

Portable Leeb Hardness Tester ML108



ML108(852-108)

Main Features:

Modern plastic cover, affordable, variant of ML 108 with additional features. Easy operation due to intuitive menu system, Fast, support optional built-out mini-printer.

- Large memory for 500 groups tests
- Auto-recognition of connected Impact Device
- Auto-recognition of Impact Device test direction
- Statistical data and upper-lower limit setting
- RS-232 interface (to hyperterminal or dataview software)
- Time and date setting; auto-clock
- Back-light LCD
- Direct display of hardness scales Rockwell HRC, HRA, Vickers
- HV, Brinell HB, Shore HS, Leebs HL
- Conversion to tensile strength σ_b (U.T.S.)
- For all metallic materials
- Impact device provides testing at any angle, even upside down
- Integral thermal printer
- High accuracy $\pm 6\text{HLD}$ and conforms to ASTM A 956
- Six impact devices are available for special applications

Standard delivery:

- Main unit with impact device type D
- Test block with HLD-value
- Cleaning brush
- RS-232 Data cable
- SINOWON certificate
- Operation Manual
- Carrying case

Technical Specifications

Hardness Scale	HL,HRC ,HRB, HRA, HV,HB,HS
Tensile strength U.T.S. range(steel only)	σ_b from 374 to 2652
Accuracy	Within $\pm 6\text{HLD}$
Functions	Auto-recognition of connected probe and probe test direction, auto-conversion to other hardness scales
Memory	500 groups test maximum
Data-output	RS-232/USB1.0 to Hyperterminal (MS)
Statistics	Average value, min-max ,upper-lower limits
Impact device	D (standard)
Optional impact devices	DC/D+15/DL/G/C/E
Max. hardness value	940HV-1000HV
Work piece radius (convex/concave)	Rmin=50mm(with support ring Rmin=10mm)
Min. Workpiece weight	2~5kg on stable support 0.05~2kg with compact coupling except C and G impact device
Workpiece min. thickness coupled	5mm,expect with impact device G:10mm,C:1mm
Workpiece min. case hardened depth	0.08mm expect C impact device 0.2mm and impact device 1.2mm
Power	AA3V
Operating temperature	0 °C to 40 °C
Overall dimensions	148mm×72mm×30mm
Weight	200g (Excluding impact device and printer)

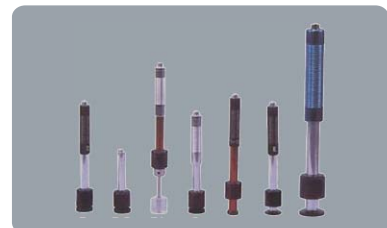
Optional Accessories:



Optional mini-printer



Optional Support Ring



Optional Impact devices

Portable Leeb Hardness Tester ML118



ML118(852-118)

Main Features:

Modern metal cover, high-end, variant of the ML118 with additional features. Easy operation due to intuitive menu system, Fast, Composite built-in printer.

- Large memory for 100 groups tests
- Auto-recognition of connected Impact Device
- Auto-recognition of Impact Device test direction
- Statistical data and upper-lower limit setting
- Prints all test results and histogram
- RS-232 interface (to hyperterminal or dataview software)
- Time and date setting; auto-clock
- Back-light LCD
- Direct display of hardness scales Rockwell HRC, Vickers HV, Brinell HB, Shore HS, Leeb HL
- Conversion to tensile strength σ_b (U.T.S.)
- For all metallic materials
- Impact device provides testing at any angle, even upside down
- Integral thermal printer
- High accuracy $\pm 6\text{HLD}$ and conforms to ASTM A 956
- Six impact devices are available for special applications

Technical Specifications

Hardness Scale	HL, HRC, HRB, HRA, HV, HB, HS
Tensile strength U.T.S. range (steel only)	σ_b from 374 to 2652
Accuracy	Within $\pm 6\text{HLD}$
Functions	Auto-recognition of connected probe and probe test direction, auto-conversion to other hardness scales
Memory	100 groups test maximum
Data-output	RS-232/USB1.0 to Hyperterminal (MS)
Printer	Thermal printer showing all test results settings and histogram
Statistics	Average value, min-max, upper-lower limits
Impact device	D (standard)
Optional impact devices	DC/D+15/DL/G/C/E
Max. hardness value	940HV-1000HV
Work piece radius (convex/concave)	$R_{min}=50\text{mm}$ (with support ring $R_{min}=10\text{mm}$)
Min. Workpiece weight	2~5kg on stable support 0.05~2kg with compact coupling except C and G impact device
Workpiece min. thickness coupled	5mm, expect with impact device G: 10mm, C: 1mm
Workpiece min. case hardened depth	0.08mm expect C impact device 0.2mm and impact device 1.2mm
Power	6V, 500mA (1.8VA), A2.5-4 hours
Operating temperature	0 °C to 40 °C
Overall dimensions	212mm x 72mm x 30mm
Weight	220g (Excluding impact device and printer)

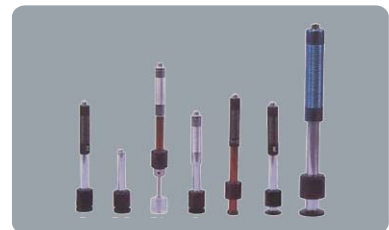
Standard delivery:

- Main unit with impact device type D
- Built-in Printer (on top)
- Test block with HLD-value
- Charger
- Cleaning brush
- RS-232 Data cable
- SINOWON certificate
- Operation Manual
- Carrying case

Optional Accessories:



Optional Support Ring



Optional Impact devices

Portable Leeb Hardness Tester ML218



ML218(852-218)

Main Features:

Modern metal cover, high-end, variant of the ML 218 with additional features. Easy operation due to intuitive menu system, Fast, support optional built-out mini-printer.

