

REED

Model R9030

Hardness Tester



Instruction Manual

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Features

- Capable of automatically converting and displaying measurements into Rockwell (HRC, HRB, HRA), Brinell (HB), Leeb (HL), Vickers (HV) and Shore (HS) hardness values
- Materials that can typically be tested include cast steel, alloy tool steel, stainless steel, aluminum, bronze, copper and cast irons
- Large capacity memory can store up to 350 groups of information (depending upon impact times) including measurement value, mean value, testing date, impact direction, impact times, material and hardness scale
- Real-time clock
- Mini USB data interface
- Operates on a rechargeable lithium battery
- 128 x 32 dot with OLED screen
- Auto shut off and low battery indicator

Applications

- Ideal for hardness testing of large and heavy objects
- In production lines of mass produced components
- Materials identification in stores and warehouses
- In locations with difficult access, or in confined spaces
- The assembled machinery and permanently installed parts
- Failure analysis of pressure vessel, steam turbo-generator set and other equipment

Specifications

- Measuring device type: D, DL, DC, D+15 or C
- Measuring device feature:

Type D is included. Type DL, DC, D+15 or C are optional accessories.

Non conventional impact devices	DC(D)/DL	D+15	C
Impacting energy	11mJ	11mJ	2.7mJ
Mass of impact body	5.5g/7.2g	7.8g	3.0g
Test tip Hardness	1600HV	1600HV	1600HV
Diameter of test tip	3mm	3mm	3mm
Material of test tip	Tungsten carbide	Tungsten carbide	Tungsten carbide
Impact device Diameter	20mm	20mm	20mm
Impact device Length	86(147)/75mm	162mm	141mm
Impact device Weight	50g	80g	75g
Max. hardness of workpiece	940HV	940HV	1000HV
Mean roughness of workpiece surface of the Ra	1.6µm	1.6µm	0.4µm

Min. weight of sample: Measure directly Need support firmly Need coupling tightly		>5kg	>5kg	>1.5kg
		2-5kg	2-5kg	0.5-1.5kg
		0.05-2kg	0.05-2kg	0.02-0.5kg
Min. thickness of sample: coupling tightly Min.layer thickness for surface harden		5mm	5mm	1mm
		≥0.8mm	≥0.8mm	≥0.2mm
Hardness 300HV	Indentation diameter	0.54mm	0.54mm	0.38mm
	Indentation depth	24µm	24µm	12µm
Hardness 600HV	Indentation diameter	0.54mm	0.54mm	0.32mm
	Indentation depth	17µm	17µm	8µm
Hardness 800HV	Indentation diameter	0.35mm	0.35mm	0.35mm
	Indentation depth	10µm	10µm	7µm
Available type of impact device	D: General test DC: Hole or hollow-cylindrical test DL: Slender narrow groove or hole test		D+15: groove or reentrant surface	C: small, light,thin parts or surface of hardend layer

R9030 includes D impact device. Please note that impact devices DL, DC, D+15 and C can be ordered separately. For more information please contact us at 1-877-849-2127 or at info@REEDinstruments.com.

Type of impact device	Hardness value of standard Leeb hardness block	Error of displayed value	Repeatability of displayed value
D (included)	760±30HLD	±6 HLD	6 HLD
	530±40HLD	±10 HLD	10 HLD
DC (optional)	760±30HLDC	±6 HLDC	6 HLD
	530±40HLDC	±10 HLDC	10 HLD

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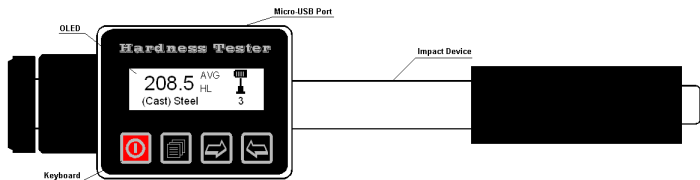
DL (optional)	878±30HLDL	±12 HLDL	12 HLDL
	736±40HLDL		
D+15 (optional)	766±30HLD+15	±12 HLD+15	12 HLD+15
	544±40HLD+15		
C (optional)	822±30HLC	±12 HLC	12 HLC
	590±40HLC		

