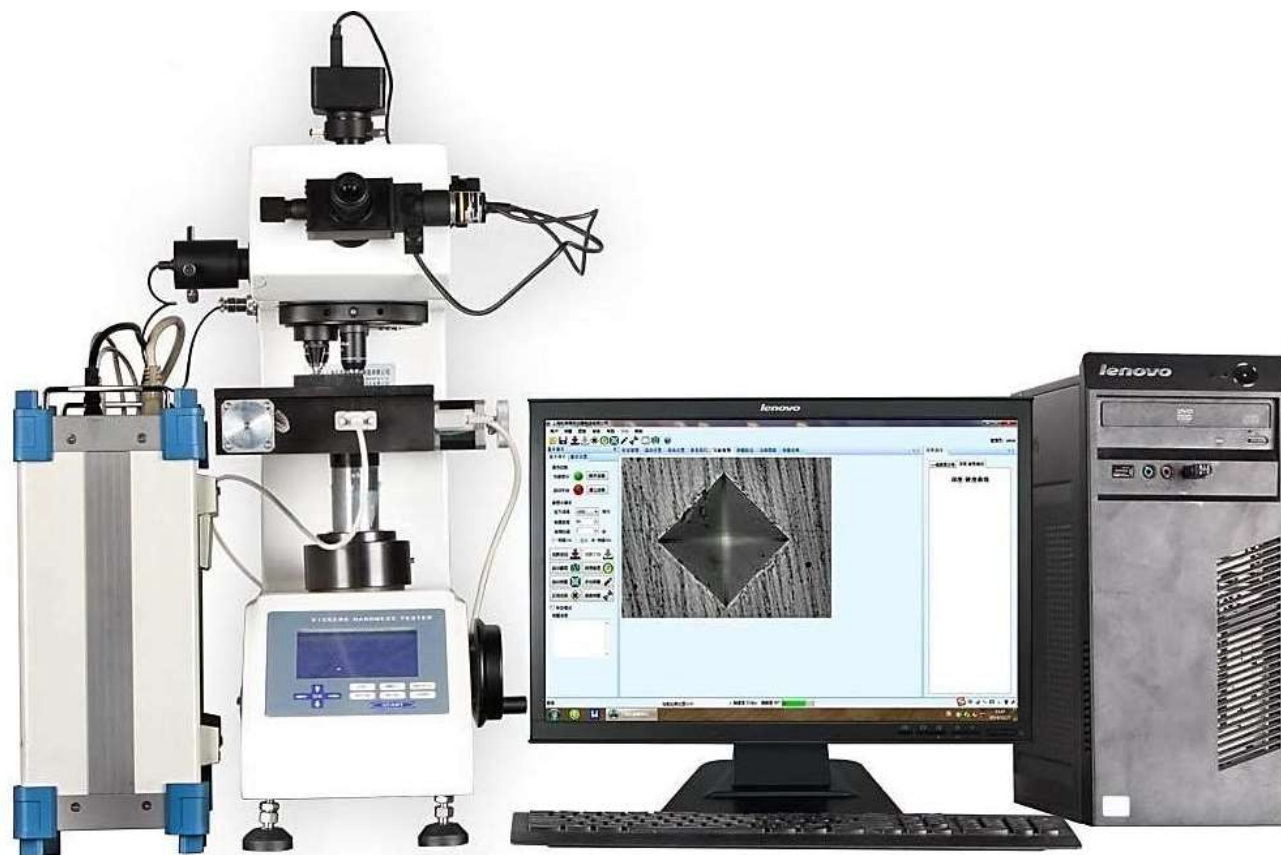# Fully–Automatic Digital Micro Hardness Test System

DESCRIPTION

The **AVHD-1000XYZ** is **Fully-Automatic Digital Micro Hardness Test System** integrated with latest professional technique (optical projection, mechanic shift, electric control, digital projection, image analysis, and computer process etc.).The computer can control hardness tester and automatic working stage via software, and indicate the indentation on the screen by digitization, then test the microhardness of metal parts of a non-metal material, plating, hardening depth, coating thickness, film thickness, and the distance between two points by automatic reading or manual reading; meanwhile, it can take the picture of surface appearance of metal, and print in fixed ratio. This system breaks through the traditional test method, completes the full automatic, high accuracy, high repeatability test; it is the important equipment for analysis material. In this Micro Vickers hardness test system, the computer controls the hardness tester working and receiving the information of hardness tester via RS-232 port; the Computer control the control box of a working stage through RS232, and control box control working stage moving and receiving the information; The optical signal of indentation via digital camera will transfer indentation image to a computer screen, then get the Vickers hardness value by manual or automatic reading.

