

HARDNESS TESTING OF PLASTICS (SHORE)

PROFESSIONAL MEASURING



SAUTER Pictograms

 <p>Adjusting program (CAL) For quick setting of the instrument's accuracy. External adjusting weight required</p>	 <p>Bluetooth® data interface To transfer data from the balance/measuring instrument to a printer, PC or other peripherals</p>	 <p>Measuring units Weighing units can be switched to e.g. non-metric. Please refer to website for more details</p>	 <p>Conformity assessment Models with type approval for construction of verifiable systems</p>
 <p>Calibration block Standard for adjusting or correcting the measuring device</p>	 <p>WIFI data interface To transfer data from the balance/measuring instrument to a printer, PC or other peripherals</p>	 <p>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</p>	 <p>DAkkS calibration possible The time required for DAkkS calibration is shown in days in the pictogram</p>
 <p>Peak hold function Capturing a peak value within a measuring process</p>	 <p>Data interface infrared To transfer data from the measuring instrument to a printer, PC or other peripheral devices</p>	 <p>Protection against dust and water splashes IPxx The type of protection is shown in the pictogram of. DIN EN 60529:2000-09, IEC 60529:1989 +A1:1999+A2:2013</p>	 <p>Factory calibration (ISO) The time required for factory calibration is specified in the pictogram</p>
 <p>Scan mode Continuous capture and display of measurements</p>	 <p>Control outputs (optocoupler, digital I/O) To connect relays, signal lamps, valves, etc.</p>	 <p>ZERO Resets the display to "0"</p>	 <p>Package shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>Push and Pull The measuring device can capture tension and compression forces</p>	 <p>Analogue interface To connect a suitable peripheral device for analogue processing of the measurements</p>	 <p>Battery operation Ready for battery operation. The battery type is specified for each device</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>Length measurement Captures the geometric dimensions of a test object or the movement during a test process</p>	 <p>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)</p>	 <p>Rechargeable battery pack Rechargeable set</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>Focus function Increases the measuring accuracy of a device within a defined measuring range</p>	 <p>Statistics Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.</p>	 <p>Plug-in power supply 230V/50Hz in standard version for EU. On request GB, AUS or US version available</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>Internal memory To save measurements in the device memory</p>	 <p>PC Software To transfer the measurement data from the device to a PC</p>	 <p>Integrated power supply unit Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or US on request</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>Data interface RS-232 Bidirectional, for connection of printer and PC</p>	 <p>Printer A printer can be connected to the device to print out the measurement data</p>	 <p>Motorised drive The mechanical movement is carried out by a electric motor</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>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</p>	 <p>Network interface For connecting the scale/measuring instrument to an Ethernet network</p>	 <p>Motorised drive The mechanical movement is carried out by a synchronous motor (stepper)</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>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</p>	 <p>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</p>	 <p>Fast-Move The total length of travel can be covered by a single lever movement</p>	 <p>Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram</p>
 <p>Data interface USB To connect the measuring instrument to a printer, PC or other peripheral devices</p>	 <p>GLP/ISO record keeping of measurement data with date, time and serial number. Only with SAUTER printers</p>		

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SAUTER Customer Consultants

With questions about our products and services, we will be happy to advise you:

Product Specialist Measuring Technology



Irmgard Russo
Tel. +49 7433 9933-208
info.sauter@kern-sohn.com

Product Specialist Measuring Technology



Helga Biselli
Tel. +49 7433 9933-188
info.sauter@kern-sohn.com

Product Specialist Measuring Technology



Ralf Gutbrod
Tel. +49 7433 9933-306
info.sauter@kern-sohn.com

Product Specialist Measuring Technology



Andreas Vossler
Tel. +49 7433 9933-243
info.sauter@kern-sohn.com

FR, Maghreb, GB, IE, IS, BE, LU



Maren Möwert
Tel. +49 7433 9933-132
Mobil +49 151 46143240
maren.moewert@kern-sohn.com

DK, SE, FI, NO, PL, LV, LT, EE



Mark Hauder
Tel. +49 7433 9933-310
Mobil +49 160 3378426
mark.hauder@kern-sohn.com

GR, CY, BG, HU, RO, SK, CZ, AL,
Ex-Yugoslavia, CIS



Ariana Sevcenco
Tel. +49 7433 9933-203
Mobil +49 151 72434692
ariana.sevcenco@kern-sohn.com

North America, Africa, Asia, Middle East,
Oceania, TR



Corinna Matthes
Tel. +49 7433 9933-215
Mobil +49 151 44568364
corinna.matthes@kern-sohn.com

Germany (PC 4, 7), NL



Taras Mikitisin
Tel. +49 7433 9933-143
Mobil +49 171 5590115
mikitisin@kern-sohn.com

SAUTER Hotlines

Technical questions about our products?

