



AHT160 Leeb hardness tester



Features:

- Advanced Leeb Hardness Model with In-built printer
- Automatic identification of Impact devices
- High performance rechargeable Li battery, intelligent charging management
- Optional Software to connect with PC, Support data query, storage, statistics and histogram display and other functions
- Upper and lower limit and sound alarm
- Large LCD with backlight, showing all functions and parameters
- 高配版本配有 OLED 高亮屏幕
- Press HELP key can obtain operating tips in any displaying interface
- Direct display of hardness scales HRB, HRC, HV, HB, HS, ...

Technical Specification

Hardness scale	HL, HRC, HRB, HRA, HV, HB, HS
Memory	240~1000 group (Impact times:32 ~ 1)
Measuring range	HLD(170 ~ 960), HRA(59 ~ 85), HRB(13 ~ 100), HRC(20 ~ 68), HB(19 ~ 651), HV(80 ~ 967), HS(30 ~ 100)
Tensile strength U.T.S. range	374 ~ 2652 MPa
Accuracy	±6HLD (760±30HLD) error of displayed value
	6HLD (760±30HLD) repeatability of displayed value
Standard Impact Device	D
Data Interface	USB 2.0
Optional Impact Devices	DC / D+15 / G / C / DL
Max. Workpiece Hardness	996HV(For Impact Devices D / DC / DL / D+15 / C)
	646HB(For Impact Device G)
Min. Radius of Workpiece (convex/concave)	Rmin = 50mm (with special support ring Rmin = 10mm)
Min. Workpiece weight	2 ~ 5kg on stable support
	0.05 ~ 2kg with compact coupling
Min. Workpiece thickness	5mm (Impact Devices D/DC/DL/D+15)
	1mm (Impact Device C)
	10mm (Impact Device G)
Min. thickness of hardened layers	0.8mm
Power	Rechargeable Li Battery, 7.4V, Li(1500mAh)
Continuous Working time	About 300h, (without backlight)
Charging time	2.5 ~ 3 hours
Operating temperature	0 ~ 40°C

Humidity	≤ 90%
Overall dimensions	212 × 80 × 35 mm
Weight	320g

Comparison table:

Model	YH160	TH140
Hardness scale	HL, HRC, HRB, HRA, HV, HB, HS	
Measuring range	HLD(170 ~ 960), HRA(59 ~ 85), HRB(13 ~ 100), HRC(20 ~ 68), HB(19 ~ 651), HV(80 ~ 967), HS(30 ~ 100)	
Tensile strength U.T.S. range	374 ~ 2652 MPa	
Accuracy	±6HLD (760±30HLD) error of displayed value 6HLD (760±30HLD) repeatability of displayed value	
Standard Impact Device	D	
Optional Impact Devices	DC / D+15 / G / C / DL	
Max. Workpiece Hardness	996HV(For Impact Devices D / DC / DL / D+15 / C) 646HB(For Impact Device G)	
Min. Radius of Workpiece (convex/concave)	Rmin = 50mm (with special support ring Rmin = 10mm)	
Min. Workpiece weight	2 ~ 5kg on stable support 0.05 ~ 2kg with compact coupling	
Min. Workpiece thickness	5mm (Impact Devices D/DC/DL/D+15) 1mm (Impact Device C) 10mm (Impact Device G)	
Min. thickness of hardened layers	0.8mm	
Memory	240 ~ 1000 group (Impact times: 32 ~ 1)	48 ~ 350 group (Impact times: 32 ~ 1)
Display	128 × 64 LCD / OLED	LCD
Data Interface	USB 2.0	UART
Printer	Integrated thermal a. 打印速度快 b. 安静	Dot matrix
Power	Rechargeable Li Battery, 7.4V, Li(1500mAh) a. 使用寿命长 b. 没有记忆效应, 可随时充电 c. 电量保持时间更长	Rechargeable Ni-NH battery, 6V, 600mAh
Continuous Working time	About 300h, (without backlight)	About 100h, (without backlight)
Backlight	LED(high performance) a. 亮度高 b. 功耗低 c. 寿命长 d. 干扰小	EL
Charging time	2.5 ~ 3 hours	2 ~ 3.5 hours
Overall dimensions	212 × 80 × 35 mm	268 × 86 × 50 mm

