



DIGITAL AUTOMATIC
ROCKWELL
HARDNESS TESTER
PMI 900-A



Precision Measuring Instruments Co.
Email:- chirag_pmico@hotmail.com
Mobile:- 9870188718
Webiste:- www.pmicoindia.co.in

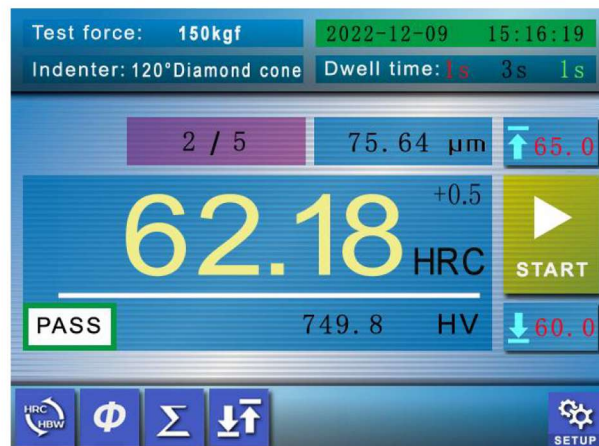


New features:

- The test force are applied via a **closed-loop control unit with a load cell**, a DC motor and an electronic measurement and control unit replace traditional dead weights. The result is **highly accurate measurements** at all test loads **up to 0.2%**.
- Simple plug - and - play tech allows for much more quick and easy installation than traditional weights type machine.
- **Automated Z-Axis**. Just press START key once, entire test process will be finished automatically. Regardless of the the size of the sample, the position of the sample, the distance between the indenter and sample surface. The sample will be auto-lifted to approach the indenter and finishing testing automatically.
- Higher precision than handle wheel lifting/dead weights type machines which can be affected by user interaction.
- **Extended Dolphin Nose** allows vertical-test height of 430mm and throat depth of 220mm.
- Integrated casting body with more wide basement leads to permanent stability.
- Built in micro-printer and USB port to PC.

Basic functions:

- Twin tester--Regular Rockwell & Rockwell Superficial hardness for metal and plastic material.
- Horizontal dolphin nose Indenter is suitable also for internal and external testing.
- Testing on Surfaces difficult to reach. Testing internal surface of rings and tubes.
- **Provided with many features such as high measuring precision, wide measuring range with 30 Rockwell scales.**
- The tester is suitable for testing of carbon steel, alloy steel, cast iron, non ferrous metal.
- Automatic testing cycle: Lifting of part, pre-loading, loading, dwell, unloading, results will be finished automatically.
- Measuring results digitally displaying and can be printed, or transmitted to external computer automatically by USB port.
- Test HR value can be converted to the value of HB, HV, HK and ob value.
- The tester meets all the following standard such as **ISO 6508-2, ASTM E18.**



Scales				
HRA	HRBw	HRC	HRD	HRE
HRF	HRG	HRH	HRK	HRL
HRM	HRP	HRR	HRS	HRV
HR15N	HR15T	HR15W	HR15X	HR15Y
HR30N	HR30T	HR30W	HR30X	HR30Y
HR45N	HR45T	HR45W	HR45X	HR45Y

Cancel OK

Parameters:

- **Preload** : 29.4N (3kgf) , 98.1N (10kgf)
- **Total test force** : 147.1N(15kgf), 294.3N(30kgf), 441.3N(45kgf),
588.4N (60kgf), 980.7N (100kgf), 1471N (150kgf)
- **Scales** : HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HR15W, HR30W, HR45W, HR15X,
HR30X, HR45X, HR15Y, HR30Y, HR45Y, HRA, HRB, HRC, HRD, HRE, HRF, HRG,
HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV
- **Load dwell duration** : 2~50s, can be set and stored
- **Resolution** : 0.01HR
- **Panel** : Coloured Touch Screen
- Upper/lower limits setting & alarming
- **Data statistics** : Avg., Max., Min., S, R
- Curved surface auto correction
- **Memory**: Max 2000 items of test results stored automatically
- **Testing Capacity** : 430mm (vertical), 220mm (horizontal)
- **Dimensions** : 690mm×280mm×860mm
- **Power supply** : AC, 220V/110V, 50~60Hz, 4A
- **Net weight** : 86 kg
- **Gross weight**:120kg



Standard configuration

Host machine	1
Standard hardness block for A scale	2
Standard hardness block for B scale	2
Standard hardness block for C scale	3
Standard hardness block for 30N scale	2
Standard hardness block for 30T scale	2
ball indenter (1/16")	3
120° cone diamond indenter	3
Mounting screws for indenter	2
Flat anvil	1
"V" shape anvil	1
Power supply wire	1
Screwdriver for indenter mounting	1
Dust cover	1

OTHER PRODUCTS



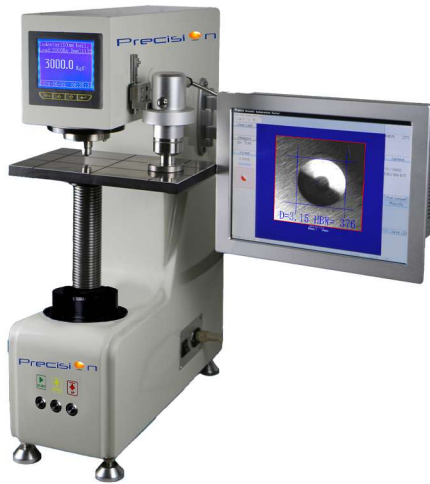
**Digital Rockwell
Hardness Tester**



**Digital Micro-Vickers
Hardness Tester**



**Digital Brinell
Hardness Tester**



**Digital Portable
Hardness Tester**

**We can customize the Hardness Tester
as per your special requirements.**

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chirag_pmico@hotmail.com

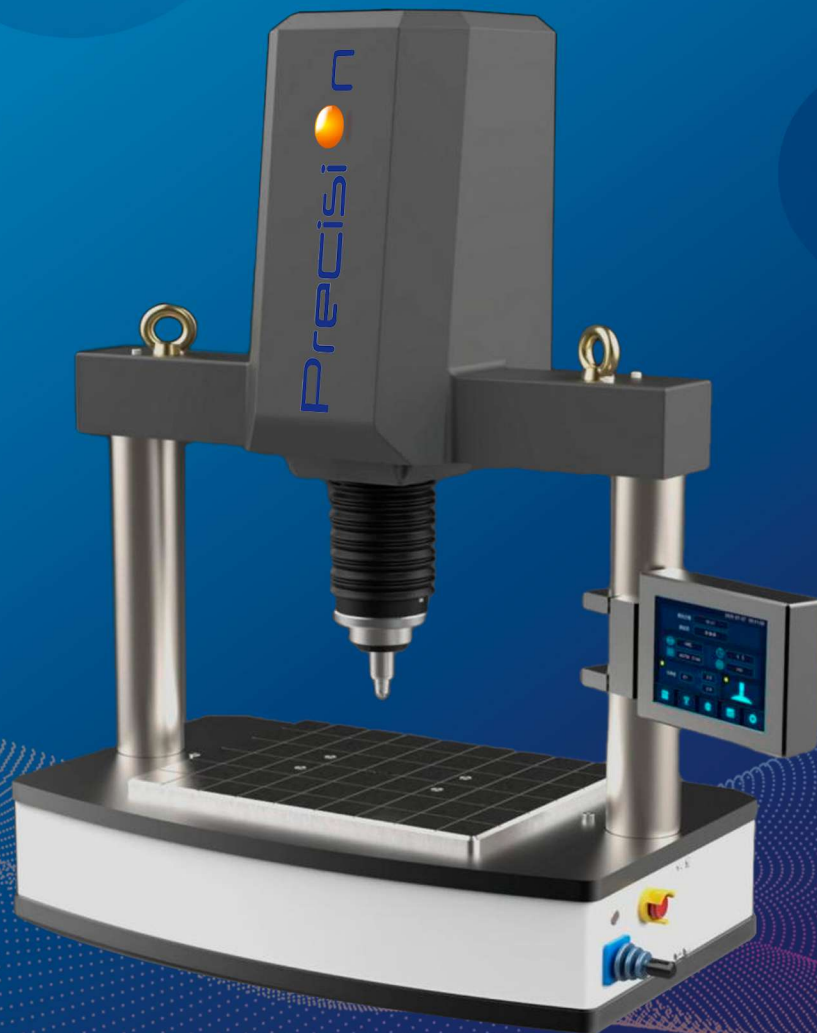
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Precision

Automatic Rockwell Hardness Tester

PG-150 SE



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OPERATION INTERFACE



Can input tester, sample name and other information (support barcode qr code input) cylinder, sphere test value correction.



