WE CREATE SYNERGIES

PORTABLE HARDNESS TESTERS

ISO 9001

www.crase.com

COMBINED HARDNESS TESTER T-UD2

The device works with both UCI (*Ultrasonic Contact Impendance*) and dynamic (*Leeb*) probes. User gets the benefits of two methods of measurement.

The **Leeb probe** is used for measuring the hardness of non-ferrous metals, cast iron, coarse-grained materials, massive products etc.

The **UCI probe** is used for measuring the hardness of small items, objects with a thin wall, complex form, and to measure the hardness of surface hardened layers.

Available with Bluetooth

UCI probe Leeb probe

THE ADVANTAGES OF T-UD2

- Hardness measurement of any mass products with a thickness of 1 mm – inaccessible to the dynamic (Leeb) hardness testers (small parts, thin-walled structures, pipes, tanks, steel sheets, articles of complex shape, hardness control of metal coatings, etc.)
- Small imprint after measuring
- Measuring the hardness of surface hardened layer
- Wide range of hardness
- Only basic function, nothing extra
- Possibility to use in field conditions with high humidity and dust
- Convenience and ease of measurement
- Optimized number of buttons
- Contrast display with bright back-lighting
- Automatic recognition of probe
- Indication of the type of connected probe
- Calibrations stored in memory of probe
- Very easy in operation and calibration
- Internal memory and communication with PC
- New, intuitive menu with tips on the buttons
- Temperature range down to - 40°C
- Water resistant case
- Rubber bumper protected case

MANY MODES OF MEASUREMENT

Normal mode

Statistics mode

Smart mode

Signal mode

OPTIONAL BLUETOOTH MODULE

Thanks to the special NOVOTEST app for Android, it is possible to do hardness measurements, calibrate the device, set up a convenient display of values, save the results of hardness measurements, synchronize the archive with your other devices and a PC, transfer measurement results to your colleagues with your smartphone.

Using a Bluetooth connection, your smartphone connects to the hardness tester and you have a completely new device. The intuitive interface, ample opportunities for documenting results, Internet access, touch screen, camera, microphone and GPS receiver of a smartphone turn the hardness tester T-UD2 into something completely unique and previously inaccessible.

WITH NOVOTEST APP IS POSSIBLE TO:

- Set and calibrate the hardness tester.
- Display measurement results in real time in numerical form with the construction of a graph, histogram or statistics.
- Take a picture of the test object with the putting of hardness marks.
- Create a video of the measured product.
- Recording audio notes about the tested object.
- Automatically save measurement's geolocation on Google maps.
- Display a Google map with markers of places of measurements made on it and the ability to view these measurements.
- Create the final comprehensive report on the measurement.
- Send a finished report to e-mail, messenger (or in any convenient way) directly from the application.
- Create folders and files with any names thanks to the flexible structure of the archive of measurements.
- Synchronize with PC and other smartphones.
- Access a cloud service for storing the archive of measurements.
- Automatically and manually synchronize the cloud measurement archives between devices.
- Use the Google navigation mode, building a route and accompanying to the point at which the measurements were made.
- Store archives of other devices with Bluetooth in one application.

COMBINED HARDNESS TESTER T-UD2

THREE TYPES OF UCI PROBES

Load	Advantages or benefits	Typical applications
98 N (10 kgf)	Leaves relatively large dent. Suitable for low finished surfaces.	Small forged products, cast materials, heat-treated materials, etc., turbine blades, inside tubes with ø> 90 mm.
50 N (5 kgf)	Considered to be the universal type for most general applications. 50 N of downward hand pressure is required to activate the probe. Surface finish equivalent to 80 grind or better.	Induction or carburized machined parts, e.g.. camshafts, turbines, weld inspection, HAZ. Measurement in grooves, gear tooth flanks and roots, turbine blades, inside tubes with ø> 90 mm.
10 N (1 kgf)	Load is easy to apply; provides control to test on a sharp radius. Only 10 N of downward hand pressure is required to activate the probe. Surface finish equivalent to 150 grind or better.	Ion-nitrided stamping dies and molds, forms, presses, thin-walled parts. Bearings, tooth flanks, turbine blades, inside tubes with ø> 90 mm.

