



Physical Test Solutions

Innovative Solutions in Material Test Equipment

Vision Brinell Hardness Tester Vision SHB-3000X



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Brief Introduction:

The vision Brinell hardness tester Vision SHB-3000X is mainly used to measure the Brinell hardness of materials. The latest frame structure design, the high-precision step-control system and the more intuitive measurement method are adopted. The structure is more stable, the control accuracy is higher, the time and effort are saved, and the accuracy is improved by an order of magnitude.

The machine adopts electronic control automatic loading, computer software programming, high-power optical measurement, photoelectric sensor and other systems, and adopts high-precision step control technology to ensure that the load of test force does not overshoot. By manually fitting the indentation edge, the Brinell hardness is automatically calculated and displayed on the LCD screen. The reading is accurate and the operation is convenient.

Feature:

- High precision step-controlled electric loading technology, fast loading speed of main test force and high efficiency.
- New mechanical structure design, strong frame structure.
- Real-time video measurement, better effect, more accurate and more stable.
- The data of the operation process and test results can be displayed on the screen.
- High-precision sensors cooperate with the control system, the loading speed and unloading speed are faster and more accurate.
- With the unique embedded vision technology, the measurement operation is simple, and human error is greatly reduced. The measurement can be learned in five minutes. The results of different people's measurements are basically the same.
- The remote control can be realized and the operation is simple.
- The light source can be measured by adjusting the screen.
- Measuring indentation is more stable.
- Can preset the test force guarantee time.
- Extremely fast loading speed: loading time of test force is 3.5-8 seconds.
- The test force has high precision and two thousandths of the fluctuation of the holding pressure of the force value.
- Intelligent control of whole process: Piece wise force application, smooth speed change, high precision and high speed step control, etc.
- The experimental data can be output by printer.

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.
- Vision 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.





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Advantages:

- 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 μ 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 μ 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.

Application:

It is not only suitable for hardness measurement of cast iron, steel, non-ferrous metal and soft alloy, but also can be used to determine the hardness of some non-metallic materials such as hard plastics and Bakelite.

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Technical Specification

Commodity		Vision Brinell Hardness Tester
Model		Vision SHB-3000X
Code#		831-155
Loading Force	N	612.9, 980.7, 1226, 1839, 2452, 4903, 7355, 9807, 14710, 29420
	kgf	62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000
Dwell Time		0~60s
Objective lens and indenter switching		Automatic
Focusing Method		Manual
Measuring Range		(8~650) HBW
Hardness Indication		LCD Display
Data Output		Built-in printer
Brinell Scales		HBW2.5/62.5 HBW10/100 HBW2.5/187.5 HBW5/125 HBW10/250 HBW10/500 HBW5/750 HBW10/1000 HBW10/1500 HBW10/3000
Scale Conversion		HR; HV; HK est.
Total Magnification		20X
Max.height of Specimen		240mm
Distance from intender to body		160mm
Min. Measuring Unit		1μm
Power supply		AC90-240V,50-60Hz
Dimension		580x250x830mm
Gross/Net Weight		170kg/140kg
Executive Standard		JJG150-2005, GB/T231, ASTM D-785, ISO6506





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Standard Accessories:

Commodity	Code #	Commodity	Code #	Commodity	Code #
Main body	831-155	Ø5mm Steel Ball Intender	831-421	Power Cord	831-801
Hardness Block HBW 10/3000	831-601	Ø2.5mm Steel Ball Intender	831-431	Toolbox	831-901
Hardness Block HBW 5/750	831-611	Ø200mm Working Stage	831-551	Dust Cover	831-911
Ø10mm Steel Ball Intender	831-411	Ø60mm Working Stage	831-501	Warranty Card	Vision SHB- 3000X
Qualified Certificate	Vision SHB- 3000X	Ø40mm V-shape Anvil	831-521	Instruction / Packing list	Vision SHB- 3000X

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