You will find assistance here quickly: **+49 7433 9933 - ...**



Service Hotline

→ 199

for general technical questions about your SAUTER product

SAUTER Measuring Instruments

→ 555

for all technical questions concerning our SAUTER measuring instruments,
test benches, force measuring accessories (clamps etc.), SAUTER software

Industrial Scales

→ 333

for all technical questions concerning our basic scales (laboratory & industry),
pocket balances, school balances, bench scales, price-computing scales,
platform scales, counting scales, counting systems, floor scales, pallet truck
scales, crane scales, veterinary scales

System Solutions Industry 4.0

→ 200

for all technical questions concerning the interlocking of the latest information
and communication technology with our scales, load cells and measuring devices
as well as questions about KERN software

NEW



Shore hardness tester with extensive functionality

6

Features

- To measure the hardness of plastics through penetration measurement
- **1** Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather and similar material
- **2** Shore D: Plastics, formica, epoxides, plexiglass etc.
- Different measuring modes: Average value, maximum value, chronological sequence
- Limit alarm function, which triggers an audible and visual signal when the value goes below or above the defined limits
- Entering the workpiece number is possible
- Setting the measuring time from 0 to 99 seconds
- Recommended for internal comparison measurement
- **3** Can be attached to the test stands SAUTER TI-HEA (for Shore A), SAUTER TI-HED (for Shore D) to improve the measurement result, see *Accessories*
- Large display with backlight
- Battery status indicator
- USB data interface, as standard
- **4** Delivered in a robust carrying case

Technical data

- Tolerance: 1 % of [Max]
- Overall dimensions W×D×H 153×50×29 mm
- Net weight approx. 0,20 kg
- Internal memory for up to 500 results
- Test force hardness measurement
SAUTER HEA: 10 N
SAUTER HED: 50 N
- Diameter of measuring probe: 18 mm
- Material thickness of the sample, min. 6 mm
- Rechargeable battery pack integrated, as standard, operating time up to 20 h without backlight, charging time approx. 3 h

Accessories

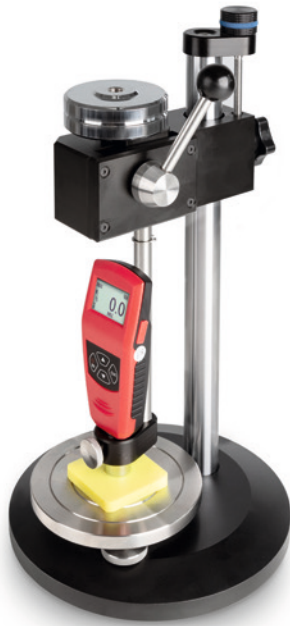
- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparisons the measuring accuracy increases significantly
- **5** 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 105,-**
- **6** 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 86,-**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 126,-**
- Test stand for HEA 100, SAUTER TI-HEA, **€ 1070,-**
- Test stand for HED 100, SAUTER TI-HED, **€ 1170,-**

STANDARD



Model	Hardness scales	Measuring range	Readability	Price excl. of VAT ex works €
SAUTER		[Max]	[d]	
HEA 100	Shore A	100 HA	0,1 HA	640,-
HED 100	Shore D	100 HD	0,1 HD	750,-

NEW New model



NEW



Test stand for hardness testing Shore A and D

Features

- High-quality test stand for Shore hardness testing of plastics in industry and the laboratory
- **1** One test stand for two hardness scales:
The test stand TI-HEA only requires the additional weight TI-HE to be screwed onto so it is also suitable for Shore D hardness tests, see *Accessories*
- **2** Level adjustment: For the precise levelling of the steel base plate, e.g. for the correction of inhomogeneous test objects
- Robust design enables accurate measuring movements
- **3** Simple handling means that you can achieve repeatable measuring results
- Hardness measuring device is not included with delivery

Technical data

- Maximum stroke length: 20 mm
- Maximum test object height: 50 mm
- Base plate \varnothing 115 mm

Accessories

- **1** Option Shore D pour TI-HE: Additional weight for TI-HEA test stand, SAUTER TI-HE, € 100,-

