

Banbros

Believes in Quality

HARDNESS TESTER

- Value
- Versatility
- Performance



THE PRECISION MEASUREMENT PEOPLE



VHS-1000A, VHS-1000B



VH-1000A, VH-1000B

MICRO HARDNESS TESER can be used to determine the Vickers hardness of steel, non-ferrous metals, ceramics, treated layers of metal surface, and the hardness grades of carburized, nitrided and hardened layers of metals. It is also suitable to determine the Vickers hardness of micro and super thin parts.

Feature & Use:

- * Automatic testing process, no human operating error.
- * Automatic turret shifting between penetrator and objective lens. (VHS-1000A & VH-1000A)
- * Hardness conversion between different hardness scales. (VHS-1000A & VHS-1000B)
- * Precision conforms to GB/T 4340.2, ISO 6507-2 and ASTM E384.
- * Frictionless loading shaft, high precision testing force.
- * RS232 data interface, built-in printer. (VHS-1000A & VHS-1000B)

SPECIFICATIONS:

MODEL	VHS-1000A & 1000B	VH-1000A & 1000B
Measuring range	5-3000HV	
Test force	0.09807, 0.2452, 0.4904, 0.9807, 1.961, 2.942, 4.904, 9.807N 10, 25, 50, 100, 200, 300, 500, 1000gf (2000gf is optional)	
Hardness scale	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1	
Magnifications of the measuring system	400X (measuring), 100X (observing)	
Min. scale value of the optical micrometer	0.01μm	0.025μm
Measuring range	200μm	
Max. height of test piece	75mm	
Depth of throat	110mm	
Power supply	220V AC, 50 or 60Hz	
Dimensions	470 x 320 x 500mm	
Weight	approx. 40kg	


SPY-5

SPY-5 is designed on the basis of traditional measuring microscope. It adds optical measuring components, CCD measuring components, 8" colorful LCD display components to microscope, and it can help to display the indentation image on LCD and make hardness test directly. In this way, the human error caused by long time eye viewing through microscope can be reduced. It is especially the ideal means for multiple persons to measure at the same time. It can be widely applied in institutes, research dept. and factories.

Features & Uses:

Direct indentation image display on LCD and direct hardness measurement through LCD.

Double function optional for measuring microscope.

SPY-5 can be mounted onto our Vickers and Micro Vickers Hardness testers.

SPECIFICATIONS:

SPY-5 is equipped with digital microscope (with rotary encoder) and combined with 40X objective lens

Measuring range	Combined with 40X objective lens: 125 um
Optical system	Total magnification: 400X (measurement)
CCD system	Horizontal definition: 570 lines
Display mode	Black and white
Input voltage	DC12V±10%
LCD display system	Screen size: 8"
Input voltage	DC12V±10%
Voltage stabilizer input voltage	220V, 50Hz
Power consumption	20W



Banbros's Microhardness image analysis software is a flexible yet affordable software solution that enables you to acquire, measure and even analyze the results of your Vickers hardness test. The automatic image analysis software measures the size of your indentation and calculates the Vickers hardness of your test piece. This software will guide you while testing case depth and the result of your complete test can be analyzed using the software. This software will also generate reports with your company logo.

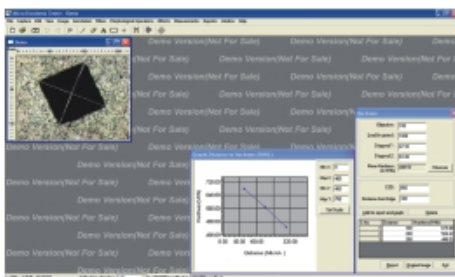
This software is also an ideal solution for upgrading or **retrofitting older hardness testers**. Install the software on your own computer, attach the camera to the hardness tester and plug in the USB camera. The system is very easy to install and can be setup on most micro and macro Vickers

Description:

The software provides simplest, accurate and user-friendly platform to all Geometrical Measurements. Creates customized reports with images, date and text in MS Word and MS Excel format.