- Large memory for 500 groups tests
- Auto-recognition of connected Impact Device
- Auto-recognition of Impact Device test direction
- Statistical data and upper-lower limit setting
- RS-232 interface (to hyperterminal or dataview software)
- Time and date setting; auto-clock
- Back-light LCD
- Direct display of hardness scales Rockwell HRB, HRC, Vickers
- HV, Brinell HB, Shore HS, Leebs HL
- Conversion to tensile strength σ_b (U.T.S.)
- For all metallic materials
- Impact device provides testing at any angle, even upside down
- Integral thermal printer
- High accuracy $\pm 6\text{HLD}$ and conforms to ASTM A 956
- Six impact devices are available for special applications

Technical Specifications

Hardness Scale	HL, HRC, HRB, HRA, HV, HB, HS
Tensile strength U.T.S. range (steel only)	σ_b from 374 to 2652
Accuracy	Within $\pm 6\text{HLD}$
Functions	Auto-recognition of connected probe and probe test direction, auto-conversion to other hardness scales
Memory	500 groups test maximum
Data-output	RS-232/USB1.0 to Hyperterminal (MS)
Statistics	Average value, min-max, upper-lower limits
Impact device	D (standard)
Optional impact devices	DC/D+15/DL/G/C/E
Max. hardness value	940HV-1000HV
Work piece radius (convex/concave)	$R_{\min}=50\text{mm}$ (with support ring $R_{\min}=10\text{mm}$)
Min. Workpiece weight	2~5kg on stable support 0.05~2kg with compact coupling except C and G impact device
Workpiece min. thickness coupled	5mm, expect with impact device G: 10mm, C: 1mm
Workpiece min. case hardened depth	0.08mm expect C impact device 0.2mm and impact device 1.2mm
Power	AA3V
Operating temperature	0 °C to 40 °C
Overall dimensions	131mm x 75mm x 31mm
Weight	200g (Excluding impact device and printer)

Standard delivery:

- Main unit with impact device type D
- Test block with HLD-value
- Cleaning brush
- RS-232 Data cable
- SINOWON certificate
- Operation Manual
- Carrying case

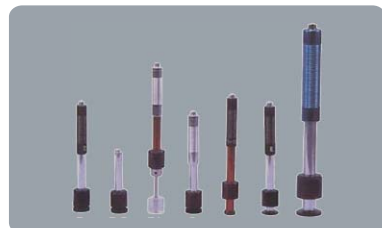
Optional Accessories:



