



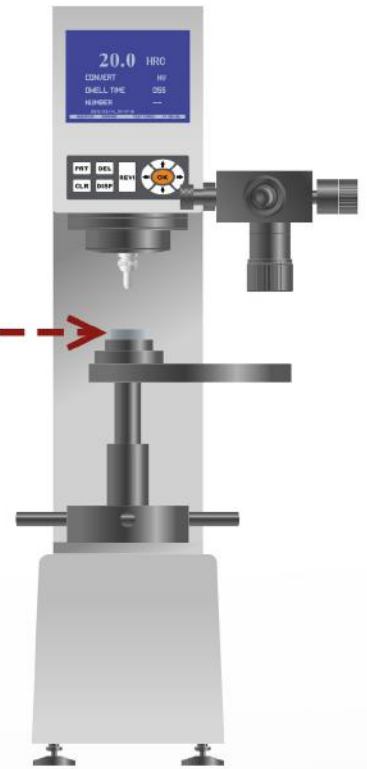
UNIVERSAL
Hardness Testers

Universal Hardness

Universal hardness Testers are multi-function instruments for the determination of Rockwell, Brinell and Vickers hardness. As an all-in-one equipment they allow the user to concentrate the measurement, the calibration and the maintenance in one single unit. Mostly used when all kinds of hardness have to be tested with specific ranges. Always applying the international standards ASTM, ISO and JIS this solution grants performance and versatility.

LOADING

1



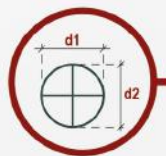
2 INDENTATION



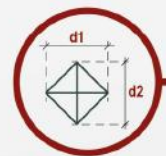
ROCKWELL



BRINELL

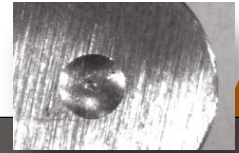


VICKERS



3

MEASURING



Rockwell						
Scale	Indenter	Pre-load	Load	Indentation time	Sample preparation	Application
HRA	Spheroconical diamond	98.07 N (10 kgf)	588.4 N (60 kgf)	2 to 6 seconds	No surface preparation	Cemented carbides, thin steel, and shallow case hardened steel.
HRB	Ball, 1.588mm ($\frac{1}{16}$ ")	98.07 N (10 kgf)	980.7 N (100 kgf)	2 to 6 seconds	No surface preparation	Copper alloys, soft steels, aluminum alloys, malleable iron, etc.
HRC	Spheroconical diamond	98.07 N (10 kgf)	1471 N (150 kgf)	2 to 6 seconds	No surface preparation	Steel, hard cast irons, pearlitic malleable iron, titanium, deep case hardened steel, and other materials harder than 100 on the Rockwell B scale.
HRD	Spheroconical diamond	98.07 N (10 kgf)	980.7 N (100 kgf)	2 to 6 seconds	No surface preparation	Thin steel and medium case hardened steel, and pearlitic malleable iron.

Applicable standard ASTM E18, ISO 6508, JIS Z2245



Brinell					
Method	Indenter	Indentation time	Sample preparation	Application	
HBW 1/30	Tungsten carbide 1mm sphere	10 to 15 seconds	Ground, polished	Steel / Iron	
HBW 2.5/187.5	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Steel / Iron	
HBW2.5/62.5	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys, aluminium alloys	
HBW2.5/31.25	Tungsten carbide 2.5mm sphere	10 to 15 seconds	Ground, polished	Light metals, copper, aluminium, copper alloys or heat treated	
HBW 5/62.5	Tungsten carbide 5mm sphere	10 to 15 seconds	Ground, polished	Light metals	
HBW 10/100	Tungsten carbide 10mm sphere	10 to 15 seconds	Ground, polished	Light metals, lead, tin	

Applicable standard ASTM E10, ISO 6506, JIS Z2243



Vickers				
Scale	Indenter	Indentation time	Sample preparation	Application
HV30	Pyramidal diamond	10 to 15 seconds	Ground	Jominy, surface hardness testing
HV100	Pyramidal diamond	10 to 15 seconds	Ground	Jominy, surface hardness testing

Applicable standard ASTM E384 for Micro and Macro ranges, ISO 6507 for Micro and Macro ranges, JIS Z2244

HTU 200BVR D

Digital Brinell, Rockwell & Vickers Hardness Tester

- > Digital Brinell, Rockwell & Vickers hardness tester equipped with large displaying screen. Three test modes and 7 level of test forces, test force loading, dwell, unload adopts automatic shifting. Present scale, test force, test indenter, dwell time and hardness conversion displayed. With RS232 interface for computer connection.



