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Manual Hardness tester

SAUTER HE

V.1.1
04/2026
E



PROFESSIONAL MEASURING

HE-BA-e-2611



SAUTER HE

V.1.1 04/2026

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1 Technical Specifications

SAUTER	HEA 100	HED 100
Function	Hardness testing using the indentation method	
Measuring range	0 – 100 HA	0 – 100 HD
Readability	0.1 HA	0.1 HD
Accuracy	± 1 HA	± 1 HD
Internal memory	500 readings	
Battery	Ni-MH	
Dimensions	153x50x29 mm	
Net weight	170 g	
Ambient	0°C to +50°C, 20% to 85% RH	

2 Declaration of Conformity

The current EC/EU Declaration of Conformity can be found online at:

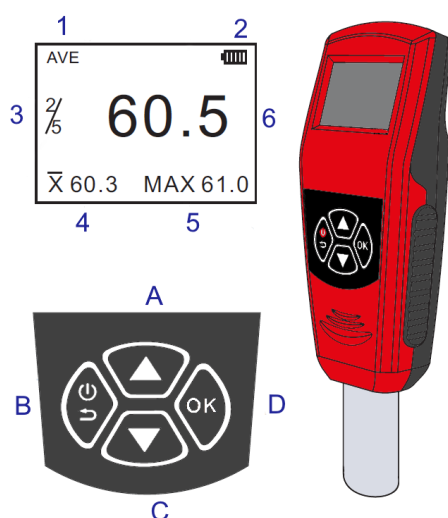
<https://www.kern-sohn.com/shop/de/DOWNLOADS/>

3 Device Overview

3.1 Scope of Delivery

- SAUTER HE
- Power adapter
- Charging cable
- Mini USB cable
- Calibration block
- User manual
- Plastic case

3.2 Control and display elements



Display	Function
1	Measurement mode (average, time, maximum)
2	Battery level indicator
3	Repeat display (e.g., 2 of 5 repeats)
4	Average
5	Maximum
6	Measured value
Button	Function
A	Go to top of menu Increase value
B	Turn on/off Cancel or Back
C	Down in the menu

	Decrease value Next display position
D	Menu Confirm Selection

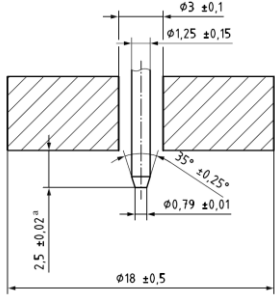
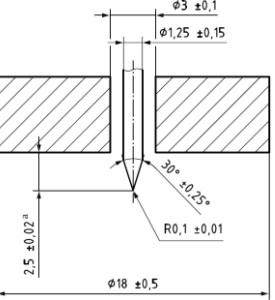
4 Basic Information (General)

4.1 Intended Use

Use the device exclusively for measuring the hardness of plastics within the measurement range specified in the technical data.

To use the device as intended, use only accessories or replacement parts tested by SAUTER.

The HE is designed for measuring the hardness of plastics by determining the penetration depth. Its compact design and built-in rechargeable battery allow for mobile operation. To improve results, the Shore hardness testers can be mounted using the TI-HEA/TI-HED test stand, enabling them to be used for stationary series testing.

Model	Shore	Indenter	Description (Selection)
HEA 100	A		Soft vulcanized rubber Natural rubber Nitrile Thermoplastic elastomers Flexible polyacrylates Thermosets
HED 100	D		Hard rubber thermoplastic elastomers harder plastics rigid thermoplastics

4.2 Improper use

Do not use the device in potentially explosive areas or for measurements in liquids or on live parts.

Unauthorized structural modifications, additions, or alterations to the device are prohibited.

4.3 Warranty

The warranty is void in the event of

- Failure to follow our instructions in the operating manual
- Use outside the described applications
- Modification or opening of the device
- Mechanical damage and damage caused by media, liquids, natural wear and tear
- Improper setup or electrical installation
- Overloading the measuring mechanism

5 Basic safety instructions

5.1 Follow the instructions in the operating manual



Read the operating instructions carefully before putting the device into service or using it, even if you already have experience with SAUTER devices. Always keep the instructions in close proximity to the device.

