



PORTABLE ULTRASONIC AND LEEB HARDNESS TESTER RoboUltra – 200i

RoboUltra-200i is a combined portable hardness tester which integrated the ultrasonic hardness testing method and dynamic Leeb hardness testing resolution in one instrument.

RoboUltra-200i is updated product based on ultrasonic hardness tester RoboUltra-100 and Leeb hardness tester RoboLeeb-500, it has full of functions of RoboUltra-100 and RoboLeeb-500, so it supports all of static ultrasonic measuring probes and Leeb dynamic impact devices together.

UCI method apply ultrasonic contact impedance method to do comparative hardness measurement for testing pieces, with advantages of high accuracy, efficiency, portable and easy operation.



Widely used to measure hardness of small forgings, cast material, weld inspection, heat affected zone, Ion-nitrided stamping dies and molds, forms, presses, thin walled parts, bearings, tooth flanks, etc.

Leeb method is a dynamic hardness test method using a calibrated instrument that impacts a spherically shaped carbide ball or diamond tipped body with a fixed velocity (generated by a spring force) onto a surface of the material under test. The ratio of the rebound velocity to the impact velocity of the impact body is a measure of the hardness of the material under test.

Leeb method used to test hardness of Die cavity of molds, Bearings and other parts, Failure analysis of pressure vessel, steam generator and other equipment, Heavy work piece, The installed machinery and permanently assembled parts, Testing surface of a small hollow space, Material identification in the warehouse of metallic materials, Rapid testing in large range and multi-measuring areas for large-scale work piece



FEATURES

- High accuracy
- High Efficiency
- Portable and easy operation

TECHNICAL SPECIFICATION

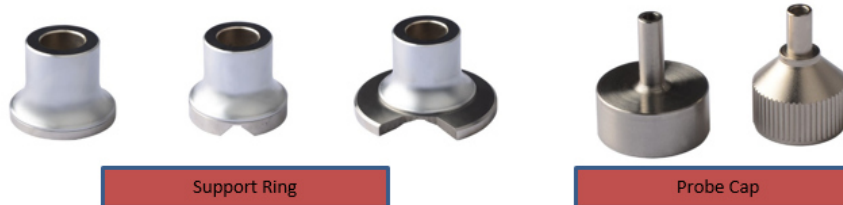
Product Name	Portable Ultrasonic and Leeb Hardness Tester
Model	RoboUltra-200i
Loading Force	2Kgf(Optional: 1Kgf, 5Kgf, 10Kgf)
Impact Device	Standard: D (Optional: DC/D+15/DL/G/C/E)
Measuring Range	HRC:20.3~68; HRB:41~100; HRA:61~85.6; HV:80 ~ 15999; HB:76~618; HLD 170-960;Mpa 255~2180N/mm2
Measuring Accuracy	HV:±3%HV; HRC:±1.5HRC; HB:±3%HB:HL:±3%HL
Indenter	136° Vickers Diamond Indenter
Measuring Direction	Support 360°
Data Storage	To save 1000-groups of measuring data and 20-groups of calibration
Hardness Scale	HV、HB、HRC、HRA、HRB、MPa
Data display	Loading force,Testing-times, Testing result, Average, Maximum、
Hardness Indication	LCD display
Operating Environment	Temperature:-10°C~50°C; Humidity: 30%~80%R.H
Operating Voltage	DC 4.2V
Instrument Dimensions	160x80x31mm
Net Weight	Approximate 500g (Without probe)

SCOPE OF SUPPLY

Product Name	Product Name
Instrument Main Body	Probe Silicone Cap
2Kgf manual Probe HP-2k	Instrument Manual
Impact Device Type D	Accessories Box
Probe Cable	Certificate
USB Cable	Leeb hardness Block

