PRODUCT DESCRIPTION

Color LCD Rechargeable Battery Customized Material Portable Hardness Tester For Metal

HUATEC Leeb hardness tester RHL60 is an innovative design testing instrument based on Leeb hardness principle, on the existing data table, the following materials added more scale
CWT, ST material add HRA, HB . for D impact device
C. ALUM material add HV. for D impact device
C. ALUM material add HV. for C impact device
Developed user defined material, which realize special material measurement, widely expand the application range of Leeb hardness testing

Main application

The installed machinery and permanently assembled parts
Die cavity of molds
Heavy work piece
Failure analysis of pressure of steam generator and other parts.
for work piece in confined spaces
Bearing and other parts.
for usage when original hardness testing data report are request
for metal material distinction in warehouse
for quick inspection of multiple measuring area in wide range of large work piece.

TECHNICAL DATA

Measuring Range	HLD(170~960), HRC(17.9~69.5), HB(19~683), HV(80~1042), HS(30.6~102.6), HRA(59.1~88), HRB(13.5~101.7)
Measuring Direction	360°
Hardness Scale	HL, HB, HRB, HRC, HRA, HV, HS
Testing result on display	HL value and the corresponding value of selected hardness scale.
Measuring Materials	Steel and cast steel, alloy tool steel, stainless steel, gray cast iron, nodular cast iron, cast aluminum alloy, copper zinc alloys (brass), copper and tin alloy, copper (bronze), forged steel. **added 3 materials for the roller hardness**

	tester(optional): cast steel roller, forged steel roller, cast iron roller
User defined material	5 kind. With setting guide
Display	320x240 true color TFT screen
Indication Error	±6HLD (D impact device)
To identify probe	automatically, or by manual.
Data Memory	Max 600 groups (relative to impact times 1~32 adjustable)
Power supply	Rechargeable li-battery, 3.7v
charger	5V/1000mA, charging time 2.5～4.5
Communication port	USB2.0
Size	130x83x32mm
Weight	0.6kg
Working Condition	working temperature: -20°C~55°C storage temperature: -20°C~75°C relative humidity: ≤90% The surrounding environment requires no vibration, no strong magnetic field, no corrosive medium and no serious dust

Main features

- **DISPLAY shows 2 scales** : the hardness scale of Leeb and the other corresponding scale.
- This hardness tester can test many kinds of metal materials with high precision.Accord with standard JB/T 9378-2001 in [Technical conditions of Leeb hardness tester].
- Dedicated circuit design, **probe hot plug support.**
- **Seven** impact devices are available for special application; Support plug and play. it can automatically identif impact device and can set by manual as well. No need calibration when probe changes.
- Ten commonly used material of hardness scale(HL, HB, HRB, HRC, HRA, HV, HS) parallel conversion.
- A**dded 3 materials for the roller hardness tester(optional): cast steel roller, forged steel roller, cast iron roller: cast steel roller, forged steel roller, cast iron roller**. it can take quick measurement for roller.
- **Five** (1-5)user's materials can be defined for hardness testing of special materials. Theoretically, this tester tests all metal materials.
- Built in lithium ion battery; up to 50 hours continuous work; with auto sleep, auto power off, power-saving features.
- **Adopt 320X240 true color large TFT display**.
- Windows menu. Support 6 language freely switch. User friendly features, easy to operate.

- the Brightness of LCD allows adjustable, it improves visibility in dark environments.
- Material of 'steel' is added; HB values can be read out directly when D/DC impact device is used to measure “steel” work piece.
- USB port. Convenient communication with PC to exchange data and set parameter.
- Large memory up to 600 group hardness data(impact times:32～1), it include: the last testing value, average value, testing date, impact direction impact times, material, hardness scale, etc
- it can automatically alarm when values are out of pre-set range, which is convenient for the requirements of batch measurements.
- Metal case, anti-electromagnetic interference, shock resistant.
- There are remaining charge indicator, charging hint.
- Features calibration function.
- Software of PC can be installed according to the requirements of user, the function will be more powerful to satisfy the more strict demands of quality control and management.
- Add user defined material.