Optional mini-printer

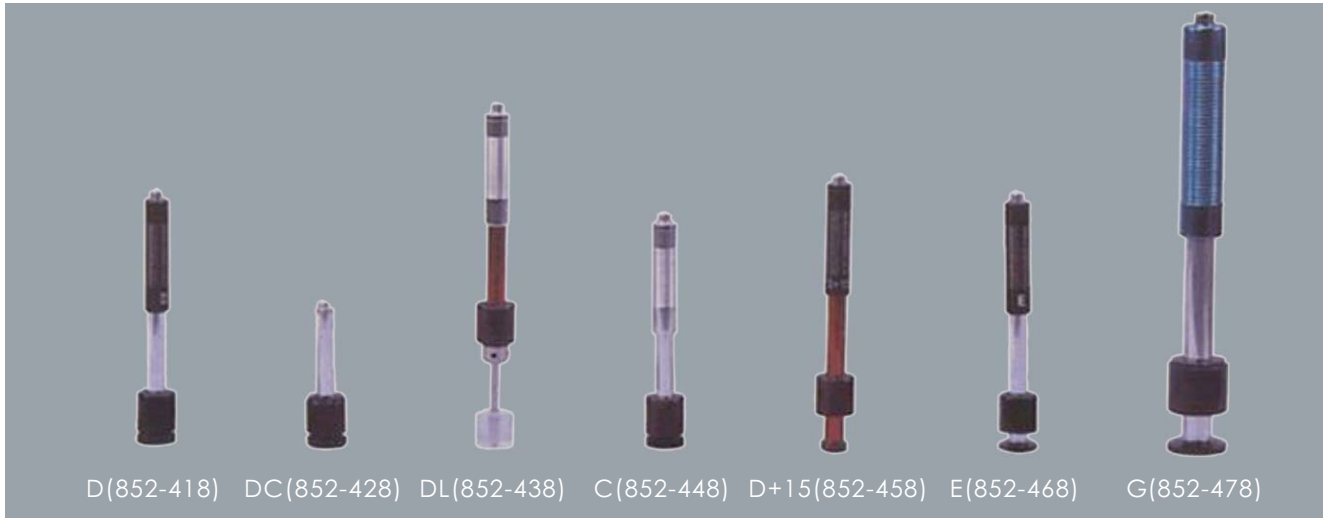


Optional Support Ring



Optional Impact devices

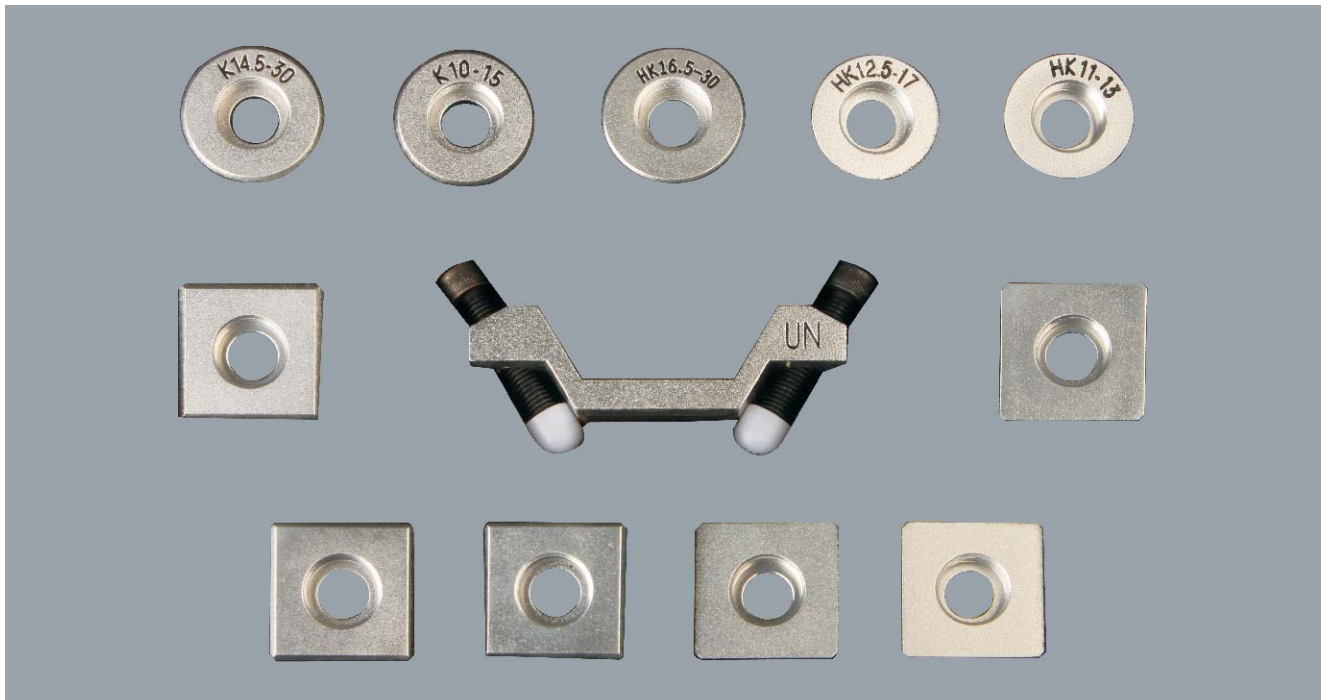
Optional Impact Devices



Technical Specifications

Impact Device		D	DC	DL	C	D+15	E	G
Order#		852-418	852-428	852-438	852-448	852-458	852-468	852-478
Impacting energy		11mJ	11mJ	11mJ	2.7mJ	11mJ	11mJ	90mJ
Mass of impact body		5.5g	5.5g	7.2g	7.8g	3.0g	5.5g	20g
Test tip hardness		1600HV	1600HV	1600HV	1600HV	1600HV	1600HV	1600HV
Dia. Test tip		3mm	3mm	3mm	3mm	3mm	3mm	3mm
Material of test tip		Tungsten carbide						
Impact Body								
Diameter		20mm	20mm	20mm	20mm	20mm	20mm	30mm
Length		147mm	86mm	75mm	141mm	162mm	155mm	254mm
Weight		50g	50g	50g	75g	80g	80g	250g
Max. hardness of sample		940HV	940HV	940HV	1000HV	940HV	1200HV	650HB
Average roughness Ra		1.6μm	1.6μm	1.6μm	0.4μm	1.6μm	1.6μm	6.3μm
Min. weight of sample								
Measure directly		>5kg	>5kg	>5kg	>1.5kg	>5kg	>5kg	>15kg
Need support firmly		2~5kg	2~5kg	0.5~1.5kg	2~5kg	2~5kg	2~5kg	5~15kg
Need coupling tightly		0.05~2kg	0.05~2kg	0.02~0.5kg	0.05~2kg	0.05~2kg	0.05~2kg	0.5~5kg
Min. thickness of sample								
Coupling tightly		5mm	5mm	5mm	1mm	5mm	5mm	10mm
hardening layers		≥0.8mm	≥0.8mm	≥0.8mm	≥0.2mm	≥0.8mm	≥0.8mm	≥1.2mm
Indentation of test tip								
Hardness 300HV	Diameter	0.54mm	0.54mm	0.54mm	0.38mm	0.54mm	0.54mm	1.03mm
	Depth	24μm	24μm	24μm	12μm	24μm	24μm	53μm
Hardness 600HV	Diameter	0.45mm	0.45mm	0.45mm	0.32mm	0.45mm	0.45mm	0.90mm
	Depth	17μm	17μm	17μm	8μm	17μm	17μm	41μm
Hardness 800HV	Diameter	0.35mm	0.35mm	0.35mm	0.30mm	0.35mm	0.35mm	
	Depth	10μm	10μm	10μm	7μm	10μm	10μm	
Error and repeatability of displayed value								
Hardness value		760±30HLD 530±40HLD	760±30HLDC 530±40HLDC	878±30HLDL 736±40HLDL	822±30HLC 590±40HLC	766±30HLD+15 544±40HLD+15	725±30HLE 508±40HLE	590±40HLG 500±40HLG
Error of value		± 6 / ± 10 HLD	± 6 / ± 10 HLDC	± 12 HLDL	± 12HLC	± 12 HLD+15	± 12HLE	± 12 HLG
Repeatability		6 / 10 HLD	6 / 10 HLDC	12 HLDL	12HLC	12 HLD+15	12HLE	12 HLG

Optional Support Ring



Optional Support Ring (852-518)

Technical Specifications		Optional Support Ring	
Order#		852-518	
No.	Type	Sketch of non-conventional Supporting ring	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 adjustable R10~∞

PHB-3000 Portable Brinell Hardness Tester

Introduction

- PHB-3000 is a portable Brinell hardness tester. It has a hydraulic system and the test force is applied by means of a handle.
- PHB-3000 condition is applying 3000kg test force on a 10mm carbide indenter. It can result in permanent indentations for reinspection. The test condition meets the requirements of ISO 6506 and ASTM E110.

