

## Mobile Leeb hardness tester SAUTER HK-D · HK-DB



## Premium Leeb hardness tester – now also with hardness comparison block included

### Features

- External impact sensor standard (Type D)
- Mobility: In comparison with stationary table-top devices and testing devices with an internal sensor, using the SAUTER HK-D offers the highest level of mobility and flexibility
- All measurement directions possible (360°) thanks to an automatic compensation function
- **SAUTER HK-DB:** Hardness comparison block, hardness approx. 800 HLD, included in delivery
- Measurement value display: Rockwell (Type A, B, C), Vickers (HV), Shore (HS), Leeb (HL), Brinell (HB)
- Internal memory for up to 600 data groups, with up to 32 values per group forming the average value of the group
- Mini statistics function: displays the measured result, the average value, the impact direction, date and time
- Automatic unit conversion: The measuring result is automatically converted into all specified hardness units
- Measuring with tolerance range (limit-setting function): Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal

- Matrix display: Backlit multi-function display for all relevant functions at a glance
- Robust metal housing
- **Delivered in a robust carrying case**

### Technical data

- Precision:  $\pm 1\%$  at 800 HLD
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Thinnest measurable material thickness: 3 mm, with coupling on fixed base
- The lowest weight of the test item on solid support unit: 2 kg with fixed coupling
- Overall dimensions WxDxH 132x82x31 mm
- Permissible ambient temperature -10 °C/40 °C
- Optional battery operation, 2x1.5 V AA not included in scope of delivery, operating time up to 200 h
- Net weight approx. 0,45 kg

### Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0

- Software BalanceConnection, for flexible recording or transmission of measured values, in particular also to Microsoft® Excel or Access as well as transfer of this data to other Apps and programs, For more details see the internet, Scope of supplies: 1 CD, 1 license, KERN SCD-4.0
- Support rings for bended test objects, SAUTER AHMR 01
- Impact body Type D, net weight approx. 0,05 kg, hardness  $\geq 1600$  HV, tungsten carbide, Impact ball  $\varnothing 3$  mm, in accordance with the standard ASTM A956-02, SAUTER AHMO D01
- External impact sensor Type C. Low energy sensor: requires only 25 % impact energy compared to type D, for testing tiny or light objects or the surface of hardened layer, SAUTER AHMR C
- External impact sensor Type D, SAUTER AHMR D
- External impact sensor Type D+15. Slim front section for holes, grooves or re-entrant surfaces, SAUTER AHMR D+15
- External impact sensor Type DL, for very narrow surfaces ( $\varnothing 4,5$  mm), SAUTER AHMR DL
- External impact sensor Type G. High energy sensor: 900 % impact energy compared to type D, SAUTER AHMR G
- Connection cable impact sensor, SAUTER HMO-A04
- **Test block Type D/DC,  $\varnothing 90$  mm ( $\pm 1$  mm), net weight < 3 kg, hardness range  $790 \pm 40$  HL, SAUTER AHMO D02  $630 \pm 40$  HL, SAUTER AHMO D03  $530 \pm 40$  HL, SAUTER AHMO D04**
- Factory calibration certificates for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132

### STANDARD



### OPTION



Model	Sensor	Measuring range	Readout	Test block	Option
					Factory calibration certificate
		[Max] HL	[d] HL	Typ D/DC approx. 800 HL	
<b>SAUTER</b>					<b>KERN</b>
<b>HK-D</b>	D	170-960	1	not standard	961-131
<b>HK-DB</b>	D	170-960	1	standard	961-131



**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 an 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

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