Application

- > Suitable for hardened and surface hardened steel, hard alloy steel, casting parts, non-ferrous metals, various kinds of hardening and tempering steel and tempered steel, carburized steel sheet, soft metals, surface heat treating and chemical treating materials etc.

Reference Standard

- > ISO 6508, ASTM E-18, JIS Z2245
- > ISO 6506, ASTM E10-12, JIS Z2243
- > ISO 6507, ASTM E92, JIS Z2244

Rockwell table			
Hardness Scale	Hardness ranges of standard Block	Allowed Tolerance of Displaying value	Allowed Repeatability of Displaying value (H: average hardness value, b: select a larger value)
HRA	20~≤75 HRA	±2 HRA	≤0.02 (100-H) or 0.8 Rockwell unit ^b
	>75~≤88 HRA	±1.5 HRA	
HRB	20~≤45 HRB	±4 HRB	≤0.04 (130-H) or 1.2 Rockwell unit ^b
	>45~≤80 HRB	±3 HRB	
	>80~≤100 HRB	±2 HRB	
HRC	20~≤70 HRC	±1.5 HRC	≤0.02 (100-H) or 0.8 Rockwell unit ^b
HRD	40~≤70 HRD	±2 HRD	≤0.02 (100-H) or 0.8 Rockwell unit ^b
	>70~≤77 HRD	±1.5 HRD	

Brinell table		
Hardness ranges of standard Block	Allowed Tolerance of Displaying value%	Allowed Repeatability of Displaying value%
≤125	±3	3
125<HBW≤225	±2.5	2.5
>225	±2	2

Vickers table 1																
Hardness	Displayed value tolerance %															
	Hardness HV															
	50	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1500
HV 30	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
HV 100		3	2	2	2	2	2	2	2	2	2	2	2	2	2	2

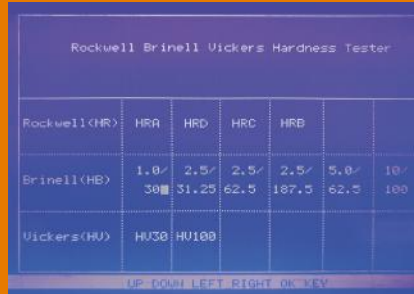
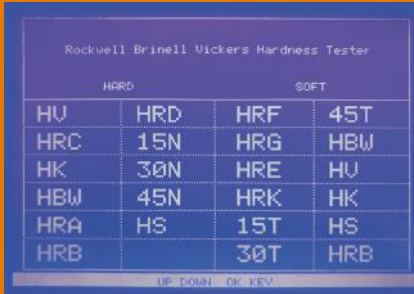
1) When the indentation diagonal length is less than 0.020 mm, the table does not display the value.
 2) For intermediate values, the maximum allowable error can be obtained by interpolation.
 3) About the Micro hardness Tester value in the table is 0.001mm or indentation diagonal length of the average of 2% of the maximum permissible error given, please select the bigger.

Vickers table 2	
Standard hardness range	Displayed value repeatability %
≤225HV	≤3
>225HV	≤2

