

# PORTABLE LEEB HARDNESS TESTER CODE ISH-SPHA\*

DATA  
OUTPUT



included



printer



hardness test block (standard)



small support ring

- Based on Leeb(HL), converted to Vickers(HV), Brinell(HB), Rockwell(HRC and HRB), Shore(HS) and tensile strength(MPa)
- Connected with printer via bluetooth
- Connected with computer via USB port
- Up to 800 test results can be saved
- Low and high limits with judgement
- Touch screen operation, large display with backlight
- Language: English, Chinese, Italian, German, French and Portuguese
- Automatic power off
- According to ASTM A 956

## SPECIFICATION

Min. reading	1HL, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
Accuracy	±6HL (when HL=800)
Display	Leeb(HL), converted hardness, material, impact direction, test times, average value, deviation, time
Output	bluetooth and USB
Power supply	built-in rechargeable battery
Dimension	135×83×24mm
Weight	350g

## STANDARD DELIVERY

Main unit	1pc
Impact device D	1pc
Printer	1pc
Hardness test block D	1pc
Small support ring	1pc
Cleaning brush	1pc
AC/DC adapter	1pc
USB cable and software disc	1pc of each
Pen for touch screen	1pc

## OPTIONAL ACCESSORY

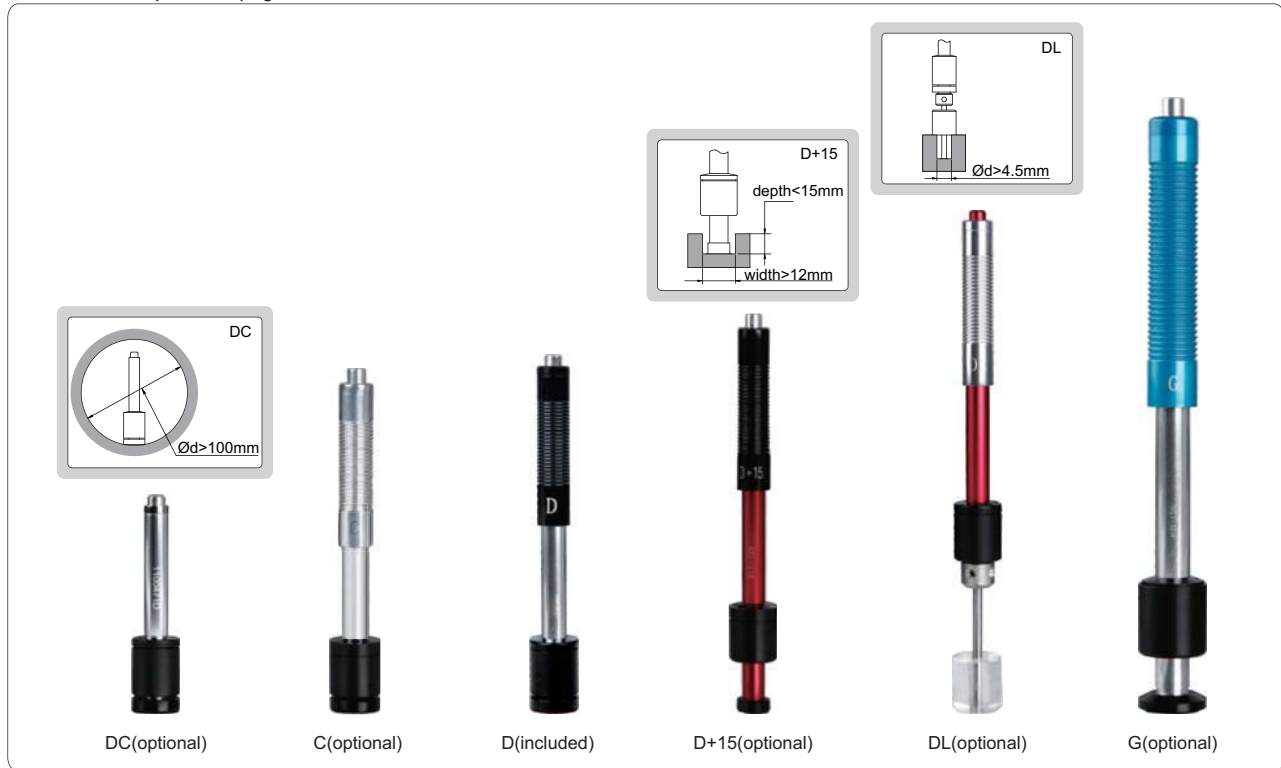
Impact device DC	ISH-SPHA-DC
Impact device C	ISH-SPHA-C
Impact device D+15	ISH-SPHA-D15
Impact device DL	ISH-SPHA-DL
Impact device G	ISH-SPHA-G
Hardness test block D**	ISH-BHLD
Hardness test block G**	ISH-BHLG
Couplant	ISH-COUPPLANT
Support rings	page 330

\* Supplied with manufacturer inspection certificate

\*\* Hardness test block G (ISH-BHLG) is for impact device G (ISH-SPHA-G).  
Hardness test block D (ISH-BHLD) is for all others impact devices.

To be continued

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**APPLICABLE WORKPIECE**

Impact device		DC	C	D	D+15	DL	G
Application		inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)		1.6µm	0.4µm	1.6µm	1.6µm	1.6µm	7µm
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	5kg	15kg
	on solid support	2kg	0.5kg	2kg	2kg	2kg	5kg
	coupled on plate	0.1kg	0.02kg	0.1kg	0.1kg	0.1kg	0.5kg
Minimum thickness of workpiece		5mm	1mm	5mm	5mm	5mm	10mm

**APPLICABLE MATERIAL AND HARDNESS RANGE**

Material	Scale	DC	C	D	D+15	DL	G
Steel & cast steel	HRC	20-68	20-69.5	20-68	19.3-67.9	20.6-68.2	
	HRB	38-100	38.4-99.5	38-100		37.0-99.9	47.7-99.9
	HB	81-654	80-683	81-654	80-638	81-646	90-646
	HV	81-955	80-996	81-955	180-818	80-950	
	HS	32-100	32-102	32-100	33-99	31-97	
	Tensile strength (MPa)			375-2639			
Cast iron	HB	93-334		93-334			92-326
	HV						
	HRC						
Tool steel	HRC	20-67		20-67			
	HV	80-898		80-898			
Stainless steel	HRB	46-101		46-101			
	HV	85-802		85-802			
	HB	85-655		85-655			
Cast aluminum alloy	HB	19-164		19-164			
	HRB	23-84		23-84			
Brass	HB	40-173		40-173			
	HRB	13-95		13-95			
Bronze	HB	60-290		60-290			
Copper	HB	45-315		45-315			