Measuring Range	HLD 170~960 HLD
Measuring Direction	360°
Hardness Scale	HL, HB, HRB, HRC, HRA, HV, HS
Display	OLED, 128×36 dot matrix
Operating Conditions	
Ambient Temperature	32 - 104 °F (0 °-40 °C)
Operating Conditions Relative Humidity	0-90%
Memory	up to 350 groups of information
Range of Upper and Lower Limit	the same as measuring range
Charging Time	2 hours
Power Supply for Charging	5V/500mA
Continuous Working Period	approx. 40 hours
Communication Interface	USB
Dimensions	5.7 x 1.3 x 1.0in (145.5 x 32 x 26mm)
Weight	160g
Included	D impact device, support ring, leeb test block, nylon brush, battery charger, data processing software, USB communication cable and carrying case

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Instrument Description



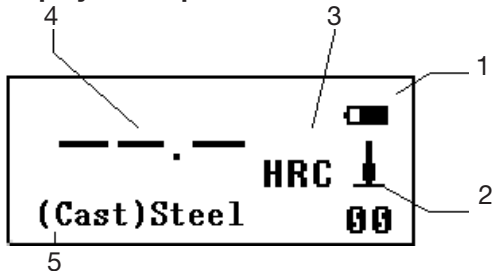
 On / Off

 Menu / Confirm / Scan enter / Scan exit

 Measuring set short cut / Scan direction / Increase number

 Back space / store notice / Delete notice / Decrease number

Display Description



1. Battery information: Current battery level.

2. Impact direction: Current impact direction.

3. Hardness scale: Hardness scale of current measuring value.

4. Measured value: Current single measured value (without average value indicator), current average value (with average value indicator).

5. Material: Current set material.

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Operating Instructions








Power On/OFF

Press  key to turn power on or off.

Note: if the tester has been shut down, it will start up automatically when charging



The tester will display main interface once powered on as follows:




Navigating Instrument Menu

When testing is finished, press  key to browse data. Press  key to scroll through data. If you want to delete displayed data, press the  key. Use the  key to confirm selection. Press the  or  key to return back to main menu. Press  key again to exit.

Instrument Calibration





The tester and impact device must be calibrated with a standard Leeb hardness test block prior to the first use, or after not using the instrument for an extended period of time.

Press  key as well as  key at the same time to enter instrument calibration. The interface impact times is set to 5. And the impact direction should be vertically down on the Leeb hardness test block.

Average value will be showed after measuring. Press  or  key to input nominal value. Press  key to finish calibration and back to the main unit.

Note: calibration range is $\pm 15HL$.

Charging

Battery symbol will flash  if battery capacity is close to empty. The tester will automatically switch on during charging.  and  will flash alternately while in charge mode.  will flash once fully charged.

Battery Replacement

The R9030 is equipped with a lithium rechargeable battery. Battery life expectancy with regular use is 3 years. Should you require a new battery please contact REED Instruments 1-877-849-2127 or at info@REEDinstruments.com

Maintenance

- After using the impact device 1000 times, it is recommended to use the nylon brush provided to clean the guide tube and the impact body of the impact device. To clean the guide tube, unscrew the support ring and then take out the impact body. Use the nylon brush to clean in a counter-clock direction. Repeat this 5 times and remount the impact body and the support ring.
- Remember to release the impact body after use
- It is strongly recommended to not use any lubricant agent to clean the impact device
- The tester should be stored at room temperature, away from vibration, strong magnetic field, corrosive medium, dampness and dust.

For service on this or any other REED product or information on other REED products, contact REED Instruments at info@reedinstruments.com