Model	HTU 200BVR D
Test force control	Weights - Load electronically controlled
Load selection	By right side handle
Pre-Load	10kgf (Rockwell only)
Main loads	Available loads: 30kgf, 31.25kgf, 60kgf, 62.5kgf, 100kgf, 150kgf, 187.5kgf, Rockwell: 60kgf, 100kgf, 150kgf Brinell: 30kgf, 31.25kgf, 62.5kgf, 100kgf, 187.5kgf Vickers: 30kgf, 100kgf
Test force selection	HRA (60kg), HRB (100kg), HRC (150kg), HRD (100kg), HBW1/30 (30kg), HBW2.5/31.25 (31.25kg), HBW2.5/62.5 (62.5kg), HBW2.5/187.5 (187.5kg), HBW5/62.5 (62.5kg), HBW10/100 (100kg), HV30 (30kg), HV100 (100kg)
Dwell time	0~60s
Loading time	2s
Test force tolerance	±1%
Test cycle type	Rockwell: semi-automatic Manual - Pre-load with sound alarm brake Automatic - Load, dwell, unload, show of the hardness value Brinell & Vickers: semi-automatic Manual - Pre-load with sound alarm brake, measure of indentation Automatic - Load, dwell, unload, show of the hardness value (after measure step)
Hardness scales	HRA, HRB, HRC, HRD, HBW1/30, HBW2.5/31.25, HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW10/100, HV30, HV100
Hardness test range	Rockwell: 20~88 HRA, 20~100HRB, 20~70HRC, 40~77HRD Brinell: 3.18~653HBW Vickers: 1~2967HV
Hardness resolution	Rockwell: 0.1HR (Valid for all the available Rockwell scales) Brinell: 0.1HBW Vickers: 0.1HV
Repeatability hef/%	Refer to the scales table
Scale conversion	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HBW
Turret type	Fixed
Eyepiece microscope	15x
Objectives	2.5x, 5x
Microscope min. measuring unit	0.5µm (2.5x objective) - 0.25µm (5x objective)
Microscope max. measurement length	2mm (2.5x objective) - 1mm (5x objective)
Measurable min. indent/indentation	Brinell:0.24mm - Vickers:0.01mm
Optical path	1
Illumination	LED
Indenters	Diamond Rockwell indenter, diamond Vickers indenter, ø 1.588mm Rockwell ball indenter, hard alloy steel ø 2,5mm ball indenter, hard alloy steel ø 5mm ball indenter
N. of indenters	1
Nose cone bore	6.35mm
Vertical test capacity	Rockwell: 175mm, Brinell: 100mm, Vickers: 115mm
Horizontal test capacity	165mm
Anvils dimensions	Large plane test table (size: ø 150mm), middle plane test table (size: ø 74mm), V-shaped test table (size: ø 40mm), sliding test table (size: ø 74mm)
Max. weight on anvil	100kg
Z axis movement	Manual
Z axis movement resolution	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	4.3"
Operation method o input mode	Control panel keyboard
Displayed data	Hardness value(HR-HB-HV), conversion scale, D1, D2, dwell time, date and time, test number, indenter needed, test force
Statistics or functions	Max, min, average value
Data storage	Temporary session memory: Brinell and Vickers: 108 tests Rockwell: 216 tests
Data output	Hyperterminal session format file .HT
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	1xRS232
Safety device	Emergency stop button
Operation temperature	10~30° C
Operation rel. humidity	≤65%
Weight	80kg
Dimensions	520x240x740mm
Power supply	220V, 50Hz
Voltage variance	±10%
Absorbed power (stand-by and working)	500W

HTU 200BVR D





Code	Standard accessories	Q.ty
UHT-DE15X	15x digital measuring eyepiece	1 pc
UHT-MSIOL	Microscope system	1 set
UHT-2.5XOB	2.5x objective	1 pc
UHT-5XOB	5x objective	1 pc
UHT-RI120	Diamond Rockwell indenter	1 pc
UHT-BI15	ø 1.588mm Rockwell ball indenter	1 pc
UHT-BI25	Hard alloy steel ø 2,5mm ball indenter	1 pc
UHT-BI5	Hard alloy steel ø 5mm ball indenter	1 pc
UHT-VI136	Diamond Vickers indenter	1 pc
UHT-STT74	Sliding test table ø 74mm	1 pc
UHT-MPTT74	Middle plane test table ø 74mm	1 pc
UHT-LTT150	Large plane test table ø 150mm	1 pc
UHT-VTT40	V-shaped test table ø 40mm	1 pc
HB-RC2030	Hardness block 20~30 HRC	1 pc
HB-RC6070	Hardness block 60~70 HRC	1 pc
HB-RB80100	Hardness block 80~100 HRB	1 pc
HB-150250HBW2.5/187.5	Hardness block 150~250 HBW 2.5/187.5	1 pc
HB-700800HV30	Hardness block 700~800 HV30	1 pc
UHT-4RS	Horizontal regulating screw	4 pcs
UHT-LV	Level	1 pc
UHT-PC	Power cable	1 pc
UHT-SK	Service keys	1 set
UHT-5WS	Weights	5 pcs
UHT-ADC	Anti-dust cover	1 pc

