

Rockwell Hardness Testing Machines HR-300/400 Series



Rockwell hardness testing machine series Versatile smart models

3 models to suit practically every application



HR-320MS

Dual type (Rockwell/Rockwell superficial) hardness testing machine

Manually handles test force and preliminary test force selection. Motor drive controls loading sequence. Preliminary test force (handling support): Loading navigator indication

HR-430MR

Rockwell hardness testing machine

Smart type, but equipped with switching power steering and automatic brake handle for auto start feature. Motor drive controls loading sequence.

HR-430MS

Dual type (Rockwell/Rockwell superficial combined use) hardness test equipment

Smart type, but equipped with switching power steering and automatic brake handle for auto start feature. Motor drive controls loading sequence.

Features

The newly designed frame provides maximum clearance for positioning the workpiece. A flat table is all that is needed for mounting these testing machines.

The digital type (HR-430MR and HR-430MS), with the adoption of the automatic brake handle and load sequence, with only simple handling test possibility.

The digital type (HR-320MS, HR-430MR and HR-430MS) has digimatic output and our Digimatic Mini-Processor (DP-1VA LOGGER) to print and input tools (USB-ITN-E) to connect to a PC and use for data transfer.



Specifications

Model No.	HR-320MS	HR-430MR	HR-430MS
Part No.	810-192-21A	810-193-21A	810-194-21A
Type of hardness test	Rockwell		
	Rockwell superficial	—	Rockwell superficial
Preliminary test force (N)	29.42, 98.07 (3Kgf, 10Kgf)	98.07 (10Kgf)	29.42, 98.07 (3Kgf, 10Kgf)
Test force (N) Superficial	147.1, 294.2, 441.3 (15Kgf, 30Kgf, 45Kgf)	—	147.1, 294.2, 441.3 (15Kgf, 30Kgf, 45Kgf)
Rockwell	588.4, 980.7, 1471 (60Kgf, 100Kgf, 150Kgf)		
Standard	IS B 7726 ISO6508-2 ASTM E18-20		
Display	Digital		
Minimum reading	0.1 HR graduation		
Preliminary test force (handling support)	Loading navigator indication	Automatic brake handle	
Preliminary test force setting	Dial switching	—	Dial switching
Total test force setting	Weight change	Dial switching	
Total test force control	Motor drive Button start	Motor drive Automatic start	
Test force duration	3-5.5 s setting Manual	1-99 s setting Manual	
Maximum specimen dimensions	Height 180 mm (100 mm if the cover is attached), depth 165 mm (from indenter axis to the frame)		
Function	Success or failure decision function		
	Offset revision function		
	Hardness conversion function		
Data output	Digimatic RS-232C		
Power supply	AC Input : 100-240 V, 50-60 Hz, 1.8 A, DC Output: 12 V – 4.17 A		
Dimensions	214 (W) × 512 (D) × 780 (H) mm		
Mass	Approximately 47 kg	Approximately 50 kg	

Hardness Testers are compliant with ASTM requirements

810-192-21A and 810-194-21A come with diamond indenter, 1/16" carbide ball indenter, HRC30 Block, HRC63 Block, HRBW95 Block, HR30N 60 Block and HR30TW 70 Block
810-192-21A comes with diamond indenter, 1/16" carbide ball indenter, HRC30 Block, HRC63 Block, and HRBW95 Block

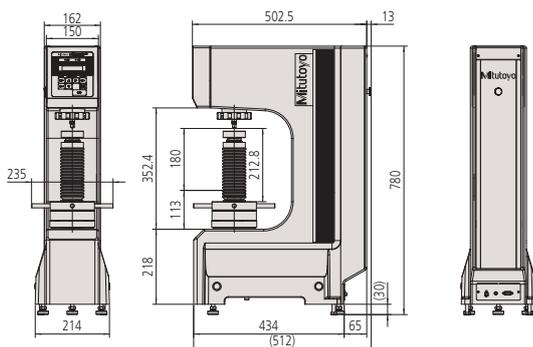
Standard accessories

Order No.	Item	Specifications
810-039	Flat anvil	ø64 mm
810-040	V-anvil (large)	ø40 mm, 120° V-groove width 30 mm
357651	AC adapter	AC 100-240 V 1.2 A DC 12 V 3.5 A