6

STANDARD



Model	Hardness scales	Test force hardness measurement	Overall dimensions W×D×H mm	Net weight approx. kg	Price excl. of VAT ex works €
SAUTER		N			
TI-HED <small>NEW</small>	Shore D	50	200×200×470	10	1 170,-
TI-HEA <small>NEW</small>	Shore A	10	200×200×390	6	1 070,-

NEW New model



Compact handheld durometer with drag indicator

6

Features

- Typical application: measurement of penetration (Shore)
- Particularly recommended for internal comparison measurement. Standard calibrations e.g. to DIN 48-4 are not possible because of very narrow standard tolerances
- Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather and similar material
- Shore D: Plastics, formica, epoxides, plexiglass etc.
- Shore A0: Foam, sponge etc.
- Max mode: Records the peak value indication by drag pointer
- Can be attached to the test stands SAUTER TI-AC (for Shore A and A0), SAUTER TI-D (for Shore D)
- Delivery in a plastic box
- The measuring tips are not interchangeable

Technical data

- Measuring precision: 3 % of [Max]
- Overall dimensions W×D×H 115×60×25 mm
- Net weight approx. 0,15 kg
- Screws to screw on to the TI: M7 fine thread
- Material thickness of the sample, min. 6 mm

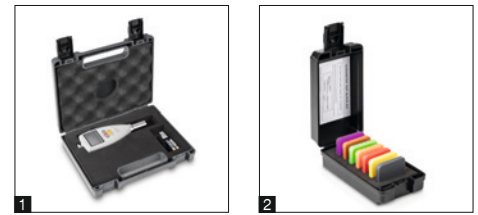
Accessories

- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparisons the measuring accuracy increases significantly:
 - 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 105,-**
 - 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 86,-**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 126,-**
- Test stand for HBA, HBO, SAUTER TI-AC, **€ 270,-**
- Test stand for HBD, SAUTER TI-D, **€ 355,-**

STANDARD



Model	Hardness scales	Measuring range	Readability	Price excl. of VAT ex works €
SAUTER		[Max]	[d]	
HBA 100-0	Shore A	100 HA	1 HA	121,-
HBO 100-0	Shore A0	100 HA0	1 HA0	146,-
HBD 100-0	Shore D	100 HD	1 HD	167,-



Professional Shore hardness tester

Features

- To measure the hardness of plastics through penetration measurement
- Particularly recommended for internal comparison measurement. Standard calibrations e.g. to DIN 48-4 are not possible because of very narrow standard tolerances
- Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather and similar material
- Shore 0: foam, sponge
- Shore D: Plastics, formica, epoxides, plexiglass etc.
- Can be attached to the test stands TI-ACL (for Shore A and 0), TI-DL (for Shore D) to improve the measurement result
- Large display with backlight
- Selectable: AUTO-OFF function or continuous operation, battery level indicator
- **1** Delivered in a robust carrying case

Technical data

- Tolerance: 1 % of [Max]
- Overall dimensions WxDxH 125x70x27 mm
- Net weight approx. 0,20 kg
- Transfer via RS-232 to the PC, e.g. to Microsoft Excel®
- Battery operation, batteries standard (2x1.5 V AAA)
- Material thickness of the sample, min. 6 mm

Accessories

- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparisons the measuring accuracy increases significantly
 - 2** 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 105,-**
 - 3** 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 86,-**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 126,-**
- Test stand for HDA, HD0, SAUTER TI-ACL, **€ 365,-**
- Test stand for HDD, SAUTER TI-DL, **€ 445,-**
- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**



Model	Hardness scales	Measuring range	Readability	Price excl. of VAT ex works €
SAUTER		[Max]	[d]	
HDA 100-1	Shore A	100 HA	0,1 HA	420,-
HD0 100-1	Shore 0	100 HO	0,1 HO	420,-
HDD 100-1	Shore D	100 HD	0,1 HD	420,-



Lever operated test stand for hardness testing with base plate made of glass

6

Features

- For Shore hardness testing of plastics, leather etc.
- **1** Glass plate: high measurement accuracy by means of superior hardness of the glass plate
- **2** Mechanical construction: Robust design enables accurate measuring movements
- **3** Level adjustment: For the precise levelling of the base plate, e.g. for the correction of inhomogeneous test objects
- **4** SAUTER TI-DL: with exchangeable longer column for use with digital hardness tester HD
- Hardness tester is not included with delivery

Operation:

1. The SAUTER hardness testing device HB/HD is fitted in a suspended position
 2. The test object is placed on the round testing table right under the durometer measuring tip
 3. By pressing the lever down, the test weight will be released, and this then presses the measuring tip into the test object with its own weight (see test force hardness measurement)
- The accuracy of the displayed result is about 25 % higher than in a manual operated test

Technical data

- Stroke length: 15 mm
- Base plate \varnothing 75 mm

STANDARD



Model	Hardness scales	Test force hardness measurement	Test object height [Max] mm	Overall dimensions W×D×H mm	Net weight approx. kg	Price excl. of VAT ex works €
SAUTER		N				
TI-AC	Shore A	10	60	150×200×330	5,0	270,-
TI-D	Shore D	50	60	150×200×400	8	355,-
TI-ACL	Shore A	10	290	150×200×580	6	365,-
TI-DL	Shore D	50	290	150×200×580	9	445,-

Sauter GmbH
 c/o KERN & SOHN GmbH
 Ziegelei 1
 72336 Balingen
 Germany
 Tel. +49 7433 9933-0
 info@sauter.eu
 www.sauter.eu

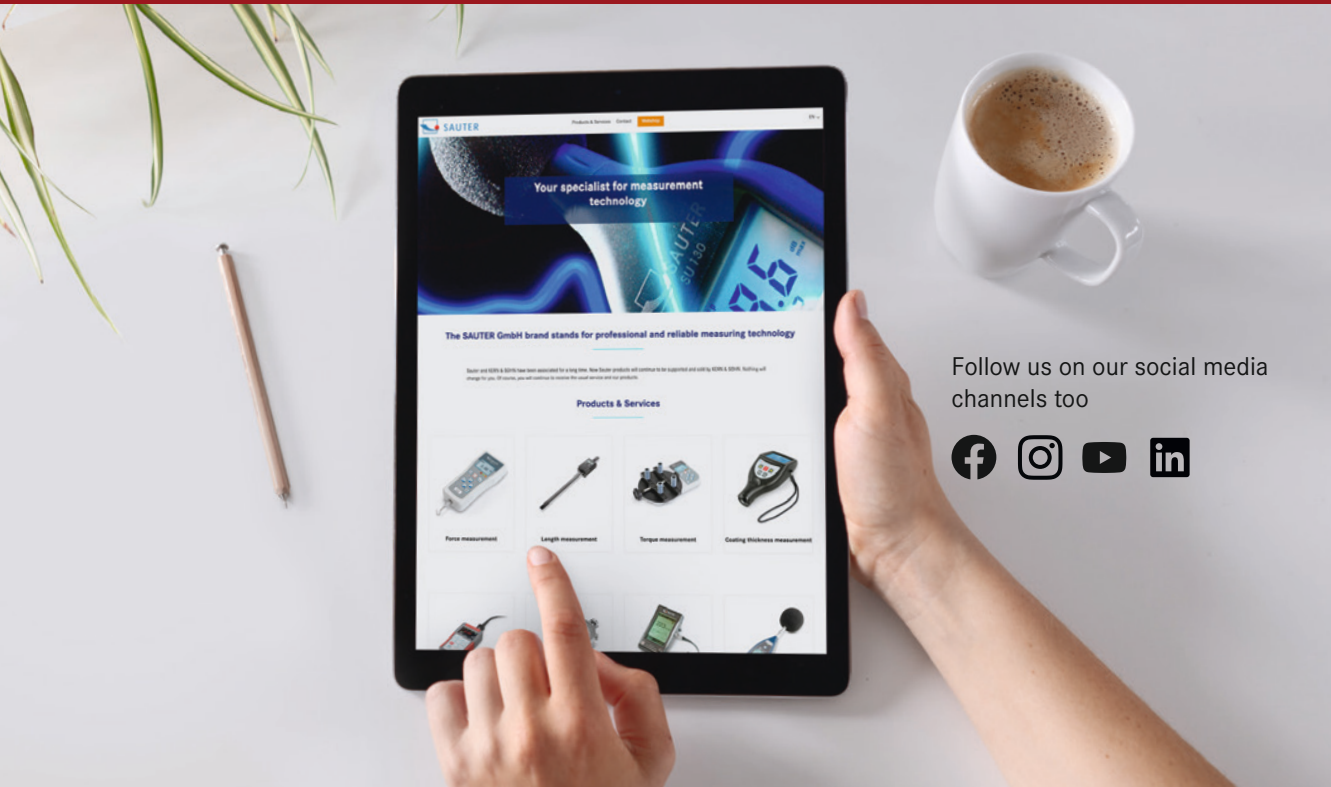
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