

MHVS-1

Digital Micro Hardness Tester

Professional manufacturer, best quality with competitive price ●
Recommended by the world UT NDT inspection association for training and examination ●
Core technology with independent intellectual property rights, certificate of CE, GOST and etc.. ●



Overview

Mitech MHVS-1 digital micro hardness tester, based on the principle that positive quadrangular pyramid diamond indenter presses the surface of the sample to produce indentation. By measuring the diagonal length of the indentation to achieve the measurement of the hardness of the material can be for small specimens, thin specimens, surface coating, heat treatment of the workpiece surface Vickers hardness test. Adopted computer-aided, high-rate optical measurement system, photoelectric sensor technology, adjustable light, it is the upgrading products of universal type of micro hardness tester and widely used in the fields of metal processing, electronics industry, mold parts, watch manufacturing, engineering quality inspection and so on. It is an ideal hardness tester for material research and testing.

Technical Parameters

Technical specifications	Technical Parameters
Measuring range	5HV~2500HV
Test force	98.07N , tolerance $\pm 2.0\%$ 10gf (0.098N)、25gf (0.245N)、50gf (0.49N)、100gf (0.98N)、200gf (1.96N)、300gf (2.94N)、500gf (4.9N)、1kgf (9.8N)
Convert ruler	HRA、HRB、HRC、HRD、HR15N、HR30N、HR45N、HR15T、HR30T、HR45T、HV、HK、HBW
Display attributes	LED Digital Display
Applying way of test force	Automatic (loading, holding, unloading)
Conversion way of indenter	Manual
Magnification of measure microscope	100X(observing)400X(measuring)
Test force holding time	0~60s
Minimum resolution	0.0625 μ m
Maximum height of specimen	75mm
Maximum width of specimen	95mm
Power supply	AC220V/50Hz
Dimension	441*270*480mm
Main unit weight	31kg

Features

- Widely used in the fields of metal processing, electronics industry, mold parts, watch manufacturing, engineering quality inspection;
- Adopt large-screen LCD liquid crystal display, easy to operate, visually display the test results;
- Adopt high magnification optical sensing system and high precision photoelectric sensing technology, the test point positioning is accurate, the test result is more accurate;
- Adjustable cold light source measurement system that can control the light strength through the software;
- Equipped with high-speed thermal printer, real-time print test result;
- Support Brinell, Vickers and other hardness units convert;
- With GBT4340.1, GBT4340.2, ASTM_E92 and other relevant domestic and foreign standards.

Scope of application

- Small, thin specimen.
- Surface heat treatment workpieces.
- Surface coating
- Glass, ceramics, agate, artificial gemstones and other more brittle, hard non-metallic materials

Applications

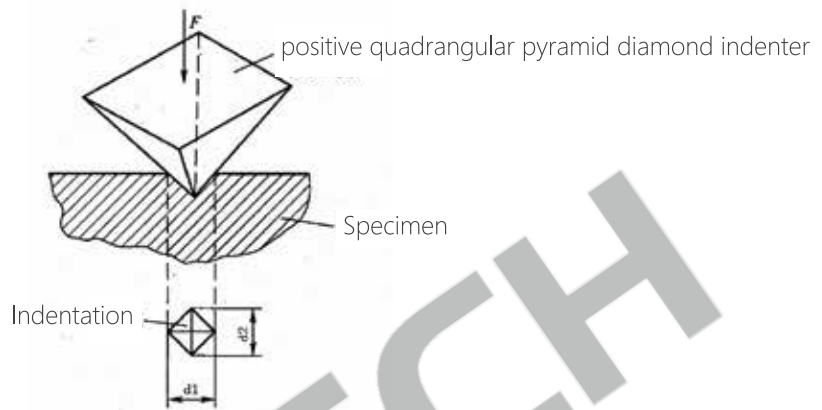
- Metal processing manufacturing quality control links
- University education teaching demonstration experiment
- Failure analysis test of metal material
- Testing of material hardness of scientific research institutions
- Quality inspection departments quality testing links

Working Conditions

- Operation Temperature : 18 ~ 28°C ;
- Relative Humidity : $\leq 65\%$;
- In an environment free from vibration, no corrosive medium in surrounding.
- Installed on a flat basis.

Working Principle

Micro-Vickers (or Knoop) hardness test principle is that put the provisions of the positive pyramid diamond indenter into the sample surface (with fixed experimental force) and maintain a certain length (holding), and then unloading. Finally, there is a positive quadrangular pyramid or kenup indentation with a square surface on the surface of the specimen. Then we can attain the area of indentation via measuring the length of the diagonal by a micrometer eyepiece. Then the corresponding Vickers (or Knoop) hardness values are obtained.



Working Principle Figure

Usually Vickers hardness values can be converted according to the following formula

$$HV = \text{constant} \times \text{test force} / \text{indentation surface area} \approx 0.1891 F / d^2$$

Note: HV, Vickers hardness symbols

F, test force d , the arithmetic mean of of the two diagonal d_1, d_2

Configurations

	NO.	Name	QTY.	Remarks
Standard Configuration	1	Main unit	1	include a micro-Vickers indenter, a 10×, a 40×
	2	Weight axis	1	
	3	Weights	6	
	4	Cross test stand	1	
	5	Sheet holder	1	
	6	Level holder	1	
	7	Filament holder	1	
	8	Screwdriver	2	a phillips screwdriver, a flattened screwdriver
	9	Horizontal adjustment screw	4	
	10	10 × digital micrometer eyepiece	1	
	11	Micro Vickers hardness block	2	HV1 high hardness block HV0.2 median hardness block
	12	Gradienter	1	
	13	Spare fuse (1A)	2	
	14	Power cable	1	
	15	Spare bulbs	2	6V / 2A

	16	Plastic dust cover	1	
	17	Attached files	1	
	18	Host accessory box	1	
Optional	1	HV-CCD measurement system	1	
Configuration	2	HV-LED video measurement system	1	



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