Features:

- Calibration: This tool is used for calibrating through calibration scale.
- Hardness Indentation Measurement.
- Micro Hardness Profile with ESD identification
- Create custom made formatted reports of live and stored images.
- Display results on the computer & you may take multicolor prints out





Model: VHS-5



Model: VH-5

SPECIFICATIONS:

MODEL	VHS-5	VH-5
Measuring range	5-3000HV	
Test force	1.961, 2.942, 4.903, 9.807, 19.61, 24.52, 29.42, 49.03N (0.2, 0.3, 0.5, 1, 2, 2.5, 3, 5 kgf)	
Magnifications of the measuring microscope	500x, 125x	
Min. scale value of the measuring microscope	0.025 μm	0.25 μm
Max. height of test piece	130 mm	
Depth of throat	100 mm	
Power supply	220V AC, 50Hz	
Dimensions	410 x 200 x 620 mm	455 x 295 x 675 mm
Weight	approx. 50kg	approx. 50kg



Model: VHS-50



Model: VH-50A

SPECIFICATIONS:

MODEL	VHS-50	VH-50A
Measuring range	5-2900HV	
Test force	9.807, 49.03, 98.07, 196.1, 294.2, 490.3N (1, 5, 10, 20, 30, 50 kgf)	
Magnifications of the measuring microscope	125x, 250x	
Min. scale value of the measuring microscope	0.5 μm	1 μm
Max. height of test piece	180 mm	180 mm
Depth of throat	125 mm	125 mm
Power supply	220V AC, 50Hz	
Dimensions	580 x 260 x 730 mm	580 x 260 x 730 mm
Weight	approx. 90kg	approx. 90kg

It's suitable to determine the Rockwell hardness of ferrous, non-ferrous metals. It can be widely applied in the Rockwell hardness testing for heat treatment materials, such as quenching, hardening and tempering, etc.


RH-150A
RH-150A ROCKWELL HARDNESS TESTER

- * Manual testing process, no need for electric supply.
- * It's steady and reliable for testing of flat & curved surfaces.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.


RH-150B
RH-150B ROCKWELL HARDNESS TESTER

- * High travel of test anvil in vertical direction and it is suitable for testing of large test piece.
- * Manual testing process, no need for electric supply.
- * It's steady and reliable for testing of flat & curved surfaces.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.


200RH-150
200RH-150 ROCKWELL HARDNESS TESTER

- * Optimized mechanical frame. Manual testing process, no need for electric supply.
- * It is steady and reliable for testing of flat & curved surfaces.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.

SPECIFICATIONS:

MODEL	RH-150A	RHS-150 B	200RH-150
Measuring range	20-88HRA, 20-100 HRB, 20-70 HRC		
Test Force	588.4, 980.7, 1471 N (60, 100, 150 Kgf)		
Max. height of test piece	170 mm	400 mm	210mm
Depth of throat	135mm	160mm	165mm
Min. scale value	0.5 HR		
Power supply	220V AC, 50 Hz		
Dimensions	466 X 238 X 630mm	548 X 326 X 1025 mm	522 X 220 X 729mm
Weight	Approx. 65 kg	Approx. 140 kg	Approx. 68 kg

It's suitable to determine the Rockwell hardness of ferrous, non-ferrous metals and non-metal materials. It can be widely applied in the Rockwell hardness testing for heat treatment materials, such as quenching, hardening and tempering, etc.


200RHS-150
200RHS-150 DIGITAL DISPLAY ROCKWELL HARDNESS TESTER
Feature & Use:

- * Optimized mechanical frame, automatic testing process, large LCD digital display.
- * RS232 data interface.
- * The measured hardness can be converted to HRA, HRB, HRC, HV, HR15N, HR30N, HR45N, HBW etc.
- * It's steady and reliable for testing of flat & curved surfaces.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.


RHS-150
RHS-150 ROCKWELL HARDNESS TESTER
Feature & Use:

- * Frictionless loading shaft, high precision testing force.
- * After preliminary test force is applied, the handwheel will lock automatically. Automatic testing process, no human operating error.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.


200RHD-150
200RHD-150 MOTOR-DRIVEN ROCKWELL HARDNESS TESTER
Feature & Use:

- * Optimized mechanical frame, automatic testing process.
- * It's steady and reliable for testing of curved surface.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.