TECHNICAL SPECIFICATIONS

1	**Automatic measurement model**	**Automatic focus (Grad the clearest image automatically) Automatic turret (Objective lens—indenter—objective lens automatically switch)**
		Automatic loading/unloading (automatic loading—dwelling—unloading)
		Automatic stage + automatic reading (Result displayed automatically)
2	Follow standard	GB/T4340, ASTM E-384, International Standard ISO/DIS 6507-2, JIS B7734
3	Load measurement	10g(0.098N), 25g(0.245N), 50g(0.49N), 100g(0.98N), 200g(1.96N), 300g(2.94N), 500g(4.9N), 1000g(9.8N), 2000g(19.6N)
4	Scale of hardness	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1, HV2
5	Dwelling time	1~99s (each step is 1 second)
6	Indenter	Four pyramidal diamond indenters (Angle 136°±0.5°)
7	Objective and eyepiece	10X and 40X objective lens, 10 X eyepiece Omron brand
8	The host screen	Big screen high definition LCD display
9	Measuring specimen	Max height 85mm Max depth 115mm
10	Light source	LED cold light source (can be used 24hours continuously, does not produce heat, can adjust thestrength of light).
11	Data output	Configuration data transmission data software - can transmitted the measurement data to the computer in variety of formats, and can remove measurement data by software.
12	Qualified determination function	Enter upper and lower limit, qualified and unqualified judge display and output.
13	Hardness conversion	Converted to any hardness value of the scale and meet the international standard.
	Automatically objective table parameters	
14	Table size	200*200mm
15	Driver mode	Control the X- Y axis move freely by software
16	Max mobile distance	50*50mm
17	Mini. Mobile distance	1μm
18	Move speed	Adjustable

Image processing system		
19	PC configuration	At least I3/500G/2G/19inch display
20	camera	Effective physical pixel≥1.3 million
21	Image processing system software	Through hardness tester serial communication, realize the system and hardness tester linkage.
21	Image processing system software	Real-time display hardness image, convert the signal through software, measure indentation hardness value automatically, measurement speed is less than 1s.
		Set by the software, realizes automatic measurement
		Can convert micro hardness tester to Brinell, Rockwell hardness values, and real-time display.
		Can adjust the contrast, brightness of indentation image.
		Can operate edge detection for finish not good enough sample of indentation.
		Horizontal line movement: horizontal distance, can set spacing arbitrarily and have zigzag measurement function.
		Vertical movement: vertical distance movement, can set spacing arbitrarily and have zigzag measurement function.
		Angle linear groups: arbitrary angle direction of the straight-line distance moving, can set spacing arbitrarily and have function of zigzag measurement.
		Random number test 1: mouse click or input coordinates test at any position.
		Random number test 2:test a reference coordinate system of the random number test mode.
		Dot in the distance between any two points, can set spacing arbitrarily.
		Matrix: can automatically recognize sample outline and to set the spacing of sample to overall hardness testing.
		The origin position arbitrarily set, automatic reset, mechanical limit,
		and other professional functions.

Standard configuration list

No.	Device name	QtY	Unit
1	Micro Vickers hardness tester host Standard diamond Vickers indenter	1	set
2	Standard Diamond Vickers Indenter	1	pc
3	Objective lens (10x, 40x)	Each 1	pc
4	Flat fixture, chip fixture, filaments fixture	Each 1	pc
5	Standard test piece HVO.2, HV1	2	pcs
6	10X Omron micrometer eyepiece	1	pcs
7	Level adjust foot	4	pcs
8	Gradient	1	pc
9	Dust cover	1	pc
10	Power line	1	pc
11	Fuse	1	set
12	Warranty card	1	pc
13	Assistive tools	1	pc
14	Operation and maintenance manuals	1	pc
15	13/5006/26 Lenovo PC	1	set
16	19inch Lenovo LED display	1	pc
17	Data transmission software	1	pc
18	Image analysis hardness control software	1	pc
19	X-Y automatic object stage and driving box (Table size 200x200mm, 50x5Omm) Journey	1	pc
20	CCD Imagine collection machine (Physical pixel?1.3 million)	1	pc
21	System connection cable	1	pc
22	Camera interface	1	pc