SAUTER CATALOGUE 2021

Mobile ultrasound hardness testing device SAUTER HO



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 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 on the 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
- 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 and also 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
- II 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/mm²
- Measuring precision: ± 3 HV; ± 1,5 HR; ± 3 % HB
- Measuring time: adjustable from 1-5 sec.
- Display units: HRC, HV, HBS, HBW, HK, HRA, HRD, HR15N, HR30N, HR45N, HS, HRF, HR15T, HR30T, HR45T, HRB.
- Rechargeable battery integrated, 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 support 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 160×83×28 mm
- Permissible ambient temperature -10 °C/40 °C
- Net weight approx. 0,93 kg



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Accessories

- External impact sensor Type D, Leeb standard sensor, can be reordered at any time, SAUTER AHMO D
- **3** Support ring, flat, SAUTER HO-A04
- Isopport ring, small cylinder, Ø 8-20 mm, SAUTER HO-A05
- Is Support ring, large cylinder, Ø 20–80 mm, SAUTER HO-A06
- **I** Deep-hole protective cover, SAUTER HO-A07
- 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, Ø 90 mm, including calibration certificate

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

- I Test stand for repeatable movements during testing. In this way you can avoid errors which could occur with 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 bench 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

STANDARD									OPTION
+ =	•	hom		C	-√+ ⊙			P	ISO
CAL BLOCK MEMOR	Y USB	STATISTIC	SOFTWARE	UNIT	TOL	ACCU	230 V	1 DAY	+4 DAYS

Model	Hardness scale	Min. weight of test item	Min. thickness of test item	Option Factory calibration certificates
SAUTER		g	mm	KERN
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	HV10	300	2	961-270

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Pictograms



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



Calibration block: Standard for adjusting or correcting

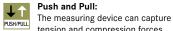
the measuring device

Peak hold function: PEAK

Capturing a peak value within a measuring process



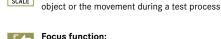
Scan mode: Continuous capture and display of measurements



tension and compression forces



Length measurement: Captures the geometric dimensions of a test



FOCUS

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:

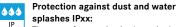
To connect the measuring instrument to a printer, PC or other peripheral devices

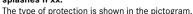
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Bluetooth* data interface: To transfer data from the balance/measuring

instrument to a printer, PC or other peripherals









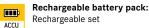
ZERO: Resets the display to "0"

Battery operation:



Ready for battery operation. The battery type is

specified for each device



Rechargeable set

230 V



230V/50Hz in standard version for EU. On request GB, AUS or USA version available



Power supply:

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



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



Motorised drive:

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



Μ

Fast-Move:

The total length of travel can be covered by a single lever movement



Verification possible:

The time required for verification is specified +3 DAYS in the pictogram



DAkkS calibration possible:

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

ISO +4 DAYS

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

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Your KERN specialist dealer:



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

For connecting the scale/measuring instrument

GLP/ISO record keeping:

Of measurement data with date, time and PRINTER serial number. Only with SAUTER printers

WLAN data interface:

Data interface Infrared:

To connect relays, signal lamps,

To transfer data from the balance/measuring

instrument to a printer, PC or other peripherals

To transfer data from the measuring instrument

to a printer, PC or other peripheral devices

Control outputs (optocoupler, digital I/O):

To connect a suitable peripheral device for

analogue processing of the measurements

For output of an electrical signal depending

Using the saved values, the device

calculates statistical data, such as

To transfer the measurement data

to print out the measurement data

from the device to a PC

Network interface:

to an Ethernet network

average value, standard deviation etc.

A printer can be connected to the device

on the load (e.g. voltage 0 V - 10 V or current

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SWITCH

ANALOG

ANALOG

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STATISTIC

SOFTWARE

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LAN

KCP

PROTOCOL

valves, etc.

Analogue interface:

Analog output:

4 mA – 20 mA) Statistics:

PC Software:

Printer:

Measuring units:

Weighing units can be switched to e.g. non-metric at the touch of a key. 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

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