



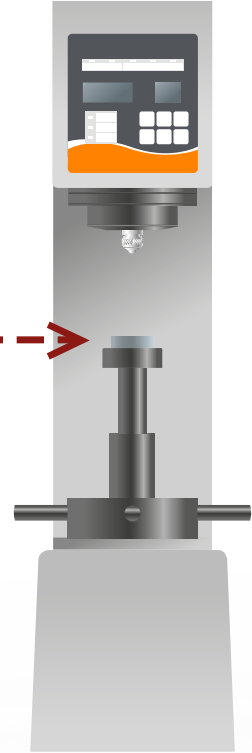
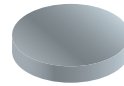
BRINELL
Hardness Testers

Brinell Hardness

The oldest hardness test in common use is frequently employed to measure the hardness of forgings and castings. The test is performed by pressing a steel, or tungsten ball indenter on a well prepared sample surface under specific load. The resulting indentation is measured by scaled eyepiece or through a specific analyzing software and converted in the HB scale. Typically, a 10, 5, 2.5 or 1mm diameter sphere indenter with kgf to 3000kgf load is used for the test, smaller spheres and low loads are used for softer materials tests. For harder materials the tungsten sphere is used. The Brinell hardness is expressed as HB and must be followed by the test conditions. These standards are two HBS when steel ball indenters are used, or HBW when tungsten indenter is used. These units are followed by XX/YYYY where XX is the ball diameter in mm and YYYY is the applied load in kgf.

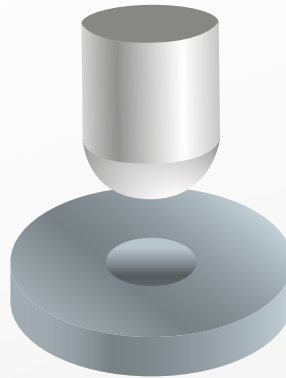
LOADING

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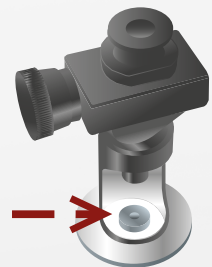
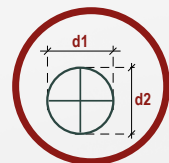
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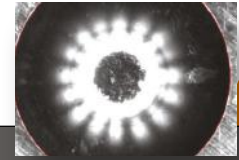
INDENTATION



3

MEASURING





Brinell				
Method	Indenter	Indentation time	Sample preparation	Application
HBW 1/30	Tungsten carbide 1mm sphere	10 to 15 seconds	Ground, polished	Steel / Iron
HBW 2.5/187.5	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Steel / Iron
HBW 5/750	Tungsten carbide 5mm sphere	10 to 15 seconds	Ground, polished	Steel / Iron
HBW 10/3000	Tungsten carbide 10mm sphere	10 to 15 seconds	Ground, polished	Steel / Iron
HBW 1/10	Tungsten carbide 1mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys, aluminium alloys
HBW2.5/62.5	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys, aluminium alloys
HBW 5/250	Tungsten carbide 5mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys, aluminium alloys
HBW 10/1000	Tungsten carbide 10mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys, aluminium alloys
HBW 1/5	Tungsten carbide 1mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys or heat treated
HBW2.5/31.25	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys or heat treated
HBW 5/125	Tungsten carbide 5mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys or heat treated
HBW 10/500	Tungsten carbide 10mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys or heat treated
HBW 1/2.5	Tungsten carbide 1mm sphere	10 to 15 seconds	Ground, polished	Light metals
HBW 2.5/15.625	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Light metals
HBW 5/62.5	Tungsten carbide 5mm sphere	10 to 15 seconds	Ground, polished	Light metals
HBW 10/250	Tungsten carbide 10mm sphere	10 to 15 seconds	Ground, polished	Light metals
HBW 1/1	Tungsten carbide 1mm sphere	10 to 15 seconds	Ground, polished	Light metals, lead, tin
HBW 2.5/6.25	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Light metals, lead, tin
HBW 5/25	Tungsten carbide 5mm sphere	10 to 15 seconds	Ground, polished	Light metals, lead, tin
HBW 10/100	Tungsten carbide 10mm sphere	10 to 15 seconds	Ground, polished	Light metals, lead, tin

Applicable standard ASTM E10, ISO 6506, JIS Z2243

HTB 3000A

Fully Automatic Digital Brinell Hardness Tester

- > Fully automatic three indenters digital Brinell hardness tester adopts strong rigidity and precise structure design casting, load test force controlled by sensors, allowing accuracy and stability. Test process controlled by CPU, automatic switching between the objective and the indenter. Switching system adopts mechanical and electronic double control in order to obtain precision set. Built-in panel computer for easy parameters settings and results, reduces the measuring error. After scale choice, the instrument will automatically detect and select the indenter and objective, the test table rises automatically and, after loading the test force, back to the focusing position, a clear image of the indentation will be shown on the display and the system will automatically start the measuring.
- > 10 test force levels, 13 Brinell hardness test scales, suitable for different kinds of metals.