STANDARD DELIVERY

ITEM	QTY
Main unit	1 PC
Standard D Impact Device	1 PC
Standard Calibration Block	1 PC
Standard Support Ring	1 PC
Brush	1 PC
USB Cable, charger	1 PC
PC Software	1 PC
User Manual	1 PC
Instrument Case	1 PC
Warranty	2 Years

OPTIOANL CONFIGURATION

hardness testing for roller, mini printer, shaped support ring

No.	Type of impact device	hardness value of standard Leeb hardness block	Error of displayed value	Repeatability of displayed value
1	D	760±30HLD 530±40HLD	±6 HLD ±10 HLD	6 HLD 10 HLD
2	DC	760±30HLDC 530±40HLDC	±6 HLDC ±10 HLDC	6 HLD 10 HLD
3	DL	878±30HLDL 736±40HLDL	±12 HLDL	12 HLDL
4	D+15	766±30HLD+15 544±40HLD+15	±12 HLD+15	12 HLD+15
5	G	590±40HLG 500±40HLG	±12 HLG	12 HLG
6	E	725±30HLE 508±40HLE	±12 HLE	12 HLE
7	C	822±30HLC 590±40HLC	±12 HLC	12 HLC

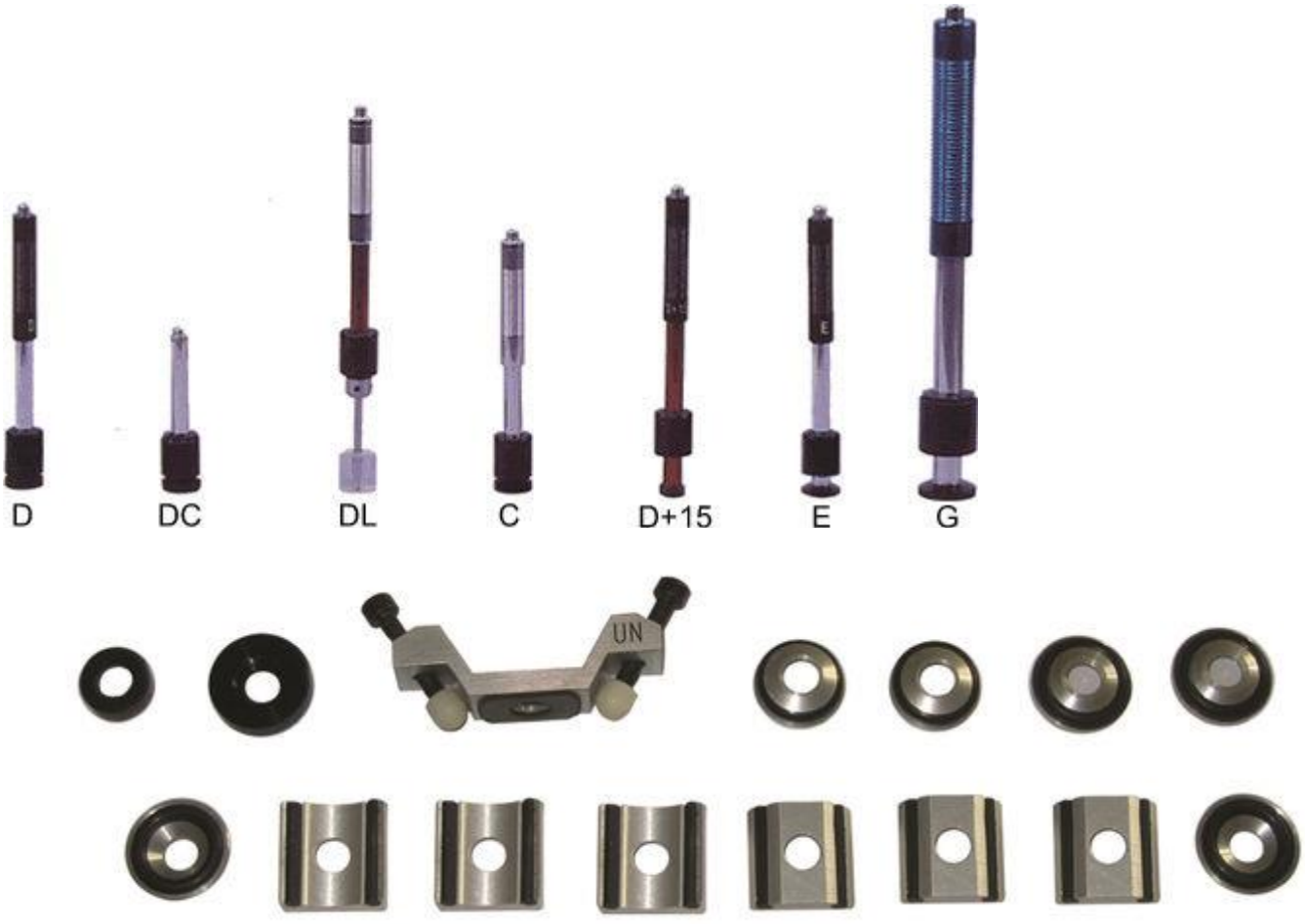
RELATED OPTIONAL ITEMS

Type of Impact Device	DC(D)/DL	D+15	C	G	E
Impacting energy Mass of impact body	11mJ 5.5g/7.2g	11mJ 7.8g	2.7mJ 3.0g	90mJ 20.0g	11mJ 5.5g
Test tip hardness: Dia. Test tip:	1600HV 3mm	1600HV 3mm	1600HV 3mm	1600HV 5mm	5000HV 3mm

Material of test tip:	Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide	synthetic diamond
Impact device diameter: Impact device length: Impact device weight:	20mm 86(147)/205mm 50g	20mm 162mm 80g	20mm 141mm 75g	30mm 254mm 250g	20mm 155mm 80g
Max. hardness of sample	940HV	940HV	1000HV	650HB	1200HV
Mean roughness value of sample surface Ra:	1.6μm	1.6μm	0.4μm	6.3μm	1.6μm
Min. weight of sample: Measure directly with stand Need coupling tightly	>5kg 2～5kg 0.05～2kg	>5kg 2～5kg 0.05～2kg	>1.5kg 0.5～1.5kg 0.02～0.5kg	>15kg 5～15kg 0.5～5kg	>5kg 2～5kg 0.05～2kg
Min. thickness of sample Coupling tightly: Min. layer thickness for surface hardening:	5mm ≥0.8mm	5mm ≥0.8mm	1mm ≥0.2mm	10mm ≥1.2mm	5mm ≥0.8mm