Optional accessories	
UHT-BI1	Hard alloy steel ø1mm ball indenter
UHT-WB	Work bench
MVT-APP	Additional printer paper roll
Hardness blocks	
HB-RA45-75	45-75 HRA
HB-RA80-84	80-84 HRA
HB-RB60-70	60-70 HRB
HB-RB80-100	80-100 HRB
HB-RC20-30	20-30 HRC
HB-RC35-55	35-55 HRC
HB-RC60-70	60-70 HRC
HB-RD40-47	40-47 HRD
HB-RD55-63	55-63 HRD
HB-RD70-75	70-75 HRD
HB-BW2.5/187.5	180-650 HBW 2.5/187.5
HB-BW2.5/62.5	90-450 HBW 2.5/62.5
HB-BW1/30	150-250 HBW 1/30
HB-V100/175-750	175-750 HV100
HB-V30/175-750	175-750 HV30



HTU 200BVR DL

Digital Brinell, Rockwell & Vickers Hardness Tester

> Digital Brinell, Rockwell & Vickers hardness tester equipped with large displaying screen. Three test modes and 7 level of test forces, test force loading, dwell, unload adopts automatic shifting. Present scale, test force, test indenter, dwell time and hardness conversion displayed. With RS232 interface for computer connection. Increased test space for large samples.

HIGH TEST CAPACITY



Application

> Suitable for hardened and surface hardened steel, hard alloy steel, casting parts, non-ferrous metals, various kinds of hardening and tempering steel and tempered steel, carburized steel sheet, soft metals, surface heat treating and chemical treating materials etc.

Reference Standard

- > ISO 6508, ASTM E-18, JIS Z2245
- > ISO 6506, ASTM E10-12, JIS Z2243
- > ISO 6507, ASTM E92, JIS Z2244

Hardness Scale	Hardness ranges of standard Block	Allowed Tolerance of Displaying value	Allowed Repeatability of Displaying value (H: average hardness value, b: select a larger value)
HRA	20~≤75 HRA	±2 HRA	≤0.02 (100-H) or 0.8 Rockwell unit ^b
	>75~≤88 HRA	±1.5 HRA	
HRB	20~≤45 HRB	±4 HRB	≤0.04 (130-H) or 1.2 Rockwell unit ^b
	>45~≤80 HRB	±3 HRB	
	>80~≤100 HRB	±2 HRB	
HRC	20~≤70 HRC	±1.5 HRC	≤0.02 (100-H) or 0.8 Rockwell unit ^b
HRD	40~≤70 HRD	±2 HRD	≤0.02 (100-H) or 0.8 Rockwell unit ^b
	>70~≤77 HRD	±1.5 HRD	

Hardness ranges of standard Block	Allowed Tolerance of Displaying value%	Allowed Repeatability of Displaying value%
≤125	±3	3
125<HBW≤225	±2.5	2.5
>225	±2	2

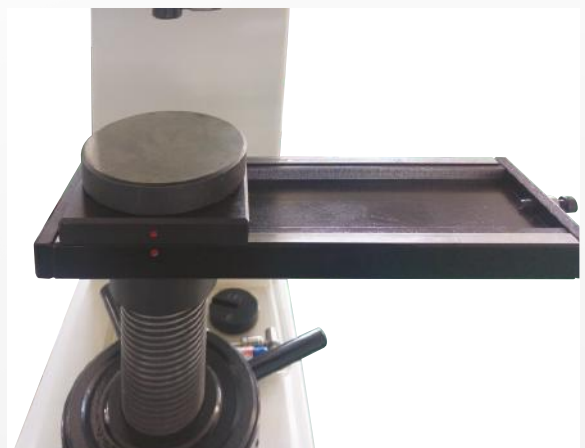
Hardness	Displayed value tolerance %															
	Hardness HV															
	50	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1500
HV 30	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
HV 100		3	2	2	2	2	2	2	2	2	2	2	2	2	2	2

1) When the indentation diagonal length is less than 0.020 mm, the table does not display the value.
 2) For intermediate values, the maximum allowable error can be obtained by interpolation.
 3) About the Micro hardness Tester value in the table is 0.001mm or indentation diagonal length of the average of 2% of the maximum permissible error given, please select the bigger.