Weight	320g	480g
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Standard delivery	Main unit In-built Printer Impact Device type D Test block HLD Charger Brush Table support for main unit Connecting cable Company certificate Instruction manual Dataview Software
Optional accessories	Optional impact devices Optional support rings Other test blocks

Accessories Images:



Impact Devices



Supporting rings



Test Blocks



Impact body



Mini-Printer

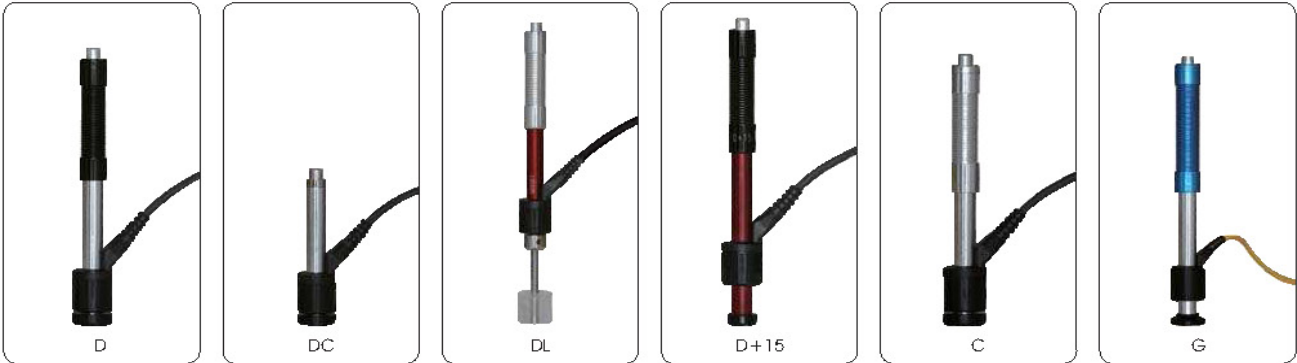


Cable for Impact device

Measuring range of Leeb hardness testers :

Material	Hardness scale	Impace 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
Steel	HB	143~650					
CWT, ST	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					
GC, IRON	HRC						
	HB	93~334			92~326		
	HV						
NC, IRON	HRC						
	HB	131~387			127~364		
	HV						
C, ALUM	HB	19~164		23~210	32~168		
	HRB	23.8~84.6		22.7~85.0	23.8~85.5		
BRASS	HB	40~173					
	HRB	13.5~95.3					
BRONZE	HB	60~290					
COPPER	HB	45~315					

Optional Impact Devices



D for general purpose detector

C For surface hardened components, coatings, thin walled or impact sensitive components

DC for internal walls of pipes with diameter that cannot be tested with the D type