5.2 Staff Training

The device may only be used by persons who have read and understood the operating instructions, particularly the Safety chapter.

5.3 Safety

WARNING

Read all safety warnings and instructions.

Failure to follow the safety instructions and guidelines can result in electric shock, fire, and/or serious injury.

Keep all safety instructions and guidelines for future reference.

- Do not operate the device in or place it in potentially explosive rooms or areas.
- Do not operate the device in a corrosive atmosphere.
- Do not submerge the device in water. Do not allow liquids to enter the interior of the device.
- The device must only be used in a dry environment and under no circumstances in rain or at a relative humidity exceeding the operating conditions.
- Protect the device from prolonged direct sunlight.
- Do not expose the device to strong vibrations.
- Do not remove any safety signs, stickers, or labels from the device. Keep all safety signs, stickers, and labels in a legible condition
- Do not open the device

WARNING



Risk of injury from electric shock!

- There is a risk of short circuits caused by liquids entering the housing!
- Do not submerge the device or its accessories in water. Ensure that no water or other liquids enter the housing.
- Work on electrical components must only be performed by an authorized service provider!

WARNING

• Risk of suffocation!

Do not leave packaging materials lying around carelessly. They could become dangerous toys for children.

- The device is not a toy and does not belong in the hands of children.
- This device may pose a hazard if used improperly or for purposes other than intended by untrained personnel! Ensure that personnel are properly qualified!

CAUTION

Keep a sufficient distance from heat sources.

NOTE

- To prevent damage to the device, do not expose it to extreme temperatures, extreme humidity, or moisture.
- Do not use harsh cleaners, abrasives, or solvents to clean the device.

6 Transport and Storage

6.1 Note

Improper storage or transport of the device may result in damage. Follow the instructions for transporting and storing the device.

6.2 Transport

Use the plastic case included in the delivery to transport the device and protect it from external influences.

6.3 Storage

When the device is not in use, observe the following storage conditions:

- dry and at a temperature between , protected from frost and heat
- protected from dust in the plastic case
- the storage temperature complies with the technical specifications

6.4 Packaging/Return Shipping

Keep all parts of the original packaging for any necessary return shipping.

- Only the original packaging may be used for return shipping.

- Disconnect all connected cables and loose/movable parts before shipping.
- Reattach any transport restraints that were installed.
- Secure all parts to prevent them from shifting or being damaged.

7 Unpacking and Commissioning

7.1 Unpacking

Upon receipt of the device, check immediately to ensure that no transport damage has occurred and that the outer packaging, the plastic housing, other parts, or even the device itself have not been damaged. If any damage is visible, please notify SAUTER GmbH immediately.

7.2 Initial Setup

To ensure the hardness tester functions properly, it must be charged with the charging cable before use. The USB cable is intended solely for data transfer, not for charging the device .

8 Menu

8.1 Navigating the menu



Press the OK button to access the menu.
Use the arrow keys to navigate through the menu.

8.2 Test Setup

Menu item	Function
Test Mode	Here you can switch between different measurement modes ➔ Average Mode is calculated from the number of repetitions entered under Test Times (Number) ➔ Maximum Mode Displays the highest measured value ➔ Timing Mode (Time-controlled) Set the time interval at which the measured value is recorded
Test Times (Number)	Enter the number of measurements
Tolerance	Set a lower and upper limit. An audible and visual signal sounds when the limits are exceeded or not met ➔ To turn off the alarm, set the upper limit to 100.0 and the lower limit to 000.0
Gross Error	Turn on/off
Workpiece	Enter a workpiece number between 0 and 99

8.3 Memory

Menu item	Function
Browse all	Display and browse saved data records
Browse selected	Display selected records
Upload data	Transfer data to PC
Delete selected	Delete selected records
Delete all	Completely clear memory

8.4 System

Menu item	Function
Backlight	• Turn backlight on/off • Backlight duration: 15, 30, 45, or 60 seconds
Key Sound (Key Tones)	Display selected data records
Alarm Sound	Turn on/off
Date/Time	Set date and time
Calibration	Press the device onto a solid surface (glass/steel plate) Use the buttons to set the reading to 100.0 and press OK Password for calibration: 123

