



Data Sheet

HTRS 150A V3.0

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Fully Automatic Rockwell and Superficial Rockwell Hardness Tester

➤ Fully automatic Rockwell hardness tester with complete functions, easy operation, intuitive display and reliability. This instrument adopts the electronic test force load and unload instead of the weights. Fully automatic XYZ control allow the Jominy end-quench test. With external software various functions can be performed such as: statistical function, extreme value, average value, standard deviation, etc. and also can establish the corresponding statistics database. Statistics database allows input data from other devices which can be used together for statistical analysis. The test report can be customized according to the user's requirements including test parameters, test results and the curve chart. The hardness tester can be connected to a network for test results and reports share.

- 1. Support all the Rockwell and superficial Rockwell scales;
- 2. Support conversion scales of different kinds of hardness;
- 3. Arc correction function;
- 4. Touch screen display, lifting screw working state and the indenter dynamically displayed;
- 5. Computer controlled, XYZ full control;
- 6. One key touch for full working flow, from the rising of the specimen, loading dwell and unloading of the indenter, displaying of the hardness value, to the homing of the test table;
- With the X-Y motorized test table, the path setting continuous test can be performed;
- 7. Data storage function, automatic calculation of the maximum, minimum and average value, the test results can be easily managed, deleted, saved and printed out.