Standard hardness range	Displayed value repeatability % HV5~HV100
≤225HV	≤3
>225HV	≤2

Model	HTU 200BVR DL
Test force control	Weights - Load electronically controlled
Load selection	By right side handle
Pre-Load	10kgf (Rockwell only)
Main loads	Available loads: 30kgf, 31.25kgf, 60kgf, 62.5kgf, 100kgf, 150kgf, 187.5kgf, Rockwell: 60kgf, 100kgf, 150kgf Brinell: 30kgf, 31.25kgf, 62.5kgf, 100kgf, 187.5kgf Vickers: 30kgf, 100kgf
Test force selection	HRA (60kg), HRB (100kg), HRC (150kg), HRD (100kg), HBW1/30 (30kg), HBW2.5/31.25 (31.25kg), HBW2.5/62.5 (62.5kg), HBW2.5/187.5 (187.5kg), HBW5/62.5 (62.5kg), HBW10/100 (100kg), HV30 (30kg), HV100 (100kg)
Dwell time	0~60s
Loading time	2s
Test force tolerance	±1%
Test cycle type	Rockwell: semi-automatic Manual - Pre-load with sound alarm brake Automatic - Load, dwell, unload, show of the hardness value Brinell & Vickers: semi-automatic Manual - Pre-load with sound alarm brake, measure of indentation Automatic - Load, dwell, unload, show of the hardness value (after measure step)
Hardness scales	HRA, HRB, HRC, HRD, HBW1/30, HBW2.5/31.25, HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW10/100, HV30, HV100
Hardness test range	Rockwell: 20~88 HRA, 20~100HRB, 20~70HRC, 40~77HRD Brinell: 3.18~653HBW Vickers: 1~2967HV
Hardness resolution	Rockwell: 0.1HR (Valid for all the available Rockwell scales) Brinell: 0.1HBW Vickers: 0.1HV
Repeatability hef/%	Refer to the scales table
Scale conversions	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HBW
Turret type	Fixed
Eyepiece microscope	15x
Objectives	2.5x, 5x
Microscope min. measuring unit	0.5µm (2.5x objective) - 0.25µm (5x objective)
Microscope max. measurement length	2mm (2.5x objective) - 1mm (5x objective)
Measurable min. indent/indentation	Brinell:0.24mm - Vickers: 0.01mm
Optical path	1
Illumination	LED
Indenters	Diamond Rockwell indenter, ø 1.588mm Rockwell ball indenter, hard alloy steel ø 2,5mm ball indenter, hard alloy steel ø 5mm ball indenter, diamond Vickers indenter
N. of indenters	1
Nose cone bore	6.35mm
Vertical test capacity	Rockwell: 400mm, Brinell: 330mm, Vickers: 345mm
Horizontal test capacity	165mm
Anvils dimensions	Large plane test table (size: ø 150mm), middle plane test table (size: ø 74mm), V-shaped test table (size: ø 40mm), sliding test table (size: ø 74mm)
Max. weight on anvil	100kg
Z axis movement	Manual
Z axis movement resolution	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	4.3"
Input mode	Control panel keyboard
Displayed data	Hardness value, conversion scale, D1, D2, dwell time, date and time, Test number, indenter needed, Test force
Statistics or functions	Max, min, average value
Data storage	Temporary session memory: Brinell and Vickers: 108 tests Rockwell: 216 tests
Data output	Hyperterminal session format file .HT
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	RS232
Safety device	Emergency stop button
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	100kg
Dimensions	500x225x880mm
Power supply	220V, 50Hz
Voltage variance	±10%
Absorbed power	500W

