Mobile ultrasound hardness testing device SAUTER HO

PREMIUM ★★★

Premium UCI hardness testing device for Rockwell, Brinell and Vickers

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: Means that the testing is almost nondestructive, small penetrations means that the testing is less destructive
- 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
- **1** 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
- 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
- **2** 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, accessories

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/mm^2
- 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 thickness of the test object: 2 mm
- Minimum dimensions the test surface size around: approx. 5×5 mm (recommended)
- Overall dimensions W×D×H 28×83×160 mm
- Net weight approx. 0,50 kg

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Accessories

- External impact sensor Type D, as standard, can be reordered, SAUTER AHMO D
- [7] 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, homogenous finish of the steel, ∅ 90 mm, including calibration certificate
  28 to 35 HRC, SAUTER HHO-A09
  38 to 43 HRC, SAUTER HO-A10
  48 to 53 HRC, SAUTER HO-A11
  58 to 63 HRC, SAUTER HO-A12

- [8] 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. 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

- [3] Support ring, flat, SAUTER HO-A04N
- [4] Support ring, small cylinder, ∅ 8–20 mm, SAUTER HO-A05N
- [5] Support ring, large cylinder, ∅ 20–80 mm, SAUTER HO-A06N

SAUTER HO 5K, HO 10K

- [3] Support ring, flat, SAUTER HO-A04
- [4] Support ring, small cylinder, ∅ 8–20 mm, SAUTER HO-A05
- [5] Support ring, large cylinder, ∅ 20–80 mm, SAUTER HO-A06
- [6] Deep-hole protective cover, SAUTER HO-A07

STANDARD

| CAL BLOCK | MEMORY | USB | STATISTIC | SOFTWARE | UNIT | TOL | ACCU | 230 V | 1 DAY |

OPTION

ISO +4 DAYS

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

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

Calibration block:
Standard for adjusting or correcting the measuring device

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

Scan mode:
Continuous capture and display of measurements

Push and Pull:
The measuring device can capture tension and compression forces

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

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

Internal memory:
To save measurements in the device memory

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

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:
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

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

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

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

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

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

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

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

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

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

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

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

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/ISO record keeping:
Of measurement data with date, time and serial number. Only with SAUTER printers

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

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

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:
Resets the display to "0"

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

Rechargeable battery pack:
Rechargeable set

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

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

Motorised drive:
The mechanical movement is carried out by a electric motor

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

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

Verification possible:
Models with type approval for construction of verifiable systems

DAkkS calibration possible:
The time required for DAkkS calibration is shown in days in the pictogram

Factory calibration:
The time required for factory calibration is specified in the pictogram

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

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