Application

● On-site Testing

It is a portable instrument suitable to use in the plant. It is easy to operate and convenient to carry. So it can be used to easy test large workpieces in any direction on site.

● Permanent Indentation

With 3000kg test force and 10mm ball indenter, the indentation can accurately reflect the true harness of cast iron, cast steel, forge piece, and other materials with coarse grain. The permanent indentation can be reinspected at any time after testing.

● Real Result

PHB-3000 has the same principle as the bench type Brinell hardness tester. So the result is totally different from the lossy conversion value of other portable hardness testers (eg. Rebound type hardness tester).

● Wide Testing Range

PHB-3000 has various test forces and two different ball indenters in order to test different metals.



PHB-3000(#832-113)

Technical Specifications:

Specifications	PHB-3000
Order#	832-113
Test Force	3000kg (500kg, 750kg, 1000kg, and 1500kg available)
Indenter	Φ10mm carbide ball indenter (Φ 5mm available)
Testing Range	100-650HBW (Expendable to 28-650HBW)
Max. Specimen Height	320mm
Throat Depth	100mm
Accuracy	Complies with ISO 6506
Repeatability	Complies with ISO 6506
Net Weight	13.8kg



20X Measuring Microscope
(With LED light) (#832-213)

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
Main unit	832-113	20X Measuring Microscope	832-213	V-shaped anvil	832-523
Hardness Block HBW/ 3000/10 (150-250)	832-603	Φ10mm Spare carbide ball indenter	832-413	Flat anvil	832-503
Hardness block HBW/ 750/05 (75-150)	832-613	Hexagon Wrench	832-713	Hemispherical anvil	832-533

Portable Brinell Durometer PHB Series



PHB-150 (#821-123)



PHB-1 (#821-145)

Introduction

- Accurate and consistent test force, controlled by precision shear pin. Works in static type and hammer impact type and follows Brinell hardness test method.
- According to the similarity principle of Brinell hardness test, this tester has 1580kg test force, $\Phi 7.26\text{mm}$ spherical indenter, $F/D^2=30$. The test condition is equivalent to the commonly used 3000kg test force, $\Phi 10\text{mm}$ ball condition.
- High accuracy and repeatability; tested by National Institute of Metrology with tolerance less than $\pm 3\%$. The accuracy meets the requirements of ISO 6506 and is no lower than that of the bench Brinell hardness tester.
- Easy, quick and simple operation. Static type for testing medium and small size workpieces; hammer impact type for testing large workpieces.
- Only one inexpensive shear pin is consumed in each test.
- Good choice to replace Leeb hardness tester and Poldi type hammer impact hardness tester with lower accuracy.

Application

- If the workpiece can be put into the C clamp, Static type is recommended for a more accurate test result.
- Hammer impact type tester should be compared with a bench Brinell hardness tester or static type tester.

Technical Specification	PHB-150 (#821-123)	PHB-1 (#821-145)
Test Force	1580kg	
Tolerance of test force	< 0.5%	
Indenter	$\Phi 7.26\text{mm}$ steel spherical surface indenter, (test range: 100-400HB); $\Phi 4.0\text{mm}$ carbide spherical surface indenter, (test range: 400-650HB)	
Accuracy	Meets the requirements of ISO6506 Error of static type: $< \pm 3\% \text{HB}$ Error of hammer impact type: $< \pm 5\% \text{HB}$	
Testing Range	100-650HB	
Application	Casting, forging and steel raw materials etc	
Package Dimensions	705×375×205mm	510×375×177 mm
Net weight	4.2kg	0.8kg
Gross weight	11.6kg	3.8kg

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
$\Phi 7.26\text{mm}$ steel indenter	821-453	Flat-Anvil (PHB-150)	821-503	Accessories Box	821-903
20x Measuring microscope	821-223	V-shape Anvil (PHB-150)	821-523	2 rubber protective caps	821-813
Brinell test block	821-603	Indenter head holder	821-913	Support handle	821-923
Test head	821-713	Shear pins (250 pcs)	821-723	Pin removal tool	821-933

Optional Accessories	Order#	Optional Accessories	Order#	Optional Accessories	Order#
$\Phi 4.0\text{mm}$ carbide indenter	821-443	Hemispherical-anvil	821-533	Brinell test block	862-603
40x Measuring microscope	821-243	Small-anvil	821-543	3 lb hammer	821-823

Portable Rockwell Durometer PHR Series



PHR-1S(#812-313)



PHB-4-2S(#812-333)

Applications:

PHR series is a precisely portable hardness testing instrument for the measurement of metal and plastic material, it is not only suitable to measure the small parts, but also measure large parts, it not only offset the problem that benchtop hardness tester can not move to test the large and fixed parts, but also offset the problem that the rebound hardness tester can not make an accurate testing for small parts.

Specification:

Technical Specification	PHR
Test Force	3kg
Total Test Force	15kg, 30kg, 45kg
Force Applying Method	By Screw
Indenter	120° diamond cone Φ 1.588mm carbide ball
Accuracy	Meets the requirement of ISO 6508
Resolution	0.5HR
Testing Range	HRN, HRT, HRW, HRX, HRY, etc. 15 scales.
Application	All metals including iron, steel copper, aluminium, zinc, lead, tin, carburized steel, nitrided steel etc.