Application

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

Reference standard

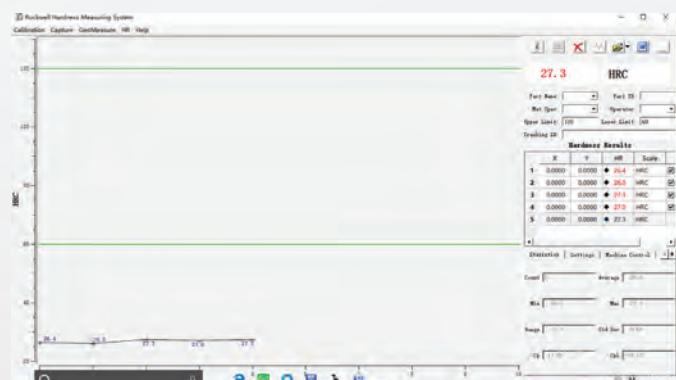
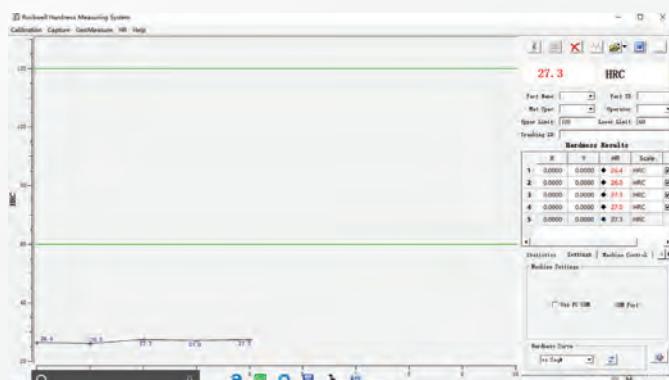
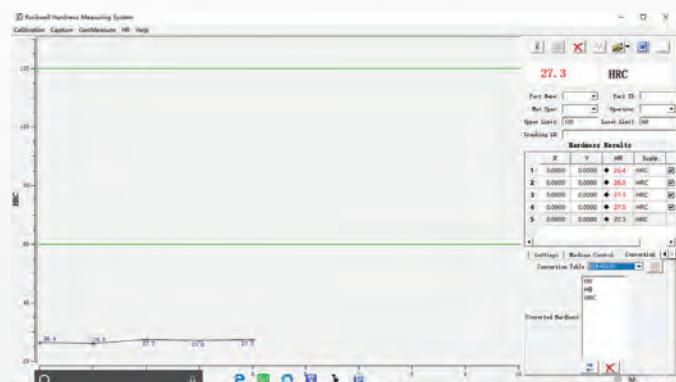
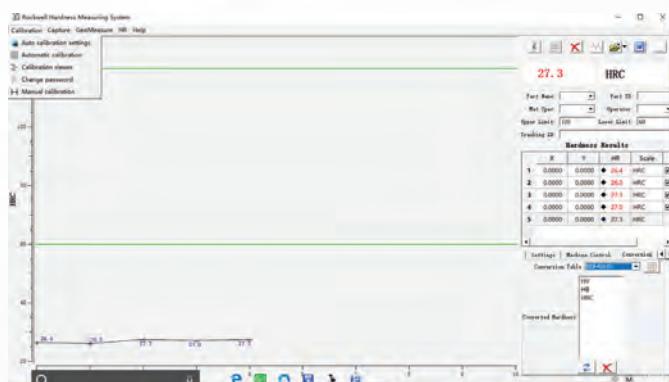
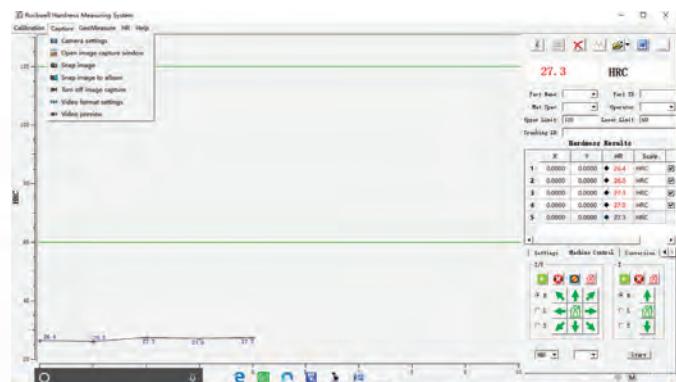
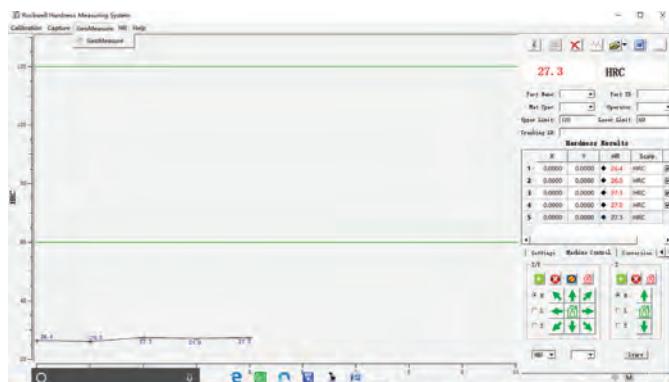
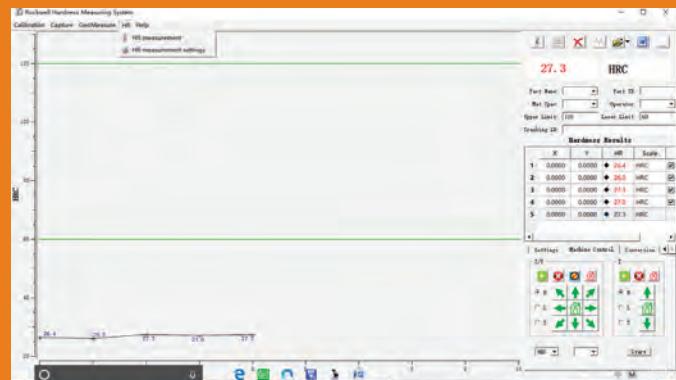
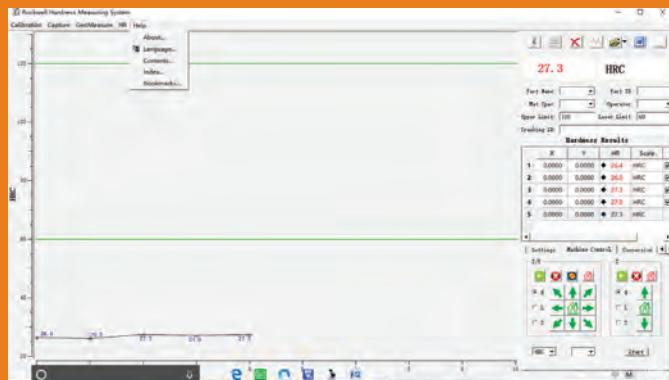
➤ ISO 2039-2, ISO 6508 - ASTM D785(A+B), ASTM E 18 - JIS Z2245



