

Rockwell HR-100/200/300/400

Series 963

Five economical Rockwell hardness testing machines to suit practically every application.

- The newly designed frame provides maximum clearance for positioning the workpiece. A flat table is all that is needed for mounting these testing machines.
- Simple to operate : the analogue types HR-110/HR-210 use an automatic presetting dial gauge.
- HR-110MR does not require a power source, and is considered to be environmentally friendly.
- Digital models HR-430MR/MS use automatic steering wheel braking and load sequencing for easy handling.
- Digital models HR-320MS and HR-430MR/MS can use our Digimatic Mini-processor (DP-1VR) for printing results, and an input tool (USB-ITN-E) for connecting to a PC to enable data transfer, analysis and storage.
- Brinell hardness tests can be performed by using the following optional accessories: a Brinell indenter, a weight set and a measurement microscope.



HR-110MR
Rockwell hardness testing machine
An environmentally friendly energy-saving model.
The basic operation is all manual, including weight-changing (total test force selection).



HR-210MR
Rockwell hardness testing machine
Manual weight changing (with total test force selected) and handling of preload force. Motor drive controls loading sequence.



HR-110MR and HR-210MR gauge

Model	HR-110MR	HR-210MR	HR-320MS	HR-430MR	HR-430MS
No.	963-210-20*	963-220D	963-231D	963-240D	963-241D
Hardness testing	Rockwell	Rockwell	Rockwell Superficial	Rockwell	Rockwell Superficial
Display	Analog	Analog	Digital	Digital	Digital
Minimum display unit	0.5 HR increments	0.5 HR increments	0.1 HR display	0.1 HR display	0.1 HR display
Preload force (handling support)	Automatic pre-setting dial gauge	Automatic pre-setting dial gauge	Loading navigator display	Automatic handle brake	Automatic handle brake
Preload force setting	-	-	Dial switching	-	Dial switching
Test force selection	Weight exchange	Weight exchange	Weight exchange	Dial switching	Dial switching
Test force application	Manual	Semi-automatic	Semi-automatic	Automatic	Automatic
Test force duration	Manual	Fixed 3-5.5 sec or manual	Fixed 3-5.5 sec or manual	1-99 sec or manual	1-99 sec or manual
Data output	-	-	Digimatic (SPC), RS-232C	Digimatic (SPC), RS-232C	Digimatic (SPC), RS-232C
Dimensions (W x D x H) (Approx.)	296 x 512 x 780 mm	235 x 512 x 780 mm	235 x 516 x 780 mm	235 x 516 x 780 mm	235 x 516 x 780 mm
Mass (approx.)	49 kg	47 kg	47 kg	50 kg	50 kg

Specifications

Standard	JIS B 7726, ISO 6508-2 (ASTM E18)
Max. height	180 mm (100 mm if cover is attached)
Max. depth	165 mm (from the centre of the indenter axis)
Functions	HR-320MS, HR-430MR, HR-430MS : GO/NG, Offset revision, Hardness conversion
Power supply	AC100-240V, 1.2A (HR-110MR : no power required)
Standard Accessories	Diamond indenter for R and R/S, Steel ball indenter 1/16", Flat anvil, large V-anvil, Hardness test blocks, AC adapter, cover, Accessory box, level.

Optional accessories

No.	Description
56AAK286B	Brinell load set weight HR-110MR, 210MR 62.5, 125, 187.5
56AAK287B	Brinell load set weight HR-320MS 31.25, 62.5, 125, 187.5
56AAK288B	Brinell load set weight HR-430MR 62.5, 125, 187.5
56AAK289B	Brinell load set weight HR-430MS 31.25, 62.5, 125, 187.5
56AAK541B	Brinell microscope 20x
Anvils	
810-038	Round table Ø250 mm
810-037	Round table Ø180 mm
810-030	Point anvil (diamond tipped for Rockwell Superficial)
810-027	Vari-rest
810-029	V-anvil length 400 mm, groove width 50 mm, 120°
810-026	Fine adjustment table for jominy test
810-028	Jack rest
810-040	V-anvil ø40mm, 120°
810-043	Point anvil (Ø12 mm)
810-041	V-anvil ø40 mm, 90°
810-044	Point anvil (Ø5,5 mm)
810-042	V-anvil Ø10 mm, 120°
810-048	Console table

Computer accessories

264-504-5D	Digimatic Mini-Processor
264-504-5E	Digimatic Mini-Processor
06ADV380E	USB Input tool Direct cable (2 m)
937387	Digimatic cable (1 m)
965013	Digimatic cable (2 m)

Indenters

19BAA072	Diamond indenter
19BAA073	Diamond indenter, min. hole : ø40 mm
19BAA074	Steel ball indenter 1/16"
19BAA075	Steel ball indenter 1/8"
19BAA077	Steel ball indenter 1/2"

19BAA072 for HR-xxxMR models only
19BAA073 for HR-xxxMS models only

937387, 965013 and 06ADV380E for 963-231D, 963-240D and 963-241D models