

Computerized Digital Brinell Rockwell and Vickers Hardness Tester with CCD vision automatic measurement system

Model: SHR-187.5DV



Function introduction:

Iqualitrol Computerized Brinell, Rockwell and Vickers hardness tester SHR-187.5DV has novel appearance, complete functions, convenient operation, clear and intuitive display, and stable performance, it is a high-tech product integrating electromechanical and optical, and can test Brinell, Rockwell and Vickers hardness.

SHR-187.5DV multi-functional hardness tester with seven levels of test force, which can meet a variety of hardness testing needs. The loading, dwell and unloading of the test force are automatically switched, and the operation is simple and fast. Its main functions as follows:

- 1 Three test methods for Brinell, Rockwell and Vickers hardness;
- 2 Conversion values between hardness scales;
- 3 Selection of dwell time for different hardness tests;
- 4 Support to set year, month, and date;
- 5 RS232 serial communication for users to expand functions.

6. The measurement is carried out by a microcomputer to make the data more accurate and the measurement more intuitive;

7 Support manual and automatic measurements, users can choose by themselves;

8 Computer display data, able to generate reports, more standardized;

SHR-187.5DV also has a storage function, which can browse the hardness test page. Hardness test results can be printed out.

CCD vision automatic measurement system:

CCD vision automatic measurement system is a combination of computer automatic measurement software and hardness tester, so that the whole test process can be completed through simple operation of keyboard and mouse, largely eliminates human operation error and avoid visual fatigue of the operator.

The system uses a CCD camera, which can directly observe and measure the indentation on software. It can quickly operate the setting of test conditions, display results, statistical calculation, conversion, display curve, judgment whether it is qualified, and save the data results output to a WORD or EXCEL file. This system is specially designed for SHR-187.5DV digital display Brinell Rockwell and Vickers hardness tester to realize automatic image measurement of Brinell indentation and Vickers indentation.

Key Features of Software:

1. Basic functions: image processing and measurement system, including image capture, calibration, image processing, geometric measurement, document annotation, album management, and fixed-scale printing, etc.;
2. Automatic measurement: automatically capture the indentation and measure the indentation diameter and calculate the corresponding Brinell and Vickers hardness values;
3. Hardness value conversion: the system can convert the measured hardness value into other hardness scales, such as HR hardness, etc.;
4. Data statistics: the system automatically calculates statistical values such as the average value and variance of the measured hardness;
5. Exceeding the standard alarm: automatically mark the abnormal value, when the hardness exceeds the specified range, it will automatically alarm;
6. Test report: Automatically generate a report in WORD or EXCEL format, and the report template can be provided by the user.
7. Easy to use: click the interface button to complete all the work automatically; if you need to manually measure or modify the results, just drag the mouse;
8. Strong noise resistance: advanced and reliable image recognition technology can handle indentation recognition on the surface of complex samples, and two automatic measurement modes can handle extreme situations;
9. Automatic calibration: The system has provided a calibration function, which is convenient for indentation size measurement and can be calibrated at any time. If equipped with a calibration grid, the system can automatically perform full image calibration on the intersection points of the calibration grid to eliminate measurement errors caused by lens distortion.

Technical specifications of SHR-187.5DV:

1. Power supply voltage: AC220V±5%, 50~60Hz

The power socket must use a three-core socket, and the grounding terminal must meet the specified grounding protection requirements.

2. Delay control: adjustable from 0 to 60 seconds

3. Distance from the center of the indenter to the fuselage: 165mm

4. Dimensions of the hardness tester (length × width × height): 551 × 260 × 800mm

5. Approximate weight of the instrument: 80kg

Rockwell Hardness Test Specifications:

Loading Force	Initial force (N)	98.07 (10kg)			Error: ±2.0%
	Total Force (N)	588.4 (60 kg)			Error ±1.0%
		980.7 (100 kg)			
		1471 (150kg)			
Indenter	Cone Diamond Indenter				
	Φ1.5875mm ball indenter				
Scales	HRA	HRB	HRC	HRD	
Max Specimen Height	175mm				

Brinell Hardness Test Specifications:

Test Force	294.2N (30kg)			Error ±1.0%
	306.5N (31.25kg)			
	612.9N (62.5kg)			
	980.7N (100kg)			
	1839N (187.5kg)			
Indenter	φ2.5mm, φ5mm			
Brinell Scales	HBW1/30	HBW2.5/31.25	HBW2.5/62.5	
	HBW5/62.5	HBW10/100	HBW2.5/187.5	
Eyepiece	15x			
Objectives	2.5x, 5x			
Max Specimen Height	115mm			

Vickers Hardness Test Specifications:

Loading Force	294.2N (30kgf)	Error ±1.0%
	980.7N (100kgf)	
Indenter	Diamond Vickers Indenter	
Scales	HV30	HV100
Eyepiece	15x	
Objective	5x	
Max Specimen Height	115mm	

Packing List:

Name	Qty	Name	Qty
Instrument Main Body	1 set	Diamond Rockwell Indenter	1 pc
Diamond Vickers Indenter	1 pc	φ1.588mm, φ2.5mm, φ5mmBall Indenter	each 1 pc
Slipped Test Table	1 pc	Middle Plane Test Table	1 pc
Large Plane Test Table	1 pc	V-shaped Test Table	1 pc
Measuring Eyepiece	1 pc	2.5x, 5x Objective	each 1 pc
Microscope System (include the inside light and outside light)	1 set	Hardness Block 150~250 HBW 2.5/187.5	1 pc
Hardness Block 60~70 HRC	1 pc	Hardness Block 20~30 HRC	1 pc
Hardness Block 80~100 HRB	1 pc	Hardness Block 700~800 HV30	1 pc
Weights 0, 1, 2, 3, 4	5 pcs	Power Cable	1 pc
Fuse 2A	2 pcs	Horizontal Regulating Screw	4 pcs
Level	1 pc	Spanner	1 pc
Screw Driver	1 pc	Anti-dust Cover	1 pc
Usage Instruction Manual	1 copy		

CCD vision automatic measurement system:

- 1, computer (optional)
- 2, Software dongle, 1pc
- 3, CCD camera device 1set
- 4, Brinell/Vickers Measuring Software 1set