The dynamic graph realizes the real-time monitoring of force sensor and displacement sensor.



The tolerance limit can be set to automatically determine the qualified/unqualified, a variety of conversion standards are optional, ASTM, DIN, GB, etc.

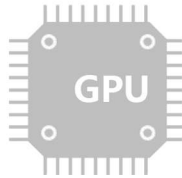


The database can store data and charts, at least 500 groups with 20 data per group.

PRODUCT FEATURES



Gate-type structure for hardiness testing of large workpieces



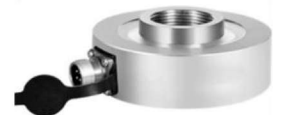
Adopt specialized CNC control system, closed-loop electronic control system to apply test force



The transmission part of the whole machine is completely composed of servo motor and ball screw



Equipped with high-precision grating displacement sensor resolution, hardness value resolution of 0.01HR



Fully automatic closed-loop force sensor afterburner system



High-definition color touch screen display



One-button measurement, automatic and rapid lifting of the test head



Equipped with sample lighting system



Multiple anti-collision protection system



New era environmental protection concept, the energy consumption of the instrument in working state is 20W

SCOPE OF APPLICATION:

Rockwell: Testing of rockwell hardness of ferrous metals, non-ferrous metals and non-metallic materials; Suitable for hardening, quenching and tempering heat treatment materials" rockwell hardness measurement; It is especially suitable for precise testing of horizontal plane. V-type anvil can be used for precise testing of cylinder.

Surface Rockwell: Testing of ferrous metals, alloy steel, hard alloy and metal surface treatment (carburizing, nitriding, electroplating).

Plastic Rockwell hardness : rockwell hardness of plastics, composite materials and various friction materials, soft metals and non-metallic soft materials.

TECHNICAL SPECIFICATIONS

Initial test force	3kgf (29.42N), 10kgf (98.07N)
Total test force	15kgf (147.1N), 30kgf (294.2N), 45kgf (441.3N), 60kgf (588.4N), 100kgf (980.7N), 150kgf (1471N)
Indenter Type	Rockwell diamond indenter ϕ 1.588mm steel ball indenter
Test force application method	Automatic (loading, dwell, and unloading are fully automatic)
Dwell time	1 to 99 seconds
Operation mode	Machine head automatically go up, can set position of return, one button can finish.
Display	8-inch high-definition touch screen display, ergonomic design, beautiful and practical.
Data statistics	Test times, average value, maximum value, minimum value, repeatability, upper and lower limit of setting hardness value, warning function, etc.
Testing scale	HRA, HRD, HRC, HRF, HRB, HRG, HRH, HRE, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Conversion scale	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HBW
Data output	USB, RS232
Hardness value Resolution	0.01HR
Specimen maximum height	400mm
Distance between two columns	560mm
Power supply	110V/220V, 60/50HZ
Executive standard	ISO 6508, ASTM E18, JIS Z2245, GB/T 230.2
Dimension	535×410×900mm, packing: 820×460×1170mm
Weight	Net: 120kgs, Gross: 150KGS

OTHER PRODUCTS



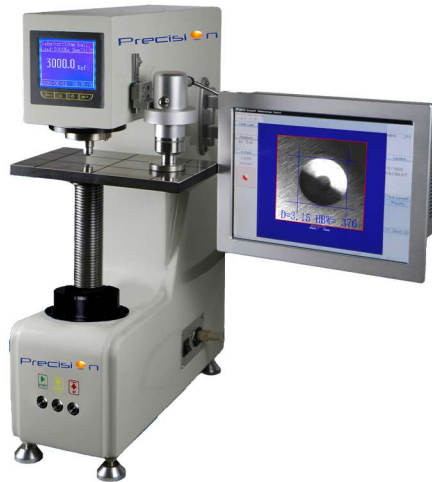
Digital Rockwell Hardness Tester



Digital Micro-Vickers Hardness Tester



Digital Brinell Hardness Tester



Digital Portable Hardness Tester

We can customize the Hardness Tester as per your special requirements.

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PG-150C



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Automatic Digital Rockwell Hardness Tester



Range of application:

- Rockwell: Suitable for precision testing on parallel planes. V-shaped test bench allows for precise testing of cylinders. Test ferrous metal, non-ferrous metal, non-metallic materials, suitable for quenching, tempering and other heat treatment.
- Superficial Rockwell : Test ferrous metal, alloy steel, hard alloy and metal surface treatment (carburizing, nitriding, electroplating).
- Plastic Rockwell : Rockwell hardness of plastics, composites and various friction materials, soft metals and non-metallic soft materials. (Optional)

Product Introduction:

- The automatic Rockwell hardness tester conforms to ASTM E18 Rockwell hardness test method for metal materials, and has the characteristics of high automation, high test accuracy and high test efficiency.
- One click operation, get the test results.
- Cantilever structure indenter automatically rises and falls, fully automatic hardness measurement .
- Equipped with a joystick, the servo motor can be quickly driven to adjust the test space and improve the detection efficiency.
- Touch screen display and operation, equipped with dynamic curves, real-time monitoring of the force value sensor and displacement sensor operating status, very intuitive.
- Large flat test bench is convenient for testing large workpieces, and can work in tandem with any brand of manipulator and automation equipment to form online hardness testing, and achieve completely unmanned testing.
- USB, Bluetooth or RS232 and other transmission methods are transmitted to the computer side, and special hardness management software is connected for data management.

Product Composition:

Measuring head, loading system (motor, reducer), measuring system (sensor), control system, base seat, power supply, printer, etc.



Special numerical control system, closed-loop electronic control system to apply test force.



With high precision grating position shift sensor resolution, hardness value resolution is 0.01HR.



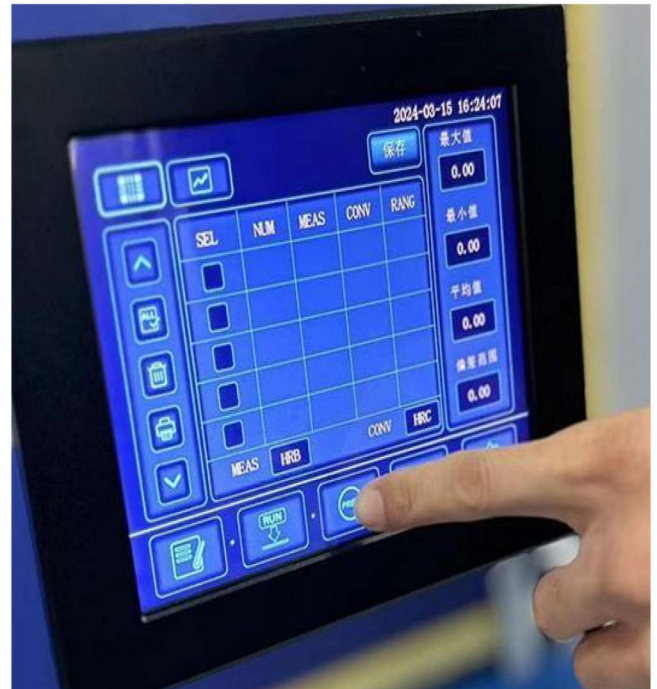
One-click automatic measurement, measuring head automatic rapid rise and fall structure



Sample lighting system highlights the measurement site to ensure clarity and visibility.



