

PORTABLE UNIVERSAL HARDNESS TESTERS



● Universal

● Portable

● Dynamic

TH-110



The completely new -entry level- TH-110, part of the unbeatable series of TIME Leeb type dynamic hardness testers offers a very affordable but accurate hardness testing solution for on-site testing in workshops and in field operation. The unit assures accurate and reliable measurement.

All results and statistics can be directly printed on the compact -build on- fast thermal printer.

Any metallic products with a minimum solid mass of 2 kg can be tested according to the Leeb principle and directly converted to any common hardness scale. All test results appear immediately on the display, while you easily can toggle between scales and conversions.

To avoid constant change of batteries and pollution, the TH-110 is equipped with long life chargeable batteries that provide over 16 hours of continuous operation.

ULTRASONIC HARDNESS TESTER

TH-110

Dynamic portable hardness tester

- Test results appear directly on the large display
- According to ASTM and DIN standards
- Display scales HV, HB, HRC, HRB, HRA, HS and conversion to tensile strength
- Highly accurate readings $\pm 0.5\%$ at 800 HL
- Correction for impact direction 360 degrees
- Chargeable battery pack to ensure many hours of undisturbed testing and printing
- Direct keys for easy set up of testing parameters
- Thermal mini-printer installed on the main unit
- Ridged ABS anti-shock casing with sealed keypad

TH-110

DYNAMIC PORTABLE

Standard delivery

- Main unit with impact device type D
- Printer (on top)
- Test block with HLD-value
- Charger
- Cleaning brush
- Coupling paste
- Table support for main unit
- Certificate
- Manual
- Plastic carrying case

Optional accessories

- Special impact devices (see overview on next page)
- Test blocks UKAS certified in any hardness parameter
- Support rings for convex and concave surfaces

Technical specifications

Hardness parameter	HL, HRC, HRB, HV, HB, HS
Measuring range / metallic materials	See table above
Tensile strength U.T.S. range (steel only)	σ_b from 374 to 2652
Accuracy	Within $\pm 0.5\%$ at 800HL
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 (see next page)
Workpiece max. hardness value	900HLD
Workpiece radius (convex/concave)	Rmin = 50mm (with support ring Rmin= 10mm)
Min. Workpiece weight	2~5kg on stable support 0.05~2kg with compact coupling
Workpiece min. thickness coupled	5mm (except with impact device G: 10mm, C: 1mm)
Workpiece min. case hardened depth	0.8mm
Indentation depth	See next page: Impact devices data
Power	Rechargeable Li battery, 6V (1 pc)
Charger	6V, 500mA (1.8VA)
Charging time	2.5 - 4 hours
Operating temperature	0 to 40°C
Overall dimensions	230mm x 90mm x 47mm
Weight	495 gr (including impact device and printer)

IMPACT DEVICES FOR SPECIAL APPLICATIONS

Hardness testing devices for models TH-110/120/160

Impact body D
Impact body G



IMPACT DEVICE E

Special feature: Synthetic diamond test tip (approximately 5000 HV).
Application: For measurements in the extremely high hardness range (always in excess of 50 HRC/650 HV). Tool steels with high carbide content inclusions. For measurements up to 1200 HV.



IMPACT DEVICE G

Special feature: Enlarged test tip, increased impact energy (approximately 9 times that of type D) low demands on measuring surface finish. For measurements in the Brinell range only (max. 650 HB).
Application: Solid components, e.g. heavy castings and forgings.

IMPACT DEVICE D

Special feature: Universal standard unit.
Application: For the majority of hardness testing assignments.

IMPACT DEVICE C

Special feature: Reduced impact energy (approximately 1/4 of type D).
Application: Surface hardened components, coatings, thin walled or impact sensitive components (small measuring indentation).

IMPACT DEVICE DC

Special feature: Extremely short impact device. Spring loaded with a special loading stick. Otherwise as for type D.
Application: Use in very confined spaces, e.g. in holes, cylinders or for internal measurements on assembled machines.