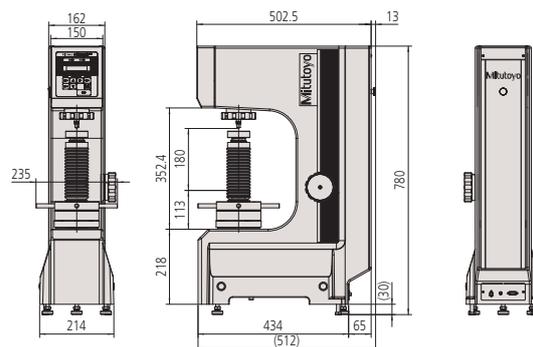
Order No.	Item	Specifications
—	User's manual	(Depends on the model)
383876	Vinyl cover	—
—	Level	—

External dimensions

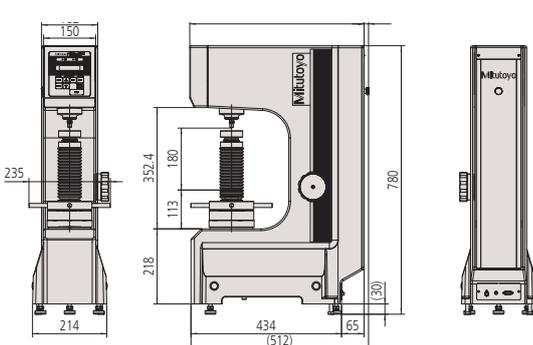
HR-320MS



HR-430MS



HR-430MR



Optional accessories

Specimen fixtures

Order No. 810-038
Round table ø250 mm



For large specimens

Order No. 810-037
Round table ø180 mm



For large specimens

Order No. 810-040
V anvil (large)
(ø40 mm, groove width 30 mm)
For shaft material (ø9 to 58 mm)



Order No. 810-043
Spot anvil
(ø12 mm)



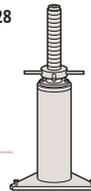
Order No. 810-041
V anvil (small)
(ø40 mm, groove width 6 mm)
For shaft material (ø3 to 7 mm)



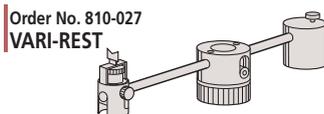
Order No. 810-044
Spot anvil
(ø5.5 mm)
For sheet specimens



Order No. 810-028
Jack rest



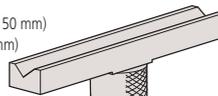
For testing long specimens
using round table or anvil



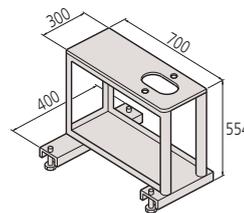
Order No. 810-027
VARI-REST

For testing long specimens using anvil

Order No. 810-029
Special V anvil
(Length 400 mm, groove width 50 mm)
For shaft material (Max. ø100 mm)



Order No. 810-048
Console table

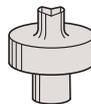


Order No. 810-030
Diamond spot anvil
(ø10 mm)



For sheet specimens
*For Rockwell superficial hardness testing

Order No. 810-042
Small V anvil
(ø10 mm)
For shaft material (ø3 to 14 mm)



Hardness reference blocks

Order No.	Item
64HAA145	HRA22 Rockwell Test Block
64HAA148	HRA35 Rockwell Test Block
64HAA151	HRA49 Rockwell Test Block
64HAA154	HRA65 Rockwell Test Block
64HAA158	HRA76 Rockwell Test Block
64HAA162	HRA84 Rockwell Test Block
64HAA164	HRBW10 Rockwell Test Block
64HAA165	HRBW20 Rockwell Test Block
64HAA166	HRBW30 Rockwell Test Block
64HAA167	HRBW40 Rockwell Test Block
64HAA168	HRBW50 Rockwell Test Block
64HAA169	HRBW60 Rockwell Test Block
64HAA170	HRBW70 Rockwell Test Block
64HAA171	HRBW80 Rockwell Test Block
64HAA172	HRBW95 Rockwell Test Block
64HAA173	HRC25 Rockwell Test Block
64HAA174	HRC30 Rockwell Test Block
64HAA175	HRC35 Rockwell Test Block
64HAA176	HRC40 Rockwell Test Block
64HAA177	HRC45 Rockwell Test Block
64HAA178	HRC50 Rockwell Test Block
64HAA179	HRC55 Rockwell Test Block
64HAA180	HRC60 Rockwell Test Block
64HAA181	HRC63 Rockwell Test Block
64HAA183	HRC67 Rockwell Test Block
64HAA184	HRD44 Rockwell Test Block
64HAA188	HRD63 Rockwell Test Block
64HAA192	HRD74 Rockwell Test Block
64HAA194	HRE62 Rockwell Test Block
64HAA199	HRE93 Rockwell Test Block
64HAA203	HRGW32 Rockwell Test Block
64HAA206	HRGW87 Rockwell Test Block
64HAA207	HRHW87 Rockwell Test Block
64HAA209	HRHW94 Rockwell Test Block

