MH660 Portable Leeb Hardness Tester

Product Overview

MH660 portable Leeb hardness tester is Mitech latest upgrade model,it focuses on user experience and innovative features.Using 320 x 240 color LCD display,can also present clear measurement results in dim light and strong sunlight environment,greatly enhance the visual experience; sealed metal case compact design,smaller,better quality,designed to withstand harsh field environment of the oil,dust,more original point calibration function is used to do multi-point calibration for convert curve to reduce errors;during measurement instrument can automatically identify the measuring direction,automatically alarm when out of rage,to meet the inspection requirements with high precision and multi-angle material collected,support free conversion between hardness type;low-power design powered by two AA batteries,support multiple languages.Blue-tooth printer.It is widely used in metal processing and manufacturing,special equipment and permanent component failure analysis in service,inspection and other fields.Particularly suitable for large non-removable part of the site hardness testing.It is to improve

the pass rate of production and cost savings necessary professional precision instrument.

Technical Specifications

Error and repeatability of displayed value showed in Table below.

No.	Type of impact device	Hardness value of Leeb standard hardness block	Error of displayed value	Repeatability
1	D	760±30HLD 530±40HLD	±6 HLD ±10 HLD	6 HLD 10 HLD
2	DC	760±30HLDC 530±40HLDC	±6 HLDC ±10 HLDC	6 HLD 10 HLD
3	DL	878±30HLDL 736±40HLDL	±12 HLDL	12 HLDL
4	D+15	766±30HLD+15 544±40HLD+15	±12 HLD+15	12 HLD+15
5	G	590±40HLG 500±40HLG	±12 HLG	12 HLG
6	E	725±30HLE 508±40HLE	±12 HLE	12 HLE
7	C	822±30HLC 590±40HLC	±12 HLC	12 HLC

- Measuring range：HLD（170～960）HLD
- Impact direction: vertically downward, oblique, horizontal, vertical upward, automatically identify
- Material: steel and cast steel， cold work tool steel, stainless steel, Grey cast iron,Nodular cast iron, cast aluminum alloys,BRASS(copper-zinc alloys),BRONZE(copper-aluminum/tin alloys),Wrought copper alloys
- Hardness Scale：HL、HB、HRB、HRC、HRA、HV、HS
- Display：Color TFT,320x240 dots, dot-matric LCD
- Built-in: conversion table from(to) HLD to(from)HLG,HLC,HLDL,HLD+15
- Data memory：500 measurement series.(relative to impact times 32～1)
- Battery : 3V,two AA size,alkaline batteries
- Standby Time: About 300hours (with default brightness)
- Communication interface：Blue tooth/USB1.1

Features

- Based on the principle of Leeb hardness testing theory. It can measure many metallic materials
- One main unit can match to 6 impact devices
- Automatically identify the state of impact devices(connect, disconnect, error, etc)
- Automatically identify the direction of impact devices(except G),360° ,comprehensive free measurement.
- 320 x 240TFT LCD screen, information-rich, intuitive, clear, display, adjustable brightness, easy to use in dimly lit
- Basic (single-point)calibration and multi-point calibration function for convert curve, to reduce the

test error

- Hardness scales can to convert to HL,HRB,HRC,HRA,HV,HS.
- Built-in Leeb Hardness conversion function to converse HLD to HLC,HLG,HLDL,HLD+15,which is convenient for calibration and value conversion
- Preset up and low limit of hardness value ,it will alarm automatically if out of range alarm, convenient for batch testings
- Chinese-English converting, menu operation, easy and convenient
- It can store 500 groups (impact times 32 ~ 1) hardness measurements, each set of data includes single testing value, average value, measurement date / time, impact direction, frequency, material, hardness, and other information.
- Tow ordinary AA batteries, it can work for not less than 100 hours; automatic screen standby, automatic sleep, automatic shutdown and other power-saving features
- With field-portable mini-printers with Blue-tooth communications, convenient to generate data reports
- USB interface can do transmission measurements, value storage management, value statistical analysis, printing the value report and batch setting the instrument parameters through the PC data-pro software to meet the higher demand for quality.
- Dimension:120mm×67mm×31mm

