

HARDNESS TESTING OF PLASTICS (SHORE)

Industry | Laboratory | Quality Assurance



SAUTER Pictograms

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

*The *Bluetooth®* word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by KERN & SOHN GmbH is under license. Other trademarks and trade names are those of their respective owners.

SAUTER Models A-Z

281/285	6
283	7
287/289	5

A

AE 500	34
AFH FAST	35
AFH FD/AFH LD	36
AFI 2.0	37

C

CB	92
CE HSx	84
CE WT	85
CJ	96
CK	90
CP	88-89
CR	91
CT	93
CS	94-95
CW	98-100

D

DA	41
DB	42
DC Y1 · DC Y2	87

F

FA	8
FC	10
FC 1K-BT	21
FG	20
FH-M	13
FH-S	12
FK	9
FL-M	15
FL-S	14
FS	16-17
FS Set	18-19

H

HB	60
HD	61
HE	58
HK-D/-DB	64
HMM/-NP	65
HMO	67
HN-D	66
HO	70-71

J

JCS	80-81
JCT	48
JIT	78

L

LB	39
----	----

S

S71	24
SD-M	32
SO	73
SP	74
SU	75
SW	76-77

T

TB	44
TB-US	50
TC	45
TD-US	51
TE	46
TF/TG	47
TI	62
TI-HE	59
TN-EE	54
TN-GOLD	52
TN-US	53
TO-EE	56
TU-US	55
TVL/-E/-O/XLS	22
TVM-N/-NL/-LB	28-29
TVO	25
TVO-S/-LD	26-27
TVP/-L	23
TVS/-LD	30-31

Y

YKV	83
-----	----

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

PL, LV, LT, EE, SK, CZ, HU



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

Product Specialist Measuring Technology



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

SL, HR, AL, MK, BG, BA, ME, RO, GR, CY, GUS



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

Product Specialist Measuring Technology



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

UK, BE, IRE, IS, LUX, NL



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

Category Manager Industrial Measuring Technology



Michael Stingel
Tel. +49 7433 9933-293
michael.stingel@kern-sohn.com

Sales & Marketing Manager



Stephan Ade
Tel. +49 7433 9933-121
Mobil +49 171 3060086
ade@kern-sohn.com

SAUTER Hotlines



Technical questions about our products?

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

Service Hotline

for general technical questions about your SAUTER product

→ 199

SAUTER Measuring Instruments

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

→ 555

Industrial Scales

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

→ 333

System Solutions Industry 4.0

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

→ 200



Shore hardness tester with extensive functionality

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

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

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, **€ 132,-**
- Test stand for HEA 100, SAUTER TI-HEA, **€ 1070,-**
- Test stand for HED 100, SAUTER TI-HED, **€ 1170,-**

STANDARD

PEAK

MEMORY

USB

STATISTIC

TOL

ACCU

230 V

1 DAY

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,-



6

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: You just need to screw the additional weight TI-HE onto the TI-HEA test bench, so that this can then also be used for Shore D hardness testing, 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 tester is not included with delivery

Technical data

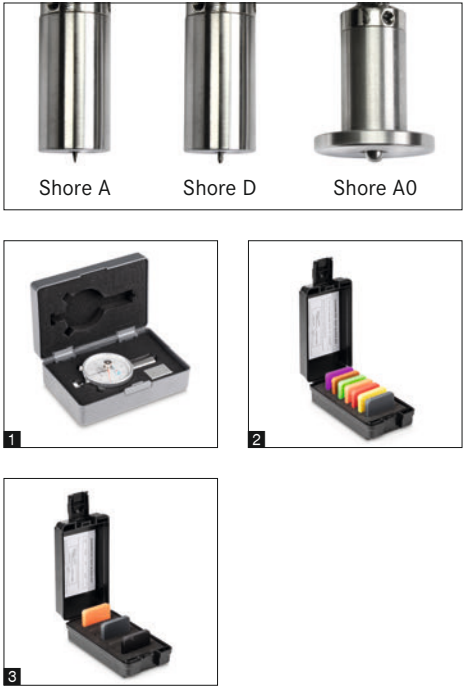
- Maximum stroke length: 20 mm
- Maximum test object height: 50 mm
- Base plate Ø 115 mm

Accessories

- **1** Option Shore D pour TI-HE: Additional weight for TI-HEA test stand, SAUTER TI-HE, € 103,-



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-HEA	Shore A	10	200×200×390	6	1070,-
TI-HED	Shore D	50	200×200×470	10	1170,-



Compact handheld durometer with drag indicator

Features

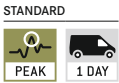
- Typical application: measurement of penetration (Shore)
- Particularly recommended for internal comparison measurement. Standard calibrations e.g. to DIN 48-4 are not possible because of very narrow standard tolerances
- Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather 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)
- **1** Delivery in a plastic box
- The measuring tips are not interchangeable

Technical data

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

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, **€ 132,-**
- Test stand for HBA, HBO, SAUTER TI-AC, **€ 270,-**
- Test stand for HBD, SAUTER TI-D, **€ 355,-**



Model	Hardness scales	Measuring range	Readability	Price excl. of VAT ex works €
SAUTER		[Max]	[d]	
HBA 100-0	Shore A	100 HA	1 HA	125,-
HBO 100-0	Shore A0	100 HAO	1 HAO	130,-
HBD 100-0	Shore D	100 HD	1 HD	170,-



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 measurment 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]
- Material thickness of the sample, min. 6 mm
- Transfer via RS-232 to the PC, e.g. to Microsoft Excel®
- Battery operation, batteries standard (2×1.5 V AAA)
- Overall dimensions W×D×H 125×70×27 mm
- Net weight approx. 0,20 kg

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, **€ 132,-**
- 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,-**

STANDARD

CAL EXT

PEAK

RS 232

ZERO

BATT

1 DAY

OPTION

SOFTWARE

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 H0	0,1 H0	420,-
HDD 100-1	Shore D	100 HD	0,1 HD	420,-

1 * ONLY WHILE STOCKS LAST

6

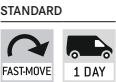


Lever operated test stand for hardness testing with base plate made of glass

- 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 Ø 75 mm



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,-

The oldest Precision Balance Factory in Germany

SAUTER GmbH

c/o KERN & SOHN GmbH

Ziegelei 1
72336 Balingen
Germany
Tel. +49 7433 9933-0
info@sauter.eu
www.kern-sohn.com

Discover the multifaceted World of Balances and Measuring Technology from SAUTER online: www.kern-sohn.com

- Full KERN & SAUTER Product Range
- Convenient 24/7 Ordering
- Selection of more than 5,000 Items across Weighing and Measuring Technology, Optical Instruments as well as Accessories and Services
- Extensive Information and useful Download Options
- Technical Product Data Sheets
- Operating Instructions
- Descriptive Image and Video Material
- Useful KERN Services
- Technical Glossary
- KERN Dealer Portal
- Practical Filter and Search Functions



Follow us on our social media
channels too



Printed in Germany by SAUTER GmbH
zcs-en-kp-20251