Rockwell				Superficial Rockwell							
Hardness scale	Standard block hardness range	Displayed value allowed tolerance	Displayed value allowed repeatability	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*	70~77 HR15N 78~88 HR15N 89~91 HR15N	±2 HR15N						
	>75~≤88 HRA	±1.5 HRA									
HRB	20~≤45 HRB	±4 HRB	≤0.04 (130–H) or 1.2 Rockwell unit*	42~54 HR30N 55~73 HR30N 74~80 HR30N	±2 HR30N	≤0.04 (100–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*	20~31 HR45N 32~61 HR45N 63~70 HR45N	±2 HR45N						
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*	73~80 HR15T 81~87 HR15T 88~93 HR15T	±3 HR15T	≤0.06 (100–H) or 2.4 Rockwell unit*					
	>90~≤100 HRF	±2 HRF									
HRG	30~≤50 HRG	±6 HRG	≤0.04 (130–H) or 1.2 Rockwell unit*	43~56 HR30T 57~69 HR30T 70~82 HR30T	±3 HR30T	≤0.06 (100–H) or 2.4 Rockwell unit*					
	>50~≤75 HRG	±4.5 HRG									
	>75~≤94 HRG	±3 HRG									
Plastic Rockwell				HR15W HR30W HR45W HR15X HR30X HR45X HR15Y HR30Y HR45Y	±1 HR15W ±1 HR30W ±1 HR45W ±1 HR15X ±1 HR30X ±1 HR45X ±1 HR15Y ±1 HR30Y ±1 HR45Y	2 HR15W 2 HR30W 2 HR45W 2 HR15X 2 HR30X 2 HR45X 2 HR15Y 2 HR30Y 2 HR45Y					
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								

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

HTRS 150A V3.0



Model	HTRS 150A V3.0
Technology	Loadcell closed loop - Load electronic controlled
Load selection	Touch screen control panel or pc selection
Pre-load	Superficial Rockwell: 3kg Rockwell: 10kg
Main loads	15kg, 30kg, 45kg, 60kg, 100kg, 150kg
Dwell time	0~99s
Loading time	15kg = 2s, 30kg=4s, 45kg=5s, 60kg=5, 8, 100kg=7s, 150kg=10s
Test force tolerance	±1.0%
Test cycle type	Fully Automatic: Pre-Load with automatic braking system, load, dwell, unload, show of 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	180mm
Horizontal test capacity	145mm
XY motorized test table	Size: 250x160mm, travel: 100x100mm, dimension: 365x300x140mm
Max. sample weight	100kg
X Y Axis movement	Motorized
X Y Axis speed	High: 4mm/s, Low: 1mm/s
Z axis movement	Motorized
Z axis speed	High: 1.7mm/s, Low: 0.18mm/s
Z Axis resolution	10µm
Computer	CPU: I3, memory: 2G, HD: 500G, 19" LCD screen
Display type	Touch screen and PC display
Display dimensions	Tester: 8"
Input mode	By tap touch or software
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, machine: 160 tests, PC: 500G
Data output	Word, Excel format
Energy saving mode	Yes
Printer	Built-in printer or external printer (optional)
Interfaces	1x RS232, 1x USB
Safety devices	Emergency switch
Operation temperature	10~30°C
Operation rel. humidity	≤65%
Weight	85kg
Dimensions	535x410x890mm
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
RT-XYTTM	XY motorized test table	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-CMP	Computer	1 pc
RT-MS	Measuring software	1 pc
RT-CC	Control cables	1 set
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	77-80 HR15T
HB-R15T80-83	80-83 HR15T
HB-R15T88-93	88-93 HR15T
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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