Equipped with a large flat working test bench, easy to test large workpieces.



HD color touch screen display, independent simple menu type operating system.

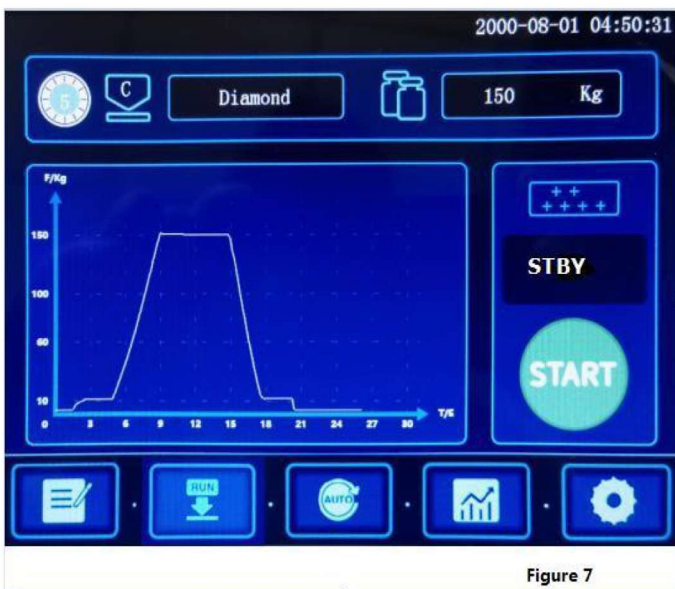
Test interface:



Test parameter setting



Data Statistics



Test force curve



Test results
(test results and conversion values)

Technical Parameters:-

Test Force	Rockwell: 60kg,100kg,150kg	
	Superficial Rockwell: 15kg,30kg,45kg	
Accuracy	±1%	
Measuring range	Rockwell: 20-95HRA,10-100HRB,10-70HRC	
	Superficial Rockwell: 70-94HR15N,42-86HR30N,20-77HR45N, 67-93HR15T, 29-82HR30T,10-72HR45T	
Indenter	Rockwell diamond indenter	φ1.588mm steel ball indenter
Test Space	Max. height of test piece: 300mm(can be customized)	
	Depth of throat: 200mm (can be customized)	
Dwell Time	Initial test force:0.1-50s Total test force:0.1-50s	
Operating Mode	Automatic head rise, return position can be set, one key to complete	
Display	8 inch HD touch screen, menu selection, hardness value display, parameter setting, data statistics, storage, etc	
Resolution	0.01HR	
Hardness Scale	HRA,HRD,HRC,HRF,HRB,HRG,HRH,HRE,HRK,HRL, HRM,HRP,HRR, HRS,HRV,HR15N,HR30N,HR45N, HR15T,HR30T,HR45T,HR15W, HR30W,HR45W,HR15X, HR30X,HR45X,HR15Y,HR30Y,HR45Y	
Conversion Scale	ASTM E140 standard for multiple material correspondence	
Data Statistics	Test times, average value, maximum value, minimum value, repeatability,setting upper and lower limits of hardness value, warning function,etc	
Data Output	USB Interface,RS232 Interface	
Power Supply	220V/110V,50Hz/60Hz	
Executive Standard	ISO6508,ASTME18,JISZ2245,GB/T230.2	

Main Accessories:

Main unit	1 set	Hardness Block HRA	1 pc
Small flat anvil	1 pc	Hardness Block HRC	3 pcs
V-notch anvil	1 pc	Hardness Block HRB	1 pc
Diamond cone penetrator	1 pc	Micro printer	1 pc
Steel ball penetrator ϕ 1.588mm	1 pc	Fuse: 2A	2 pcs
Superficial Rockwell Hardness Blocks	2 pcs	Anti-dust cover	1 pc
Spanner	1 pc	Horizontal Regulating	4 pcs
Operation manual	1 pc		

OTHER PRODUCTS



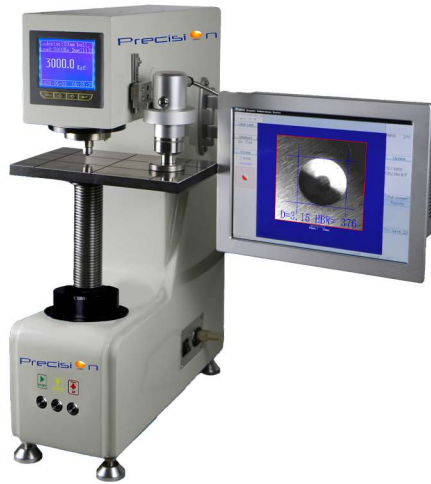
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DIGITAL BRINELL HARDNESS TESTER Auto-Turret P-3000AB



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Mobile:- 9870188718

Webiste:- www.pmicoindia.co.in



Product Feature

- The fully automatic Brinell hardness tester, with its **unique automatic turret** structure system, allows users to customize the measurement target to match the hard alloy indenter, test force, and dwelling time before starting the test.
- After the measurement is completed, there is no need to move the workpiece, and the CMOS directly captures the indentation image.**
- The world's **advanced digital imaging technology** is used to automatically find the most suitable pixels on the indentation image, high-speed analysis, and automatic reading.
- Automatically measure standard block indentation, shaded indentation, background blurred indentation and elliptical indentation.**
- This instrument has **12 levels of testing force** and **16 different Brinell hardness testing scales**, which can be freely selected;
- Equipped with **4 sets of ball indenter**, all of which can automatically participate in testing;
- Equipped with **two sets of objective lenses**, both of which can participate in the measurement of indentation diameter;
- According to the selected scale, the objective lens and indenter automatically switch;**
- Preset test force dwelling time and adjust the strength of the indentation lightsource for measurement;
- Real time display of loading time;
- Display measurement indentation length, hardness value, measurement frequency, etc;
- Select the conversion values between various hardness scales;
- The hardness test results can be printed out.

Technical Specifications:

Name	Specification
Test Force	29.42N(30kg) 306.45N (31.25kg) 612.9N (62.5kg)、 980.7N (100kg)、 1226N (125kg)、 1839N(187.5kg)、 2452N(250kg)、4903N(500kg)、 7355N(750kg)、 9807N(1000kg)、14710N(1500kg)、 29420N (3000kg)
Test Scale	HB 10/3000、 HB 10/1500、 HB 10/1000、 HB 5/750、 HB 10/500、 HBW 10/250、 HB5/250、 HB 2.5/187.5、 HB 10/125、 HB5/125、 HB10/100、 HB 5/62.5、 HB2.5/62.5、 HB5/31.25 、 HB2.5/31.25、 HB1/30
Measuring Range	8~650HBW
Loading Mode	Worktable automatic lifting, loading, dwelling, unloading, and measurement
Maximum Test Height	500mm
Max Test Throat	200mm
Main Test Force Loading Time	5~8S
Dwelling Time	0-99S
Indenter /Objective Switch	Auto
Dimension	230*600*920mm