- > Three indenters and two objectives, no need to change the indenters when testing different samples; with rigorous optical structure and high magnification clear indentation observation;
- > Automatic indenter and objective selection according to the test scale;
- > Automatic lifting test table adopts precise structure with high stability;
- > Integrated design panel computer, Windows 7 operating system, touch screen, test force, dwell time, light source intensity adjustment, indentation length, hardness value, test range and test number etc.;
- > Hardness conversion scales;
- > Test result can be saved as WORD or EXCEL files, report and can be printed out;
- > CCD image measuring system;
- > With USB port, VGA interface and network interface for high connectivity;

Application

- > Suitable for cast iron, steel products, non-ferrous metals and alloys, etc. Also suitable for some non-metal materials such as rigid plastics and bakelite etc.

Reference standard

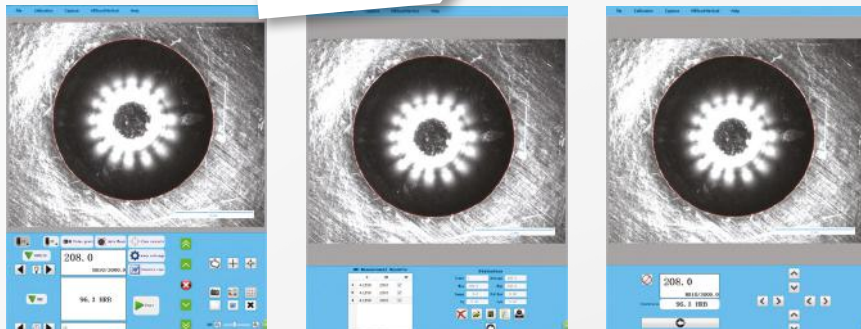
- > ISO 6506, ASTM E10-12, JIS Z2243



Standard block hardness range	Displayed value allowed tolerance %	Displayed value allowed repeatability %
≤125	±3	3
125<HBW ≤ 225	±2.5	2,5
>225	±2	2



INTEGRATED CAMERA



Model	HTB 3000A
Technology	Load cell closed loop - Load electronic controlled
Load selection	Touch screen control panel
Main loads	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
Dwell time	0-95s
Loading time	62.5kg: 1.5s, 100kg: 2.5s, 125kg: 3.5s, 187.5kg: 4s, 250kg: 4.5s, 500kg: 7.5s, 750kg: 8s, 1000kg: 8.5s, 1500kg: 11s, 3000kg: 18s
Loading speed (indenter descending speed)	0.3mm/s
Test force tolerance	±1.0%
Test cycle type	Fully Automatic: minor load with automatic breaking system, load, dwell, unload, measure
Hardness scales	HBW10/3000, HBW10/1500, HBW10/1000, HBW10/500, HBW10/250, HBW10/125, HBW10/100, HBW5/750, HBW5/250, HBW5/125, HBW5/62.5, HBW2.5/187.5, HBW2.5/62.5
Hardness test range	3.18 ~ 653HBW
Hardness resolution	0.01HBW
Repeatability hef/%	≤125, ±3% 125 < HBW ≤ 225, ±2.5% > 225, ±2%
Scale conversion	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS - According to ASTM E140
Turret type	Automatic
CCD camera pixel	3.00 million
Objectives	1x, 2x
Optical path	1
CCD min. measuring unit	3µm (1x objective) - 1.5µm (2x objective)
CCD max. measurement length	4.8mm (1x objective) - 2.4mm (2x objective)
Measurable min. indent/indentation	0.24mm
Illumination	LED light
Indenters	ø 2,5mm, ø 5mm, ø 10mm hard alloy steel ball indenter
N. of indenters	3
Nose cone support diameter	6.35mm
Indent measure algorithms	Automatic
Auto reading time	0.3 sec/1 indent
Specimen detection	Yes
Vertical test capacity	260mm
Horizontal test capacity	150mm
Anvils dimensions	Large plane test table ø 200mm Middle sized testing table ø 60mm V-Shaped test table ø 80mm
Max. weight on anvil	100kg
Z axis movement	Motorized
Z axis movement resolution	±10µm
Z axis speed	High: 1.78mm/s, Low: 0.2mm/s
Display type	Touch screen
Display dimensions	12"
Input mode	By tap touch
Displayed data	Hardness value, D1, D2, dwell time, test number, test force, date and time, light, conversion scale, hardness range, indenter, objective, indentation image
Statistics or functions	Max, min, average value
Data storage	Memory: 2G, SSD: 64G
Data output	Word, Excel format
Energy saving mode	Yes
Printer	External printer (optional)
Interfaces	3x USB, 1x VGA, 1x LAN
Safety device	Emergency switch
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	200kg
Dimensions	700x380x1000mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Standard accessories		
Model	Description	Q.ty
BT-1XOB	1x objective	1 pcs
BT-2XOB	2x objective	1 pcs
BI-25	Hard alloy steel ø 2,5mm ball indenter	1 pcs
BI-5	Hard alloy steel ø 5mm ball indenter	1 pcs
BI-10	Hard alloy steel ø 10mm ball indenter	1 pcs
BT-LTT200	Large plane test table ø 200mm	1 pcs
BT-MTT60	Middle sized testing table ø 60mm	1 pcs
BT-VTT80	V-Shaped test table ø 80mm	1 pcs
HB-150250HBW103000	Hardness block 150~250 HBW 10/3000	1 pc
HB-150250HBW5750	Hardness block 150~250 HBW 5/750	1 pc
BT-PC	Power cable	1 pc
BT-SK	Service keys	1 set
BT-ADC	Anti-dust cover	1 pc

