Wizhard® HR-500

Rockwell Type
Hardness Testing Machines

Catalog No. E4177-810

Three Types
of Hardness Testing with One Model

- Rockwell
- Rockwell Superficial
- Brinell

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wiZhard

The Wizhard® HR-500 offers three different types of hardness testing, Rockwell, Rockwell Superficial and Brinell* in a single unit. A unique electronic test force system is built into the compact body. Real time force control provides accurate test force generation backed up with huge amount of data from national force gage standards. Furthermore, the new design dolphin-nose indenter arm expands the application range as it can reach into low-accessibility interior and exterior features.

*up to 1839N

The control unit can be attached on the top of the machine.

Wizhard HR-511

Rockwell/Rockwell Superficial/Brinell* hardness tester with durable sheet switch control unit

*only 1839N

Order No.

	HR-511
120V	**810-208A**
220V	**810-208D**
240V	**810-208E**
100V	**810-208K** (for Korea)
220V	**810-208C** (for China)

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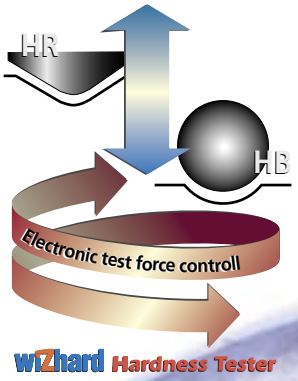


Wizhard HR-521

Rockwell/Rockwell Superficial/Brinell* hardness tester with touch screen control unit

*only 1839N

Wizhard HR-522

Rockwell/Rockwell Superficial/Brinell hardness tester with touch screen control unit

Order No.

	HR-521	HR-522
120V	**810-202A**	**810-203A**
220V	**810-202D**	**810-203D**
240V	**810-202E**	**810-203E**
100V	**810-202K** (for Korea)	**810-203K** (for Korea)
220V	**810-202C** (for China)	**810-203C** (for China)

Wizhard HR-523

Rockwell/Rockwell Superficial/Brinell hardness tester with power-elevation stage

Order No.

	HR-523
120V	**810-204A**
220V	**810-204D**
240V	**810-204E**
100V	**810-204K** (for Korea)
220V	**810-204C** (for China)

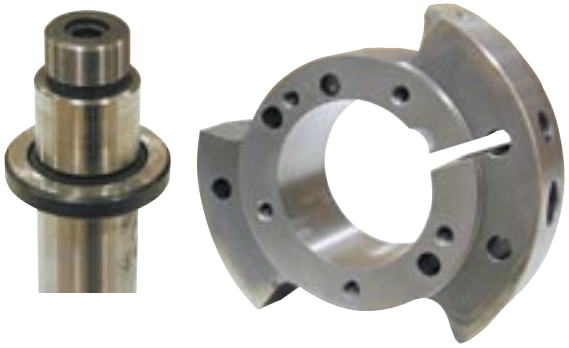
FEATURES

- Multiple test force generation for Rockwell, Rockwell Superficial and Brinell hardness.
- Dolphin-nose indenter arm for easy reach of interior (min. ø40mm/ ø22mm*) and exterior surfaces.

*When using an optional diamond indenter (**19BAA292**).

- Real time electronic test force control for accurate loading. This perfectly eliminates load force overshooting.
- Indenter escape function for continuous testing at fixed table position. This eliminates instability caused by the table retraction.
- Auto-stop elevation table and automatic preliminary test force loading to provid stable test force generation.
- Compact body with large working space.
- Various data output, RS-232C, Centronics and Digimatic Code.

Diamond indenter
19BAA292



Control unit of Wizhard HR-511

- Durable sheet switch operation with LED display.
- Remote selection of the test force linked to the hardness scale selection.
- Powerful statistical processing and 1024 data memory.
- OK/NG tolerance judgment.

Control unit of Wizhard HR-521/522/523

- Touch screen operation with a back-lit LCD graphic display.
- Remote selection of the test force linked to the hardness scale selection.
- Choice of message language in English, German, French, Spanish, Italian and Japanese for user friendly operation.
- Cylindrical and spherical surface compensation.
- Complete conversion to other hardness scales (HV, HK, HRA/B/C/D/ F/G/15T/30T/45T/15N/30N/45N, HS, HB (HBS)) or tensile strength.
- Powerful statistical processing with flexible data point editing and 1024 data memory.
- OK/±NG tolerance judgment.