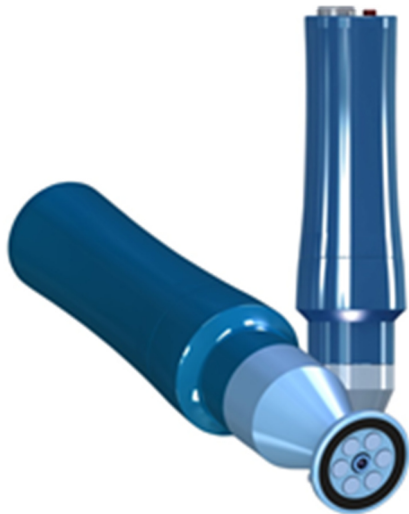
MANUAL PROBE SPECIFICATION

Probe Type	HP-1K	HP-2K	HP-5K	HP-10K
Remark	Optional	Standard	Optional	Optional
Loading force	10N	20N	50N	98N
Diameter	22mm	22mm	22mm	22mm
Length	154mm	154mm	154mm	154mm
Oscillating Rod Diameter	2.4mm	2.4mm	3mm	3mm
Roughness of measuring surface	Ra<3.2um	Ra<5um	Ra<10um	Ra<15um
Min weight of test material	0.3kg	0.3kg	0.3kg	0.3kg
Min thickness of test material	2mm	2mm	2mm	2mm



MOTORIZED PROBE SPECIFICATION

Probe Type	MP-100	MP-300	MP-500	MP-800
Remark	Optional	Optional	Optional	Optional
Loading force	1N	3N	5N	8N
Diameter	46mm	46mm	46mm	46mm
Length	200mm	200mm	200mm	200mm
Oscillating Rod Diameter	3.7mm	3.7mm	3.7mm	3.7mm
Min weight of test material	0.3kg	0.3kg	0.3kg	0.3kg
Min thickness of test material	2mm	2mm </td <td>2mm</td> <td>2mm</td>	2mm	2mm



Motorized Probe



Motorized Probe with "V"
Support Ring



LEEB IMPACT DEVICE SPECIFICATION

Type of impact device	DC(D)/DL	D+15	C	G	E
Impacting energy	11mJ	11mJ	2.7mJ	90mJ	11mJ
Mass of impact body	5.5g/7.2g	7.8g	3.0g	20.0g	5.5g
Test tip hardness:	1600HV	1600HV	1600HV	1600HV	5000HV
Dia. Test tip:	3mm	3mm	3mm	5mm	3mm
Material of test tip:	Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide	synthetic diamond
Impact device diameter:	20mm	20mm	20mm	30mm	20mm
Impact device length:	86(147)/	162mm	141mm	254mm	155mm
Impact device weight:	75mm 50g	80g	75g	250g	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:	>5kg	>5kg	>1.5kg	>15kg	>5kg
Measure directly	2~5kg	2~5kg	0.5~1.5kg	5~15kg	2~5kg
Need support firmly	0.05~2kg	0.05~2kg	0.02~0.5kg	0.5~5kg	0.05~2kg
Need coupling tightly					



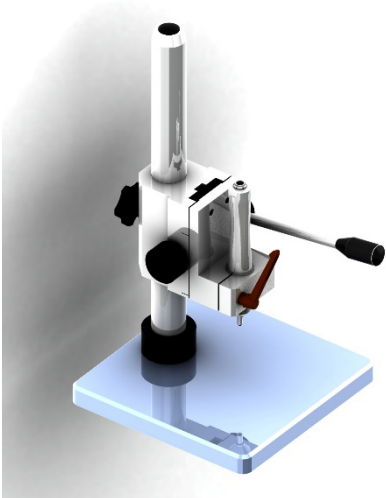
Min. thickness of sample Coupling tightly		5mm	5mm	1mm	10mm	5mm
Min. layer thickness for surface hardening		≥0.8mm	≥0.8mm	≥0.2mm	≥1.2mm	≥0.8mm
Size of tip indentation						
Hardness 300HV	Indentation diameter	0.54mm	0.54mm	0.38mm	1.03mm	0.54mm
	Depth of indentation	24μm	24μm	12μm	53μm	24μm
Hardness 600HV	Indentation diameter	0.54mm	0.54mm	0.32mm	0.90mm	0.54mm
	Depth of indentation	17μm	17μm	8μm	41μm	17μm
Hardness 800HV	Indentation diameter	0.35mm	0.35mm	0.35mm	--	0.35mm
	Depth of indentation	10μm	10μm	7μm	--	10μm
Available type of impact device		DC: Test hole or hollow cylindrical; DL: Test slender narrow groove or hole	D+15: Test groove or reentrant surface	C: Test small, light, thin parts and surface of hardened layer	G: Test large, thick, heavy and rough surface steel	E: Test super high hardness material

Leeb Support Ring Specifications:

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~∞



UCI Manual Probe



Test Stand



UCI Hardness Block



Optional Mini Printer



Leeb Impact Device



Optional Leeb Support