Optional accessories	
Model	Description
BT-V10S	V1.0 System
BT-WB	Work bench
BT-EXPR	External printer

Brinell hardness blocks	
Model	Range
HB-BW10/3000	180-650 HBW 10/3000
HB-BW10/1500	180-650 HBW 10/1500
HB-BW10/1000	90-450 HBW 10/1000
HB-BW10/500	90-450 HBW 10/500
HB-BW5/750	180-650 HBW 5/750
HB-BW5/250	90-450 HBW 5/250
HB-BW2.5/187.5	180-650 HBW 2.5/187.5
HB-BW2.5/62.5	90-450 HBW 2.5/62.5

HTB 3000Z

Automatic Digital Brinell Hardness Tester

- > Automatic three indenters digital Brinell Hardness Tester adopts strong rigidity and precise structure design casting, load test force controlled by sensors, allowing accuracy and stability.
- > Test process controlled by CPU, automatic switching between objective and the indenter.
- > Switching system adopts mechanical and electronic double control 10 level of test force, 13 Brinell hardness test scales;
- > Three indenters and two objectives, no need to change the indenters when testing different samples; with rigorous optical structure and high magnification clear indentation observation;

AUTOMATIC TURRET



- > Automatic indenter and objective selection; touch screen operating, test force, dwell time, light source intensity adjustment, indentation length, hardness value, test range and test number etc.;
- > Conversion scales of different kinds of hardness;
- > Built in printer and RS232 interface.
- > According to the requirements the tester can be equipped with CCD or Video measuring system.

Application

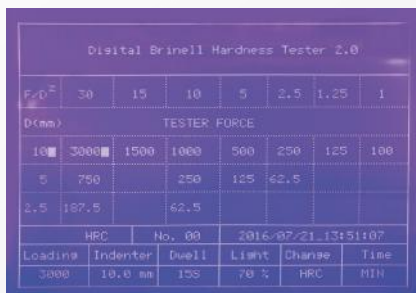
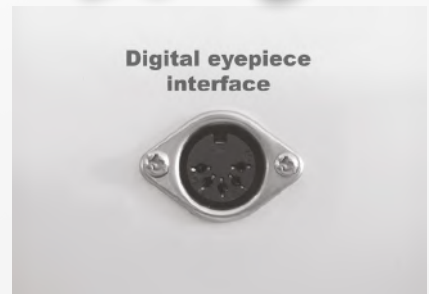
- > Suitable for cast iron, steel products, non-ferrous metals and soft alloys etc. Also suitable for some non-metal materials such as rigid plastics and bakelite etc.