HTU 200BVR DL

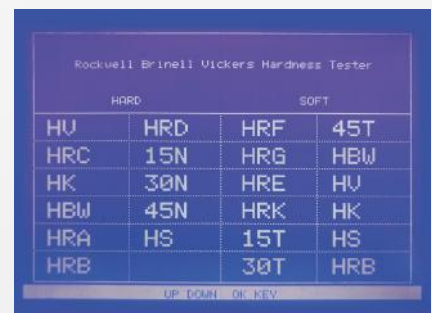




Code	Standard accessories	Q.ty
UHT-DE15X	15x digital measuring eyepiece	1 pc
UHT-MSIOL	Microscope system	1 set
UHT-2.5XOB	2.5x objective	1 pc
UHT-5XOB	5x objective	1 pc
UHT-RI120	Diamond Rockwell indenter	1 pc
UHT-BI15	ø 1.588mm Rockwell ball indenter	1 pc
UHT-BI25	Hard alloy steel ø 2,5mm ball indenter	1 pc
UHT-BI5	Hard alloy steel ø 5mm ball indenter	1 pc
UHT-VI136	Diamond Vickers indenter	1 pc
UHT-STT74	Sliding test table ø 74mm	1 pc
UHT-MPTT74	Middle plane test table ø 74mm	1 pc
UHT-LTT150	Large plane test table ø 150mm	1 pc
UHT-VTT40	V-shaped test table ø 40mm	1 pc
HB-RC2030	Hardness block 20~30 HRC	1 pc
HB-RC6070	Hardness block 60~70 HRC	1 pc
HB-RB80100	Hardness block 80~100 HRB	1 pc
HB-150250HBW2.5/187.5	Hardness block 150~250 HBW 2.5/187.5	1 pc
HB-700800HV30	Hardness block 700~800 HV30	1 pc
UHT-4RS	Horizontal regulating screw	4 pcs
UHT-LV	Level	1 pc
UHT-PC	Power cable	1 pc
UHT-SK	Service keys	1 set
UHT-5WS	Weights	5 pcs
UHT-ADC	Anti-dust cover	1 pc

Optional accessories	
UHT-BI1	Hard alloy steel ø1mm ball indenter
UHT-WB	Work bench
MVT-APP	Additional printer paper roll

Hardness blocks	
Model	Range
HB-RA45-75	45-75 HRA
HB-RA80-84	80-84 HRA
HB-RB60-70	60-70 HRB
HB-RB80-100	80-100 HRB
HB-RC20-30	20-30 HRC
HB-RC35-55	35-55 HRC
HB-RC60-70	60-70 HRC
HB-RD40-47	40-47 HRD
HB-RD55-63	55-63 HRD
HB-RD70-75	70-75 HRD
HB-BW2.5/187.5	180-650 HBW 2.5/187.5
HB-BW2.5/62.5	90-450 HBW 2.5/62.5
HB-BW1/30	150-250 HBW 1/30
HB-V100/175-750	175-750 HV100
HB-V30/175-750	175-750 HV30



HTU 200BVR

Motorized Brinell Rockwell & Vickers Hardness Tester

- > Brinell Rockwell & Vickers hardness tester multi-functional three test modes and 7 level of test forces. Test force loading, dwell, unload adopts automatic system, widely and easy to be used.

Application

- > Suitable for hardened and surface hardened steel, hard alloy steel, casting parts, non-ferrous metals, various kinds of hardening and tempering steel and tempered steel, carburized steel sheet, soft metals, surface heat treating and chemical treating materials etc.

