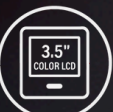


# PORTABLE HARDNESS TESTER

## MR-HD700/ MR-HD700 WITH NABL

Combining Ultrasonic Contact Impedance (UCI) and Leeb Rebound testing methods



**METERDI**<sup>®</sup>  
INSTRUMENTS

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# PORTABLE HARDNESS TESTER

## METERDI MR-HD700/ MR-HD700 WITH NABL

The **METERDI MR-HD700** is a versatile and high-precision hardness tester, meticulously engineered for accurate monitoring of metal hardness across diverse industrial environments.

Combining Ultrasonic Contact Impedance (UCI) and Leeb Rebound testing methods, the MR-HD700 delivers unmatched flexibility for incoming inspection, in-process monitoring, and final quality control of metal components.

### Applications

The MR-HD700 is ideal for evaluating the hardness of:

- Carbon steels and structural steels
- Surface-hardened and heat-treated materials
- Corrosion-resistant and stainless steels
- Aluminum and copper alloys
- Galvanized coatings and weld zones
- Thin-walled, small, and complex-shaped products
- Mirror-finished shafts, blades, and gear teeth

It effectively resolves variations in hardness results that may arise between departments or subcontractors during component acceptance, offering precision comparable to stationary laboratory hardness testers.

### Design and Display

- Built for rugged industrial environments, the MR-HD700 features a durable, dust- and moisture-resistant housing with protective rubber inserts. The instrument is equipped with a bright 3.5" color TFT LCD display and a user-friendly interface, ensuring effortless operation in laboratories, workshops, or outdoor conditions.



### Dynamic (Leeb) Sensor

The dynamic Leeb sensor is designed for testing large and heavy metal structures, ensuring reliable and repeatable measurements.

Interchangeable impact devices with varying spring stiffness and impact energy levels allow precise testing of different materials and geometries.

Applicable Standard: ISO 16859 — Metallic Materials — Leeb Hardness Test and ASTM A956/A956M-22 — Standard Test Method for Leeb Hardness Testing of Steel Products



### Ultrasonic (UCI) Sensor

The UCI probe is ideal for measuring hardness in grooves, small-radius surfaces, and hard-to-reach areas. It provides accurate results even on polished, thin-walled, or complex components, such as shaft necks, turbine blades, and gear teeth.

Applicable Standard: ASTM A1038 – Standard Test Method for Portable Hardness Testing by the Ultrasonic Contact Impedance Method.

# PORTABLE HARDNESS TESTER SPECIFICATIONS

## METERDI MR-HD700/ MR-HD700 WITH NABL

Measurement range for the main scales. *Extended calibration is possible when certified reference samples are available for each hardness scale.		
Rockwell	20 – 70 HRC*	
Brinell	30 – 650 HB*	
Vickers	230 – 940 HV*	
Measurement error	Subject to following recommendations *	Requirements of ISO and ASTM standards
Rockwell	±0.2 HRC	±2 HRC
Brinell, in the range 90-180 HB 180-250 HB 250-460 HB	± 3 HB	±10 HB ±15 HB ±20 HB
Vickers in the range 240-500 HV 500-800 HV 800-940 HV	± 3 HV	+/- 15 HV +/- 20 HV +/- 25 HV
Diameter of the surface for installing the sensor		
For the ultrasonic sensor	– from 1 mm on the plane, from 5 mm/0.197" in a blind hole (groove)	
For the dynamic sensor:	from 14 mm/0.551" on the plane	
The recommended roughness of the controlled product		
For a dynamic sensor type 'D' type 'G'	3.2 Ra, 7.2 Ra	
For an Ultrasonic Sensor	1.6 Ra	
Algorithm of false values	Yes	
Materials	Ultrasonic sensor (UCI) – pre-calibrated for steel	
	Dynamic sensor – pre-calibrated for steel, cast iron, stainless steel, aluminum, bronze, brass, and copper	
	Additional user materials for calibration	
Calculations	Average value for 1-20 measurements; Minimum, maximum, average values; Algorithm for rejecting incorrect measurements	
Scale conversion	Rockwell: HRC, HRB, HRA, and others Brinell: HBW (various ranges) Vickers: HV1, HV5, HV10, etc. Shore: HS-D, HS-C Leeb: HL (D, G, C, DL probes) Tensile Strength: MPa (approximate for steels)	
Programmable scales	Additional scales beyond 100	
Construction of graphs	All points from the series that were considered in the calculation of the mean value	
Language	English, Indian Language Optional	
Memory capacity	128Mb (Possibility of saving more than 1000 measurements)	
Device body	Impact-resistant plastic casing with a rubber bumper (fall protection)	
Display	3.5" color TFT LCD display	
PC connection	USB, results processing, report generation	
Power supply	Rechargeable, Li-Pol, 3.7V 3000mAh	
Work without recharging	9 hours	
Operating temperature	-10...+45 °C, no condensation	
Overall dimensions	185 x 98 x 42 mm (including rubber inserts)	
Weight	0.35 kg	