Reference standard

- > ISO 6506, ASTM E10-12, JIS Z2243

Table 1

Standard block hardness range	Displayed value allowed tolerance %	Displayed value allowed repeatability %
≤125	±3	3
125<HBW ≤ 225	±2.5	2.5
>225	±2	2



Model	HTB 3000Z
Technology	Load cell closed loop - Load electronic controlled
Load selection	Control panel keyboard
Main loads	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
Dwell time	0-60s
Loading time	62.5kg: 1.5s, 100kg: 2.5s, 125kg: 3.5s, 187.5kg: 4s, 250kg: 4.5s, 500kg: 7.5s, 750kg: 8s, 1000kg: 8.5s, 1500kg: 11s, 3000kg: 18s
Loading speed	0.3mm/s
Test force tolerance	±1.0%
Test cycle type	Semi-automatic - manual - focus, measure of indentation Automatic - load, dwell, unload, show of the hardness value (after measure step)
Hardness scales	HBW10/3000, HBW10/1500, HBW10/1000, HBW10/500, HBW10/250, HBW10/125, HBW10/100, HBW5/750, HBW5/250, HBW5/125, HBW5/62.5, HBW2.5/187.5, HBW2.5/62.5
Hardness test range	3.18 ~ 653HBW
Hardness resolution	0.01HBW
Repeatability hef/%	≤125, ±3% 125 < HBW ≤ 225, ±2.5% > 225, ±2%
Scale conversion	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS - According to ASTM E140
Turret type	Automatic
Eyepiece microscope	20x
Objectives	1x, 2x
Optical path	1
Illumination	LED light
Microscope min. measuring unit	1.25µm (objective 1x) - 0.625µm (objective 2x)
Microscope max. measurement length	6mm (objective 1x) - 3mm (objective 2x)
Measurable min. indent/indentation	0.24mm
Indenters	ø 2,5mm, ø 5mm, ø 10mm hard alloy steel ball indenter
N. of indenters	3
Nose cone support diameter	6.35mm
Vertical test capacity	260mm
Horizontal test capacity	150mm
Anvils dimensions	Large plane test table ø 200mm Middle sized testing table ø 60mm V-Shaped test table ø 80mm
Max. weight on anvil	200kg
Z axis movement	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	4.3"
Input mode	Control panel keyboard
Displayed data	Hardness value, D1, D2, dwell time, test number, test force, date and time, light, conversion scale, hardness range
Statistics or functions	Max, min, average value
Data storage	Temporary session memory, 96 tests
Data output	Hyperterminal session format File (.HT)
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	1x RS232
Safety device	Emergency switch
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	150kg
Dimensions	535x260x890mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Standard accessories		
Model	Description	Q.ty
BT-DE20X	20x digital measuring eyepiece	1 pc
BT-1XOB	1x objective	1 pcs
BT-2XOB	2x objective	1 pcs
BI-25	Hard alloy steel ø 2,5mm ball indenter	1 pcs
BI-5	Hard alloy steel ø 5mm ball indenter	1 pcs
BI-10	Hard alloy steel ø 10mm ball indenter	1 pcs
BT-LTT200	Large plane test table ø 200mm	1 pcs
BT-MTT60	Middle sized testing table ø 60mm	1 pcs
BT-VTT80	V-Shaped test table ø 80mm	1 pcs
HB-150250HBW103000	Hardness block 150~250 HBW 10/3000	1 pc
HB-150250HBW5750	Hardness block 150~250 HBW 5/750	1 pc
BT-PC	Power cable	1 pc
BT-SK	Service keys	1 set
BT-ADC	Anti-dust cover	1 pc

Optional accessories	
Model	Description
BT-V10S	V1.0 System
BT-LCDMD	LCD measuring device
BT-CCDMS	CCD measuring system
BT-WB	Work bench
BT-APP	Additional printer paper roll
Brinell hardness blocks	
Model	Range
HB-BW10/3000	180-650 HBW 10/3000
HB-BW10/1500	180-650 HBW 10/1500
HB-BW10/1000	90-450 HBW 10/1000
HB-BW10/500	90-450 HBW 10/500
HB-BW5/750	180-650 HBW 5/750
HB-BW5/250	90-450 HBW 5/250
HB-BW2.5/187.5	180-650 HBW 2.5/187.5
HB-BW2.5/62.5	90-450 HBW 2.5/62.5

HTB 3000D

Digital Brinell Hardness Tester

- > Digital Brinell Hardness Tester combines the high accuracy mechanical structure and load cell control system. Motorized test force application without weights with its 0.5% accuracy compression sensor, CPU control system automatically compensate the test force lost during the test.
- > The indentation can be directly measured through the digital measuring eyepiece, the control system show the test force, indentation length, dwell time, test number, date and time on the large screen.
- > Test results can be saved or printed out by the built-in printer.
- > According to the requirements the tester can be equipped with CCD or Video measuring system.

Application

- > Suitable for cast iron, steel products, non-ferrous metals and soft alloys etc. Also suitable for some non-metal materials such as rigid plastics and bakelite etc.