Size of tip indentation						
Hardness 300HV	Indentation diameter: Depth of indentation:	0.54mm 24μm	0.54mm 24μm	0.38mm 12μm	1.03mm 53μm	0.54mm 24μm
Hardness 600HV	Indentation diameter: Depth of indentation	0.54mm 17μm	0.54mm 17μm	0.32mm 8μm	0.90mm 41μm	0.54mm 17μm

Hardness 800HV	Indentation diameter: Depth of indentation	0.35mm 10μm	0.35mm 10μm	0.35mm 7μm	-- --	0.35mm 10μm
Application	DC type used to measuring hole or inside face of cylinder, DL type used to measuring elongated narrow slot or hole, D type for routine measurements.		Suitable for measuring surface of the trench or concave.	Suitable for measuring thin workpiece and harden surface.	Suitable for heavy or rough castings and forgings.	Suitable high hardness material.



Testing range see table 1 and table 2.

Table 1

Material	**Hardness method**	**Impact device**					
		D/DC	D+15	C	G	E	DL
Steel and cast steel	HRC	17.9～68.5	19.3～67.9	20.0～69.5		22.4～70.7	20.6～68.2
	HRB	59.6～99.6			47.7～99.9		37.0～99.9
	HRA	59.1~85.8				61.7～88.0	
	HB	127～651	80～638	80～683	90～646	83～663	81～646
	HV	83～976	80～937	80～996		84～1042	80～950
	HS	32.2～99.5	33.3～99.3	31.8～102.1		35.8～102.6	30.6～96.8
Hammered steel	HB	143~650					
Cold work tool steel	HRC	20.4～67.1	19.8～68.2	20.7～68.2		22.6～70.2	
	HV	80～898	80～935	100～941		82～1009	
Stainless steel	HRB	46.5～101.7					
	HB	85～655					
	HV	85～802					
Gray cast iron	HRC						
	HB	93～334			92～326		
	HV						
Nodular cast iron	HRC						
	HB	131～387			127～364		
	HV						

Cast aluminum alloys	HB	19～164		23～210	32～168		
	HRB	23.8～84.6		22.7～85.0	23.8～85.5		
Brass(copper-zinc alloys)	HB	40～173					
	HRB	13.5～95.3					
Bronze (copper-aluminum/copper-tin alloys)	HB	60～290					
Wrought copper alloys	HB	45～315					