Control unit of Wizhard HR-511

Control unit of Wizhard HR-521/522/523

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TECHNICAL DATA

Preliminary test force
29.42N, 98.07N

Available hardness scale
Rockwell Superficial

	147.1N	294.2N	441.3N
Diamond	HR15N	HR30N	HR45N
1/16" steel ball	HR15T	HR30T	HR45T
1/8" steel ball	HR15W	HR30W	HR45W
1/4" steel ball	HR15X	HR30X	HR45X
1/2" steel ball	HR15Y	HR30Y	HR45Y

Rockwell

	588.4N	980.7N	1471N
Diamond	HRA	HRD	HRC
1/16" steel ball	HRF	HRB	HRG
1/8" steel ball	HRH	HRE	HRK
1/4" steel ball	HRL	HRM	HRP
1/2" steel ball	HRR	HRS	HRV

Brinell

	61.29N	98.07N	153.2N
1mm carbide ball	—	HBW1/10*	—
2.5mm carbide ball	HBW2.5/6.25*	—	HBW2.5/15.625*

	245.2N	294.2N	306.4N
1mm carbide ball	—	HBW1/30*	—
2.5mm carbide ball	—	—	HBW2.5/31.25*
5mm carbide ball	HBW5/25*	—	—

	612.9N	980.7N	1226N
2.5mm carbide ball	HBW2.5/62.5*	—	—
5mm carbide ball	HBW5/62.5*	—	HBW5/125*
10mm carbide ball	—	HBW10/100*	—

	1839N
2.5mm carbide ball	HBW25/187.5

*Not available for HR-521, HR-511

Force control
Automatic control (unloading, duration, unloading) with spring deformation feed back

Console/display unit
Touch screen operation with back-lit LCD graphic display (HR-521, HR-522, HR-523)
Durable sheet switch operation with LED display (HR-511)

Test force selection
By touch screen (HR-521, HR-522, HR-523)
By sheet switch (HR-511)

Load duration
Total test force duration timer: 0 to 120sec (1sec step)
Preliminary test force duration timer (after unloading): 0 to 120sec (1sec step)
Preliminary test force duration timer (after loading): 1 to 120sec (1sec step)

Functions
- Rockwell/Rockwell Superficial/Brinell hardness testing
- Continuous testing
- Cylindrical/spherical surface compensation*
- Data offset
- Hardness value conversion* (HV, HK, HRA/B/C/D/F/G/15T/30T/45T/15N/30N/45N, HS, HB (HBS), tensile strength)
- OK/±NG tolerance judgment (HR-511: OK/NG)
- Measured data editing*
- Data memory (max. 1024 data)
- SPC calculation (No. of data, max./min./mean values, range, upper/lower limit values, standard deviation (n, n-1), No. of passing/defective)
- Histogram*
- $\bar{X}$-R chart*

*Only for HR-521, HR-522, and HR-523

Display indication
- Hardness value
- Converted hardness value*
- Test conditions
- OK/±NG tolerance judgment (HR-511: OK/NG)
- Statistical processing result (HR-511: data output only)

*Only for HR-521, HR-522, and HR-523

Maximum specimen size (HxD*)
205x150mm (8.07x5.90")
*From the center of indenter shaft

Data output
RS-232C, Digimatic Code and Centronics

Power supply
100/120/220/240V AC, 50/60Hz

Dimensions (WxDxH)
Machine: 250x670x605mm (9.84"x26.38"x23.82")
Control unit: 165x260x105mm (6.50"x10.23"x4.13")

Mass
Approx. 65kg (143 lbs.)

ACCESSORIES

Diamond indenter
19BAA073: (Min. to ø40mm)

Diamond indenter
19BAA292: (Min. to ø22mm)

1/16" DIA steel ball indenter
19BAA074

Spare 1/16" steel ball
19BAA082: (10 pcs. set)

1/4" DIA steel ball indenter
19BAA076

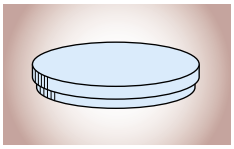
Spare 1/4" steel ball
19BAA084: (10 pcs. set)

1/8" DIA steel ball indenter
19BAA075

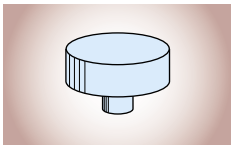
Spare 1/8" steel ball
19BAA083: (10 pcs. set)

1/2" DIA steel ball indenter
19BAA077

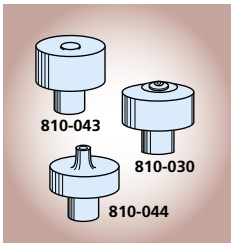
Spare 1/2" steel ball
19BAA085: (10 pcs. set)



Round tables
810-037: ø180mm
810-038: ø250mm

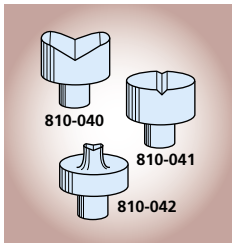


Flat anvil
810-039

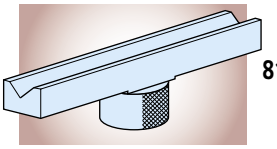


Spot anvils
810-043: ø12mm
810-030: Diamond tipped type for Rockwell Superficial
810-044: ø5.5mm