TECHNICAL FEATURES

UCI probe types	1 kgf (10 N) - 5 kgf (50 N) - 10 kgf (98 N)
Leeb probe types	D, DC, DL, C, D+15, E, G
Indenter	Diamond indenter (UCI), hardened ball (Leeb)
Measuring direction	Any direction 360°
Data storage	Limited only by the memory card
Measurement hardness range: - Rockwell, HRC - Brinell, HB - Vickers, HV - Tensile strength, MPa	 20 - 70 90 - 450 230 - 940 370 - 1740
Measuring accuracy	HV ± 3%; HRC ± 1.5%; HB ± 3%
Hardness scale	HRC, HB, HV, MPa
Materials	- UCI probe: pre-calibrated for steel - Leeb probe: pre-calibrated for steel, alloy steel, cast iron, stainless steel, aluminum, bronze, brass, copper - Additional custom materials for calibration
Operating temperature range	-20 to +50° C
Power supply	2 AA batteries
Instrument dimensions	120 x 60 x 25 mm
Weight of electronic unit with batteries	0.2 kg (without probes)
Battery life	Not less than 20 hours

COMBINED HARDNESS TESTER T-UD3

The device works with both UCI (*Ultrasonic Contact Impendance*) and dynamic (*Leeb*) probes. User gets the benefits of two methods of measurement.

The **Leeb probe** is used for measuring the hardness of non-ferrous metals, cast iron, coarse-grained materials, massive products etc.

The **UCI probe** is used for measuring the hardness of small items, objects with a thin wall, complex form, and to measure the hardness of surface hardened layers.

Available with Bluetooth

UCI probe Leeb probe

THE ADVANTAGES OF T-UD3

- Hardness measurement of any mass products with a thickness of 1 mm – inaccessible to the dynamic (Leeb) hardness testers (small parts, thinwalled structures, pipes, tanks, steel sheets, articles of complex shape, hardness control of metal coatings, etc.)
- Small imprint after measuring
- Measuring hardness of the surface hardened layer
- Wide range of hardness
- Various measurement modes
- Calibration of any scale in any range
- Convenience and ease of measurement
- Large full color graphic display with bright back-lighting
- Automatic recognition of probe
- Indication of the type of connected probe
- Calibrations stored in memory of probe
- Extended temperature range down to - 40°C
- Internal memory and communication with PC
- New, intuitive menu with tips on the buttons
- Optional wireless mini-printer
- Water resistant case
- Rubber bumper protected case

MANY MODES OF MEASUREMENT

1 2 3 4 5

1. GRAPH - the mode of building the graph
2. HISTOGRAM - the mode of building the histogram
3. STATISTIC - the mode of statistics
4. SMART - the mode of filtering incorrect measurements
5. SIGNAL - the mode of displaying the signal (only for Leeb probe)

OPTIONAL BLUETOOTH MODULE

Thanks to the special NOVOTEST app for Android, it is possible to do hardness measurements, calibrate the device, set up a convenient display of values, save the results of hardness measurements, synchronize the archive with your other devices and a PC, transfer measurement results to your colleagues with your smartphone.

Using a Bluetooth connection, your smartphone connects to the hardness tester and you have a completely new device. The intuitive interface, ample opportunities for documenting results, Internet access, touch screen, camera, microphone and GPS receiver of a smartphone turn the hardness tester T-UD3 into something completely unique and previously inaccessible.

