

Mobile Ultrasound Hardness Testing Device SAUTER HO

PREMIUM



Premium UCI hardness testing device for Rockwell, Brinell and Vickers



Mini statistics function: Display of the measuring result, the number of measurements, the maximum and minimum value as well as the average value and the standard deviation



Scope of delivery: Standard block for calibration (approx. 61 HRC), USB cable, display unit, UCI sensor unit, transport case, software to transfer the saved data to the PC, other accessories



Test stand for repeatable movements during testing. In this way you can avoid errors which could occur in manual handling of the sensor. This ensures even more stable measurements and more precise measuring results, see *Accessories*

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Features

- **Application:** This ultrasound hardness testing device is ideally suited for mobile hardness testing, where the main emphasis is on obtaining rapid and precise results
- **Principle:** The SAUTER HO measures by using a vibrating rod which vibrates at ultrasonic frequency and is pressed onto the sample at a defined test force. At the lower end there is a Vickers indenter. Its resonant frequency increases, as soon as an indentation is created when it comes into contact with the sample. Through appropriate adjustment of the device, the resulting change in resonant frequency is matched with the corresponding Vickers hardness
- **Examples:** The SAUTER HO ultrasound hardness testing system is primarily used for measuring small forgings, castings, welding points, punched parts, casting tools, ball bearings and the flanks of gear wheels as well as for measuring the influence of warmth or heat
- **Advantages compared with Rockwell and Brinell:** Almost non-destructive testing by smaller test force and thus only microscopic indentation craters
- **Advantages compared with Vickers:** Demanding optical measuring is not required. You can therefore carry out measurements directly on-site, for example, on a permanently installed workpiece
- **Advantages compared with Leeb:** The high requirements concerning the proper weight of the test object can be widely omitted
- **Standards:** The device meets following technical standards: DIN 50159-1; ASTM-A1038-2005; JB/T9377-2013
- **Measurement data memory** saves up to 1000 measurement groups each with 20 individual values

- **Calibration:** The device can be set to both standard hardness test blocks as well as to up to 20 reference calibration values. When doing this it is possible to measure different materials quickly, without having to re-adjust the device to the individual materials

Technical data

- **Measuring ranges:** HRC: 20,3–68; HRB: 41–100; HRA: 61–85,6; HV: 80–1599; HB: 76–618; Tensile strength: 255–2180 N/mm²
- **Measurement precision:** ± 3 % HV; ± 1,5 HR; ± 3 % HB
- **Display units:** HRC, HV, HBS, HBW, HK, HRA, HRD, HR15N, HR30N, HR45N, HS, HRF, HR15T, HR30T, HR45T, HRB.
- **Rechargeable battery pack** integrated, as standard, operating time up to 12 h without backlight, charging time approx. 8 h
- **Minimum weight of the test object:** 300 g for direct measurement with the sensor (included); 100 g with supporting ring (optional)
- **Minimum dimensions the test surface size** around: approx. 5×5 mm (recommended)
- **Overall dimensions** W×D×H 28×83×160 mm
- **Net weight** approx. 0,95 kg

Accessories

- **External impact sensor** Type D, as standard, can be reordered, SAUTER AHMO D
- **Calibration and adjustment plate** (hardness test blocks) with defined and tested steel hardness for regular testing and adjustment of hardness testing devices. The hardness values are indicated. A key feature of the plates is the low-granular, homogeneous finish of the steel, Ø 90 mm

- 28 to 35 HRC, SAUTER HO-A09
- 38 to 43 HRC, SAUTER HO-A10
- 48 to 53 HRC, SAUTER HO-A11
- 58 to 63 HRC, SAUTER HO-A12
- **Test stand** for repeatable movements during testing. Smooth-running mechanical system, stroke length 34 mm, maximum height of the test object within the test stand 240 mm, swivel probe device for measurements outside the base plate, very robust construction, net weight approx. 9 kg, SAUTER HO-A08
- **Motorised probe.** Enables testing at the touch of a button while maintaining the same procedure (while stocks last)
HV 0,3, SAUTER HO-A15
HV 0,5, SAUTER HO-A16
HV 0,8, SAUTER HO-A17
HV 1, SAUTER HO-A18

SAUTER HO 1K, HO 2K

- **Support ring, flat,** SAUTER HO-A04N
- **Support ring, small cylinder,** Ø 8-20 mm, SAUTER HO-A05N
- **Support ring, large cylinder,** Ø 20-80 mm, SAUTER HO-A06N

SAUTER HO 5K, HO 10K

- **Support ring, flat,** SAUTER HO-A04
- **Support ring, small cylinder,** Ø 8-20 mm, SAUTER HO-A05
- **Support ring, large cylinder,** Ø 20-80 mm, SAUTER HO-A06
- **Deep-hole protective cover,** SAUTER HO-A07