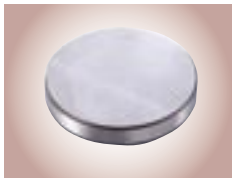
Level
19BAA098



V-anvils
810-040: ø40mm, 30mm grove width
810-041: ø40mm, 6mm grove width
810-042: ø10mm, 8mm grove width



810-029: 400mm length, 30mm grove width



Hardness test blocks
19BAA123: 30HRC - 35HRC
19BAA124: 45HRC - 50HRC
19BAA125: 60HRC - 65HRC
19BAA126: 90HRB - 95HRB
19BAA127: 30HRB - 35HRB
19BAA128: 64HR30N - 69HR30N
19BAA129: 74HR30T - 79HR30T

For Brinell hardness testing
19BAA277: ø1mm carbide ball indenter
19BAA279: ø2.5mm carbide ball indenter
19BAA280: ø5mm carbide ball indenter
19BAA284: ø10mm carbide ball indenter
19BAA281: Spare ø1mm carbide ball (5pcs. set)
19BAA283: Spare ø2.5mm carbide ball (5pcs. set)
19BAA162: Spare ø5mm carbide ball (1pc.)
19BAA163: Spare ø10mm carbide ball (1pc.)
19BAA027: Hardness test block (200HBW)
19BAA161: Measuring microscope

For Rockwell hardness testing
19BAA506: 1/2" carbide ball indenter
19BAA505: 1/4" carbide ball indenter
19BAA504: 1/8" carbide ball indenter
19BAA515: 1/16" carbide ball indenter
19BAA510: Spare 1/2" carbide ball (1pc.)
19BAA509: Spare 1/4" carbide ball (1pc.)
19BAA508: Spare 1/8" carbide ball (1pc.)
19BAA507: Spare 1/16" carbide ball (1pc.)

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*Standard accessories supplied.

Printer DPU-414

810-622A: DPU-414 (120V)
810-622D: DPU-414 (220V)
19BAA262: Connecting cable
19BAA157: Printer paper

Digimatic Mini-Processor DP-1VR

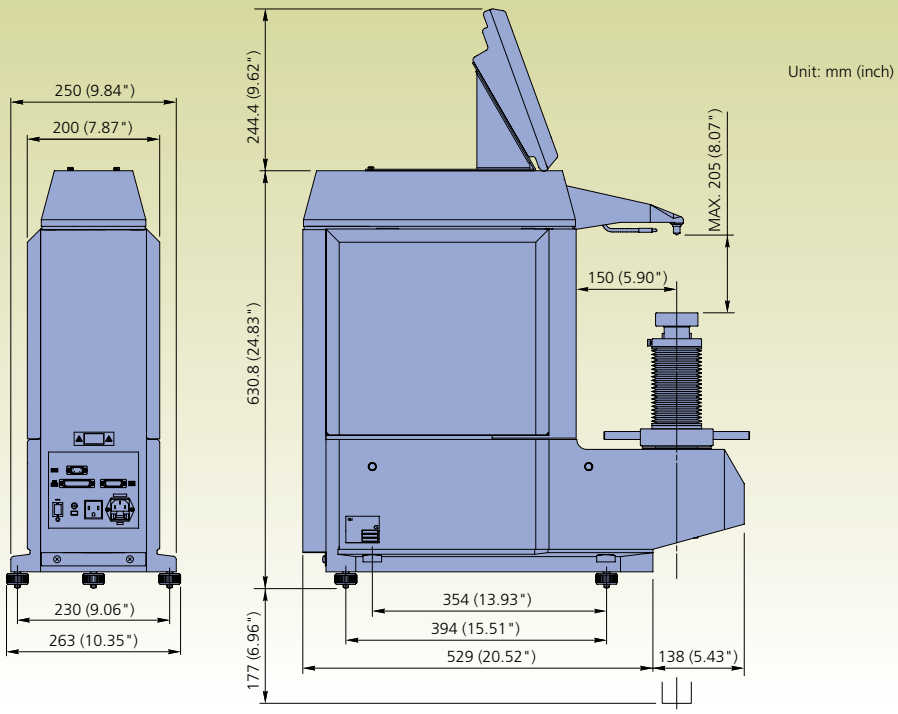
264-504-5A: DP-1VR (120V)
264-504-5D: DP-1VR (220V)
264-504-5E: DP-1VR (240V)
264-504-5F: DP-1VR (230V, for Australia)
264-504-1K: DP-1VR (220V, for Korea)
937386: Connecting cable
09EAA082: Printer paper (10 rolls set)

Measuring microscope

19BAA161: 20X model
19BAA318: 40X model
19BAA319: 100X model

Dimensions

Unit: mm (inch)



Specifications are subject to change without notice.

- Coordinate Measuring Machines
- Vision Measuring Systems
- Surface, Form and Contour Measurement
- Optical Measuring
- Sensor Systems
- Hardness Measuring
- Digital Scale and DRO Systems
- Small Tool Instruments and Data Management

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