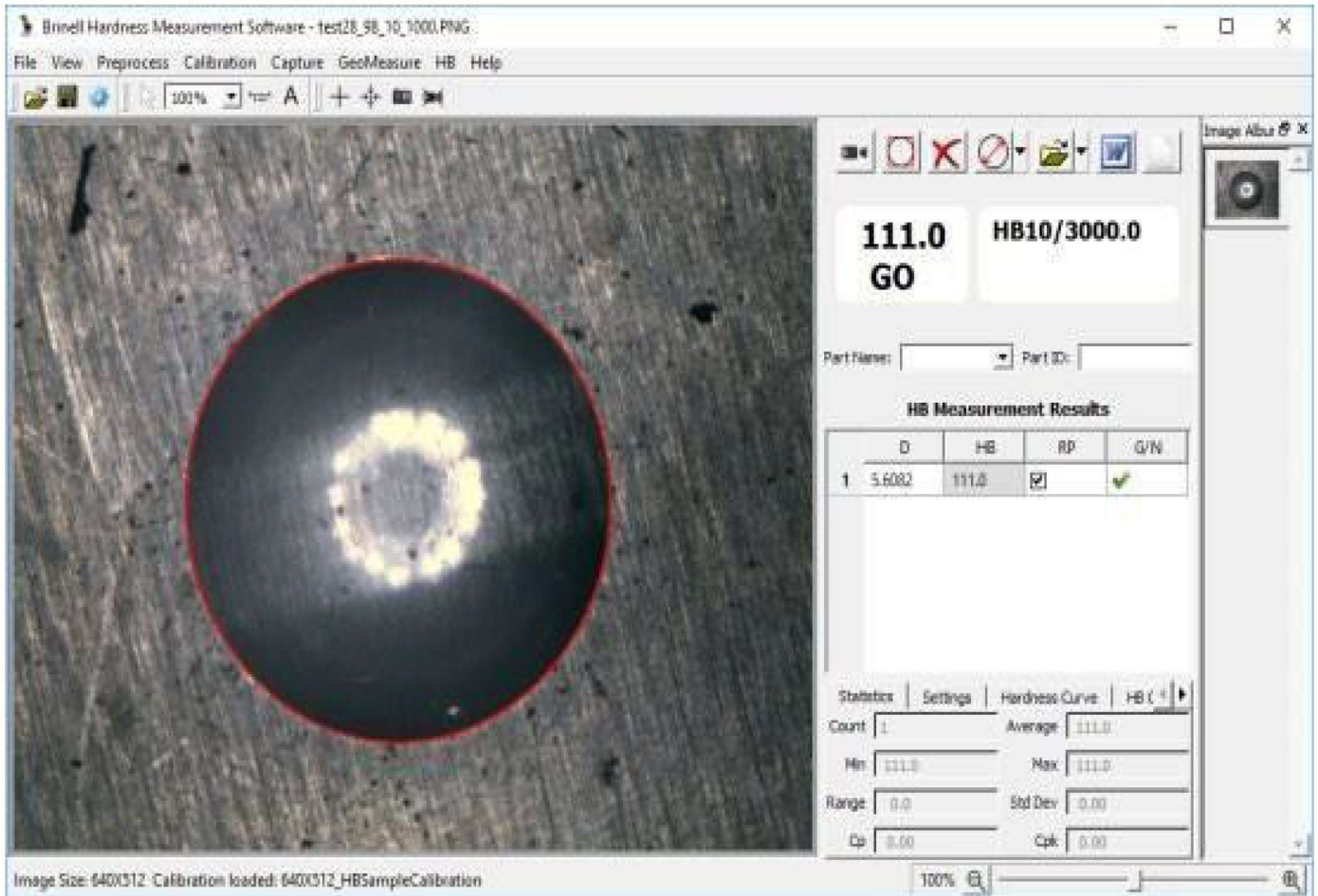
Weight	130Kg
Objective Lens	1X、 2X
Light Path Converting	Auto
Indenter Diameter (mm)	Φ1、 Φ2.5、 Φ5、 Φ10 Installed in the Same Turret
Working Mode	One-click operation, automatic lifting, loading, dwelling, unloading, CMOS measurement
Indentation Image Measurement Method	Automatic Measurement
Indentation Image Repeated Measurement Accuracy	Repeatability ±0.8%
Data Display Mode	12.1 Inch Industrial Touch Screen
Data Output	Output report in WORD and EXCEL format, printable output; Graphics engine shows more features
Data Statistics	Hardness conversion: According to national standards, automatic Brinell - Rockwell - Vickers - Knob and other hardness numerical conversion, real-time display.
Light Source	LED
Functional Regulation	Infinite-controlled light source strength
Communication Interface	USB、 RJ45LAN、 WLAN、 RS232
Dimensions mm(L×W×H)	1000×595×350
Supply Voltage	AC 220V/110V±5%, 50~60 Hz

Name	Specification	Quantity
Brinell Hardness Tester		1
Ball Indenter	φ10、φ5、φ2.5、φ1	4
Objective Lens	1 [×] 、2 [×]	2
Accessory Case		1
Reading Microscope	20 [×]	1
V-Shaped Test Stage		1
Large Test Stage		1
Small Test Stage		1
Dust Cover		1
Hex Wrench		1
Power Line		1
Fuse	2A	2
Brinell Hardness Block	(150~250) HBW3000/10	1
Brinell Hardness Block	(150~250) HBW750/5	1
Brinell Measuring System	Integrated in the host	1
Product Certificate		1
Instruction Manual		1

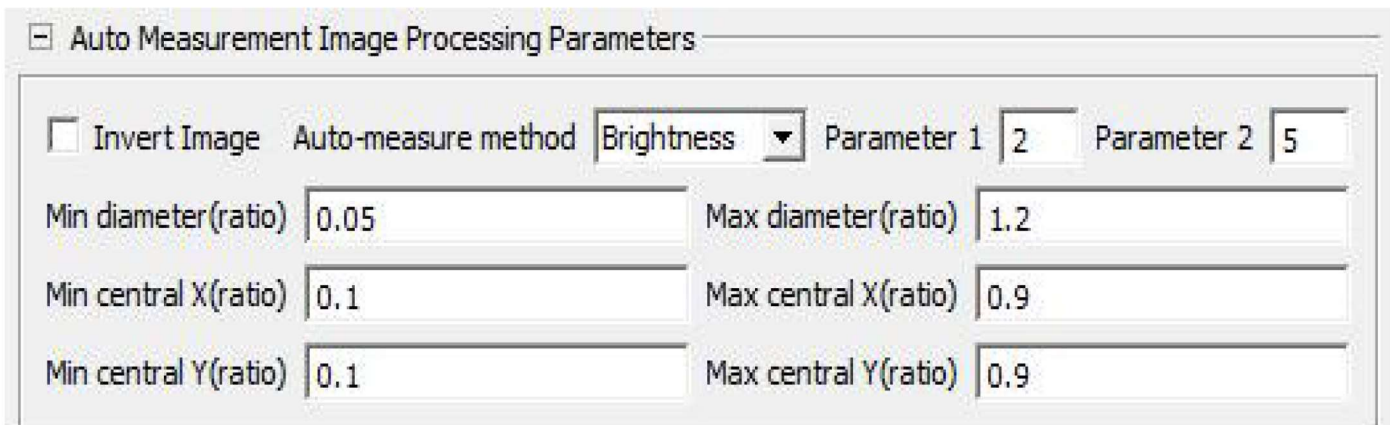
Brinell Hardness Measurement Software:

Brinell Hardness Measurement Software is mainly used in automatically measuring the Brinell indentations and calculate their hardness values. The utility functions include hardness conversion, report generating, and data archiving etc.

Main interface: At first time opening after installation, user will need to manually adjust the splitters to have the user preferred sizes among the displays. To do that, move the mouse cursor to the splitter region, the cursor shape should become a splitter, mouse drag move to adjust.