WITH NOVOTEST APP IS POSSIBLE TO:

• Set and calibrate the hardness tester.
• Display measurement results in real time in numerical form with the construction of a graph, histogram or statistics.
• Take a picture of the test object with the putting of hardness marks.
• Create a video of the measured product.
• Recording audio notes about the tested object.
• Automatically save measurement's geolocation on Google maps.
• Visualizzare una mappa di Google con le indicazioni dei luoghi delle misurazioni fatte e la possibilità di visionarle.
• Display a Google map with markers of places of measurements made on it and the ability to view these measurements.
• Create the final comprehensive report on the measurement.
• Send a finished report to e-mail, messenger (or in any convenient way) directly from the application.
• Create folders and files with any names thanks to the flexible structure of the archive of measurements.
• Synchronize with PC and other smartphones.
• Access a cloud service for storing the archive of measurements.
• Automatically and manually synchronize the cloud measurement archives between devices.
• Use the Google navigation mode, building a route and accompanying to the point at which the measurements were made.
• Store archives of other devices with Bluetooth in one application.

COMBINED HARDNESS TESTER T-UD3

THREE TYPES OF UCI PROBES

Load	Advantages and benefits	Typical applications
98 N (10 kgf)	Leaves relatively large dent. Suitable for low finished surfaces. Surface finish equivalent to 30 grind or better.	Small forged products, cast materials, heat-treated materials, etc., turbine blades, inside tubes with ø> 90 mm.
50 N (5 kgf)	Considered to be the universal type for most general applications. 50 N of downward hand pressure is required to activate the probe. Surface finish equivalent to 80 grind or better.	Induction or carburized machined parts, e.g.. camshafts, turbines, weld inspection, HAZ. Measurement in grooves, gear tooth flanks and roots, turbine blades, inside tubes with ø> 90 mm.
10 N (1 kgf)	Load is easy to apply; provides control to test on a sharp radius. Only 10 N of downward hand pressure is required to activate the probe. Surface finish equivalent to 150 grind or better.	Ion-nitrided stamping dies and molds, forms, presses, thin-walled parts bearings, tooth flanks, turbine blades, inside tubes with ø> 90 mm.

TECHNICAL FEATURES

UCI probe types	1 kgf (10 N) - 5 kgf (50 N) - 10 kgf (98 N)
Leeb probe types	D, DC, DL, C, D+15, E, G
Measuring range	HV: 230 ~ 940; HRC: 20 ~ 70; HB: 90 ~ 650 Tensile strength, MPa: 370 ~ 1740
Measuring accuracy	HV ± 3%; HRC ± 1.5%; HB ± 3%
Indenter	Diamond indenter (UCI), hardened ball (Leeb)
Data storage	Limited only by the memory card
Communication	Upload data to PC and export as a spreadsheet (USB cable and software included)
Hardness scale	HRC, HB, HV, HRB, HS, HL, MPa
Materials	- UCI probe: pre-calibrated for steel - Leeb probe: pre-calibrated for steel, alloy steel, cast iron, stainless steel, aluminum, bronze, brass, copper - Additional custom materials for calibration
Data display	Load applied/contact (UCI), angle (Leeb), single test result. Max., min., average of tests, number of tests, deviation, var. coeff, histogram, signal and smart mode
Indication	Color LCD display (320 x 240)
Operating environment	Temperature: -20 to +40° C; Humidity: 30 to 80% RH
Power supply	DC 4.5 V (3 AA batteries)
Instrument dimensions	160 x 75 x 30 mm
Net weight	Approx. 0.3 kg (without probe)
Battery life	Approx. 10 hours

COMBINED HARDNESS TESTERS T-UD2/3

STANDARD SET T-UD2

- Electronic unit
- UCI probe
- Leeb probe
- 2 AA batteries
- Charger
- USB cable
- Operating manual
- Software for PC
- Case

AVAILABLE OPTIONS T-UD2

- UCI probe
- Leeb probe
- Batteries
- Charger
- USB cable
- Set of hardness measures
- Case

STANDARD SET T-UD3

- Electronic unit
- UCI probe
- Leeb probe
- 3 AA batteries
- Charger
- USB cable
- Operating manual
- Software for PC
- Case

AVAILABLE OPTIONS T-UD3

- UCI probe
- Leeb probe
- Rubber bumper protected case
- Wireless printer
- Portable grinding machine
- Set of hardness measures
- Three types of UCI probes (10 - 50 - 98 N)
- Batteries
- Charger
- USB cable
- Case

WIRELESS HARDNESS TESTER LAB UCI

Wireless portable hardness tester which implements the UCI (*Ultrasonic Contact Impendance*) method.

