

Ultrasonic Hardness Tester

The PHASE II ultrasonic/dynamic portable hardness testers are capable of measuring the surface hardness of a broad variety of metals on flat, round, thin or large surfaces. Unlike the standard Dynamic hardness testers, these "state-of-the-art" portable hardness testers incorporate "Ultrasonic UCI" technology, which enables the hardness testing of very thin and small workpieces, which otherwise could not be tested accurately using a portable device. Non-destructive in it's function, these hardness testers allow for the testing of highly sensitive or finished parts that previously could not be tested in an operational setting. The non-destructive (ndt) feature of these hardness testers allow the operator to accurately test parts without causing physical or structural damage that would normally lead to disposal or refinish of operators part.



Non-Destructive! • 50% Faster Test Time!

MEASURING METHOD: UCI – Ultrasonic Contact Impedance

A hardness testing method based on the measurement of the frequency shift of a resonating rod caused by the essentially elastic nature of the finite area of contact between the indenter and the test piece during the penetration. Described as a hardness testing practice using a calibrated instrument by pressing a resonating rod with a Vickers style Diamond indenter with a fixed force against the surface of the part to be tested.

FUNCTIONS: MET-U1A and MET-UDA

- Perform hardness tests on variety of metals from thin to very large parts
- Display test results in all various hardness scales: Scales: HRC, HRB, HRA, HB, HV, HRN, HRT, HS, HLD
- Printout to PC via USB interface w/ extended memory locations

MET-U1A Hardness Tester (MET-U1A and UDA)

Standard Accessories:

- Base Instrument
- 10N (1kgf) Hand-Held Probe
- Calibrated HRC Test Blocks
- Custom Carry Case
- Battery Charger
- Operation Manual

Functions:

- Easy To Read Menu Operation
- Large LCD Display w/ Back Light
- USB Interface
- Automatic Conversions to: Brinell, Rockwell, Vicker and Leeb
- Automatic Mean Value
- Data Archive Capacity

Specifications:

- Tolerance +/- 3.6% deviation of average from the reference value of the test block with a minimum of 5 tests
- Minimum Thickness of sample: .040"/1mm
- Materials: steel & cast steel, alloy tool steel, stainless steel, grey cast iron, spheroidal iron, cast aluminum, brass, bronze, wrought copper alloy.
- Battery type: NiMH Re-Chargeable (4xAA)
- Operating temperature: 5-104 degrees F
- Dimensions: 7.25" x 3.16" x 1.68" (HxWxD)
- Weight: 1.7 lbs (UD)



TEST DEVICE	U1 (UCI)	D1 (DYNAMIC)
Length	160mm	140mm
Diameter	25mm	25mm
Indentation Depth	30µm	300µm
Pressure Force	14.7N	11Nm
Transducer Test Life (approx)	200,000	50,000
Min. Thickness for test	1mm	12mm
Min. Radius for Test	5mm	10mm
Max Roughness of surface	Ra 2.5µm	Ra 3.2µm
Max Archive	100 Tests	100 Tests
Time of Test	2 sec.	2 sec.

SCALES	MEASUREMENT RANGE
Rockwell C	20-67 HRC
Rockwell B	59-99 HRB
Brinell	75-650 HB
Vickers	75-1000 HV
Leeb	200-900HL
HRA	20-88 HRA
HRN	20-91 HRN
HRT	12-82 HRT
HSD	23-102 HSD

The PHASE II ultrasonic hardness testers are capable of measuring the surface hardness of a broad variety of metals on flat, round, thin or large surfaces. Accurate measurements of steel, cast steel, alloy steel, gray cast iron, cast iron, cast aluminum alloy, brass, bronze and copper are easily attained with this compact instrument.

MET-U1A Ultrasonic Hardness Tester

MET-UDA Combination Ultrasonic/ Dynamic Hardness Tester

MET-1000 Precision Test Stand