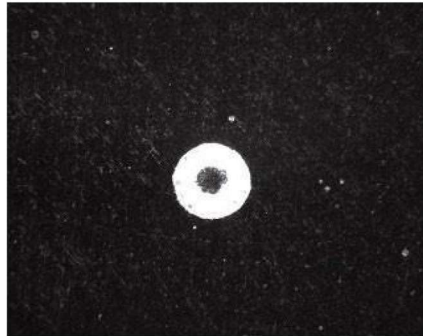


Main Interface:



Auto Measurement Image Processing Parameters:

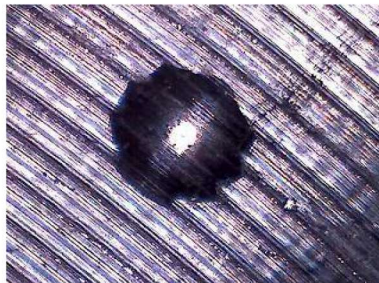
- Invert Image: Needs to be checked in cases the indentations on some test materials, as shown below, appears to be brighter than the sample surface.



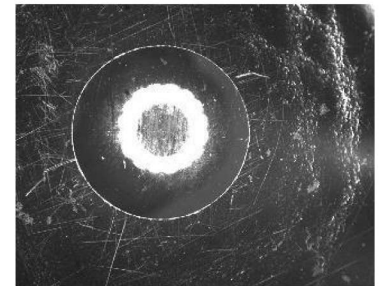
- Auto-measure method: Under typical circumstances, the indentation image shows brightness contrast between the indentation and the sample surface, the default Brightness method is used, and the parameter 1 is set at default 2. In some cases as shown in below #1, the sample surface shows shiny grain, this parameter should be set to 1. For sample surfaces with large scratches as shown below #2, this parameter should be set a large value, e.g. 6. If in cases there is no light intensity contrastas shown in #3, the Auto-measure method Edge should be chosen.



Shiny spots on surface




Large scratches



No light intensity contrast

Automated Test and Measurement:

After the test points are generated, click on the Auto Test Measure to start the process. To pause the automatio, click on the image. To resume, click on the Auto Test Measure 

Data Saving and Retrieval:

Click on the dropdown arrow on the Open data file /Save data file tool button to select Open data file or Save data file to save/restore the measurement results. To save, select the path to store and name the data file.

Hardness Test Report:

The WORD and EXCEL report template files hb_re- port_en.doc and hb_report_en.xls are under the installation bin directory, and they can be customized, e.g. with LOGO and title etc.

OTHER PRODUCTS



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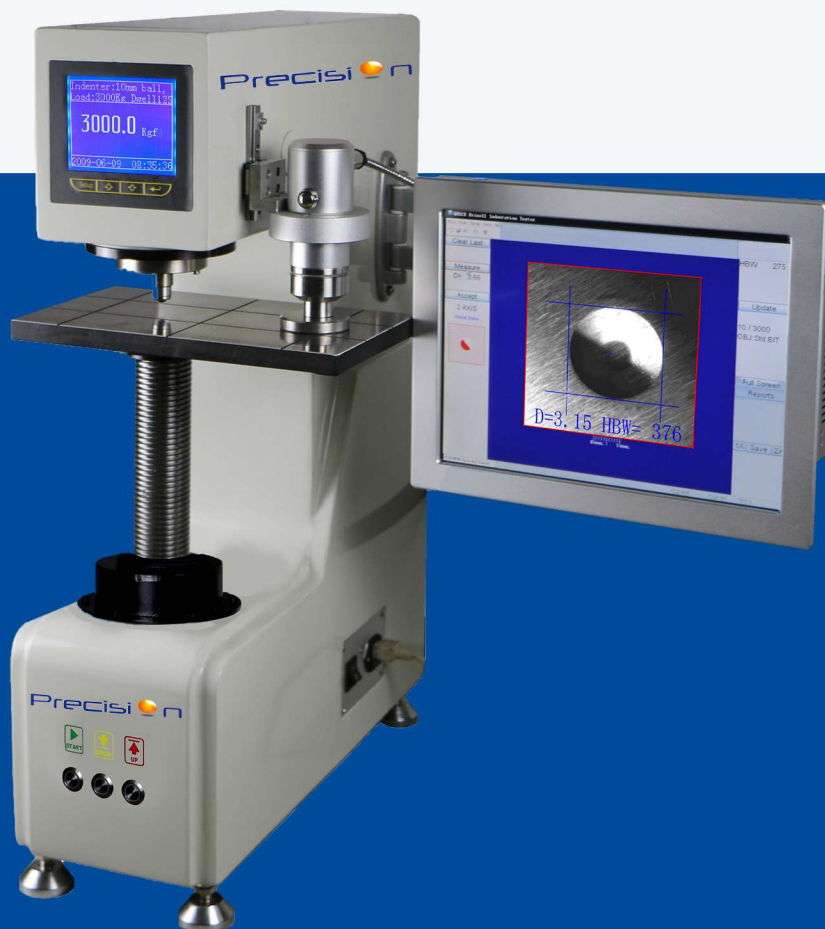


chirag_pmico@hotmail.com

sales@pmicoindia.co.in

DIGITAL BRINELL HARDNESS TESTERS

With CCD Camera
PMI 600-A



Precision Measuring Instruments Co.

Email:- chirag_pmico@hotmail.com

Mobile:- 9870188718

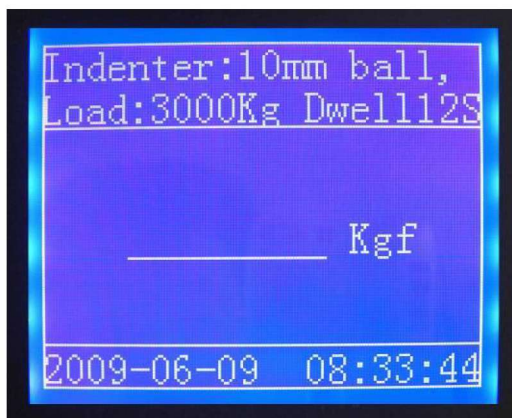
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Features:

- **Auto Z-axis** make the testing more easily. Just press START key once, **the sample will be auto-lifted** to approach the indenter and finishing testing automatically. No matter the size of the sample, the distance between the indenter and sample surface.
- **Equipped with CCD camera** and PC make the indentation measuring automatically.
- Touch screen, keyboard and mouse 3 ways operation methods available.

Specification:

- The tester incorporates the latest load cell technology. The test load is applied via a closed-loop control unit with a load cell, a DC motor and an electronic measurement and control unit. The result is highly accurate measurements at all test loads up to 0.5%.
- PnP tech. Simple plug - and - play tech allows for much more quick and easy installation than traditional weights type machine.
- The whole weight of the tester is 50% less than the traditional dead weights type tester.
- Test load selection by keyboard and LCD screen. No need of handling heavy weights or cleaning the messy oil.
- Fully automatic test cycles. Just press START key once, the hardness tester will finish the whole test cycle automatically--the sample elevating, load application, load dwelling, unloading.



