MHBS-3000Z

- Professional manufacturer, best quality with competitive price
- Recommended by the world UT NDT inspection association for training and examination
- Core technology with independent intellectual property rights, certificate of CE, GOST and etc..

Touch Screen Automatic Tower Digital Display Brinell Hardness Tester

Overview

Mitech MHBS-3000Z Touch Screen Automatic Tower Digital Display Brinell Hardness Tester, based on the mechanical principle of hard alloy indenter pressing into the sample surface to produce indentation, realizing the material hardness measurement by measuring the diameter of the indentation, The use of photoelectric sensor system to high magnification optical measurement, equipped with automatic turret device, high sensitivity touch screen operation interface, can achieve automatic loading and unloading of electronic, easy to operate, high detection efficiency. It can meet the hardness testing requirement for the quality control and qualified assessment of the workpiece sample. It is widely used in metal processing and manufacturing, various metal material's failure analysis and other fields like colleges and research institutions. It's to improve the work efficiency, product qualification rate, saving production costs necessary professional precision testing equipment.

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Technical Parameters

Technical Parameters	Technical Indicators
The power series	612.5N(62.5kgf) ; 980N(100kgf) ; 1225N(125kgf) ; 1837.5N(187.5kgf) ; 2450N(250kgf) ; 4900N(500kgf) ; 7350N(750kgf) ; 9800N(1000kgf) ; 14700N(1500kgf) ; 29400N(3000kgf) ;
Measuring range	8 – 650 HBW
Conversion scale	HRA、HRB、HRC、HRD、HV、HK、HBW、HR15N、HR30N、HR45N、HR15T、HR30T、HR45T
Brinell scale	HBW2.5/62.5、HBW2.5/187.5、HBW5/125、HBW5/250、HBW5/750、HBW10/100、HBW10/1500、HBW10/3000、HBW10/250、HBW10/500、 HBW10/1000
Testing Force Application Mode	Automatic (loading, holding, unloading)
Indenter objective lens conversion mode	Automatic
display usage	LCD touch screen
Microocular magnification	20X
Test force holding time	0~60s
Minimum division	0.001 mm
Max sample height	230mm
Max distance from head to body	140mm
Voltage	AC 220V/50Hz
Size	620*270*900mm
Total Weight	130kgt

Indicating accuracy

Standard Block	Indicating Error%(H)	Repeatability Error
≤125	±3%	0.03$\bar{d}$
125 < HBW≤225	±2.5%	0.025$\bar{d}$
> 225	±2%	0.02$\bar{d}$

H : Hardness of standard block $\bar{d}$: Indentation diameter(average)

Features

- Suitable for measuring the surface is more rough cast iron, steel and other non-homogeneous specimen Brinell hardness;
- The use of automatic closed-loop pressure sensor control system, can dynamically reflect the loading process load changes;
- The automatic turret mechanism can realize the automatic switching function between the objective lens and the indenter and improve the detection efficiency.
- Using touch screen display interface, display operation integration, simple and intuitive, the technical requirements of the operator is not high;
- Modeling novel, strong structure, reliability and operability is high, intuitive, high test efficiency;
- Equipped with excellent performance of the carbide indenter, high hardness, wear resistance, good toughness, while high temperature, corrosion resistance, to ensure that the instrument measured standard, stable and reliable;
- Support Brinell, Rockwell, Vickers and other hardness standard conversion;
- Equipped with high-speed thermal printer, you can quickly print out the test data;
- Meet ISO6507, ISO6506, GB / T231, JJG150 and other relevant domestic and foreign standards..

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Applied condition

- Cast iron, steel, nonferrous metals, soft alloys and other metal materials;
- Hard plastic, bakelite and some other non-metallic materials;

Application

- Metal processing industry quality control links
- Universities teaching and demonstration test
- The failure test of metal material
- The material hardness test of scientific research institutions

Working condition

- Working Temperature：18℃～28℃;
- Relative Humidity：≤65%;
- Clean environment, no vibration;
- No corrosive media around.

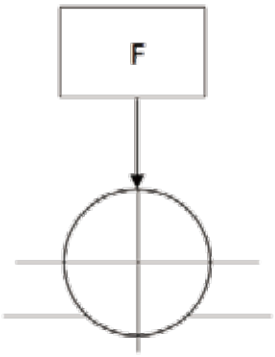
Working Principle

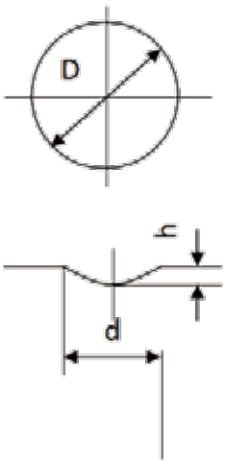
Hardness is not a simple physical quantity, but a reflection of the material elasticity, plasticity, strength and toughness .and hardness test is the most simple mechanical testing method to determine the metal material performance. Also one of the important means to judge the products quality.

Brinell hardness test: Test force(F) is on the steel ball with certain diameter(D) , pressed on sample surface. After a period of time, cancel the force. The indentation diameter is get by measuring with micrometer ocular,thus to calculate the average pressure(N/mm^2). Then we can get the Brinell hardness of the sample as below

$$HB = 0.102 \times \frac{2F}{\pi D\left(D-\sqrt{D^2-d^2}\right)}$$

Tips：F：Test force on steel ball , unit:N； D：Diameter of steel ball , unit:mm； d：Indentation diameter , unit:mm ; 0.102：Rule coefficient.





Configuration

	NO.	Configuration	QTY.	备注
	1	Main unit	1	
	2	20×Lens	1	
	3	ϕ2.5mm ball	1	
	4	ϕ5mm ball	1	
	5	ϕ10mm ball	1	
	6	Small testing table	1	Diameter 80mm
	7	Large testing table	1	Diameter 200mm
	8	V-shape testing table	1	For cylindrical sample
Standard Config	9	Standard Hardness block HBW/3000/10(150 ~ 250)	1	
	10	Standard Hardness block HBW/1000/10(75 ~ 125)	1	
	11	Standard Hardness block HBW/187.5/2.5(150 ~ 250)	1	
	12	Fuse wire(2A)	3	
	13	RS232 Cable	1	
	14	Power line	1	
	15	Plastic dust cover	1	
	16	Attached files	1	
	17	Instrument case	1	
Optional Config	1	Brinell measurement system	1	