STANDARD



OPTION



Model	Hardness scale	Min. weight of test item	Min. thickness of test item	Option
		g	mm	Factory calibration certificate
SAUTER HO 1K	HV 1	300	2	KERN 961-270
SAUTER HO 2K	HV 2	300	2	KERN 961-270
SAUTER HO 5K	HV 5	300	2	KERN 961-270
SAUTER HO 10K	HV 10	300	2	KERN 961-270

CAL EXT
Adjusting program (CAL)
 For quick setting of the instrument's accuracy. External adjusting weight required

CAL BLOCK
Calibration block
 Standard for adjusting or correcting the measuring device

PEAK
Peak hold function
 Capturing a peak value within a measuring process

SCAN
Scan mode
 Continuous capture and display of measurements

PUSH/PULL
Push and Pull
 The measuring device can capture tension and compression forces

SCALE
Length measurement
 Captures the geometric dimensions of a test object or the movement during a test process

FOCUS
Focus function
 Increases the measuring accuracy of a device within a defined measuring range

MEMORY
Internal memory
 To save measurements in the device memory

RS 232
Data interface RS-232
 Bidirectional, for connection of printer and PC

PROFIBUS
Profibus
 For transmitting data, e.g. between scales, measuring cells, controllers and peripheral devices over long distances. Suitable for safe, fast, fault-tolerant data transmission. Less susceptible to magnetic interference

PROFINET
Profinet
 Enables efficient data exchange between decentralised peripheral devices (balances, measuring cells, measuring instruments etc.) and a control unit (controller). Especially advantageous when exchanging complex measured values, device, diagnostic and process information. Savings potential through shorter commissioning times and device integration possible

USB
Data interface USB
 To connect the measuring instrument to a printer, PC or other peripheral devices

BT
Bluetooth* data interface
 To transfer data from the balance/measuring instrument to a printer, PC or other peripherals

WIFI
WIFI data interface
 To transfer data from the balance/measuring instrument to a printer, PC or other peripherals

IR
Data interface infrared
 To transfer data from the measuring instrument to a printer, PC or other peripheral devices

SWITCH
Control outputs (optocoupler, digital I/O)
 To connect relays, signal lamps, valves, etc.

ANALOG
Analogue interface
 To connect a suitable peripheral device for analogue processing of the measurements

DUAL
Analogue output
 For output of an electrical signal depending on the load (e.g. voltage 0 V - 10 V or current 4 mA - 20 mA)

LAN
Statistics
 Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.

SOFTWARE
PC Software
 To transfer the measurement data from the device to a PC

PRINT
Printer
 A printer can be connected to the device to print out the measurement data

LAN
Network interface
 For connecting the scale/measuring instrument to an Ethernet network

KCP PROTOCOL
KERN Communication Protocol (KCP)
 It is a standardized interface command set for KERN balances and other instruments, which allows retrieving and controlling all relevant parameters and functions of the device. KERN devices featuring KCP are thus easily integrated with computers, industrial controllers and other digital systems

GLP PRINTER
GLP/ISO record keeping
 of measurement data with date, time and serial number. Only with SAUTER printers

UNIT
Measuring units
 Weighing units can be switched to e.g. non-metric. Please refer to website for more details

TOL
Measuring with tolerance range (limit-setting function)
 Upper and lower limiting can be programmed individually. The process is supported by an audible or visual signal, see the relevant model

IP
Protection against dust and water splashes IPxx
 The type of protection is shown in the pictogram cf. DIN EN 60529:2000-09, IEC 60529:1989 +A1:1999+A2:2013

ZERO
ZERO
 Resets the display to "0"

BATT
Battery operation
 Ready for battery operation. The battery type is specified for each device

ACCU
Rechargeable battery pack
 Rechargeable set

230 V
Plug-in power supply
 230V/50Hz in standard version for EU. On request GB, AUS or US version available

230 V
Integrated power supply unit
 Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or US on request

ELECTRO
Motorised drive
 The mechanical movement is carried out by an electric motor

STEPPER
Motorised drive
 The mechanical movement is carried out by a synchronous motor (stepper)

FAST-MOVE
Fast-Move
 The total length of travel can be covered by a single lever movement

M
Conformity assessment
 Models with type approval for construction of verifiable systems

DAkkS +3 DAYS
DAkkS calibration possible
 The time required for DAkkS calibration is shown in days in the pictogram

ISO +4 DAYS
Factory calibration (ISO)
 The time required for factory calibration is specified in the pictogram

1 DAY
Package shipment
 The time required for internal shipping preparations is shown in days in the pictogram

2 DAYS
Pallet shipment
 The time required for internal shipping preparations is shown in days in the pictogram

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