PHR-100(#812-213)



PHB-8-4(#812-163)



PHR-16(#812-413)



PHB-1(#812-113)

Standard Delivery:

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
120° diamond cone indenter	812-403	V-shape anvil	812-523	Rockwell test blocks	812-603
Φ 1.588mm carbide ball indenter	812-463	Flat-anvil	812-503	Magnifier	812-813

Optional Accessories:

Optional Accessories	Order#	Optional Accessories	Order#	Optional Accessories	Order#
Φ 3.175mm carbide ball indenter	812-473	Rockwell test blocks HRC-High	812-613	Rockwell test blocks HRA	812-643
Φ 6.35mm ball indenter	812-483	Rockwell test blocks HRC-Medium	812-623	Rockwell test blocks HRB	812-653
Φ 12.7mm ball indenter	812-493	Rockwell test blocks HRC-Low	812-633	Customized adapter	812-733

Portable Rockwell Durometer PHR Series



carbide ball indenter



Accessories Box



Measuring Microscope



Bench Stand



Flat-anvil



Extensions



Test Blocks



V-shape anvil



Convex Anvil

Model	Order#	Specimen/Opening Size	Net Weight		Gross Weight		Package Dimensions	
			Tester	Bench stand	Tester	Bench stand	Tester	Bench stand
PHR-1	812-113	25 × 25mm	0.8kg	1.5kg	2.8kg	1.8kg	330x255x150mm	215x148x232mm
PHR-2	812-123	50 × 50mm	1.2kg	1.5kg	3.7kg	1.8kg	390x280x160mm	215x148x232mm
PHR-4-2	812-133	100 × 50mm	1.5kg	4.5kg	5.2kg	4.9kg	510x177x375mm	215x148x232mm
PHR-4-4	812-143	100 × 100mm	2.5kg	4.5kg	6.1kg	4.9kg	510x177x375mm	215x148x232mm
HR-4-3	812-153	100 × 75mm	2.2kg		8.5kg		510x375x177mm	
PHR-8-4	812-163	200 × 100mm	4.0kg		10.7kg		710x470x200mm	
PHR-8-10	812-173	200 × 250mm	5.5kg		14.2kg		720x650x230mm	
PHR-20-12	812-183	500 × 300mm	7.8kg		21.0kg		1020x760x240mm	
PHR-100	812-213	Flat surface>60x180mm Cylinder diameter>Φ 100mm	4.9kg		10.0kg		480x390x210mm	
PHR-100x	812-223	Flat surface>20x180mm Cylinder diameter>Φ 50mm	5.5kg		10.8kg		480x390x210mm	
PHR-1S	812-313	25 × 25mm	0.8kg	1.5kg	2.6kg	1.8kg	330x255x150mm	215x148x232mm
PHR-2S	812-323	50 × 50mm	1.1kg	1.5kg	3.6kg	1.8kg	390x280x160mm	215x148x232mm
PHR-4-2S	812-333	100 × 50mm	1.5kg	4.5kg	5.0kg	4.9kg	510x375x177mm	215x148x232mm
PHR-1ST	812-343	Dia>4.8mm	0.8kg	1.5kg	2.0kg	1.8kg	510x375x177mm	215x148x232mm
PHR-100S	812-353	Flat surface>20x120mm Cylinder diameter>Φ 40mm	2.8kg		5.0kg		480x390x210mm	
PHR-16	812-413	200x450mm	4.8kg		13.0kg		680 × 470 × 240mm	
PHR-32	812-423	400x850mm	6.8kg		15.0kg		680 × 470 × 240mm	
PHR-64	812-433	800x1600mm	11.5kg		23.0kg		1000 × 460 × 255mm	

Portable Webster Durometer W Series



W-20(#862-113)



W-B75(#862-143)

Introduction

- Webster Durometer is a portable instrument which can perform on-site hardness testing of soft metals in accordance with American Standard ASTM B647.
- Webster Durometer mainly used to check the result of heat treatment and determine if the mechanical performance of the workpiece is acceptable.
- Webster Durometer is suitable for testing the hardness of aluminium profiles, tubings, sheets and other shapes.
- Webster Durometer mainly used for testing the with long or heavy workpieces or assemblies inconvenient to be sent to the labs.
- Webster Durometer is ideally for qualification inspection on the production site.
- Webster Durometer has different models which available for testing aluminum alloys, brass, copper alloy and copper

Application

- W-20, W-20A and W-20B are used to test aluminum profiles on the production site and application.
- W-B75 Webster hardness tester is used to test brass tubings.
- W-BB75 Webster hardness tester is used to test copper tubings.
- W-B92 Webster hardness tester is used to test stainless steel sheets and cold-rolled steel sheets in the manufacturing plant

Technical Specifications:

- Measuring Scope : 0-20HW
- Resolution : 0.5HW
- Weight : 0.5kg

Model	order#	Application Range	Hardness Range	Specimen Dimension(mm)
W-20	862-113	Aluminum alloy	25~110HRE 58~131HRV	Thickness 0.4-6 Inner diameter>10
W-20A	862-123			Thickness 0.4-13 Inner diameter>10
W-20B	862-133			Thickness 0.4-8 Inner diameter>6
W-B75	862-143	Brass	63~105HRF	Thickness 0.4-6 Inner diameter>10
W-B75B	862-153			Thickness 0.4-8 Inner diameter>6
W-BB75	862-163	Copper	18~100HRE	Thickness 0.4-6 Inner diameter>10
W-BB75B	862-173			Thickness 0.4-8 Inner diameter>6
W-B92	862-183	Stainless steel trips, Thin cold-rolled steel trips	50~92HRB	Thickness 0.4-6 Inner diameter>10

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
Main unit	862-113	Calibration wrench	862-713	Accessories Box	862-901
Hardness Block	862-603	Spare indenter	862-413	Small screwdriver	862-813