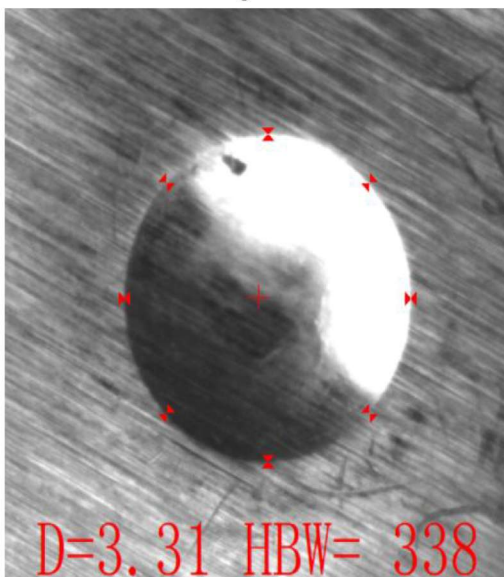
- Selectable dwell times by screen. The indenter, load, and other test informations are showing clearly on the large LCD screen.
- The directions for 0.102F/D² ratios selecting according to the materials and hardness range can be showing on the screen.

Material	HBW	F/D ²
Steel	95-650	30
Iron	<140	10
	>140	30
Ni-alloy	95-650	30
Cu-alloy	<35	5
	35-200	10
	>200	30

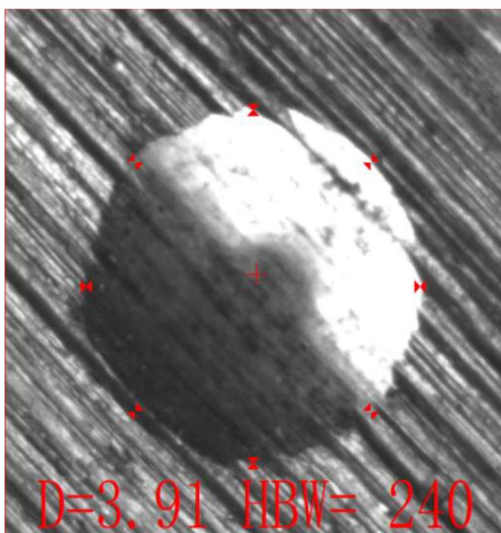
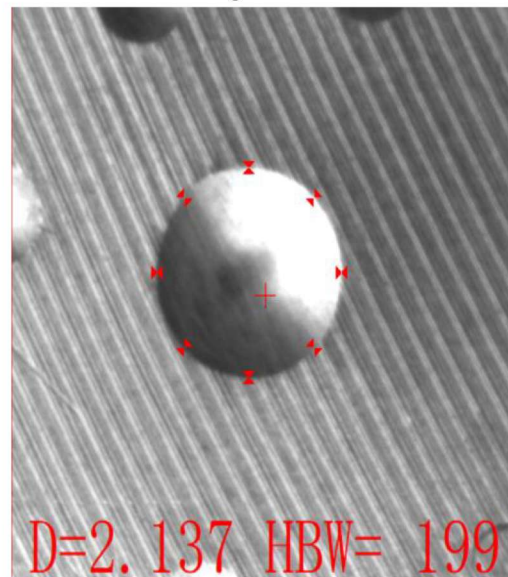
Material	HBW	F/D ²
Ti-alloy	95-650	30
Al	<35	2.5
	35-80	5/10/15
	>80	10/15
Pb		1
Sn		1

- Equipped with the computer and special Brinell indentation measure software which can measure the Brinell indentation accurately, quickly, reliably. It is a new measuring method by using CCD camera to capture the indentation image, instead of reading diameter from optical microscope by operator then calculating the test value.
- The software can measure Brinell hardness value less than 0.01 seconds automatically. It has high recognition rate for the indentation on rough surface. As the following examples, the surface processed by turning, milling, grinding; even the sawing sections, surfaces filed by hand, or grinding by abrasion wheel, and rusty surfaces, and even damaged indentation, can be identified automatically.
- It is especially suitable for actual industrial field testing due to high speed, and high recognition rate on rough surface.
- The operation is very simple, just press the button on CCD once. It is no longer need to drag the mouse. Realize real automatic measurement.

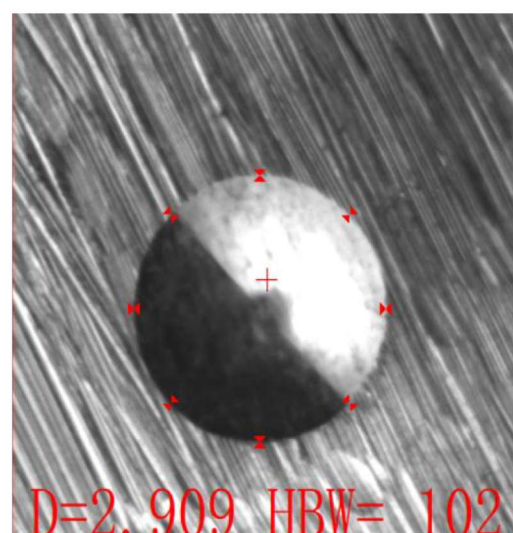
Grinding surface



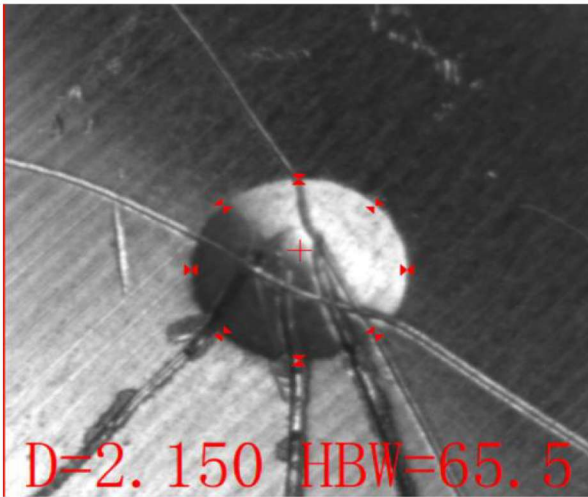
Turning surface



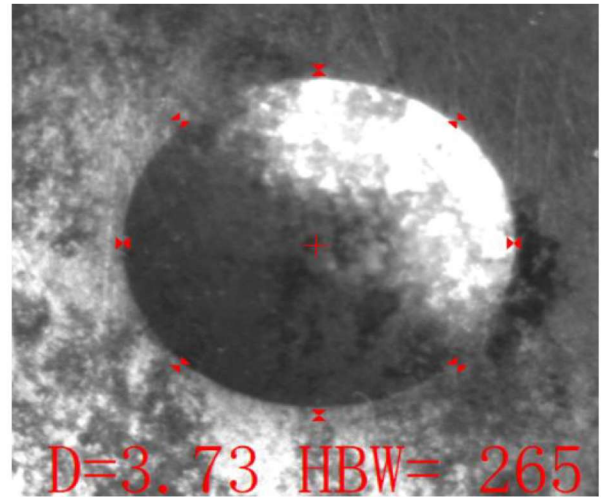
Grinding surface by abrasion wheel



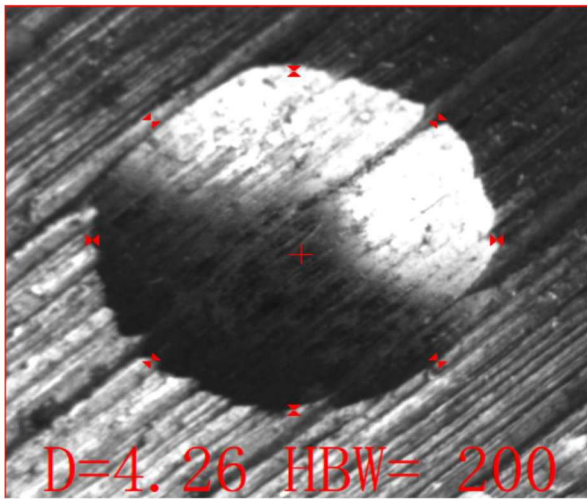
Filed surface



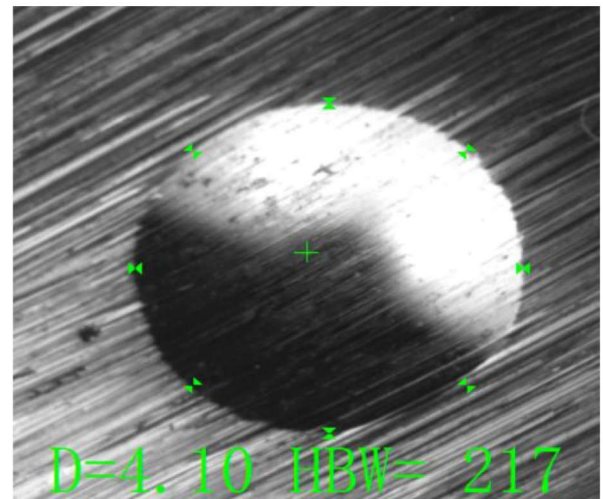
Scratched surface



Rusty surface



Sawed section



Sanding surface

1. Screen and Keyboard
2. Indenter
3. Anvil
4. Leadscrew and Protecting sleeve
5. Buttons
6. Level Feet
7. CCD Camera
8. PC and Software



