



## Data Sheet

HTB 3000A

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### 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.

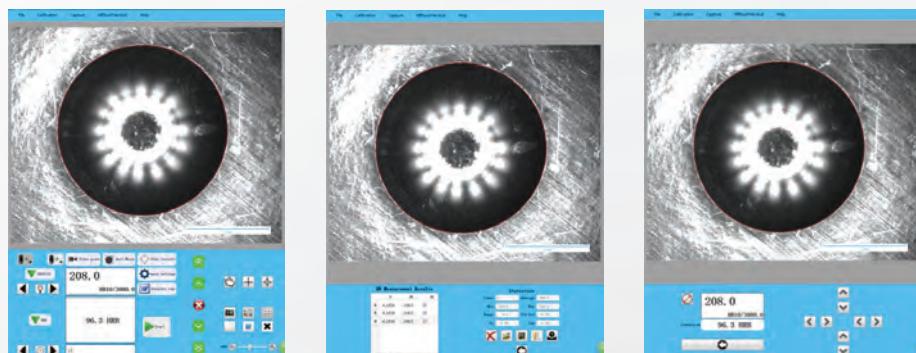
#### Reference standard

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



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 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



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