Portable Barcol Durometer BD-1

Introduction

- A portable indentation hardness tester.
- Single hand operation; no operating experience required; can test any workpiece which is reachable in any site.
- Wide valid testing range equivalent to Brinell hardness 25-150 HBW. Used to test the hardness of all kinds of aluminum, from very soft aluminum to very hard aluminum alloys.
- Extended application. Model BD-1 is applied to test the hardness of aluminum, aluminum alloys, copper, copper alloys, fiber reinforced plastics and rigid plastics etc. The improved model of it is available to test very soft metals such as lead and tin and other soft materials such as soft plastics, rubber, felt and leather etc.
- High sensitivity. Featured with 100 scales, much more sensitive than Webster hardness testers applied in aluminum alloys industry.
- No supporting required. Can test from only one side of the workpiece. No need to move or support the workpiece. Used to test super large and thick workpieces and assembly parts.
- Easy conversion. The test results can be converted to HB, HR, HV and HW easily through conversion table.
- Comply to standard ASTM B648-2000.

Application

- Barcol Impressor is mainly applied to test aluminum and aluminum alloys. Webster is used to test aluminum alloy extrusions, sheet and tubings. Barcol Impressor is suitable to test pure aluminum, soft aluminum alloys, super thick aluminum alloys, aluminum alloys bars and assembled aluminum alloys parts (e.g. al-alloy door & window, scaling ladder etc.) Relevant Standard: ASTM B648 (Test Method for Indentation Hardness of Aluminum Alloys by Means of a Barcol Impressor)
- Barcol Impressor is also used to test fiber reinforced plastics and rigid plastics etc.
Relevant Standard: ASTM D2583-07 (Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor)
- The improved models of Barcol Impressor are available to test softer plastics, very soft metals, rubber and leather etc.

Technical Specification	BD-1 (#872-113)
Indenter	26° panhead cone, head face diameter 0.176mm
Testing Range	0~100HBa, equivalent to 25~150HBW
Resolution	0.5HBa
Indication error	hardness range 42~52HBa, ± 2HBa hardness range 84~88HBa ± 1HBa
Repeatability error	hardness range 42~52HBa, ± 2HBa hardness range 84~88HBa ± 1HBa
Net weight	0.5kg



934-1 (#872-113)

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
Main unit	872-113	Calibration wrench	872-713	Accessories Box	872-901
High value hardness block	872-603	Low value hardness block	872-613	Spare indenters	872-413

Digital Shore Durometer



MS-100A(842-216)

MS-100C(842-226)

MS-100D(842-236)

Technical Specifications

Model	MS-100A	MS-100C	MS-100D
Order#	842-216	842-226	842-236
Measurement Range	0-100HA;	0-100HW;	0-100HD.
Test Scale	shore hardness		
Standard	DIN53505, ASTM D2240, ISO7619, JISK7215		
Parameters	hardness result, average value, maxes. value		
Measurement Deviation	< 1%H;		
Resolution	0.1		
Communication Interface	RS232C		
Operating Conditions	0°C to 40°C		
Power Supply	4x1.5V AAA (UM-4) battery,		
Switch	Auto switch off		
Battery Indicator	low battery indicator		
Dimensions	162x65x38mm		
Weight	173g (no probe)		
Standard Delivery	Instrument, test block, English manual and carrying case		

Single-index Analogue Shore Durometer



LX-A(842-115)

LX-D(842-135)

LX-DS(842-535)

Applications

Shore durometer are designed to determine the indentation hardness of material ranging from cellular products from to rigid plastics.

- LX-A durometer is an essential characteristic of various rubber, elastomers and plastic products. It is feature portability, ease of operation, with facility, high resolution and it is available in GB/T 531 -1999 and ISO 7619. It can be used in SLX hardness test stand.
- LX-C durometer is an essential characteristic of various foam, sponge and so on. It is feature portability, ease of operation, with facility, high resolution and it is available in HG/T2489-93.
- LX-D durometer is an essential characteristic of various hard rubber, colophony, glass, print board, fiber and so on. It is feature portability, ease of operation, with facility, high resolution and it is available in GB/T 531 -1999.
- The durometer test stand is R&D for Shore A, C, and D Durometer. The test stand construction includes operating handle, adjusted glass stage, die poise, clip beam of durometer and carrick column. The shore hardness testing will be more accurate with the stand.

Technical Specifications

Model	LX-A	LX-C	LX-D
Order#	842-115	842-125	842-135
Test Range	0-100 HA	0-100 HW	0-100 HD
Available Test Range	10-90 HA	10-90 HW	10-90 HD
Stroke	2.5 mm	2.5 mm	0~2.5 mm
Tip Dimension	0.79mm	SR2.5mm	SR0.1mm
Dimension	115x60x25mm	115x60x25mm	115x60x25mm
Net Weight	0.5kg	0.5kg	0.5kg

Testing stand	LX-AS	LX-CS	LX-DS
Order#	842-515	842-525	842-535
Stand Dimension (LxWxH)	116 x 161 x 340mm	116 x 161 x 340mm	116 x 161 x 340mm
Weight of Weight	About 1kg	About 1kg	About 1kg
Weight of Stand	About 5.5kg	About 5.5kg	About 5.5kg

Twin-index Analogue Shore Durometer

In contrary to the single-index analogue shore durometer LX-X Series, the second index of twin-index durometer LX-XT can be fixed at the position of maximum testing value after unload the testing force, it is much inconvenient for the value reading during shore testing.