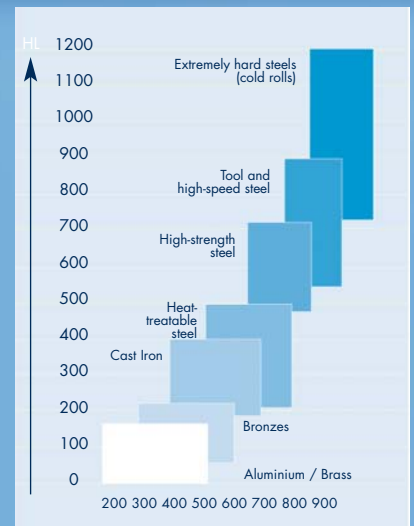
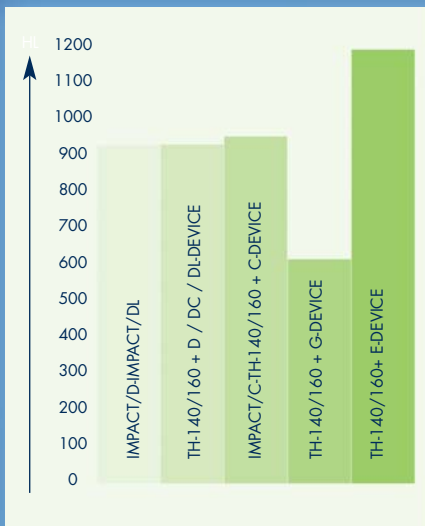
IMPACT DEVICE D+15

Special feature: Particularly slim front section and with measuring coil moved back.
Application: Hardness measurements in grooves and on recessed surfaces.

IMPACT DEVICE DL

Special feature: Needle front section diameter 4.2mm, length 50mm.
Application: Measurements in extremely confined spaces

Impact Device G



IMPACT DEVICES FOR SPECIAL APPLICATIONS

Hardness testing devices for models TH-110/120/160

Technical specifications

Impact devices:	D/DC/DL	D+15	C	G	E
Impact energy:	11 Nmm	11 Nmm	3 Nmm	90 Nmm	11 Nmm
Mass of impact body:	5.5 gr DL: 7.3	7.8 gr	3.0 gr	20 gr	5.5gr
Test tip					
■ Hardness	1600HV	1600HV	1600HV	1600HV	5000HV
■ Diameter	3mm	3mm	3mm	5mm	3mm
■ Material			Tungsten carbide		Diamond
Impact body					
■ Diameter	20mm	20mm	20mm	30mm	20mm
■ Length	147/86mm	162mm	141mm	254mm	155mm
■ Weight	75/50gr	80gr	75g	250g	80g
Max. hardness of sample:	940 HV	940HV	1000HV	650HB	1200HV
Preparation of surface					
■ Roughness class ISO	N7	N7	N5	N9	N7
■ Max. roughness depth Rt	10µm	10µm	2.5µm	30µm	10µm
■ Average roughness Ra	2µm	2µm	0.4µm	7µm	2µm
Min. weight of sample					
■ Of compact shape	5kg	5kg	1.5kg	15kg	5kg
■ On solid support	2kg	2kg	0.5kg	5kg	2kg
■ Coupled on plate	0.1kg	0.1kg	0.02kg	0.5kg	0.1kg
Min. thickness of sample					
■ Coupled	3mm	3mm	1mm	10mm	3mm
■ Min. thickness of hardened layers	0.8mm	0.8mm	0.2mm	-	0.8mm

Indentation of test tip

Impact devices:	D/DC/DL	D+15	C	G	E
With 300 HV					
■ Diameter	0.54mm	0.54mm	0.38mm	1.03mm	0.54mm
■ Depth	24µm	24µm	12µm	53µm	24µm
With 600 HV					
■ Diameter	0.45mm	0.45mm	0.32mm	0.90mm	0.45mm
■ Depth	17µm	17µm	8µm	41µm	17µm
With 800 HV					
■ Diameter	0.35mm	0.35mm	0.30mm	-	0.35mm
■ Depth	10µm	10µm	7µm	-	10µm

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Changes in products and/or product specifications can emerge due to new technologies and continuous development.

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