

HTRS 150

Digital Rockwell and Superficial Rockwell Hardness Tester

- > Digital Rockwell and Superficial Rockwell Hardness Tester equipped with large displaying screen allowing excellent operation and easy watching. Display and set the scale, test force, test indenter, dwell time and hardness conversion;
- > Main functions: Rockwell and superficial Rockwell scales selection, conversion scales, test results, data save function, printing, automatic calculation of maximum, minimum and average value.



Application

- > Quenched steel, tempered steel, annealed steel, cold and hard casting, malleable cast iron, hard alloy steel, aluminum alloy, copper alloy, bearing steel, surface quenched steel, surface heat treating and chemical treating materials, sheet, zinc, chrome and tin layers, etc.

Reference standard

- > ISO 6508, ASTM E 18, JIS Z2245

Rockwell			
Hardness scale	Standard block hardness range	Displayed value allowed tolerance	Displayed value allowed repeatability
HRA	20~≤75 HRA	±2 HRA	≤0.02 (100-H) or 0.8 Rockwell unit*
	>75~≤88 HRA	±1.5 HRA	
HRB	20~≤45 HRB	±4 HRB	≤0.04 (130-H) or 1.2 Rockwell unit*
	>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*
HRD	40~≤70 HRD	±2 HRD	≤0.02 (100-H) or 0.8 Rockwell unit*
	>70~≤77 HRD	±1.5 HRD	
HRF	60~≤90 HRF	±3 HRF	≤0.04 (130-H) or 1.2 Rockwell unit*
	>90~≤100 HRF	±2 HRF	
HRG	30~≤50 HRG	±6 HRG	≤0.04 (130-H) or 1.2 Rockwell unit*
	>50~≤75 HRG	±4.5 HRG	
	>75~≤94 HRG	±3 HRG	

Plastic Rockwell			
Hardness scale	Standard block hardness range	Displayed value allowed tolerance	Displayed value allowed repeatability
HRH	80~≤100 HRH	±2 HRH	≤0.04 (130-H) or 1.2 Rockwell unit*
HRE	70~≤90 HRE	±2.5 HRE	≤0.04 (130-H) or 1.2 Rockwell unit*
	>90~≤100 HRE	±2 HRE	
HRK	40~60 HRK	±4 HRK	≤0.04 (130-H) or 1.2 Rockwell unit*
	>60~≤80 HRK	±3 HRK	
	>80~≤100 HRK	±2 HRK	
HRL	100~120 HRL	±1.2 HRL	1.5 HRL
HRM	85~110 HRM	±1.5 HRM	2 HRM
HRP	72~130 HRP	±1 HRP	2 HRP
HRR	114~125 HRR	±1.2 HRR	1.5 HRR
HRS	99~122 HRS	±1 HRS	2 HRS
HRV	78~115 HRV	±1 HRV	2 HRV

Superficial Rockwell			
Hardness scale	Standard block hardness range	Displayed value allowed tolerance	Displayed value allowed repeatability
HR15N	70~77 HR15N	±2 HR15N	≤0.04 (100-H) or 1.2 Rockwell unit*
	78~88 HR15N		
	89~91 HR15N		
HR30N	42~54 HR30N	±2 HR30N	≤0.04 (100-H) or 1.2 Rockwell unit*
	55~73 HR30N		
HR45N	74~80 HR30N	±2 HR45N	≤0.04 (100-H) or 1.2 Rockwell unit*
	20~31 HR45N		
	32~61 HR45N		
HR15T	63~70 HR45N	±3 HR15T	≤0.06 (100-H) or 2.4 Rockwell unit*
	73~80 HR15T		
HR30T	81~87 HR15T	±3 HR30T	≤0.06 (100-H) or 2.4 Rockwell unit*
	88~93 HR15T		
	43~56 HR30T		
HR45T	57~69 HR30T	±3 HR45T	≤0.06 (100-H) or 2.4 Rockwell unit*
	70~82 HR30T		
	12~33 HR45T		
HR15W	34~54 HR45T	±1 HR15W	2 HR15W
HR30W	55~72 HR45T	±1 HR30W	2 HR30W
HR45W	83~100 HR15W	±1 HR45W	2 HR45W
HR15X	60~99 HR30W	±1 HR15X	2 HR15X
HR30X	38~99 HR45W	±1 HR30X	2 HR30X
HR45X	89~100 HR15X	±1 HR45X	2 HR45X
HR15Y	75~100 HR30X	±1 HR15Y	2 HR15Y
HR30Y	63~99 HR45X	±1 HR30Y	2 HR30Y
HR45Y	80~100 HR15Y	±1 HR45Y	2 HR45Y
	77~100 HR30Y		
	64~100 HR45Y		

(H: average hardness value, *: select a larger value)