LX-AT(842-215)

LX-CT(842-225)

LX-DT(842-235)

Applications

- Shore durometer are designed to determine the indentation hardness of material ranging from cellular products from to rigid plastics.
- LX-AT Shore Durometer, designed for testing the hardness of vulcanized rubber and plastic products, has simple structure, easy operation and reading, facility and high resolution. It complies with the standard of GB/T531-1999 and other relevant standard.
- LX-CT Micropore Material Durometer , designed for testing the hardness of foam, sponge, shoe microporous material, etc. It is in accordance with HG/T2489-93.
- LX-DT Shore Durometer is designed for testing the hardness of hard rubber, resin, glass, printed board, fiber and so on. It is in accordance with GB/T531-1999.
- The durometer test stand is R&D for Shore A, C, and D Durometer. The test stand construction includes operating handle, adjusted glass stage, die poise, clip beam of durometer and carrick column. The shore hardness testing will be more accurate with the stand.

Technical Specifications

Model	LX-AT	LX-CT	LX-DT
Order#	842-215	842-225	842-235
Test Range	0-100 HA	0-100 HW	0-100 HD
Available Test Range	10-90 HA	10-90 HW	20-90 HD
Stroke	2.5 mm	2.5 mm	0~2.5 mm
Tip Dimension	0.79mm	SR2.5mm	SR0.1mm
Dimension	115x60x25mm	115x60x25mm	115x60x25mm
Net Weight	0.5kg	0.5kg	0.5kg

Coating Thickness Gauge TG-100 series



TG-100 (762-106)

Applications:

F Type Magnetic induction:

Can measure the thickness of non-magnetic coating layers on magnetic substrate

Such as: (aluminum, chrome, copper, enamel, rubber, paint) on magnetic substrate (steel, iron, alloy and magnetic stainless steel)

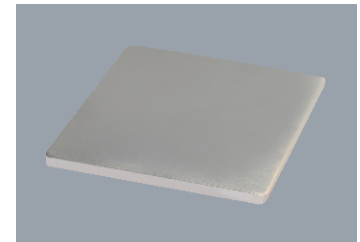
NF Type Eddy Current:

Can measure the thickness of nonconductive coating layers covered on nonferrous substrate.

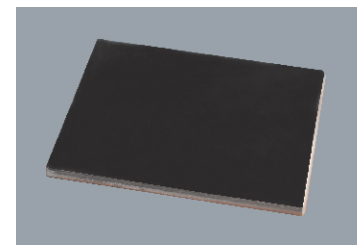
Such as: (enamel, rubber, paint, varnish, plastic anodic-oxide layer) covered on nonferrous substrate (aluminum, brass, zinc, tin and nonmagnetic stainless steel)

Technical Specifications

Model	TG-100
Order#	762-106
Measuring range	0-1250um/0-50mil (default range)
Operating principle	Ultrasonic
Resolution	0.1/1
Min. radius work piece	F: Convex 1.5mm / Concave 25mm N: Convex 3mm / Concave 50mm
Min. measuring area	6mm
Min. sample thickness	0.3mm
Battery indicator	low battery indicator
Accuracy	$\pm 1-3\%$ or $\pm 2.5\mu\text{m}$
Metric/ imperial	convertible
Power supply	4x1.5V AAA(UM-4)battery; Auto switch off
Operating conditions	Temperature: 0~45°C (32FH~104FH), Humidity $\leq 90\%$ RH
Dimensions	126x65x27mm
Weight	81g(not including battery)



F Calibration base set



N Calibration base set



Calibration foil set

Standard Delivery	Order#	Standard Delivery	Order#
F Calibration base set	761-616	Calibration foil set	761-636
N Calibration base set	761-626	Carrying case	761-901
Instruction manual	TG-100		

Coating Thickness Gauge TG-200 series



TG-200 (761-106)

Applications:

F Type Magnetic induction:

Can measure the thickness of non-magnetic coating layers on magnetic substrate

Such as: (aluminum, chrome, copper, enamel, rubber, paint) on magnetic substrate (steel, iron, alloy and magnetic stainless steel)

NF Type Eddy Current:

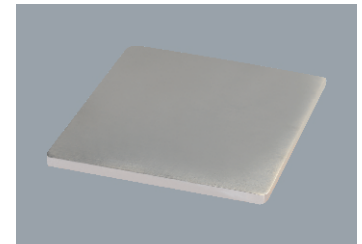
Can measure the thickness of nonconductive coating layers covered on nonferrous substrate.

Such as: (enamel, rubber, paint, varnish, plastic anodic-oxide layer) covered on nonferrous substrate (aluminum, brass, zinc, tin and nonmagnetic stainless steel)

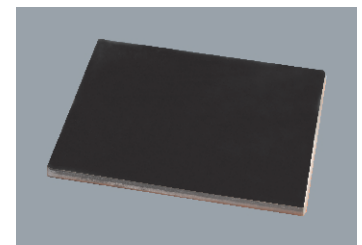
Technical Specifications

Model	TG-200
Order#	761-106
Measuring range	0-1250um/0-50mil (default range)
Operating principle	Ultrasonic
Resolution	0.1/1
Min. radius work piece	F: Convex 1.5mm / Concave 25mm N: Convex 3mm / Concave 50mm
Min. measuring area	6mm
Min. sample thickness	0.3mm
Battery indicator	low battery indicator
Accuracy	$\pm 1-3\%$ or $\pm 2.5\mu\text{m}$
Metric/ imperial	convertible
Power supply	4x1.5V AAA(UM-4) battery; Auto switch off
Operating conditions	Temperature: 0~45°C (32°F~104°F), Humidity $\leq 90\%$ RH
Dimensions	126x65x27mm
Weight	81g(not including battery)

Standard Delivery	Order#	Standard Delivery	Order#
F Type probe	761-416	Calibration foil set	761-636
N Type probe	761-426	Carrying case	761-901
F Calibration base set	761-616	Instruction manual	TG-200
N Calibration base set	761-626		



