METTECHNIK

One stop solution in Metallurgy Testing

ULTRASONIC PORTABLE HARDNESS TESTER Model: UH-III

Introduction:

At present, there are kinds of methods for hardness measurement,commonly used like Brinell, Rockwell, Vickers, Leeb, etc. while the disadvantages are obvious for the above hardness measurement .

Rockwell and Brinell with heavy loading force and big indentation, lead to serious destruction on sample surface.

Vickers apply optical measurement, but only professional technicians can operate smoothly, impossible to measure hardness of heavy work piece, installed machinery and permanently assembled parts.

Leeb hardness tester apply rebound and indirect method to measure hardness, easily lead to big deviation when convert to Brinell, Rockwell and Vickers scales.

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

Ultrasonic hardness tester UH-III is 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.

Features:

Perfect Accuracy——±3% HV, ±1.5HR, ±3%HB

Microscopic Indentation—— Only high-power microscope can observe the indentation

Quick Measurement——Result in 2 seconds

Large LCD Display——Directly display measurement result, times count, maximum, minimal, average and deviation.

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Friendly Operation——Operate well after short training

Promised Warranty——2-Year warranty for main unit (Excludes Probe)

Mass Storage——Save 1000 groups measurement data

Simple Calibration——Save 20 groups calibration data for invoking,improve calibration efficiency.

UH-III Specifications:

Model	**Ultrasonic Hardness Tester**
Model	UH-III
Loading Force	2Kgf(Optional: 1Kgf, 5Kgf, 10Kgf)
Measuring Range	HB: 85-650; HV 80-1599; HRC 20-70; HRB:41-100; HRA: 61-85.6; HS: 34.2-97.3; Mpa: 255- 2180N/mm
Measuring Accuracy	HV:±3%HV; HRC:±1.5HRC; HB:±3%HB
Indenter	136°Vickers Diamond Indenter
Measuring Direction	Support 360°
Data Storage	To save 1000-groups of measuring data and 20-groups of calibration data
Hardness Scale	HV、HB、HRC、HRA、HRB、MPa
Data display	Loading force, Testing-times, Testing result, Average, Maximum、Minimum、Deviation and Conversion scale.
Display	LCD display
Operating Environment	Temperature:-10℃~50℃; Humidity: 30%~80%R.H
Power	DC 4.8V
Dimensions	160x80x31mm
Net Weight	Approximate 500g（Without probe）

Standard Delivery:

UH-III Main Unit -1No.	Carry Case -1No.
2Kg Manual Probe -1No.	Warranty Card -1No.

Probe Cable -1No.	Quality Certificate -1No.
Recharger -1No.	Operation Manual -1No.
Battery -1No.	Calibration Certificate -1No.
Screw driver -1No.	

Manual Probe Specifications:

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 Specifications:

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	2mm	2mm

Guidelines for selection and use of UCI instruments:

Load	Model	Features	MP500
98N	Standard length (Manual)	Relatively large indentation; requires minimal surface preparation	Small forgings, cast material, weld inspection, HAZ

50N	Standard length (Manual) Extended length (Manual) Short probe (Manual)	For general use 30 mm extended length Reduced length (90 mm); electronics in separate housing	Induction hardened or carburized machine parts, for example, camshafts, turbine weld inspection, HAZ Measurement in grooves, on gear tooth flanks and roots Turbine blades, inside wall of pipes with Ø >90 mm
10N	Standard length (Manual) Extended length (Manual) Short probe (Manual)	Load is easy to apply and provides control to test onsharp radii 30 mm extended length Reduced length (90 mm); electronics in separate housing	Ion-nitrided stamping dies and molds, forms, presses, thin walled parts Bearings, tooth flanks Turbine blades, inside wall of pipes with Ø >90 mm
8N	Motor probe style	Load is applied by servomotor	Finished precision parts, gears, bearing raceways
3N	Motor probe style	Load is applied by servomotor; rather small indentations	Thin layers, for example, copper or chromium on steel cylinders; Copper rotogravure cylinders; Coatings,case harden parts.
1N	Motor probe style	Load is applied by servomotor; rather small indentation	Thin layers and coatings

Block Specification:

Hardness Range	Uniformity	Roughness	Dimension
(28~35)HRC	±1.5HRC	Ra=0.02um	Ø90x16mm
(38~45) HRC	±1.5HRC	Ra=0.02um	Ø90x16mm
(48~55)HRC	±1.5HRC	Ra=0.02um	Ø90x16mm
(58~65)HRC	±1.5HRC	Ra=0.02um	Ø90x16mm
(50~999)HV1	±3% HV	Ra=0.02um	Ø90x16mm
(50~999)HV5	±3% HV	Ra=0.02um	Ø90x16mm

Support Ring Specifications:

Support Ring Name	Plan Support Ring	Small Cylinder Support Ring	Big Cylinder Support Ring
Application	Plan Test Piece	Diameter 8-22mm Test Piece	Diameter 16-80mm Test piece

We also supply all types of Metallography Equipments





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