Table 2

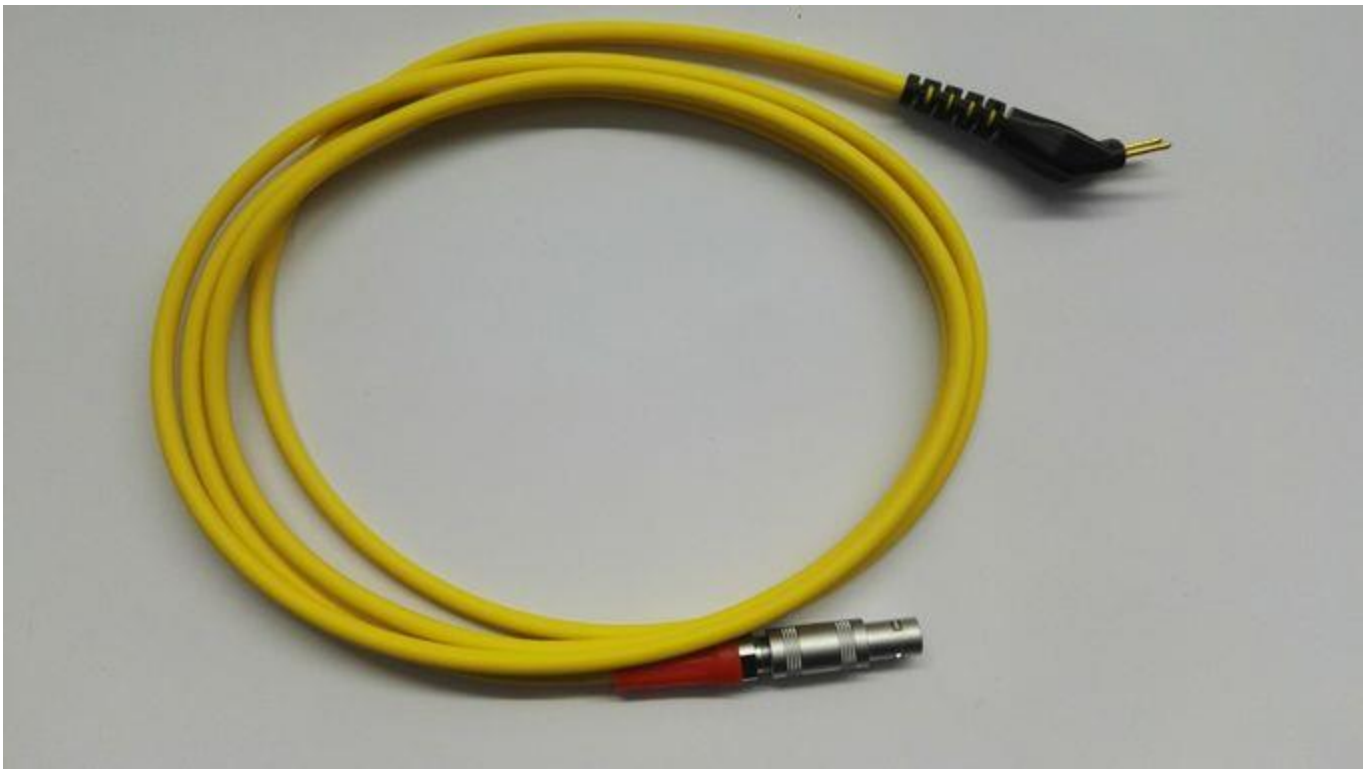
No.	Material	HLD	Strength σ_b(Mpa)
1	Mild steel	350～522	374～780
2	High-carbon steel	500～710	737～1670
3	Cr steel	500～730	707～1829
4	Cr-V steel	500～750	704～1980
5	Cr-Ni steel	500～750	763～2007
6	Cr-Mo steel	500～738	721～1875
7	Cr-Ni-Mo steel	540～738	844～1933
8	Cr-Mn-Si steel	500～750	755～1993
9	Super strength steel	630～800	1180～2652
10	Stainless steel	500～710	703～1676


DL


D


D


C

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Function:
On-line measuring management
Various function keys of data test, store, read, delete, clear, print, input and output to excel etc.
PC Software sample

Key words:Hardness Tester, Leeb Hardness Tester, Portable Hardness Tester, Portable Hand Held Leebs Metal Hardness Testers, Portable, Hardness Testers, hardness testing equipment, hardness testing machine, ndt, non destructive testing, ndt testing, impact device, Leebs, ASTM Standards, HRC, HRB, HRA, HB, HV, HS, HLD, hardness values, DIN 53505, ASTM D2240, ISO 7619