Reference Standar

- > ISO 6508, ASTM E-18, JIS Z2245
- > ISO 6506, ASTM E10-12, JIS Z2243
- > ISO 6507, ASTM E92, JIS Z2244



Rockwell table

Hardness Scale	Hardness ranges of standard Block	Allowed Tolerance of Displaying value	Allowed Repeatability of Displaying value (H: average hardness value, b: select a larger value)
HRA	20~≤75 HRA	±2 HRA	≤0.02 (100-H) or 0.8 Rockwell unit ^b
	>75~≤88 HRA	±1.5 HRA	
HRB	20~≤45 HRB	±4 HRB	≤0.04 (130-H) or 1.2 Rockwell unit ^b
	>45~≤80 HRB	±3 HRB	
	>80~≤100 HRB	±2 HRB	
HRC	20~≤70 HRC	±1.5 HRC	≤0.02 (100-H) or 0.8 Rockwell unit ^b
HRD	40~≤70 HRD	±2 HRD	≤0.02 (100-H) or 0.8 Rockwell unit ^b
	>70~≤77 HRD	±1.5 HRD	

Brinell table

Hardness ranges of standard Block	Allowed Tolerance of Displaying value%	Allowed Repeatability of Displaying value%
≤125	±3	3
125<HBW≤225	±2.5	2.5
>225	±2	2

Vickers table 1

Hardness	Displayed value tolerance %															
	Hardness HV															
	50	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1500
HV 30		3		3		2		2		2	2	2	2	2	2	2
HV 100				3		2		2		2	2	2	2	2	2	2

1) When the indentation diagonal length is less than 0.020 mm, the table does not display the value.
 2) For intermediate values, the maximum allowable error can be obtained by interpolation.
 3) About the Micro hardness Tester value in the table is 0.001mm or indentation diagonal length of the average of 2% of the maximum permissible error given, please select the bigger.



Vickers table 2

Standard hardness range	Displayed value repeatability %
≤225HV	≤3
>225HV	≤2

Model	HTU 200BVR
Test force control	Weights - Load electronically controlled
Load selection	By right side handle
Pre-Load	10kgf (Rockwell only)
Main-Load	Available loads: 30kgf, 31.25kgf, 60kgf, 62.5kgf, 100kgf, 150kgf, 187.5kgf Rockwell: 60kgf, 100kgf, 150kgf Brinell: 30kgf, 31.25kgf, 62.5kgf, 100kgf, 187.5kgf Vickers: 30kgf, 100kgf
Dwell time	2~60s
Loading time	2s
Test force tolerance	±1%
Test cycle type	Rockwell: semi-automatic Manual - Pre-load with physical brake Automatic - Load, dwell, unload, show of the hardness value Brinell and Vickers: semi-automatic Manual - Pre-load with physical brake, measure of indentation, check the hardness value from the hardness table Automatic - Load, dwell, unload
Hardness scales	HRA, HRB, HRC, HRD, HBW1/30, HBW2.5/31.25, HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW10/100, HV30, HV100
Hardness test range	Rockwell: 20~88 HRA, 20~100HRB, 20~70HRC, 40~77HRD Brinell: 3.18~653HBW Vickers: 1~2967HV
Hardness resolution	Rockwell = 0.5HR Brinell = hardness table Vickers = hardness table
Repeatability hef/%	Refer to the scales table
Conversion scales	With table, according to ASTM E140
Turret type	Fixed
Microscope eyepiece	15x
Objectives	2.5x, 5x
Microscope min. measuring unit	4µm (2.5x objective) 2µm (5x objective)
Microscope max. measurement length	2mm (2.5x objective) 1mm (5x objective)
Measurable min. indent/indentation	Brinell: 0.24mm Vickers: 0.01mm
Optical path	1
Illumination	LED
Indenters	Diamond Rockwell indenter, diamond Vickers indenter, ø1.588mm Rockwell ball indenter, hard alloy steel ø 2,5mm ball indenter, hard alloy steel ø 5mm ball indenter
N. of indenters	1
Nose cone bore	6.35mm
Vertical test capacity	Rockwell: 175mm, Brinell: 100mm, Vickers: 115mm
Horizontal test capacity	165mm
Anvils dimensions	Large plane test table (size: ø150mm), middle plane test table (size: ø74mm), V-shaped test table (size: ø40mm), sliding test table (size: ø74mm)
Max. weight on anvil	100kg
Z axis movement	Manual
Z axis movement resolution	Manual
Z axis speed	Manual
Display type	Dial
Display dimensions	110mm
Input mode	Control panel keyboard
Displayed data	HR value
Safety devices	Emergency stop button
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	80kg
Dimensions	520×240×700mm
Power supply	220V, 50Hz
Voltage variance	±10%
Absorbed power	500W