Reference standard

- > ISO 6506, ASTM E10-12, JIS Z2243



Standard block hardness range	Displayed value allowed tolerance %	Displayed value allowed repeatability %
≤125	±3	3
125<HBW ≤ 225	±2.5	2.5
>225	±2	2



Model	HTB 3000D
Technology	Load cell closed loop - Load electronic controlled
Load selection	Control panel keyboard
Main loads	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
Dwell time	0-60s
Loading time	62.5kg: 1.5s, 100kg: 2.5s, 125kg: 3.5s, 187.5kg: 4s, 250kg: 4.5s, 500kg: 7.5s, 750kg: 8s, 1000kg: 8.5s, 1500kg: 11s, 3000kg: 18s
Loading speed	Manual lifting of the test table (Z axis)
Test force tolerance	±1.0%
Test cycle type	Semi-automatic - manual - pre-load with sound alarm brake, measure of the indentation - Automatic - load, dwell, unload, show of the hardness value (after measure step)
Hardness scales	HBW10/3000, HBW10/1500, HBW10/1000, HBW10/500, HBW10/250, HBW10/125, HBW10/100, HBW5/750, HBW5/250, HBW5/125, HBW5/62.5, HBW2.5/187.5, HBW2.5/62.5
Hardness test range	3.18 ~ 653HBW
Hardness resolution	0.01HBW
Repeatability hef/%	≤125, ±3% 125 < HBW ≤ 225, ±2.5% > 225, ±2%
Scale conversion	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS - According to ASTM E140
Turret type	Manual shifting
Eyepiece microscope	20x
Objectives	1x
Optical Path	1
Illumination	LED light
Microscope min. measuring unit	1.25µm (1x objective)
Microscope max. measurement length	6mm (1x objective)
Measurable min. indent/indentation	0.24mm
Indenters	ø 2,5mm, ø 5mm, ø 10mm hard alloy steel ball indenter
N. of indenters	1
Nose cone support diameter	6.35mm
Vertical test capacity	225mm
Horizontal test capacity	135mm
Anvils dimensions	Large plane test table ø 200mm Middle sized testing table ø 60mm V-Shaped test table ø 80mm
Max. weight on anvil	200kg
Z axis movement	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	4.3"
Input mode	Control panel keyboard
Displayed data	Hardness value, D1, D2, dwell time, test number, test force, date and time, light, conversion scale, hardness range
Statistics or functions	Max, min, average value
Data storage	Temporary session memory - 96 tests
Data output	Hyperterminal session format (.HT)
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	1x RS232
Safety device	Emergency switch
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	130kg
Dimensions	545x235x790mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Standard accessories		
Model	Description	Q.ty
BT- DE20X	20x digital measuring eyepiece	1 pc
BI-25	Hard alloy steel ø 2,5mm ball indenter	1 pcs
BI-5	Hard alloy steel ø 5mm ball indenter	1 pcs
BI-10	Hard alloy steel ø 10mm ball indenter	1 pcs
BT-LTT200	Large plane test table ø 200mm	1 pcs
BT-MTT60	Middle sized testing table ø 60mm	1 pcs
BT-VTT80	V-Shaped test table ø 80mm	1 pcs
HB-150250HBW103000	Hardness block 150-250 HBW 10/3000	1 pc
HB-150250HBW5750	Hardness block 150-250 HBW 5/750	1 pc
BT-PC	Power cable	1 pc
BT-SK	Service keys	1 set
BT-ADC	Anti-dust cover	1 pc

Optional accessories	
Model	Description
BT-V10S	V1.0 System
BT-LCDMD	LCD measuring device
BT-CCDMS	CCD measuring system
BT-WB	Work bench
BT-APP	Additional printer paper roll
Brinell hardness blocks	
Model	Range
HB-BW10/3000	180-650 HBW 10/3000
HB-BW10/1500	180-650 HBW 10/1500
HB-BW10/1000	90-450 HBW 10/1000
HB-BW10/500	90-450 HBW 10/500
HB-BW5/750	180-650 HBW 5/750
HB-BW5/250	90-450 HBW 5/250
HB-BW2.5/187.5	180-650 HBW 2.5/187.5
HB-BW2.5/62.5	90-450 HBW 2.5/62.5

HTB 625Z

Low Load Digital Brinell Hardness Tester

- > Low Load Digital Brinell Hardness Tester with direct-viewing display, stable performance and good reliability. 8 test force and 9 Brinell testing scales, 2 objectives 5x and 10x for measurement; automatic shifting between indenter and objectives; dwell time pre-set and light source intensity regulation; automatically display the testing indentation length, hardness value; test result can be printed out by the built-in printer; According to the requirements the tester can be equipped with CCD or Video measuring system.