SPECIFICATIONS:

MODEL	200 RHS-150	RHS-150	200RHD-150
Measuring range	20-88HRA, 20-100HRB, 20-70HRC		
Test force	588.4, 980.7, 1471N (60,100,150kgf)		
Max. height of test piece	210 mm	170mm	210mm
Depth of throat	165mm	130mm	165mm
Unit for display	0.1HR	0.1HR	0.5HR
Power supply	220V AC, 50 Hz		
Dimensions	522 x 220 x 729 mm	500 x 250 x 700 mm	522 x 220 x 729 mm
Weight	approx. 98kg	approx. 75Kg	approx. 98Kg



RHSS-45

HSRS-45 DIGITAL DISPLAY SUPERFICIAL ROCKWELL HARDNESS TESTER

Feature & Use:

- * Frictionless loading shaft, high precision testing force.
- * After preliminary test force is applied, the handwheel will lock automatically. Automatic testing process, no human operating error.
- * Precision conforms to the Standards of GB/T 230.2, ISO 6508-2 and ASTM E18.

It's suitable to determine the Superficial Rockwell hardness of ferrous metals, alloy steels and hard alloys, as well as treated layers of metal surface, such as carburized layer, nitrided layer and electroplated coating, etc.



310HRSS-150

MODEL 310HRSS-150 AUTOMATIC FULL SCALE ROCKWELL & SUPERFICIAL HARDNESS TESTER

Feature & Use

- * Test force closed-loop control.
- * Automatic tracking and testing, no test error caused by deformation of frame and workpiece.
- * Automatically clamp the workpiece, suitable for testing of abnormal shape workpiece, no need to apply preliminary test force by hand.
- * High accuracy optical grating displacement measuring system.
- * Large LCD display, menu operation, complete functions (data processing, hardness conversion between different hardness scales).
- * RS232 data interface.
- * Upper-computer is optional (equipped with special software).
- * Precision conforms to GB/T 230.2, ISO 6508-2 and ASTM E18.

It's suitable to determine the Rockwell & Superficial Rockwell hardness of ferrous metals, alloy steel and hard alloy, as well as treated layers of metal surface, such as carburized layer, nitrided layer and electroplated coating, etc. It's especially suitable to determine heterotypic workpiece.

SPECIFICATIONS:

MODEL	310RHSS-150	RHSS-45
Measuring range	Rockwell : 20-88HRA, 20-100HRB, 20-70HRC	
	Superficial : 70-94HR15N, 42-86HR30N, 20-77HR45N 67-93HR15T, 29-82HR30T, 10-72HR45T	70-91HR15N, 42-80HR30N, 20-70HR45N 73-93HR15T, 43-82HR30T, 12-72HR45T
Preliminary test force	29.4, 98.07N (3, 10Kg)	29.4N (3Kg)
Test force	147.1, 294.2, 441.3, 588.4, 980.7, 1471N (15, 30, 45, 60, 100, 150kgf)	145.1, 294.2, 441.3N (15, 30, 45kgf)
Max. height of test piece	180 mm	150mm
Depth of throat	160 mm	120mm
Power supply	220V AC±5%, 50 Hz	
Dimensions	910 x 535 x 220 mm	550 x 250 x 700mm
Weight	approx. 85 kg	approx. 69 kg


BH-3000

BH-3000B

BH-3000D
BH-3000 - BRINELL HARDNESS TESTER

- * Manual loading & unloading.
- * It's steady and reliable for testing of flate & curved surfaces.
- * Precision conforms to the Standards of GB/T 231.2, ISO 6506-2 and ASTM E10.

It's suitable to determine the Brinell hardness of unquenched steel, cast iron, non-ferrous metals and soft bearing alloys, etc.

BH-3000B - BRINELL HARDNESS TESTER

- * Automatic loading & unloading.
- * It's steady and reliable for testing of flat & curved surface.
- * Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10.

BH-3000C - BRINELL HARDNESS TESTER

- * Automatic testing process, no human operating & reading errors.
- * Large LCD screen displaying for parameters setup, easy operation.
- * Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10.

MODEL BH - 3000D MEDIUM TYPE HARDNESS TESTER

- * Automatic testing process, no human operating error.
- * High travel, large size work table.
- * Large LCD screen displaying for parameters setup, easy operation.
- * Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10.