F Calibration base set



N Calibration base set



Calibration foil set

Ultrasonic Thickness Gauge MT160



MT160 (761-121)

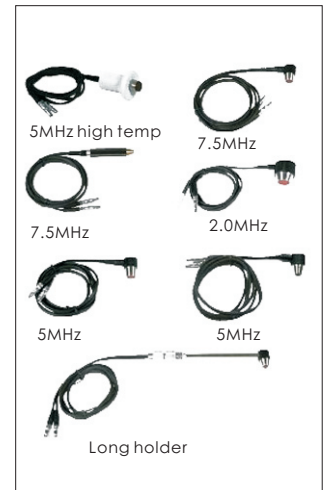
Applications:

Ultrasonic thickness gauge adopts the theory of sound wave to measure a wide range of material, such as metals, plastic, ceramics, composites, epoxies, glass and other ultrasonic wave well-conductive materials.

Functions:

- Five transducer models are available for special application ,including for coarse grain material and high temperature applications.
- Probe-Zero, Sound-Velocity-Calibration.
- Two-Point Calibration.
- Two working modes: Single point mode and Scan mode.
- Coupling status indicator showing the coupling status.
- Battery information indicates the rest capacity of the battery.
- Auto sleep and auto power off function to conserve battery life.
- Optional software to process the memory data on the PC.
- Optional thermal mini-printer to print the measured data via RS232 port.

Technical Specifications	MT160
Order#	761-121
Display	4.5 digits LCD with EL backlight
Measuring Range	0.75~300mm (in Steel)
Sound Velocity Range	1000~9999 m/s
Resolution	0.1/0.01mm (selectable)
Accuracy	± (0.5%Thickness+0.04) mm, depends on materials and conditions
Units	Metric / English unit selectable
Communication	RS232 serial port
Power Supply	Two "AA" size, 1.5 volt alkaline batteries. 100 hours typical operating time (EL backlight off)
Dimension	150 x 74 x 32 mm
Net Weight	245 g



Transducers

Transducers:

Mode	Order#	Diam.mm	Freq.MHz	Measuring Range	Lower Limit	Descriptionk
N02	751-422	2	22	3.0mm~300.0mm (In Steel) 40mm (in Gray Cast Iron Ht200)	20	for thick, highly attenuating, or highly scattering materials
N05	751-402	5	10	1.2mm~230.0mm (In Steel)	20*3.0mm	Normal Measurement
N05/90°	751-412	5	10	1.2mm~230.0mm (In Steel)	20*3.0mm	Normal Measurement
N07	751-432	7	6	0.75mm~80.0mm (In Steel)	15*2.0mm	For thin pipe wall or small curvature pipe wall measurement
HT5	751-442	5	14	3mm~200mm (In Steel)	30	For high temperature (lower than 300°C) measurement.

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
Software	751-801	USB Data Cable	751-811	Accessories Box	751-921

Ultrasonic Thickness Gauge MT200



MT200 (761-111)

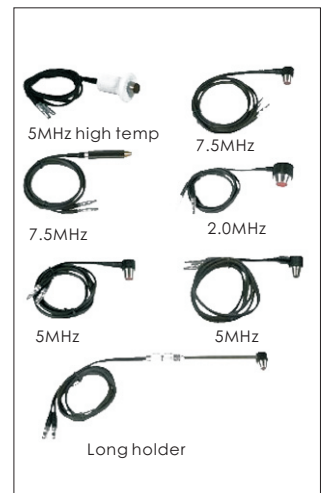
Applications:

Ultrasonic thickness gauge adopts the theory of sound wave to measure a wide range of material, such as metals, plastic, ceramics, composites, epoxies, glass and other ultrasonic wave well-conductive materials.

Functions:

- Five transducer models are available for special application ,including for coarse grain material and high temperature applications.
- Probe-Zero, Sound-Velocity-Calibration.
- Two-Point Calibration.
- Two working modes: Single point mode and Scan mode.
- Coupling status indicator showing the coupling status.
- Battery information indicates the rest capacity of the battery.
- Auto sleep and auto power off function to conserve battery life.
- Optional software to process the memory data on the PC.
- Optional thermal mini-printer to print the measured data via RS232 port.

Technical Specifications	MT 200
Order#	761-111
Display	4.5 digits LCD with EL backlight
Measuring Range	0.75~300mm (in Steel)
Sound Velocity Range	1000~9999 m/s
Resolution	0.10mm
Accuracy	± (0.5%Thickness+0.04) mm, depends on materials and conditions
Units	Metric / English unit selectable
Communication	RS232 serial port
Power Supply	Two "AA" size, 1.5 volt alkaline batteries. 100 hours typical operating time (EL backlight off)
Dimension	150 x 74 x 32 mm
Net Weight	245 g



Transducers

Transducers:

Mode	Order#	Diam.mm	Freq.MHz	Measuring Range	Lower Limit	Descriptionk
N02	751-422	2	22	3.0mm~300.0mm (In Steel) 40mm (in Gray Cast Iron Ht200)	20	for thick, highly attenuating, or highly scattering materials
N05	751-402	5	10	1.2mm~230.0mm (In Steel)	20*3.0mm	Normal Measurement
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N07	751-432	7	6	0.75mm~80.0mm (In Steel)	15*2.0mm	For thin pipe wall or small curvature pipe wall measurement
HT5	751-442	5	14	3mm~200mm (In Steel)	30	For high temperature (lower than 300°C) measurement.

Standard Delivery	Order#	Standard Delivery	Order#	Standard Delivery	Order#
Software	751-801	USB Data Cable	751-811	Accessories Box	751-931