AUTOMATIC TURRET



Application

- > Suitable for cast iron, steel products, non-ferrous metals and soft alloys etc. Also suitable for some non-metal materials such as rigid plastics and bakelite etc.

Reference standard

- > ISO 6506, ASTM E10-12, JIS Z2243

Standard block hardness range	Displayed value allowed tolerance %	Displayed value allowed repeatability %
≤125	±3	3
125<HBW ≤ 225	±2.5	2.5
>225	±2	2



Model	HTB 625Z
Technology	Load cell closed loop - Load electronic controlled
Load selection	Control panel keyboard
Main loads	1kgf, 5kgf, 6.25kgf, 10kgf, 15.625kgf, 30kgf, 31.25kgf, 62.5kgf
Dwell time	0-60s
Loading time	8s
Loading speed (indenter descending speed)	0.04mm/s
Test force tolerance	±1.0%
Test cycle type	Semi-automatic type: Manual - focus, measure of indentation Automatic - load, dwell, unload, show of the hardness value (after measure step)
Hardness scales	HBW5/62.5, HBW2.5/62.5, HBW2.5/31.25, HBW2.5/15.625, HBW2.5/6.25, HBW1/30, HBW1/10, HBW1/5, HBW1/1
Hardness test range	3.18 ~ 653HBW
Hardness resolution	0.01HBW
Repeatability hef/%	≤125, ±3% 125 < HBW ≤ 225, ±2.5% > 225, ±2%
Scale conversion	With table, according to ASTM E140
Turret type	Automatic
Eyepiece microscope	10x
Objectives	5x, 10x
Optical path	2
Illumination	LED light
Microscope min. measuring unit	5x: 0.5µm - 10x: 0.25µm
Microscope max. measurement length	5x: 2.4mm - 10x: 1.2mm
Measurable min. indent/indentation	0.24mm
Indenters	ø 1mm, ø 2.5mm, ø 5mm hard alloy steel ball indenter
N. of indenters	1
Nose cone support diameter	6.35mm
Vertical test capacity	170mm
Horizontal test capacity	130mm
Anvils dimensions	Large plane test table ø 108mm V-Shaped test table ø 40mm
Max. weight on anvil	100kg
Z axis movement	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	3"
Input mode	Control panel keyboard
Displayed data	Hardness value, D1, D2, dwell time, test number, test force
Statistics or functions	Max, min, average value
Data storage	Temporary session memory, 96 tests
Data output	Hyperterminal session format (.HT)
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	1x RS232
Safety device	Emergency switch
Operation temperature	10-30°C
Operation rel. humidity	≤65%
Weight	35kg
Dimensions	530x200x630mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Standard accessories		
Model	Description	Q.ty
BT-DE10X	10x digital measuring eyepiece	1 pc
BT- 5XOB	5x objective	1 pcs
BT-10XOB	10x objective	1 pcs
BI-1	Hard alloy steel ø 1mm ball indenter	1 pc
BI-25	Hard alloy steel ø 2.5mm Ball Indenter	1 pc
BI-5	Hard alloy steel ø 5mm ball indenter	1 pc
BT-LTT108	Large plane test table ø 108mm	1 pc
BT-VTT40	V-Shaped test table ø 40mm	1 pc
HB-90120HBW2.562.5	Hardness block 90-120 HBW 2.5/62.5	1 pc
HB-180220HBW130	Hardness block 180-220 HBW 1/30	1 pc
BT-4RS	Horizontal regulating screw	4 pcs
BT-LV	Spirit level	1 pc
BT-PC	Power cable	1 pc
BT-SK	Service keys	1 set
BT-ADC	Anti-dust cover	1 pc

Optional accessories	
Model	Description
BI-10	Hard alloy steel ø 10mm ball indenter
BT-V10S	V1.0 System
BT-LCDMD	LCD measuring device
BT-CCDMS	CCD Measuring system
BT-WB	Work bench
BT-APP	Additional printer paper roll
Brinell hardness blocks	
Model	Range
HB-BW2.5/62.5	90-450 HBW 2.5/62.5
HB-BW1/30	150-250 HBW 1/30

