



# Static ultrasonic hardness tester

*designed for very precise hardness testing.*

Works on the principle of "Ultrasonic Contact Impedance"

Memory for 12,900 readings

With a Vickers diamond

Can also be used in hard to reach places

Any testing direction without having to enter a correction value



# Hardy Test UCI 3000<sup>©</sup>

Our **HardyTest UCI 3000**® is especially designed for very precise hardness testing. The "Ultrasonic-Contact-Impedance" technique with a Vickers diamond allows to measure the hardness of layers from 30 microns!



# HardyTest UCI 3000<sup>®</sup>

## Ultrasonic hardness tester.

### Working principle

The **HardyTest UCI 3000**® works on the principle of "Ultrasonic Contact Impedance": The piezoelectric crystal causes the rod in the probe to vibrate longitudinally. The Vickers diamond at the lower end of the rod is pressed by a spring into the workpiece surface. Depending on probe choice, this is done with the thrust of 10, 50 or 100 Newton.

The rod oscillates at natural resonance frequency, which is however reduced when the diamond penetrates into the measurement object. The change in the resonance frequency also depends on the elastic modulus of the material. For this reason, the device must be calibrated in accordance with new material changes. The frequency shift is proportional from the root of the impression surface. The device measures the change in frequency and calculates the hardness value considering the thrust and the calibration.

### Specifications

**Hardness units:** HRC, HB, HV, in addition: HRA, HRB, HS

**Measuring range:**  
Rockwell 20 - 70 HRC  
Brinell 90 - 460 HB  
Vickers 240 - 940 HV

**Accuracy:** HRC 1,5% ; HB 4% ; HV 3%

**Application:** Hardness testing on fine-grained, thin-walled materials and alloys, nitrided and high frequency hardened and chrome plated parts

**Material:** all ferromagnetic material (with exceptions)

**Coating testing:** from 30 µm (micron) with special probe 10 Newton

**Minimum weight of sample:** 0,01 kg

**Contact area:** 1 mm, 5mm depth in a blind hole (a bore which does not completely penetrate the workpiece)

**Minimum hardness depth:** little influence of mass and thickness of sample. Impact indenter: no noticeable grooves, impact body: cone of diamond with an angle of 136°

**Direction of impact device:** 360°

**Language:** Menue/Software/Instructions: german/english/russian

**Language:** 1- and 2-point calibration, Auto off, Reset, random test, low energy mode, naming of memory cells, correction of measuring results

**Statistics:** adjustable, analysis of measuring results (Standard deviation, limits, average values, graphic illustration, minimum, maximum)

**Data memory:** 12.900 values, 100 different groups of measuring values

**PC data processing:** USB data cable + software

**Display:** coloured LCD display with adjustable backlight

**Power supply:** rechargeable battery, capacity 15 – 20 hours

**Environment:** Working temperature: -10°C to +40°C, humidity: ≤90%

**Dimensions (L x W x H):** 125 x 70 x 40 mm

**Weight:** 450 g with probe, case: 2,6 kg

### Ultrasonic hardness tester with 10, 50 or 100 Newton probe

The **HardyTest UCI 3000**® meets all the needs of the professional user in hardness testing. It is oriented by the different types of probes, the wide range and high precision for an incredible variety of applications.

### Features and equipment:

- Hardness testing on all ferromagnetic materials and alloys (with limitations)
- Color display-screen
- Memory for 12,900 readings , divisible into 100 blocks
- Automatic test sequence
- Measurements of the hardness of layers starting at 30 microns!
- Very good reproducibility
- Suitable for mass testing of workpieces
- Housing is protected against moisture and dust
- Low requirements for the mass and thickness of the workpiece; for example, with thin-walled tubes starting at 2 mm wall thickness
- Can also be used in hard to reach places
- Any testing directions without having to enter correction values
- Managing and processing the stored measurement results
- Evaluation of measurement results in graphic form
- Data transfer to PC with USB/RS232 cable and software

### Application:

Hardness testing on fine-grained, thin-walled materials and alloys, nitrided and high frequency hardened and chrome plated parts in the power industry, petrochemical industry, in the apparatus, vehicle and mechanical engineering, quality control and in the steel industry.

### Areas of application:

- Production of metal and rubber components
- Mechanical engineering
- Research and development
- Solid state physics

### Standard delivery:

- **HardyTest UCI 3000**®
- Probe 50N or 10N (length: 145 mm), cable and adapter
- Battery and charger
- USB-Data cable
- Software-CD
- User manual
- Carry case

All **SaluTron**® gauges correspond to national (DIN) and international (ISO, BS, ASTM) norms and possess the CE-sign. **Specifications are subject to change without prior notice.**

Certified according to ISO EN 9001



D-50226 Frechen · Dr.-Gottfried-Cremer-Allee 30/7  
Telefon: +49 (0) 22 34 / 99 99 96 0  
Telefax: +49 (0) 22 34 / 99 99 96 2  
info@salutron.de · www.salutron.de