SPECIFICATIONS:

MODEL	BH-3000 / 3000B	BH-3000C	BH-3000D
Measuring range	8-650HBW	4-650HBW	8-650HBW
Steps of test load	187.5, 250, 750, 1000, 3000kgf	62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000kgf	187.5, 250, 750, 1000, 1500, 3000kgf
Max. height of test piece	230 mm	240mm	400mm
Depth of throat	120mm	150mm	200mm
Power supply	220V AC, 50/60Hz		
Dimensions	700 x 268 x 842 mm	630 x 250 x 1000 mm	860 x 680 x 1250 mm
Weight	approx. 210kg	approx. 250kg	approx. 400kg


200 BH-3000
MODEL 200BH-3000 BRINELL HARDNESS TESTER

- * Weight loading system.
- * Automatic test process, no human operating error.
- * Large LCD display of testing process, easy operation.
- * Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10.


210 BHS-3000
MODEL 210BHS-3000 DIGITAL DISPLAY BRINELL HARDNESS TESTER

- * Digital display of Hardness value.
- * Hardness conversion between different hardness scales.
- * Manual turret, weight loading system.
- * Automatic test process, no human operating error.
- * Large LCD display of testing process, easy operation.
- * Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10.

SPECIFICATIONS:

MODEL	200BH-3000	210BHS-3000
Measuring range	8-650HBW	8-650HBW
Steps of test load	1838.8, 2415.8, 7355.3, 9807, 29421N (187.5, 250, 750, 1000, 3000kgf)	
Max. height of test piece	280 mm	280mm
Depth of throat	150mm	150mm
Unit for display	0.1μm	0.1μm
Power supply	220V AC, 50/60Hz	220V AC, 50/60Hz
Dimensions	570 x 330 x 910 mm	570 x 330 x 910 mm
Weight	approx. 220kg	approx. 220kg


BHZ-3000A
BHZ-3000A - AUTOMATIC BRINELL HARDNESS TESTER

- * Automatic testing process, high precision optical grating measuring system, automatic digital display, no human operating & reading errors.
- * The attached printer can automatically print out the hardness testing result.
- * Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10.

It is especially suitable for on-line & on-spot determining of the hardness of test pieces in large batches.

SPECIFICATIONS:

MODEL	BHZ-3000A
Measuring range	2-650HBW
Test force	7355.3, 9807, 29421N (750, 1000, 3000kgf)
Max. height of test piece	450mm
Depth of throat	170mm
Power supply	380V AC, 50 or 60Hz
Main Machine Dimensions	920 x 720 x 1760mm
Control box	510 x 500 x 1450mm
Weight main machine	approx. 900kg
Weight control box	approx. 40kg

This Hardness Tester is a direct hardness measurement with in any particular material group (i.e. steel, aluminum etc) and can be used as a final test result without conversion.

Conversions Leeb Hardness to other scales (Rockwell, Brinell, Vickers and shore etc.) are programmed into the electronics and can be shown directly on the display as the test result. All data is stored in the native L Scale to prevent any possible errors with multiple conversions.



PHT-300

Application Range:

- Good for all metals
- Ideal for production level testing
- Best suited for on-site testing of heavy, big or already installed parts
- Handy for difficult to access or confined test locations
- Automatic compensation for impact direction
- Excellent for material selection and acceptance tests
- Easy to use and accurate on curved test surfaces ($R > 10\text{mm}$)
- Metal production & processing
- Automotive & transportation
- Machinery & Power plants
- Petro-chemical, refineries
- Aerospace & shipyard
- Metal Constructions
- Testing Services & laboratories

Main Features:

High accuracy: $\pm 6 \text{ HL}$

Automatic correction for impact direction

Large, easy to read display with backlight

User profiles for fast change of all settings

Converts to all common hardness scales (HB, HRB, HRC, HV, HSD) and tensile strength MPa