Model	HTRS 150
Technology	Weights - Load electronic controlled
Load selection	Right side handle
Pre-load	Superficial Rockwell: 3kg Rockwell: 10kg
Main loads	60kg, 100kg, 150kg
Dwell time	0~60s
Loading time	2s
Test force tolerance	±1.0%
Test cycle type	Semi-automatic type: Manual - pre-load with sound alarm brake Automatic - load, dwell, unload, show the hardness value
Hardness scales	HRA, HRD, HRC, HRF, HRB, HRG, HRH, HRE, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Hardness test ranges	Rockwell: HRA 20 - 88, HRB 20 - 100, HRC 20 - 70, HRD 40 - 77, HRF 60 - 100, HRG 30 - 94 Plastic Rockwell: HRE 70 - 100, HRH 80 - 100, HRK 40 - 100, HRL 100 - 120, HRM 85 - 100, HRP 72-130, HRR 114 - 125, HRS 99-122, HRV 78-115 Superficial Rockwell: HR15N 70 - 91, HR30N 42 - 80, HR45N 20 - 70, HR15T 73 - 93, HR30T 43 - 82, HR45T 12 - 72, HR15W 83 - 100, HR30W 60 - 99, HR45W 38 - 99, HR15X 89 - 100, HR30X 75 - 100, HR45X 63 - 99, HR15Y 80 - 100, HR30Y 77 - 100, HR45Y 64 - 100
Hardness resolution	0.1HR
Scale conversion	Automatic conversion: HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HBW - According to ASTM E140
Indenters	Diamond Rockwell indenter, ø 1.588mm ball indenter
Nose bore diameter	6.35mm
Vertical test capacity	175mm
Horizontal test capacity	165mm
Anvils dimensions	Large plane test table ø 150mm Middle plane test table ø 60mm V-shaped test table ø 40mm
Max. sample weight	100kg
Z axis movement	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	4.3"
Input mode	Control panel keyboard
Displayed data	Scale, test force, dwell time, indenter, conversion scale, test number, date and time
Statistics or functions	Max, min, average value
Data storage	Internal storage, 216 tests
Data output	Hyperterminal session format (.HT)
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	RS232
Safety devices	Emergency switch
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	80kg
Dimensions	520x215x700mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Standard accessories		
Model	Description	Q.ty
RI-120	Diamond Rockwell indenter	1 pc
BI-15	ø 1.588mm ball indenter	1 pc
RTLTT150	Large plane test table ø 150mm	1 pc
RTMTT60	Middle plane test table ø 60mm	1 pc
RTVTT40	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-R30N6580	Hardness block 65~80 HR30N	1 pc
HB-R30T7085	Hardness block 70~85 HR30T	1 pc
RT-5WS	Weight 1, 2, 3, 4, 5	5 pcs
RT-4RS	Horizontal regulating screw	4 pcs
RT-LV	Spirit level	1 pc
RT-PC	Power cable	1 pc
RT-SK	Service keys	1 set
RT-ADC	Anti-dust cover	1 pc

Optional accessories	
Model	Description
RT-BI3.1	ø 3.175mm ball indenter
RT-BI6.3	ø 6.35mm ball indenter
RT-BI12.7	ø 12.7mm ball indenter
RT-WB	Work bench
RT-EXPR	External printer
RT-APP	Additional printer paper roll

Rockwell hardness blocks	
Model	Range
HB-RA45-75	45-75 HRA
HB-RA80-84	80-84 HRA
HB-RB60-70	60-70 HRB
HB-RB88-100	88-100 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-RF105-114	105-114 HRF
HB-RG80-94	80-94 HRG

Superficial Rockwell hardness blocks	
Model	Range
HB-R15N70-77	70-77 HR15N
HB-R15N78-88	78-88 HR15N
HB-R15N89-91	89-91 HR15N
HB-R30N42-54	42-54 HR30N
HB-R30N55-73	55-73 HR30N
HB-R30N74-80	74-80 HR30N
HB-R45N20-31	20-31 HR45N
HB-R45N32-61	32-61 HR45N
HB-R45N63-70	63-70 HR45N
HB-R15T77-80	77-80HR15T
HB-R15T80-83	80-83HR15T
HB-R15T88-93	88-93HR15T
HB-R30T49-56	49-56 HR30T
HB-R30T57-63	57-63 HR30T
HB-R30T73-82	73-82 HR30T
HB-R45T34-43	34-43 HR45T
HB-R45T58-72	58-72 HR45T



Optional accessories	
Plastic Rockwell hardness blocks	
Model	Range
HB-RE95-100	95-100 HRE
HB-RE107-114	107-114 HRE
HB-RK91-100	91-100 HRK
HB-RH96-100	96-100 HRH
HB-RL110-115	110-115 HRL
HB-RM110-115	110-115 HRM
HB-RR110-115	110-115 HRR



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