Brinell
Accessories

V 1.0 System

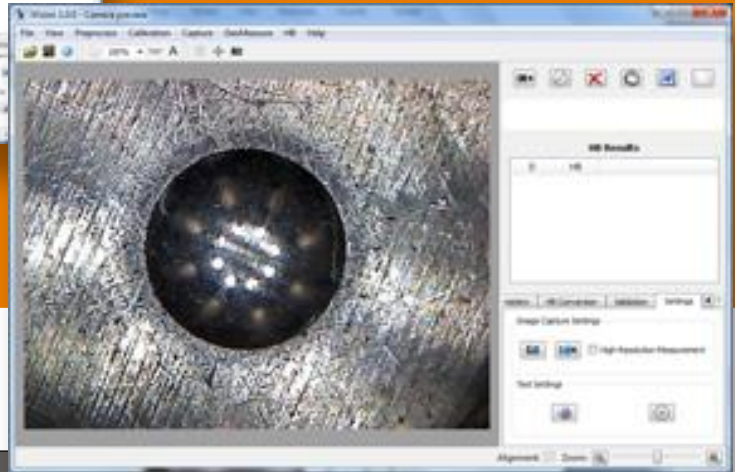
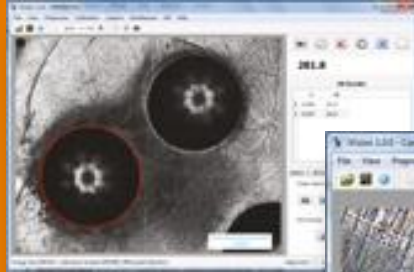


V 1.0 System

Main Function:

1. **Basic function:** include all functions of image processing and measurement system, such as image capture, calibration, image processing, geometric measurement, annotation, photo album management and fixed times print etc;
2. **Automatic measurement:** Automatically capture the indentation measure the diameter and calculate the corresponding value of Brinell hardness;
3. **Manual measurement:** Manually measure the indentation, the system calculates the corresponding value of Brinell hardness;
4. **Hardness conversion:** The system can convert the measured Brinell hardness value HB to other hardness value such as HV, HR etc;
5. **Data statistics:** The system can automatically calculate the average value, variance and other statistical values the hardness;
6. **Standard exceeding alarm:** Automatic mark the abnormal value, when the hardness exceeds the specified value, an alarm will appear;
7. **Test report:** Automatically generate the report in Word or Excel format, report templates can be modified by the user.
8. **Easy to use:** Click on the interface button or press the camera button to automatically complete all the work;
9. **Strong noise resistance:** The advanced and reliable image recognition technology can handle the indentation recognition on the surface of complex samples, two automatic measurement modes to deal with difficult samples;
10. **Automatic calibration:** System provided with calibration function. With a calibration grid, the system can automatically implement full calibration for calibration data.

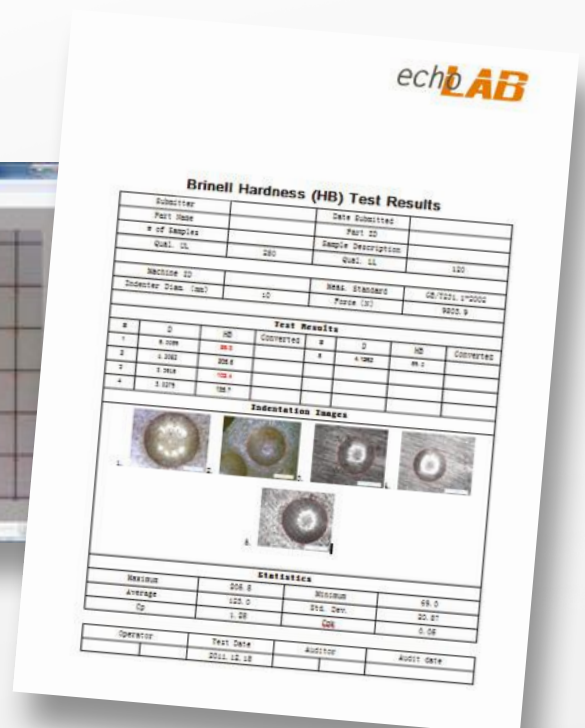
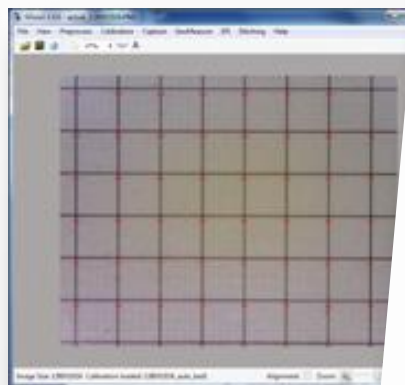
Brinell Accessories



V 1.0 System

Standard Configuration:

1. Computer (Hard disk: 500G, Memory: 2G, 19" LCD screen) 1 set
2. Ink jet printer 1 set
3. Portable camera device 1 set
4. Measuring software 1 pc + USB softdog 1 pc