Technical data :

Loads : 3000kgf (29400N), 1500Kgf (14700N), 1000Kgf (9800N), 750Kgf (7355N) ,
500Kgf (4900N), 250Kgf (2452N), 187.5Kgf (1839N), 125Kgf (1226N),
100Kgf (980N), 62.5Kgf (612.9N)

Load dwell duration: 5s~50s, can be set and stored

Tungsten Carbide Ball indenter: 10mm, 5mm, 2.5mm

Measuring range: 3.18HBW~658HBW

Accuracy of indentation measureing: $\pm 0.5\%$

Accuracy of Brinell Hardness Value:

Hardness Range(HBW)	Error (%)	Repeatability(%)
≤ 125	± 2.5	≤ 3.0
$125 < \text{HBW} \leq 225$	± 2.0	≤ 2.5
> 225	± 1.5	≤ 2.0

Max measurable height: 220 mm (**Customizable**)

Max measurable depth: 150 mm (**Customizable**)

Dimensions: 530mm×260mm×750mm

Power supply: 220/110 V, 50/60 Hz, 4A

Weight: 130kg

Standard configuration

Host machine	1
Standard block 125-350HBW10/3000	1
Standard block 90-150HBW10/1000	1
Φ10mm Tungsten Carbide Ball indenter	1
Φ5mm Tungsten Carbide Ball indenter	1
Φ2.5mm Tungsten Carbide Ball indenter	1
Mounting screws for indenter	1
Flat anvil, 300mmx180mm	1
Power supply wire	1
Dust cover	1

Optional accessories:

“V ”shape anvil
Standard blocks of other value
Φ10mm Tungsten Carbide Ball
Φ5mm Tungsten Carbide Ball
Φ2.5mm Tungsten Carbide Ball

OTHER PRODUCTS



**Digital Rockwell
Hardness Tester**



**Digital Micro-Vickers
Hardness Tester**



**Digital Portable
Hardness Tester**

**We can customize the Hardness Tester
as per your special requirements.**

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chirag_pmico@hotmail.com

sales@pmicoindia.co.in



Precision

MICRO-VICKERS

Hardness Tester

PG-VHT-10



Precision Measuring Instruments Co.

Email:- chirag_pmico@hotmail.com

Mobile:- 9870188718

Webiste:- www.pmicoindia.co.in

Product Introduction:

The Digital Micro-Vickers Hardness Tester uses **closed-loop control** to reduce the test cost and the influence of the operator on the test results. It can help you complete efficient and cost-saving small-force hardness tests. It is a precision testing instrument that **integrates advanced technology and high precision**, and is designed to meet the testing needs of diverse materials. It uses electronic loading and has a wide range of test forces, from **10g-10kg**, which fully covers the test forces commonly used in the industrial field and can flexibly respond to the hardness test challenges of various materials. Its excellent performance and flexible configuration provide all-round support and guarantee for your material testing.

Motorized working table and machine head automatically moving up and down.

The machine can perform single-point and multi-point testing, including the following methods: Vickers hardness, Knoop hardness.

The hardness testing system is suitable for fully automated hardness testing using the following test methods: Case hardening depth(CHD), Determination of conventional hardening depth after surface heating (DS); Determination of hardening depth after nitriding (Nht), weld inspection of steel pipes.

Features:

Z-axis electric focus: Quickly and accurately find the focus plane, improve test efficiency, make the test process more automated, and reduce the difficulty of use for operators.

Advanced optics and safety technology: The unique optical system ensures clear images, and the perfect combination with safety anti-collision technology ensures safety during the test.

The measuring microscope adopts high-definition camera technology and an automatic turret for the indenter. It can be optionally equipped with a six-station model with four measuring objective lenses and two indenters (**turrent 6 positions**).

Equipped with a **panoramic camera** to photograph the sample surface .

Digital zoom and powerful test system: The digital zoom function provides the largest range of magnifications, combined with long working distance objectives and high-precision automatic stages to build a powerful test system to ensure the accuracy of test results.

Highly integrated and intelligent: All hardware and software are carefully designed and assembled, integrated into one, which improves the intelligence of the hardness tester while ensuring the stability and reliability of the test results.

Customizable test space: The test space and workbench can be customized according to specimens of different sizes to flexibly adapt to various test scenarios.

Image recognition system: It uses a unique algorithm with strong recognition ability and high precision to ensure accurate measurement and further improve test efficiency and accuracy.

Applications:

It is widely used in the hardness test of various materials such as steel, non-ferrous metals, IC chips, thin plastics, metal foils, plating, coatings, surface hardening layers, laminated metals, hardening depth of heat-treated carburized layers, as well as hardness tests of cemented carbide, ceramics, etc. At the same time, it is also suitable for the hardness test of thin plates, electroplating, welded joints or deposited layers, providing strong support for material science research and industrial quality control.

Technical parameters:

Hardness test range : 5-3000 HV, widely covering the hardness test range of various materials.

Test force: Ranges from 10gf to 10kg, adapting to the test requirements of different materials.

Optional range available:- 50gf to 2kgf, 50gf to 10kgf and 300gf to 50kgf.

Implementation standards: in accordance with GBT4340, ISO 6507, ASTM 384 and other standards.

Automatic workbench: XY motorized sample stage and Z-axis control.

Table size: 120 x 120 x 55 mm. XY stroke: 50mm*50mm (large stroke worktable can be customized) .

Displacement repeatability < 2um; XYZ displacement resolution can reach 2um . Minimum step size: less than 1 micron.

Moving speed: The speed is adjustable when the plane moves.

Test force application method: automatic loading, dwell and unloading, easy and quick operation.

Switching between indenter and objective lens: automatic switching improves test efficiency and reduces human errors.

Indenter: diamond Vickers indenter: 1pc

Objective lens magnification: 10x, 20x, and 40x (optional) objective lenses are available to meet the needs of detailed observation.

Number of workstations: 3 workstations (6 workstations optional) to meet different testing needs.

Conversion scale: supports conversion of multiple hardness units such as HR\HB\HV, which is convenient for users to conduct comparative analysis. Test force dwell time: 1-99s adjustable to meet the dwell time requirements under different test conditions.

Maximum specimen height: 170 mm (customizable), to meet the testing needs of specimens of different sizes.

Throat: 135 mm (customizable), ensuring the stability and reliability of the test process.

Vickers indentation measurement system: precise measurement to ensure the accuracy of test results.

Automatic measurement system:

The software can control the turret, lighting, dwell time, electric stage movement, load, etc. of the hardness tester respectively, and control the hardness tester from the PC side. At the same time, the hardness tester will return the execution command.