FEATURES

• Ultra-portable device for quick hardness testing anywhere – in laboratories or in field conditions, with autonomous continuous operation up to 20 hours.
• UCI hardness test method has almost no boundaries in relation to the test object, so this method is the most versatile of the existing ones.
• Multifunctional application with a user-friendly interface and cloud archive.

The NOVOTEST Lab application allows users to:

• Set up and calibrate the device;
• Get illustrations of measurements as graphs, histograms, and statistics;
• Save measurements with text-, audio-, photo- and even videos protocols;
• Transfer the protocol in one click by any convenient messenger or e-mail;
• Synchronize archive with cloud storage.

WIRELESS HARDNESS TESTER LAB UCI

ULTRAPORTABLE
Wireless connection allows user to get rid of wires, blocks, and it makes the device as portable as possible. It fits in any bag or even just a pocket.

HIGH AUTONOMY
The device charges from any USB 5V port, be it a PC, car, or a power bank. From one full charge, the device can work for more than 20 hours in a row.

SPECIAL NOZZLE
The special nozzle for products helps test radius surfaces and get accurate measurements on the flat products, included in the standard set. The device can also be used without a nozzle for narrow and hard-to-reach places.

CALIBRATION FOR ANY METAL
The device has preset calibrations for steel, aluminum and brass. If necessary, users can calibrate the device for any metal-scale combination if samples are available.

CROSS-PLATFORM ARCHIVE MANAGEMENT INTERFACE
Create comprehensive protocols and synchronize your archive with cloud storage managed in the Google Chrome browser.

WIRELESS HARDNESS TESTER LAB UCI

ADVANTAGES OF LAB UCI

- Wireless
- Ultraportable
- Autonomous
- Universal
- Accurate
- Widely applicable
- Multifunctional
- Easy to use

The device connects with your smartphone through the NOVOTEST application!

SCARICALA DA Google Play

TECHNICAL FEATURES

Measuring range	HRC: 20~70, HB: 90~650, HV: 230~940, Tensile strength, MPa: 370~1740, User calibrations for any range (e.g.: HV20-2000)
Scales	HRC, HB, HV, HRA, HRB, MPa, and can be calibrated for any other
Materials	Steel, aluminum, brass and can be calibrated for any other
Weight	170 g
Dimensions	160 x 26 (36 with nozzle) mm
Battery life	20 hours
Power supply / Charging	Built-in battery / USB 5V
Operating environment	Temperature: -30°C ~ 60°C – Humidity: 30% ~ 80% R.H.

WIRELESS HARDNESS TESTER LAB UCI

STANDARD SET LAB UCI

- Hardness tester
- Special nozzle
- Software
- USB cable
- Case
- Operating manual