**Brinell
Accessories**

**CCD Image Automatic
Measuring System**



CAMERA AND MEASURING SW HARDNESS TESTER



Brinell CCD Image Automatic measuring System

Introduction:

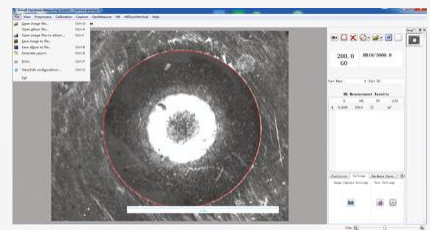
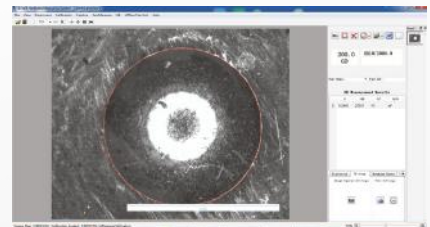
CCD Image automatic measuring system allow test performing through mouse click, and CCD camera for directly observe and measure the indentation on the display, test conditions setting, results clearly and conveniently managed and displayed. Automatic calculation of indentation depth, statistical calculations, conversions, curves, data managing and export as Word or Excel documents.

Main Functions:

1. **Basic function:** include all functions of image processing and measurement system, such as image capture, calibration, image processing, geometric measurement, annotation, photo album management, etc;
2. **Automatic measurement:** Automatically capture the indentation, measure the diameter and calculate the corresponding value of Brinell hardness;
3. **Hardness conversion:** The system can convert the measured Brinell hardness value HB to other hardness scales such as HV, HR etc;
4. **Data statistics:** Automatic calculation of average value, variance and other statistical values;
5. **Standard exceeding alarm:** Automatic mark abnormal value, when the hardness exceeds the specified value, an alarm will appear;
6. **Test report:** Automatically generate the report in Word or Excel format, the report templates can be modified by the user.
7. **Easy to use:** Click on the interface button, press the camera button or press the run button to automatically complete all the steps;
8. **Strong noise resistance:** The advanced and reliable image recognition technology can handle the indentation recognition on the surface of complex samples, two automatic measurement modes to deal with difficult samples;
9. **Automatic calibration:** System provided with calibration function. With a calibration grid, the system can automatically implement full calibration for calibration data.

Standard Configuration:

1. Computer (Hard disk: 500G, Memory: 2G, 19" LCD screen) 1 set
2. Ink jet printer 1 set
3. CCD camera 1 set
4. Measuring software 1 pc + USB softdog 1 pc



**Brinell
Accessories**

LCD Video measuring device



LCD Video measuring device

Main Function:

LCD Video measuring device is composed by video measuring device, 8" color LCD monitor and connections components. With this device, the indentation can be directly showed on the monitor.



The measurement is more accurate. Avoids visual fatigue and human-made error, increasing working efficiency.

Standard Configuration:




1. 8" Color LCD monitor
2. Video measuring device
3. Video connection cable

**Brinell
Accessories**



Indenters

Code	Description	
BI-1	Hard alloy steel \varnothing 1mm ball indenter	
BI-25	Hard alloy steel \varnothing 2,5mm ball indenter	
BI-5	Hard alloy steel \varnothing 5mm ball indenter	
BI-10	Hard alloy steel \varnothing 10mm ball indenter	
BT-IB1	\varnothing 1mm Hard alloysteel ball	
BT-IB2.5	\varnothing 2.5mm hard alloy steel ball	
BT-IB5	\varnothing 5mm hard alloy steel ball	
BT-IB10	\varnothing 10mm hard alloy steel ball	

Test tables

Code	Description	
BT-LTT200	Large plane test table \varnothing 200mm	
BT-LTT108	Large plane test table \varnothing 108mm	
BT-MTT60	Middle sized testing table \varnothing 60mm	
BT-VTT80	V-Shaped test table \varnothing 80mm	
BT-VTT40	V-Shaped test table \varnothing 40mm	

Additional options

Code	Description	
BT-APP	Additional printer paper roll	
BT-WB	Work bench	

Hardness blocks

Code	Scale	Range
HB-BW10/3000	HBW 10/3000	180-650
HB-BW10/1500	HBW 10/1500	180-650
HB-BW10/1000	HBW 10/1000	90-450
HB-BW10/500	HBW 10/500	90-450
HB-BW5/750	HBW 5/750	180-650
HB-BW5/250	HBW 5/250	90-450
HB-BW2.5/187.5	HBW 2.5/187.5	180-650
HB-BW2.5/62.5	HBW 2.5/62.5	90-450
HB-BW1/30	HBW 1/30	150-250