Order No.	Item
64HAA213	HRKW38 Rockwell Test Block
64HAA216	HRKW65 Rockwell Test Block
64HAA219	HRKW90 Rockwell Test Block
64HAA221	HRLW107 Rockwell Test Block
64HAA224	HRLW113 Rockwell Test Block
64HAA229	HRLW125 Rockwell Test Block
64HAA252	HR15N 75 Rockwell Test Block
64HAA254	HR15N 80 Rockwell Test Block
64HAA256	HR15N 86 Rockwell Test Block
64HAA258	HR15N 90 Rockwell Test Block
64HAA262	HR30N 46 Rockwell Test Block
64HAA263	HR30N 50 Rockwell Test Block
64HAA264	HR30N 55 Rockwell Test Block
64HAA265	HR30N 60 Rockwell Test Block
64HAA266	HR30N 64 Rockwell Test Block
64HAA267	HR30N 69 Rockwell Test Block
64HAA268	HR30N 73 Rockwell Test Block
64HAA269	HR30N 78 Rockwell Test Block
64HAA270	HR30N 80 Rockwell Test Block
64HAA271	HR30N 82 Rockwell Test Block
64HAA273	HR45N 25 Rockwell Test Block
64HAA276	HR45N 43 Rockwell Test Block
64HAA282	HR45N 72 Rockwell Test Block
64HAA284	HR15TW 61 Rockwell Test Block
64HAA285	HR15TW 64 Rockwell Test Block
64HAA286	HR15TW 67 Rockwell Test Block
64HAA287	HR15TW 70 Rockwell Test Block
64HAA288	HR15TW 73 Rockwell Test Block
64HAA289	HR15TW 77 Rockwell Test Block
64HAA290	HR15TW 80 Rockwell Test Block
64HAA291	HR15TW 83 Rockwell Test Block
64HAA292	HR15TW 86 Rockwell Test Block
64HAA293	HR15TW 91 Rockwell Test Block

Order No.	Item
64HAA294	HR30TW 15 Rockwell Test Block
64HAA295	HR30TW 22 Rockwell Test Block
64HAA296	HR30TW 28 Rockwell Test Block
64HAA297	HR30TW 36 Rockwell Test Block
64HAA298	HR30TW 43 Rockwell Test Block
64HAA299	HR30TW 49.5 Rockwell Test Block
64HAA300	HR30TW 56 Rockwell Test Block
64HAA301	HR30TW 62.5 Rockwell Test Block
64HAA302	HR30TW 70 Rockwell Test Block
64HAA303	HR30TW 79 Rockwell Test Block
64HAA306	HR45TW 23 Rockwell Test Block
64HAA308	HR45TW 42.5 Rockwell Test Block
64HAA310	HR45TW 67 Rockwell Test Block
64HAA311	HR15WW 76 Rockwell Test Block
64HAA314	HR15WW 82 Rockwell Test Block
64HAA317	HR15WW 88 Rockwell Test Block
64HAA320	HR30WW 50 Rockwell Test Block
64HAA323	HR30WW 63 Rockwell Test Block
64HAA326	HR30WW 75 Rockwell Test Block
64HAA329	HR30WW 90 Rockwell Test Block
64HAA330	HR45WW 30 Rockwell Test Block
64HAA333	HR45WW 44 Rockwell Test Block
64HAA336	HR45WW 62 Rockwell Test Block
64HAA339	HR45WW 84 Rockwell Test Block
64HAA340	HR15XW 87 Rockwell Test Block
64HAA344	HR30XW 78 Rockwell Test Block
64HAA350	HR30XW 96 Rockwell Test Block
64HAA351	HR45XW 53 Rockwell Test Block
64HAA352	HR45XW 88 Rockwell Test Block
64HAA353	HR15YW 90 Rockwell Test Block
64HAA357	HR30YW 87 Rockwell Test Block
64HAA367	HR45YW 77 Rockwell Test Block
64HAA369	HR45YW 84 Rockwell Test Block

Compliant with ASTM requirements

Indenters and Spare Balls

Order No.	Item
64HAA105	DIAMOND INDENTER *1
64HAA107	DIAMOND INDENTER *2
64HAA120	1/16" BALL INDENTER (CARBIDE)
64HAA122	1/8" BALL INDENTER (CARBIDE)
64HAA124	1/4" BALL INDENTER (CARBIDE)

