

PORTABLE HARDNESS TESTERS

MEASURING METHODS: UCI & Leeb

There are two basic methods of portable hardness testing that is accepted in the field today.

“Ultrasonic Contact Impedance” is based on a 136 degree diamond at the end of a vibrating rod being depressed into the test surface at a fixed load. The difference in Ultrasonic vibration frequency is then calculated into a hardness value. The UCI test procedure is slower than the Dynamic Impact style, however the “UCI” method of hardness testing is portable, easy and accurate. It also has its own advantages when utilized for certain testing applications. UCI testers are not restricted to large mass items like dynamic type testers. These units can test metals as thin as 1mm and at a hardness value as low as 20HRC (75HB).

They also excel at performing hardness tests on larger, harder metals as well. Another reason for the rise in popularity is due to the fact that the UCI method is categorized as “Non-Destructive”. That translates into less scrap parts/ lower manufacturing costs due to necessary inspections.

“Dynamic Impact” is based on the Leeb principle of hardness, developed by Dietmar Leeb in the 1970’s. A spring loaded impact body is thrust to the test surface, effecting rebound. The speed of both the initial thrust and the rebound is measured in a non-contact mode. This is calculated as a Leeb hardness value and then automatically converted to Rockwell C, B, Brinell, Vickers and Shore Values. It has effectually brought easy, fast and accurate results to portable hardness testing.

PHT-6000 Series for UCI (Ultrasonic Contact Impedance) & Dynamic Impact (Leeb) Hardness Testing

UCI Portable Hardness Tester w/manual probe

PHT-6001 UCI Hardness Tester w/1kgf Probe For use on polished surfaces. Below Ra 125µin

PHT-6002 UCI Hardness Tester w/2kgf Probe For use on smooth surfaces. Below Ra 200µin

PHT-6005 UCI Hardness Tester w/5kgf Probe For use on machined surfaces. Below Ra 400µin

PHT-6010 UCI Hardness Tester w/10kgf Probe For use on rough surfaces. Below Ra 600µin





UCI Portable Hardness Tester w/motorized probe

PHT-6030 UCI Hardness Tester w/.30kgf Probe Best for checking coating layer hardness; Finished thin parts

PHT-6080 UCI Hardness Tester w/.80kgf Probe Best for smooth bearing type surfaces

PHT-6100 UCI Hardness Tester w/1kgf Probe Best for machined surfaces

Features:

- Non-Destructive hand held hardness tester
- Combines UCI and Leeb hardness testing in one state of the art device
- Test steel with min thickness of .08" and unlimited max thickness
- Blazing fast test results
- Rockwell, Brinell Vickers conversions shown on display
- Large Memory w/USB Output
- Choice of manual UCI probes; 1kg, 2kg, 5kg & 10kg
- Optional Motorized Probes: .30kg, .80kg, & 1kgf
- Available Impact Devices(Leeb) D, DC, D+15, G & DL

Specifications:

- Hardness Range: HRC: 20.3- 68; HRB: 61-85.6 ; HV: 80-1599; HB: 76-618
- Scale Selection: Rockwell C (HRC); Rockwell B (HRB); Rockwell A (HRA); Brinell (HB); Vickers (HV); Leeb (HLD)
- Tolerance: +/- 3.0% deviation of average from the reference value of the test block with a minimum of 5 tests
- Display Type: LCD Color Screen w/Backlight, adjustable brightness
- Language Selection: English, German, Chinese, Spanish, etc.
- Data Logger: Letters, Numerals
- Data Memory: 2000 groups of measured data ; 20 groups of calibration data
- Statistical Software Supplied-can be saved in Word or Excel
- Data Output: USB – cable supplied
- Power Supply Rechargeable Lithium Battery: Voltage-4.2V, 4800mAh
- Auto Power Off: 5 minutes
- Recharging Time: Approx. 8 hours
- Battery Usage: Approx. 6 hours (no backlight)
- Net Weight(base unit): 2lbs (w/probe)
- Unit Dimensions: 7.00" H x 3.10" W x 1.10" D