The hardness tester can be automatically controlled: automatic switching of the objective lens and the indenter, automatic focusing (optional) and automatic loading control.

The brightness of the light source and the dwell time of the hardness tester can be set. The switching of the objective lens and the indenter can be selected and reflected in the software interface to calculate parameter changes. The indenter of the hardness tester can be automatically switched to the load position, loading, dwell, and unloading. The test conditions set by the hardness tester can be automatically reflected in the software interface.

Stage movement control: You can automatically select points by clicking any point in the interface with the mouse, set the starting position of the straight line and the random movement position, and control the movement of the automatic XY displacement stage in any direction by clicking the mouse. It can automatically reset and clear the coordinates at will. The software system can control the automatic stage to move programmed, and can perform hardening layer gradient tests on samples, or access multiple samples and use several different test programs and report on the use of different test programs for each individual sample.

Data output/editing function: Through the data processing software, various measurement data, hardness value table, hardened layer depth, maximum value, average value, minimum value, hardness gradient curve with hardness value can be easily output.

Contour sweeping function:

The entire outline of the product can be scanned along the edge of the workpiece, making it convenient for the operator to set the path or directly select points for measurement.

The system will automatically adjust the test line lifting point to the edge of the sample, which significantly improves the degree of automation and is an ideal accessory function for the automatic capture function.

Other functions:

System linkage: The system and hardness tester can be linked through the hardness test force change and displays it in real time in the system.

Turret linkage: The software controls the hardness tester to switch between the objective lens and the indenter, without the need for manual control of the hardness tester.

Loading linkage: The software controls the hardness tester to load, and there is no need to manually control the hardness tester.

Auto focus: Auto focus can be completed automatically. (Optional)

Measurement linkage: software controls the hardness tester turret, loads and directly reads the Vickers hardness value.

Image acquisition: Real-time display of hardness images, storage and printing of images.

Automatic measurement: Automatically find the four vertices of the indentation, fast speed, accurate data, and a variety of professional algorithms to suit different indentations. Continuous printing and measurement, instant measurement, and designated coordinate printing.

Automatic point search: Select points near the four vertices of the indentation, and the system will

automatically find the best vertex, greatly reducing human error.

Diagonal measurement: Click the upper left and lower right corners of the indentation to read the hardness value.

Four-point measurement: select the four vertices of the indentation and read the hardness value.

Micro-force measurement: Specially designed professional function, which can amplify the indentation under micro- compression test force 10 gf, in real time without reducing the resolution, thus improving the measurement accuracy.

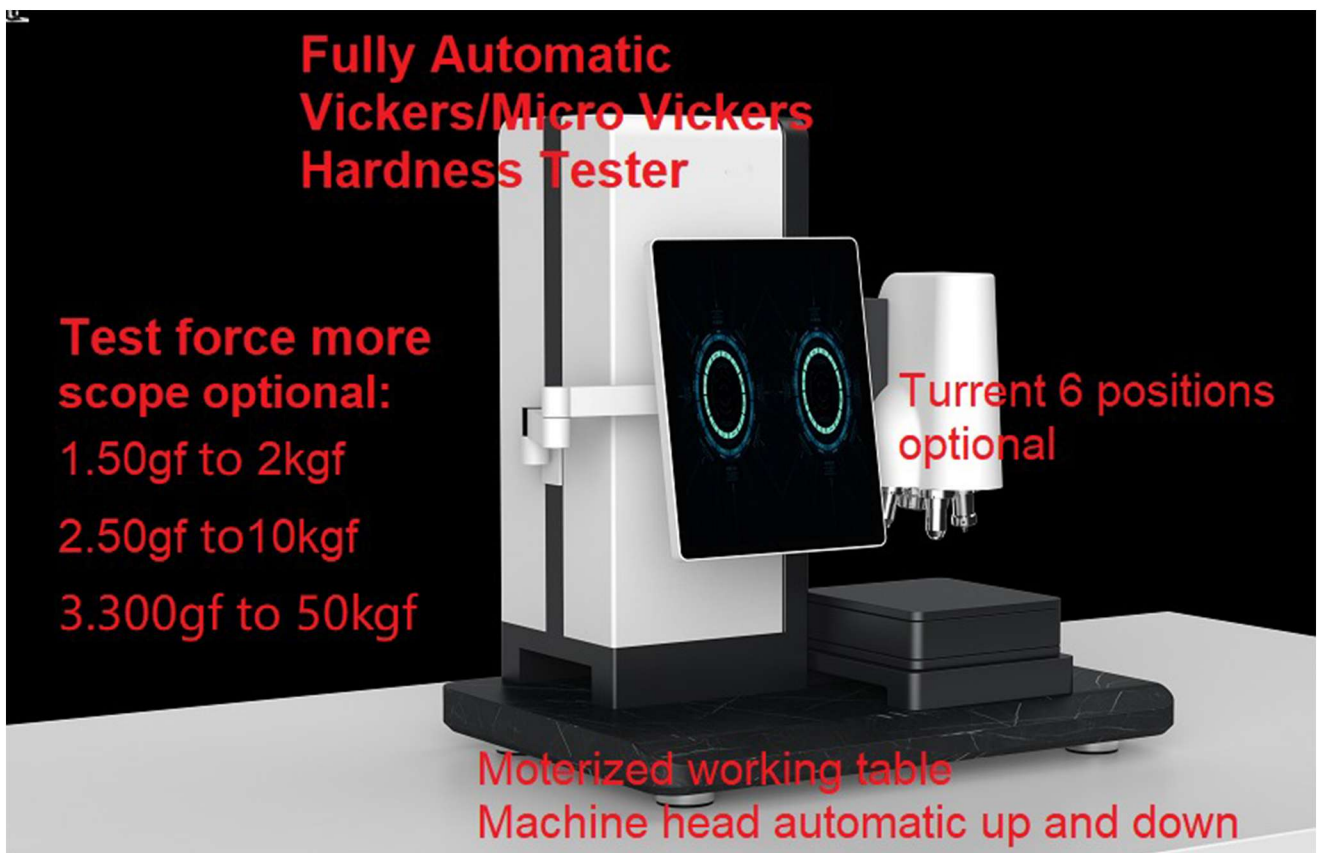
Measurement method: Automatic stage movement, automatic reading, automatic loading.
(The workpiece surface must be flat and the surface roughness must be above Ra6.3) Automatic reading/manual reading

Automatic reading time: single indentation reading time is about 300 milliseconds. Automatic measurement accuracy: 0.1 micron.

Automatic measurement repeatability: $\pm 0.8\%$ (700 HV/500gf, clear imaging)

Manual reading: manual point taking, automatic point finding, 4-point measurement, 2 diagonal measurement.

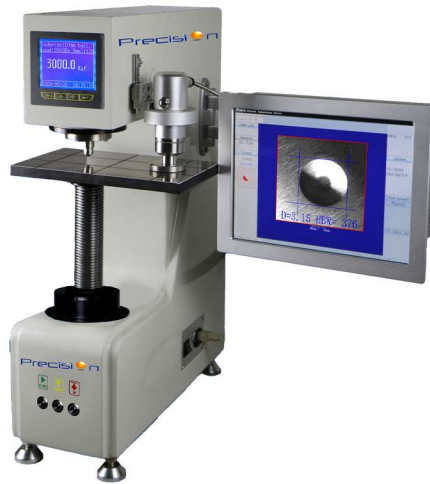
Result saving/output: Store/output measurement data and experimental parameters, including D1, D2, HV, X, Y, etc. Store/output effective hardening layer depth curve report; Store/export images.



OTHER PRODUCTS



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Hardness Tester**



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**We can customize the Hardness Tester
as per your special requirements.**

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chirag_pmico@hotmail.com

sales@pmicoindia.co.in