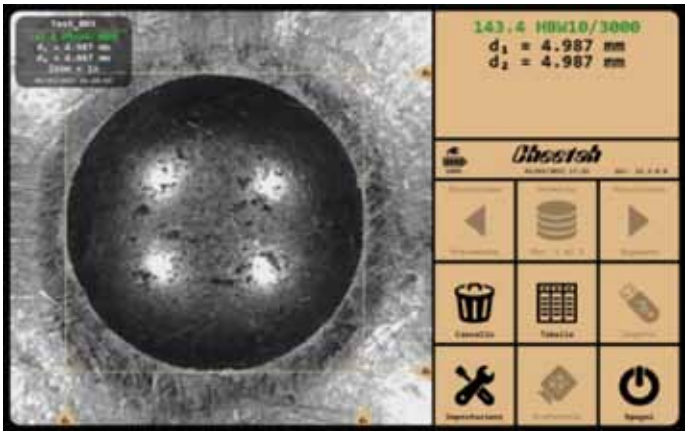
AVAILABLE OPTIONS LAB UCI

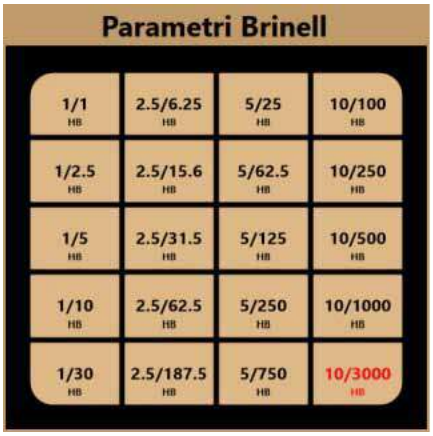
- Hardness test blocks
- UCI probe test stand for thin sheets
- Portable grinding machine

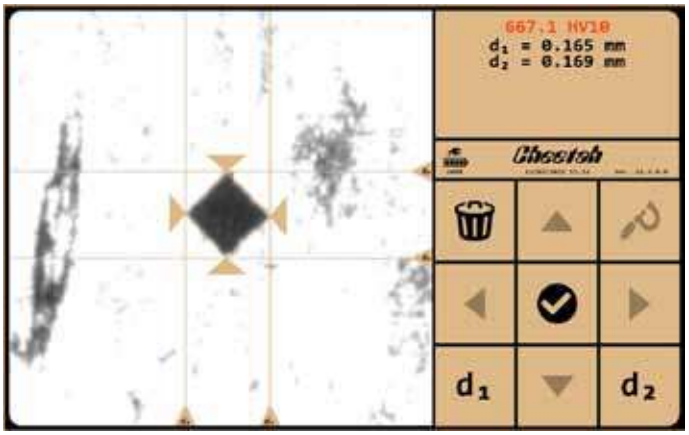
APPLICATIONS

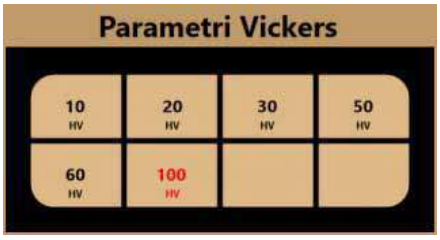
Brinell and Vickers indentation's digital reader

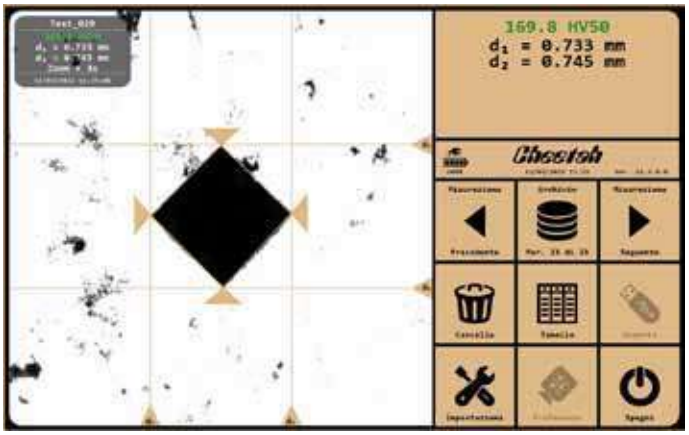
The software allows the user to measure Vickers and Brinell indentation in compliance with ISO and ASTM.