Powered by dry cell, Ultra-low-power

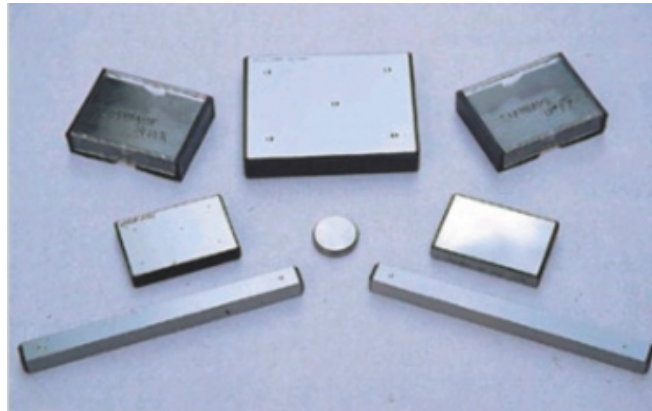
Easy calibration

Conforms to the standard ASTM A956-02

SPECIFICATIONS:

MODEL	PHT-300
HL Display Range	0-999 HLD
Accuracy	$\pm 6 \text{ HL}$ (at 500 HLD)
LCD	Large LCD with backlight.
Scales	HL, HV, HB, HRB, HSD, MPa
Resolution	1 HL; 1 HV; 1 HB; 0.1 HRB; 1 HSD; 1 MPa
Measurement Direction	360°
Power	4.5 V Dry Cell (3 x 1.5V AAA batteries)
Operating Temperature	0° to $+50^\circ \text{ C}$ (32 to 122° F)
Storage Temperature	-10° to $+60^\circ \text{ C}$ (14 to 140° F)
Humidity	90% max.
Dimensions	150mm x 80mm x 24mm
Weight	Approx. 200g

Impact Unit D	
Impact Energy	11 N.mm
Mass of the impact body	5.5g
Test tip diameter	3mm
Test tip material	Tungsten Carbide
Test tip hardness	$> 1600 \text{ HV}$
Impact Length	147mm
Impact Max. Diameter	20mm
Impact Weight	75g



Feature & Use:

Conforms to National standard "calibration of hardness reference blocks"

High homogenization and nice repeatability

SPECIFICATIONS:

DESCRIPTION	Range of hardness	Weight (kg)
Brinell standardized block	200±50HBW	1
	100±25HBW	
Rockwell standardized block	80-88HRA	0.19
	85-95HRB	
	20-30HRC	
	35-55HRC	
	60-70HRC	
Vickers standardized block	200±25HV5	0.19
	450±50HV5	
	450±50HV10	
	450±50HV30	
	750±50HV10	
Superficial Rockwell standardized block	89-91HR15N	0.19
	42-50HR30N	
	75-80HR30N	
	37-61HR45N	
	87-93HR15T	
	70-82HR30T	
Portable Brinell standardized block	200±50HBS	1
Hammer-hitting type Brinell standardized block	175-225HBS	0.17
Micro-Vickers standardized block	200-300HV0.05	0.03
	400-500HV0.1	
	400-500HV0.2	
	700-800HV0.2	
	700-800HV0.5	
	700-800HV1	
Leeb standardized block	790±40HLD	2.7
Shore standardized block	95±4HSD	0.39
	60±4HSD	
	30±4HSD	



BHX-0.5

This tester can be used to determine the Brinell Hardness of ferrous metals with elastic modulus approximate to 2×10^5 Mpa. It is especially suitable to determine the hardness of heavy parts on the spot.

Feature & Use:

Small volume, convenient for carrying, easy operation
Precision conforms to GB/T 231.2, ISO 6506-2 and ASTM E10

Specification:

Measuring Range: 100-400HBS
Steel ball diameter: 10mm
Impact Capacity: 4.9J
Dimensions: $\varnothing 55 \times 370$ mm
Weight: 3.3 Kg. (Approx.)

Main Accessories:

Portable Brinell Standardized Block: 1 pc
20x Readout Microscope: 1 pc



SPECIFICATIONS:

DESCRIPTION	Specification
Penetrator for Rockwell Hardness Tester	120° Diamond cone penetrator used for all kinds of Rockwell hardness testers
	$\varnothing 1.588$ (1/16") Steel ball or Tungsten carbide ball penetrator
Penetrator for Brinell Hardness Tester	$\varnothing 1, 2, 2.5, 5, 10$ mm Tungsten carbide ball penetrator
Penetrator for Vickers Hardness Tester	136° Diamond pyramid penetrator used for all kinds of Vickers hardness testers