# PORTABLE HARDNESS TESTER

## METERDI MR-HD700/ MR-HD700 WITH NABL

### Key Features



- Dual measurement modes: Ultrasonic (UCI) and Dynamic (Leeb)
- Supports 100+ custom scales for specialized applications
- Rugged construction: Dust- and moisture-resistant design for field or lab use
- Intuitive operation: “Turn ON and Work” interface for fast and simple testing
- High-visibility color display: Backlit screen ensures clarity in bright or dim environments
- Measurement alert system: Notifies users when values exceed set limits
- Advanced statistical analysis: Enables quick evaluation of test results
- Single-point calibration: Simple and accurate user calibration process
- Extensive memory: Stores 100+ user-defined scales and complete test histories
- Custom scales: User-programmable hardness scales for special applications
- Data management: Stores results with date and time stamps; view data in tables or graphical form
- All-weather performance: Stable operation across wide temperature and humidity ranges

### Delivery Scope

- 1 x Universal Portable Hardness Tester MR-HD700
- 1 x UCI Measuring Probe
- 1 x Rebound Probe Type D
- 1 x Test Block
- 1 x Charger
- 1 x USB Cable
- 1 x Cable for Type D Sensor
- 1 x Cable for UCI Sensor
- 1 x Carrying Case
- 1 x Instruction Manual
- 1 x AC USB charger
- 1 x Protective case
- 1 x Warranty Card
- 1 x Factory Calibration Certificate
- 1 x NABL Calibration Certificate (Optional)
- Additional types of Sensors (Optional)
- Additional hardness measurement scales (Optional)








The METERDI MR-HD700 redefines portability and precision in hardness testing. With its dual-mode measurement capability, ergonomic design, and compliance with international standards (ASTM A956 and ASTM A1038), it is the ultimate solution for comprehensive metal hardness assessment in industrial and laboratory settings.

# PORTABLE HARDNESS TESTER

## METERDI MR-HD700/ MR-HD700 WITH NABL



### OPTIONAL ADDITIONAL LEEB PROBE






Type	Image	Specifications
<b>DC</b>		The Dynamic Probe Type DC-R is designed for precise hardness testing in tight spaces like holes, cylinders, and internal machine parts. Its compact build and advanced design ensure reliable results in challenging environments.
<b>C</b>		The Leeb Probe Type C is designed for testing surface-hardened, coated, and thin or impact-sensitive materials. Its small indentation ensures accurate results with minimal surface damage, making it perfect for delicate applications.
<b>G</b>		The Leeb Probe Type G is built for hardness testing of solid components like heavy castings and forgings. Its robust design ensures reliable performance on large, dense materials where standard probes fall short.
<b>D+15</b>		The Leeb Probe Type D+15 is designed for hardness testing in grooves and recessed surfaces. Its extended design enables access to hard-to-reach areas, making it ideal for specialized testing applications.
<b>DL</b>		The Leeb Probe Type DL is designed for precise hardness testing in tight spaces and groove bases. Its slim design ensures accurate measurements where access is limited, making it ideal for specialized testing applications.

# PORTABLE HARDNESS TESTER

## METERDI MR-HD700/ MR-HD700 WITH NABL

### OPTIONAL ADDITIONAL UCI PROBE



Type	Image	Specifications
<b>UCI-L</b>		The METERDI Sensor UCI-L (50 N) is a precision Ultrasonic Contact Impedance probe designed for hardness testing in confined or hard-to-reach areas, offering accurate, repeatable, and non-destructive measurements on complex geometries such as grooves, pipes, and weld seams.
<b>UCI</b>		The METERDI Sensor UCI-05 (5 N) is a high-sensitivity UCI probe designed for microhardness testing of ultra-thin coatings and delicate surfaces, delivering precise, repeatable, and non-destructive measurements ideal for micro-components, plating, and fine surface analysis.
<b>UCI-S</b>		The METERDI Sensor UCI-S (10 N) is a precision Ultrasonic Contact Impedance probe designed for accurate, non-destructive hardness testing of electroplated and thin coatings, ensuring reliable measurement of chrome, nickel, copper, and other delicate layers without damaging the surface.
<b>UCI-R</b>		The METERDI Sensor UCI-R (100 N) is a high-load Ultrasonic Contact Impedance probe engineered for accurate hardness testing on rough or unpolished surfaces (up to Ra 5 $\mu$ m), ensuring reliable, repeatable, and non-destructive measurements on castings, forgings, and other challenging materials.
<b>UCI-P</b>		The METERDI Sensor UCI-P (50 N) is a specialized Ultrasonic Contact Impedance probe designed for precise hardness testing inside pipes, tanks, and confined internal surfaces ( $\geq 80$ mm diameter), delivering accurate, repeatable, and non-destructive results even in challenging industrial environments.



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