

System linkage	Through the communication interface it realizes the linkage between the system and the hardness tester.
Pressure linkage	When converting test force, the system percepts the test force change and displays in real time.
Turret linkage	The software controls the shifting between the objective and the indenter without manual control.
Loading linkage	The software controls the loading without manual control.
Measuring linkage	The software controls the turret, loading and directly reading the Vickers hardness value.
Light source linkage	Automatic focus.
Image acquisition	Real time display of hardness image, store and print image.
Automatic measurement	Automatically find the four vertices of indentation with fast speed and accurate data, there are many professional algorithms to be suitable for different indentation. It continuously and immediately measures at specified coordinates once loading.
Automatic point search	The system automatically finds the best vertices near the four vertices of the indentation, greatly reduce the human error.
Diagonal measurement	Click the top left and lower right corner of the indentation, you can read the hardness value.
Four point measurement	Click the four point of the indentation and you can read the hardness value.
Hardness conversion	According to the national standard, automatically convert the hardness value between Brinell, Rockwell, Vickers, Knoop, real-time display.
Graphic report	Automatic record of measurement data, automatic generation of hardness-depth curves, saving or printing the hardness-depth curves and all indentation measurements. Save or print the indentation image and the current indentation hardness value. All the reports are saved in WORD file.
Results statistics	Output the multiple measured results of indentations by EXCEL and automatically count the measurement number, maximum value, minimum value, average value, variance, etc. of hardness.
Linkage control	Through the communication interface the system percepts the test force changes, controls the turret, loads and directly reads.
Automatic displacement	Equipped with high precision X-Y automatic test table.
Automatic identification	Leading indentation automatic identification technology, read D1 / D2 and HV value in 0.3 seconds.
Stable performance	The indentation of non mirror polishing, uneven light, not in the center can be read automatically.
Powerful functions	Such as manual reading, automatic reading, hardness conversion, depth-hardness curve, indentation image, picture and text report.
Easy to use	Through the hardness block calibration, in line with the users' habits. It can be normal used with half day training.
Automatic reading	Original algorithm of automatic reading to automatic read a variety of indentation with fast speed and high accuracy.
Good repeatability	It is automatic reading with high repeatability and can satisfy the requirement of professional users.
Automatic scanning	Can automatically scan the sample edge and shape.

**Hardware Parameters:**

1. Computer: Desktop computer (2G memory, 500G hard disk, 19 inch LCD screen)
2. Ink jet printer
3. Operating system: WIN7 or Win10

**4. Digital Imaging System**

High resolution: 130 million pixel (1280×1024)  
 High speed acquisition: 1280×1024 resolution: 25 FPS  
 High definition: Black and white images and clarity is better.  
 Target surface size: 1/2 inch

**5. X-Y automatic test table**

Table size: 100×100×50 mm  
 Maximum travel: 50×50 mm  
 Minimum step: Less than 2µm  
 Movement speed: Adjustable  
 Control mode: Manual control, electric control, computer control

**6. X-Y test table - computer control mode**

Location movement	The test table directly moves to the software settings
Point movement	Select any point of the sample, moved to the below of the indenter
Directional movement	Eight directions to make the test table move and the moving step can be set up
Arbitrary movement	Click any directions to make the test table move and make it easy for users to browse the specimen surface;
Variable speed movement	There are two speeds (fast and slow) when moving the test table and the speed is optional and adjustable
Other functions	Original position arbitrary setting, automatic reset, mechanical limit, and other professional features to meet various requirements.

**7. Measuring method**

Automatic mode——Automatic test table moving (X and Y direction) + automatic reading  
 Manual mode 1——Automatic loading + manual eyepiece scribed line measurement  
 Manual mode 2——Manual test table moving + manual focus + Automatic / manual measurement

**8. Automatic / manual reading**

Automatic reading time: Single indentation reading time is about 300 milliseconds;  
 Automatic measurement precision: 0.1µm;  
 Automatic measurement repeatability: ±0.8%  
 Manual reading: Manual pick, automatic search points, 4 points measurement, 2 diagonal measurement

**9. Results save / output**

Save / output measurement data and experimental parameters, including D1, D2, HV, X, Y etc.;  
 Save / output effective hardening layer depth curve report;  
 Save / output image.

**Standard Configuration:**

Name	Qty	Name	Qty
Instrument Main Body	1 set	10x Digital Measuring Eyepiece	1 pc
Diamond Micro Vickers Indenter	1 pc	10x, 40x Objective	each 1 pc
Weights	6 pcs	Weight Axis	1 pc
Motorized Test Table	1 pc	Flat Clamping Test Table	1 pc
Thin Specimen Test Table	1 pc	Filament Clamping Test Table	1 pc
Horizontal Regulating Screw	4 pcs	Level	1 pc
Fuse 1A	2 pcs	Halogen Lamp 12V, 15~20W	1 pc
Power Cable	1 pc	Screw Driver	2 pcs
Hardness Block 400~500 HV0.2	1 pc	Hardness Block 700~800 HV1	1 pc
Anti-dust Cover	1 pc	Usage Instruction Manual	1 copy
Computer (Hard disk: 500G, Memory: 2G, 19 inch LCD screen)	1 set	Ink Jet Printer	1 set
CCD Camera	1 set	1.5x Adapter	1 pc
USB Softdog	1 pc	Control Cables	1 pc
RS232 Cable	1 pc	Motorized Test Table Control Box	1 pc
Measuring Software	1 pc		