Application fields

- Die cavity of molds
- Bearings and other parts
- Failure analysis of pressure vessel, steam generator and other equipment
- Heavy work piece
- The installed machinery and permanently assembled parts
- Testing surface of a small hollow space
- Requirements of formal original record for test results
- Material identification In the warehouse of metallic materials
- Rapid testing in large range and multi-measuring areas for large-scale work piece

Application conditions

- Surface temperature can't be overheat less than 120℃.
- Surface roughness should not to be too large, otherwise it will cause errors. The surface of the work piece must be exposed metallic luster, smoothing and polish without oil.
- The specimens with 2-5kg or thin walled specimens overhangs should be supported with some object in order to avoid the specimen deformation ,bending and movement caused by impact for medium-sized work piece ,it shall be placed on a flat and hard surface, the sample must be placed absolutely smoothly,without any shake, for heavy samples more than 5kg, it can be measured dire without any support.
- Portable Leeb hardness tester has strict requirements for sample thickness , the minimum thickness shall comply with regulatory a(see instructions).
- For work piece with hardened layer on surface,the depth of hardened layer should conform to regulatory.
- For lighter parts, please make it tightly coupled with support ,two coupled surface layer should must

be conform flat and to smooth, the coupling gel should not to be too much. The direction of the test shall be perpendicular to the coupling plate; if the work piece is a large plate, pole or bending material , even the weight and thickness is okay ,it may still cause deformation and instability, resulting in test values error, it should be reinforced or supported at the back of the test points.

- Magnetic of work piece should be less than 30 gauss.
- For artifact-surface : The work piece surface is preferably flat. When the curvature radius R of measured surface is less than 30mm,the.work pieces should be tested with the small support ring the shaped support rings.

Working Conditions

- Working temperature:-10℃~+50℃,
- Storage temperature -30℃ ~ + 60℃,
- Relative humidity : ≤90%,,
- The surrounding environment should avoid of vibration, strong magnetic field, corrosive medium and heavy dust.

Impact Devices

D: Stand configuration,for normal testing

DC: Test hole or hollow cylindrical

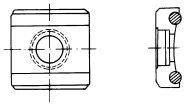
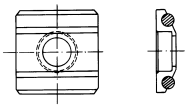
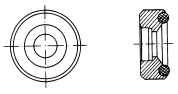
DL: Test slender narrow groove or hole

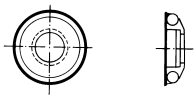
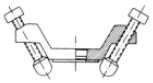
D+I5: Test groove or concave surface

G: Test large, thick, heavy and rough surface steel

C: Test small, light, thin parts and surface of hardened layer

Other Supporting Rings

No.	Type	Sketch	Remarks
1	Z10-15		For testing cylindrical outside surface R10～R15
2	Z14.5-30		For testing cylindrical outside surface R14.5～R30
3	Z25-50		For testing cylindrical outside surface R25～R50
4	HZ11-13		For testing cylindrical inside surface R11～R13
5	HZ12.5-17		For testing cylindrical inside surface R12.5～R17
6	HZ16.5-30		For testing cylindrical inside surface R16.5～R30
7	K10-15		For testing spherical outside surface SR10～SR15
8	K14.5-30		For testing spherical outside surface SR14.5～SR30

9	HK11-13		For testing spherical inside surface SR11～SR13
10	HK12.5-17		For testing spherical inside surface SR12.5～SR17
11	HK16.5-30		For testing spherical inside surface SR16.5～SR30
12	UN		For testing cylindrical outside surface, radius R10～∞

Configurations

	No.	Item	Qty	Remarks
Standard config.	1	Main unit	1	
	2	D type Impact device	1	
	3	Standard test block	1	
	4	Cleaning brush(A)	1	
	5	Small supporting	1	
	6	AA size alkaline Battery	2	
	7	Documents	1	
	8	Carry case	1	
	9	Data-pro Software	1	On PC
	10	USB Cable	1	Mini USB-B to USB-A
	11	Screw driver		
Optional config.	1	Cleaning brush(B)		For use with G type impact device
	2	Other type of impact devices and support rings		