Note 1: Indenter for HR-430MR
Note 2: Indenter for HR 320MS and HR-430MS

Order No.	Item
64HAA126	1/2" BALL INDENTER (CARBIDE)
64HAA128	3/4" BALL INDENTER (CARBIDE)
64HAA131	1/16" SPARE CARBIDE BALL (10PCS./SET)
64HAA133	1/8" SPARE CARBIDE BALL (10PCS./SET)
64HAA135	1/4" SPARE CARBIDE BALL (1 pcs)
64HAA137	1/2" SPARE CARBIDE BALL (1 pcs)

Compliant with ASTM requirements

Options for data output

Compact printer with data logger function Digimatic Mini-Processor DP-1VA LOGGER

- A compact printer for statistical calculation and printing data from hardness testing machines with Digimatic output function.
- High performance with support of measurement data printing, statistical calculation, histograms, and D chart creation, as well as complex calculations required for X-R control charts.
- Up to 1,000 data items can be saved in the machine using the data logger function. All data can be transferred in one operation by connecting the printer to a computer using a USB cable (sold separately).
- The connection cable to the hardness testing machine is not supplied. A connection cable sold separately is required.



Order No. 264-505A
DP-1VA LOGGER

Cables

Order No. 06AFZ050

USB cable (Type A - micro B)

Order No. 937387

Connection cable (1 m) Type E

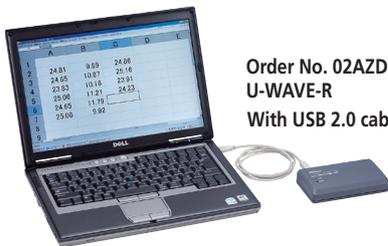
Order No. 965013

Connection cable (2 m) Type E



Measurement data wireless communication system U-WAVE

- Used to import data from hardness testing machines with Digimatic output function to a computer using wireless communication.
- Easy installation without cables that may get in the way thanks to wireless communication (up to 20 m).
- Data can be imported to common software with keyboard input (Excel, notepad, etc.) using the data interface function of the software supplied with U-WAVE-R.
- Test results from several hardness testing machines can be imported to a single computer using simultaneous transfers from multiple U-WAVE devices.



Order No. 02AZD810D

U-WAVE-R

With USB 2.0 cable (1 m)



Order No. 02AZD880G

U-WAVE-T



U-WAVE-T connection cable

Order No. 02AZD790E

U-WAVE-T dedicated connection cable Type E

Digimatic Gage/PC Data Input Device USB Input Tool

- Interface used to export calculation results to spreadsheet software on a computer via a USB cable. Calculation results (values) can be exported in one operation.



USB Direct Input Tool

Order No. 06AFM380E

USB-ITN-E



USB keyboard signal converter type*

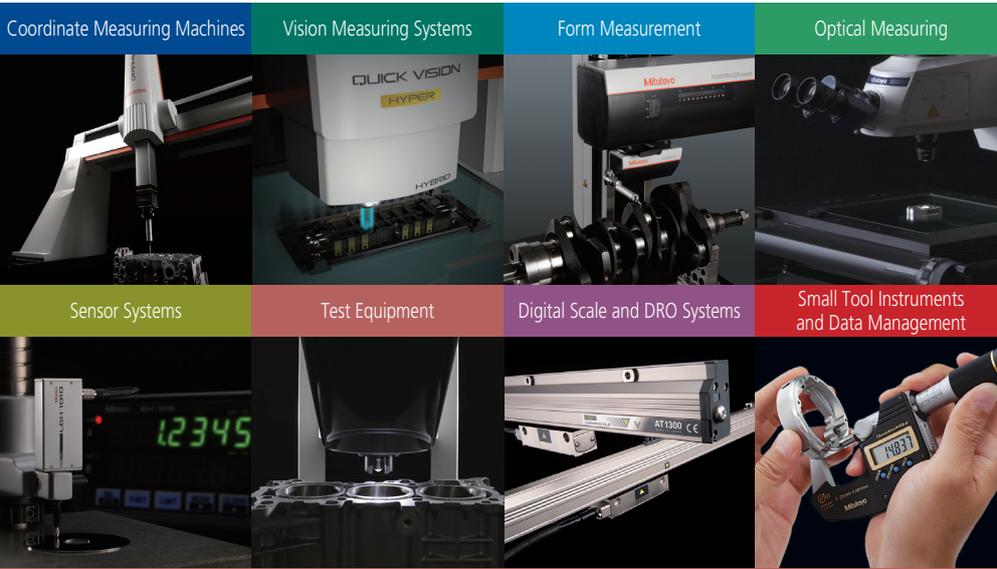
Order No. 264-016-10

IT-016U

* One of the cables below (sold separately) is required to connect the testing machine to the IT-016U.

1 m: Order No. 937387

2 m: Order No. 965013



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Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.



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