D+15 for bearings and gears

DL for small areas such as the bottom of small gears and weld corners

G For solid components, such as heavy castings and forgings

Technical Specification

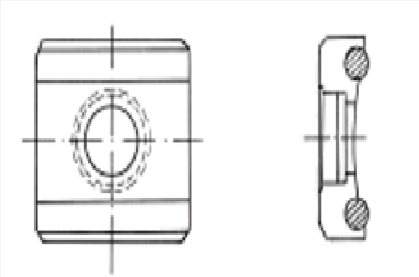
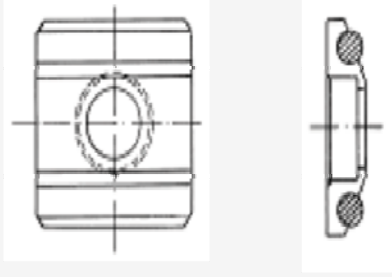
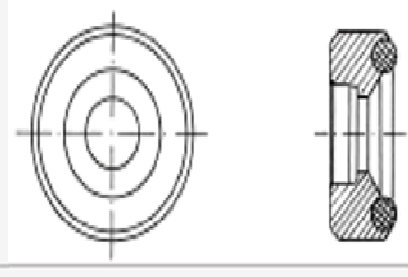
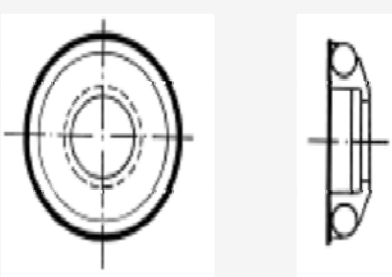
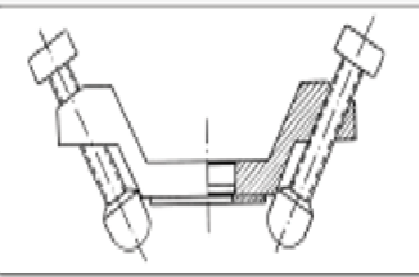
Impact Devices		D / DC / DL	D+15	C	G
Impacting energy (Nmm)		11	11	3	90
Mass of impact body (g)		5.5/5.5/7.3	7.8	3.0	20
Test tip	Hardness (HV)	1600	1600	1600	1600
	Diameter (mm)	3	3	3	5
	Material	Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide
Impact body	Diameter (mm)	20	20	20	30
	Length (mm)	147/147/86	162	141	254
	Weight (gr)	75/75/50	80	75	250
Max. Hardness of work piece		940HV	940HV	1000HV	650HB
Preparation of surface	Roughness class ISO (ISO)	N7	N7	N5	N9
	Max. roughness depth Rt (μm)	10	10	2.5	30
	Average roughness Ra (μm)	2	2	0.4	7
Min. weight of sample	Of compact shape (kg)	5	5	1.5	15
	On solid support (kg)	2	2	0.5	5
	Coupled on plate (kg)	0.1	0.1	0.02	0.5
Min. thickness of sample	coupled (mm)	3	3	1	10
	Min. thickness of hardened layers (mm)	0.8	0.8	0.2	-

Indentation of Test tip

With 300HV	Diameter (mm)	0.54	0.54	0.38	1.03
	Depth (μm)	24	24	12	53
With 600HV	Diameter (mm)	0.45	0.45	0.32	0.90
	Depth (μm)	17	17	8	41
With 800HV	Diameter (mm)	0.35	0.35	0.30	-
	Depth (μm)	10	10	7	-

No.	Impact device	Standard test block values	Tolerance	Repeatability
1	D	760 ± 30HLD 530 ± 40HLD	± 6HLD ± 10HLD	6HLD 10HLD
2	DC	760 ± 30HLDC 530 ± 40HLDC	± 6HLDC ± 10HLDC	6HLDC 10HLDC
3	DL	878 ± 30HLDL 736 ± 40HLDL	± 12HLDL	12HLDL
4	D+15	766 ± 30HLD+15 544 ± 40HLD+15	± 12HLD+15	12HLD+15
5	G	590 ± 40HLG 500 ± 40HLG	± 12HLG	12HLG
6	C	822 ± 30HLC 590 ± 40HLC	± 12HLC	12HLC

Support rings are used for tested surface whose curvature radius is less than 30mm (D, DC, D+15, C impact devices) or less than 50mm (G impact device)

No.	Type	Sketch of non-conventional supporting ring	Remarks
1	Z10-15		For testing cylindrical outside surface R10~R15
2	Z14.5-30		For testing cylindrical outside surface R14.5~R30
3	Z25-50		For testing cylindrical outside surface R25~R50
4	HZ11-13		For testing cylindrical inside surface R11~R13
5	HZ12.5-17		For testing cylindrical inside surface R12.5~R17
6	HZ16.5-30		For testing cylindrical inside surface R16.5~R30
7	K10-15		For testing spherical outside surface SR10~SR15
8	K14.5-30		For testing spherical outside surface SR14.5~SR30
9	HK11-13		For testing spherical inside surface SR11~SR13
10	HK12.5-17		For testing spherical inside surface SR12.5~SR17
11	HK16.5-30		For testing spherical inside surface SR16.5~SR30
12	UN		For testing cylindrical outside surface, radius adjustable R10~∞