HTU 200BVR





Code	Standard accessories	Q.ty
UHT-DE15X	15x digital measuring eyepiece	1 pc
UHT-MSIOL	Microscope system	1 set
UHT-2.5XOB	2.5x objective	1 pc
UHT-5XOB	5x objective	1 pc
UHT-RI120	Diamond Rockwell indenter	1 pc
UHT-BI15	ø 1.588mm Rockwell ball indenter	1 pc
UHT-BI25	Hard alloy steel ø 2,5mm ball indenter	1 pc
UHT-BI5	Hard alloy steel ø 5mm ball indenter	1 pc
UHT-VI136	Diamond Vickers indenter	1 pc
UHT-STT74	Sliding test table ø 74mm	1pc
UHT-MPTT74	Middle plane test table ø 74mm	1 pc
UHT-LTT150	Large plane test table ø 150mm	1 pc
UHT-VTT40	V-shaped test table ø 40mm	1 pc
HB-RC2030	Hardness block 20~30 HRC	1pc
HB-RC6070	Hardness block 60~70 HRC	1 pc
HB-RB80100	Hardness block 80~100 HRB	1 pc
HB-150250HBW2.5187.5	Hardness block 150~250 HBW 2.5/187.5	1 pc
HB-700800HV30	Hardness block 700~800 HV30	1 pc
UHT-4RS	Horizontal Regulating Screw	4 pcs
UHT-LV	Level	1 pc
UHT-PC	Power cable	1 pc
UHT-SK	Service keys	1 set
UHT-5WS	Weights	5 pcs
UHT-ADC	Anti-Dust cover	1 pc






Optional accessories	
UHT-BI1	Hard alloy steel ø1mm ball indenter
UHT-WB	Work bench
MVT-APP	Additional printer paper roll

Hardness blocks	
HB-RA45-75	45-75 HRA
HB-RA80-84	80-84 HRA
HB-RB60-70	60-70 HRB
HB-RB80-100	80-100 HRB
HB-RC20-30	20-30 HRC
HB-RC35-55	35-55 HRC
HB-RC60-70	60-70 HRC
HB-RD40-47	40-47 HRD
HB-RD55-63	55-63 HRD
HB-RD70-75	70-75 HRD
HB-BW2.5/187.5	180-650 HBW 2.5/187.5
HB-BW2.5/62.5	90-450 HBW 2.5/62.5
HB-BW1/30	150-250 HBW 1/30
HB-V100/175-750	175-750 HV100
HB-V30/175-750	175-750 HV30





UNIVERSAL ACCESSORIES

Indenters

Code	Description	
UHT-RI120	Diamond Rockwell indenter	
UHT-BI15	Ø 1.588mm Rockwell ball indenter	
UHT-BI25	Hard alloy steel Ø 2,5mm ball indenter	
UHT-BI5	Hard alloy steel Ø 5mm ball indenter	
UHT-VI136	Diamond Vickers indenter	

Additional options

Code	Description	
UHT-WB	Work bench	
MVT-APP	Additional printer paper roll	

Test tables

Code	Description	
UHT-STT74	Sliding test table ø 74mm	
UHT-MPTT74	Middle plane test table ø 74mm	
UHT-LTT150	Large plane test table ø 150mm	
UHT-VTT40	V-shaped test table ø 40mm	

Hardness blocks

Code		Description
HB-RA45-75	HRA	45-75
HB-RA80-84	HRA	80-84
HB-RB60-70	HRB(w)	60-70
HB-RB80-100	HRB(w)	80-100
HB-RC20-30	HRC	20-30
HB-RC35-55	HRC	35-55
HB-RC60-70	HRC	60-70
HB-RD40-47	HRD	40-47
HB-RD55-63	HRD	55-63
HB-RD70-75	HRD	70-75
HB-BW2.5/187.5	HBW 2.5/187.5	180-650
HB-BW2.5/62.5	HBW 2.5/62.5	90-450
HB-BW1/30	HBW 1/30	150-250
HB-V100/175-750	HV100	175-750
HB-V30/175-750	HV30	175-750