

SU-300H

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Introduction:

- SU-300H manual ultrasonic hardness tester applies module design, which can work with manual probes HP-1K, HP-2K, HP-5K, HP-10K, can be used to test 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.
- SU-300H can test hardness of ferrous metal, non ferrous metal and alloys, it is an ideal instrument, can test hardness of HRA, HRB, HRC, HV, HBW, HS on site, assembly line and lab.
- SU-300H can also be upgraded with motorized probes MP-300, MP-500, MP-800, MP-1000, then the function is same with SU-300M.



SU-300H(#882-141H)

Conform Standards:
ASTM-A1038-2005;
DIN 50159-1-2008;
JB/T9377-2010.

Specifications:

Product Name	Manual Ultrasonic Hardness Tester				
Model	SU-300H				
Code#	882-141H				
Optional Probe	Manual Probe:10N、20N、49N、98N; Motorized Probe:3N、5N、8N、10N				
Measuring Range(ASTM)	HBS:100-500; HV:100-1500; HRC:20-68; HRB:55-100; HRA:37-85; Mpa: 255-2180N/mm				
Measuring Accuracy	Scales	< 250HV	250~500HV	500~800HV	> 800HV
	HV0.1	6	7	8	9
	HV0.3	6	7	8	9
	HV0.8	5	5	6	7
	HV1	5	5	6	7
	HV5	5	5	6	5
	HV10	5	5	5	5
LCD	3.2"Color Screen				
Hardness Scales	Vickers(HV);Rockwell C(HRC); Rockwell A(HRA); RockwellB(HRB); Brinell(HB)				
Data Display	Loading force,Testing-times, Testing result, Average, Maximum, Minimum,Deviation and Conversion scale.				
Language	Chinese, English, German, Portugese, Turkish				
Data Output	RS232 Hyper Terminal/Bluetooth Printer				
Print	Bluetooth				
Data Storage	To save 1000-groups of measuring data and 20-groups of calibration data				
Word Input	Letters and numerals				
Working Environment	Temperature: -10°C to 50°C ; Humidity :30%-80% R.H.				
Battery Voltage	Rechargeable lithium battery ; Voltage :4.2V, 4800mAh				
Recharger Voltage	AC220V/50Hz, 110V/60Hz				
Main unit Dimension and Weight	Main unit Dimension :160 x 80 x 30mm (L x W x H); Manual Probe: Φ22 x 153mm ; Weight(No Probe): 0.5Kg				
Packing Dimension and Weight	Packing Dimension :320 x 430 x 155mm (L x W x H) ; Packing Weight (Standard Delivery) :4.3Kg				

Features:

- Perfect Accuracy**—— $\pm 3\%$ HV, $\pm 1.5\%$ HR, $\pm 3\%$ 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.
- 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.

Standard Delivery:

Product Name	Code#
Instrument Main Body	882-141H
20N Manual Probe	882-321
Standard Rockwell Block	882-641
Probe Cable	882-801
USB Recharger	882-851
Screw	882-951
Anti Vibration Case	882-901
Operation Manual	SU-300H

Manual Probe

Features:

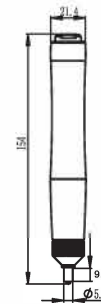
- Introduced latest ultrasonic sensor technology.
- Obtain accurate hardness value without auxiliary devices.
- Support 360° quick measuring.
- Excellent human engineering design easy to hold.
- Suitable dimension and weight of probe is convenient to control.
- Quick and accurate measuring for edge and fixed position of specimen.
- Micro indentation, Non- Destructive for specimen.



Standard Probe Cap
(#882-711)



Deep Hole Probe Cap
(#882-721)



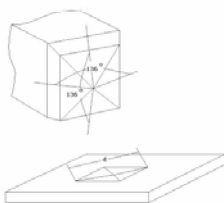
Drawings of Manual Probe

Manual Probe

HP-1K	HP-2K	HP-5K	HP-10K
882-311	882-321	882-331	882-341

Specifications:

Probe Type	HP-1K	HP-2K	HP-5K	HP-10K
Code#	882-311	882-321	882-331	882-341
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<2.5um	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



Ultrasonic Hardness Tester Indenter Illustration

$$\Delta f = f(E_{\text{eff}}, A); \quad HV = F/A$$

Δf = Frequency Shift

A = Indentation area

E_{eff} = Effective elastic modulus

HV = Vickers hardness value

F = Force applied in the hardness

$$HV = \frac{F}{A}$$

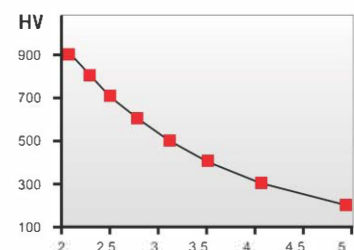
$$A = \frac{F}{HV}$$

$$\Delta f = f(E_{\text{eff}}, A)$$

$$A = f(E_{\text{eff}}, \Delta f)$$

$$E_{\text{eff}} = \frac{\Delta f_1}{\Delta f_2}$$

Ultrasonic Hardness Tester Calculation Formula



UCI Method: Hardness Value versus Frequency Shift



Hardness Block

(28~35)HRC	(38~43)HRC	(48~53)HRC	(58~63)HRC
882-611	882-621	882-631	882-641

Block Specification:

Hardness Range	Code#	Uniformity	Roughness	Dimension
(28~63)HRC	882-611	±1.5HRC	Ra=0.02um	Ø90x16mm
(300~800)HV1	882-621	±3%HV	Ra=0.02um	Ø90x16mm
(300~800)HV5	882-631	±3%HV	Ra=0.02um	Ø90x16mm
(300~800)HV10	882-641	±3%HV	Ra=0.02um	Ø90x16mm
(180~500)HB	882-681	±2%HB	Ra=0.02um	Ø90x16mm



Small Cylinder Support Ring (#882-521)

Big Cylinder Support Ring (#882-531)

Plan Support Ring (#882-511)

Support Ring Specifications:

Support Ring Name	Plan Support Ring	Small Cylinder Support Ring	Big Cylinder Support Ring
Code#	882-511	882-521	882-531
Application	Plan Test Piece	Diameter 8-22mm Test Piece	Diameter 16-80mm Test Piece



10KG/5KG Probe Counterweight



Carrier and Stand



Plan Support Ring



Manual Probe Test Stand MU-100



Motorized Probe Test Stand MU-200

Testing Stand

MU-100 testing stand is applicable with ultrasonic hardness tester for the accurate measurement, MU-200/MU-300/MU-400 in the laboratory, it must be used when Manual Probe calibrated.

Testing Stand	MU-100	MU-200	MU-300	MU-400
Code#	882-311	882-321	882-331	882-341
Material	Stainless Steel	magnesium aluminum alloy	Aluminum	Stainless Steel
Weight	8.8Kg	1.6Kg	4.5Kg	9.5Kg
Dimension(LxWxH)	200 x 200 x 332mm	205 x 142 x 284mm	200 x 120 x 348mm	200 x 200 x 332mm
Packing Dimension	320 x 320 x 440mm	405 x 340 x 580mm	398 x 310 x 540mm	398 x 398 x 530mm
Application	Manual Probe Test Stand	Motorized Probe Test Stand for Roller Materials	Motorized Probe Magnet Test Stand	Motorized Probe Test Stand



MU-100(#882-311)

MU-200(#882-321)

MU-300(#882-331)

MU-400(#882-341)