8.5 Language

Menu item	Function
Language	Setting the language (English)

8.6 Printing Setup

Menu item	Function
Printing Setup	Settings for infrared printers (not supported by SAUTER)

8.7 Information

Menu item	Function
Information	Display: - Serial number - Firmware version number - Model name

9 Basic operation

9.1 Test object

- The surfaces of the test specimen must be flat and parallel to allow contact between the indenter and the test specimen
- The specimen must lie securely on a stable, smooth surface
- For test specimens with a thickness of less than 6 mm and 1.5 mm, the test specimen may consist of no more than three layers to achieve the required thickness. Measurements taken on such test specimens do not correspond to those taken on single-layer test specimens.
- The lateral dimensions of the test specimen must be such that measurements can be taken at a distance of at least 12.0 mm from each edge.
- In addition, care must be taken to ensure that the test specimen is acclimated to the ambient temperature.

9.2 Testing

There are 3 different measurement modes.

9.3 Average Mode

In this mode, the number of measurements can be specified. The average value is then calculated from the measurements. Once the set number of measurements has been reached, the result can be read.

9.4 Maximum Mode

In this mode, the maximum value can be read.

9.5 Timing Mode (Timed)

In this mode, you can set the time interval at which measurements should be taken. This allows you to respond to changes in material properties.

9.6 Test Procedure

Press the indenter onto the surface of the test specimen and ensure that the pressure plate is in close contact. This should be done quickly and with appropriate force. When the data is stable, a tone sounds and the value is displayed until the next measurement. (In timed measurement mode, the measured value is displayed after the set measurement time has elapsed). To obtain a stable, reproducible value, at least 3, preferably 5, measurements should be taken, and the average value calculated from them.



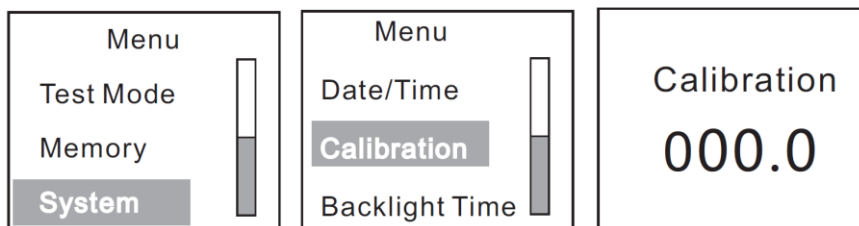
9.7 Support

To improve the measurement result, the appropriate SAUTER TI-HEA or TI-HED test bench can be used.

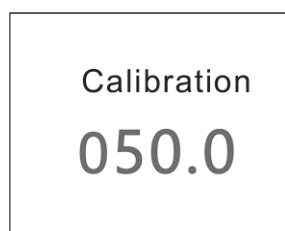
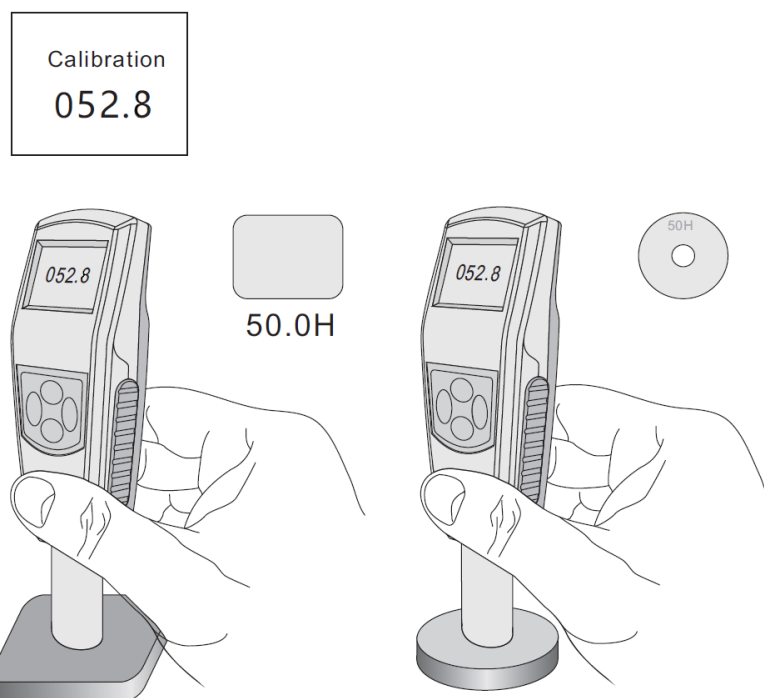
10 Calibration

If the device has not been used for an extended period or if the measured values appear implausible, calibration is recommended.