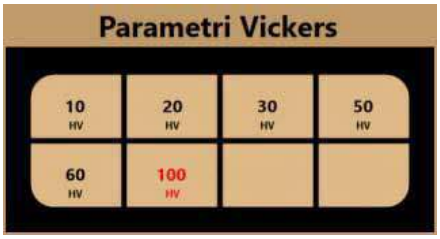












CHEETAH MEASURING SYSTEM

INSTRUMENT COMPOSITION:

- PC Tablet
- Measuring probe with built-in LED light and USB3 cable
- Measuring software on Windows operating system for automatic and manual reading of Brinell / Vickers indentation
- High-definition camera for optical evaluation of Brinell / Vickers indentation with digital zoom
- Connection cable
- Operating manual

TECHNICAL FEATURES

Typical parameters of a file are:

- File name, with creation of a tests storage
- Measuring mode Archive/Live
- Digital zoom 1x - 1.5x - 2x - 3x - 5x
- HRC conversion
- Tolerance with insert of min/max limits
- Instrument calibration
- Printing of the report with customisation of company details and own logo
- Indentation images memorisation
- Data export to PDF and EXCEL format
- Images export

- Dimensions: h 140 mm - Ø 50 mm
- Weight: 0.600 kg
- Camera resolution: 1440 x 1080 Pixel
- Brinell diameters range: 0.3 - 6.0 mm
- Vickers diameters range: from diagonals 100 micron

BRINELL HARDNESS TESTER HBX 0,5

TECHNICAL FEATURES

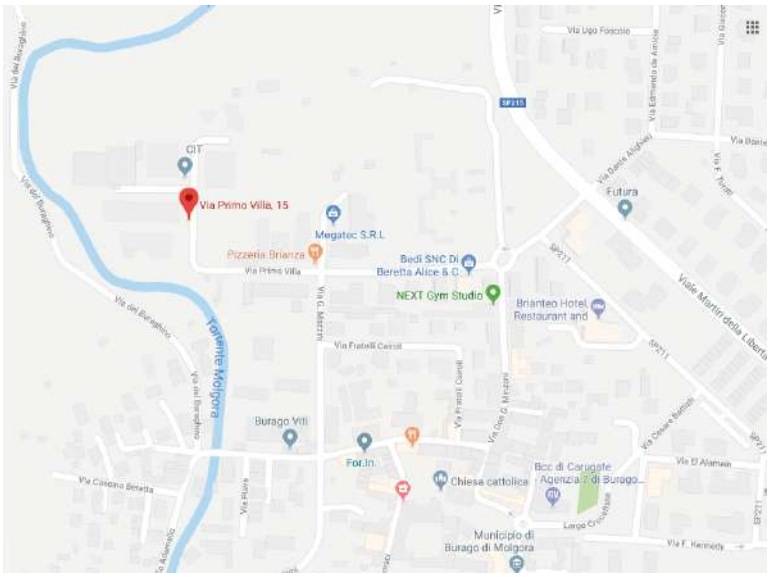
Brinell hardness tester designed to measure steel and cast iron hardness up to 350 - 400 Brinell; the measurements can be carried out anywhere and in any testing direction.
With this instrument the classic consumables can be saved; it is lightweight, small and portable.
When **HBX 0,5** is pushed down, a pre-loaded spring sets free and releases the load on the underlying workpiece; the force of the spring is guided directly on the indenter. This creates the indentation.
After that, the indentation diameter will be measured thanks to the supplied micrometrical microscope or through digital measuring systems.

ROCKWELL HARDNESS TESTER PHT

TECHNICAL FEATURES

The mechanical **Rockwell** hardness tester, even if smaller than a bench one, does not lose in accuracy.
The smallest model weights only 0.7 kg and its use is similar to a classic micrometer. **PHT** directly measures 15 Rockwell scales: A, B, C, D, E, F, G, H, K, L, M, P, R and S (depending on the model).
Its accuracy is compliant with ISO 6508 and ASTM E-18 standards.
The measuring process is fast and easy, it leaves only a small test indentation on the piece's surface.

CONTACTS



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