To do this, go to the **menu**: "→" > "System" > "→" > "Calibration".



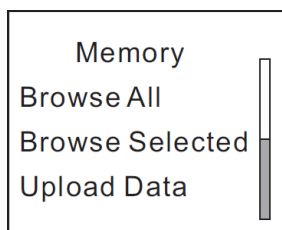
Place the hardness comparison plate or calibration block (included in the scope of delivery) on a stable, firm surface.



Use the arrow keys   to adjust the displayed value until it matches that of the standard used (here 50.0H). Confirm with **OK**.

11 Save

All measured values are saved. If the memory is full, it is overwritten starting from the beginning. The measured values can be displayed in the "**→ Memory**" menu:



001 65.7	005 71.7
002 68.1	006 73.5
003 55.2	
004 64.6	

001 65.7	005 71.7
002 68.1	006 73.5
2017 - 11 -11	
13:55 WP 01	



Use  or  to navigate; confirm with **OK**. Press the **ON** button to go back or exit.

12 Interfaces

12.1 USB Port

The HE series allows you to send data to a PC. You can download the software from the download section (<https://www.kern-sohn.com/shop/de/DOWNLOADS/>). Data transfer is controlled by the software. Further information is available there.

12.2 Printing

The HE series allows you to print test reports using an infrared printer; however, the print function is not supported by SAUTER.

13 Maintenance, Servicing, and Disposal



Disconnect the device from the power supply before performing any maintenance, cleaning, or repair work.

13.1 Cleaning

Clean the device with a damp, soft, lint-free cloth. Make sure that no moisture penetrates the housing. Do not use sprays, solvents, alcohol-based cleaners, or abrasive cleaners; use only plain water to dampen the cloth.

13.2 , and Repair

Do not make any modifications to the device or install any replacement parts. Contact the manufacturer for repairs or device inspections.

13.3 Disposal

The operator must dispose of the packaging and device in accordance with applicable national or regional laws at the user's location.

14 Battery Act

Notice in accordance with the Battery Act (BattG):

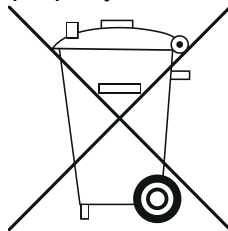
INFORMATION



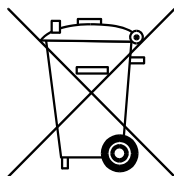
- The following information applies to Germany.

In connection with the sale of batteries and rechargeable batteries, we, as a retailer, are required by the Battery Act to inform end consumers of the following:

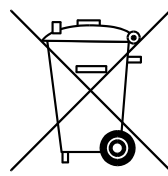
- End consumers are legally required to return used batteries and rechargeable batteries.
- Batteries and rechargeable batteries can be returned free of charge after use to municipal collection points or at retail stores. The batteries/rechargeable batteries must have reached the end of their normal useful life; otherwise, precautions must be taken to prevent short circuits.
- The return option is limited to batteries and rechargeable batteries of the type we currently carry or have carried in our product range, as well as to the quantity that end consumers typically dispose of.
- A crossed-out trash can symbol means that you must not dispose of the batteries or rechargeable batteries in household waste under any circumstances. Old batteries or rechargeable batteries may contain hazardous substances that can harm people and the environment if not disposed of properly.



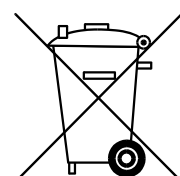
- Batteries containing hazardous substances are marked with a symbol consisting of a crossed-out trash can and the chemical symbol (Cd = cadmium, Hg = mercury, or Pb = lead) of the heavy metal responsible for the classification as containing hazardous substances.



Cd



Hg



Pb