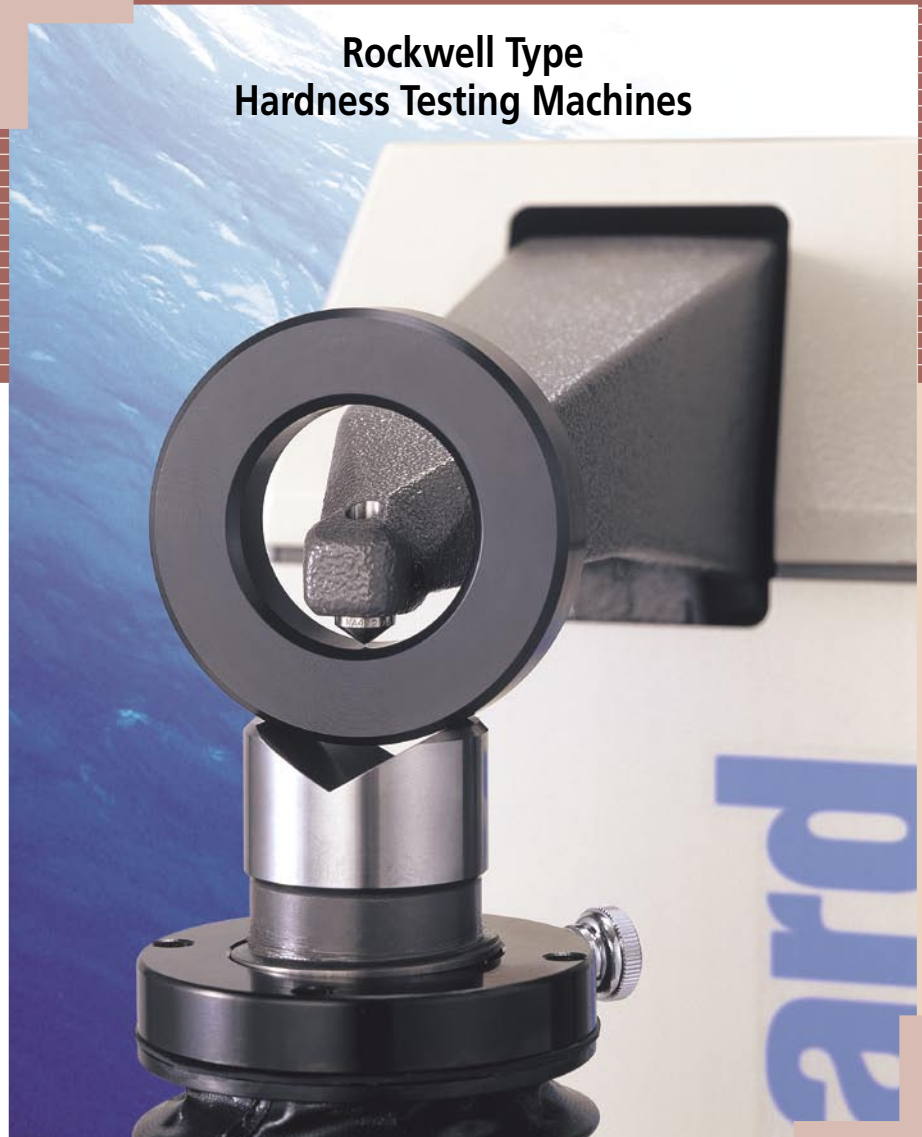


# Wizhard<sup>®</sup> HR-500

Rockwell Type  
Hardness Testing Machines

Catalog No. E4177-810



Three Types  
of Hardness Testing with One Model

- Rockwell
- Rockwell Superficial
- Brinell

**Mitutoyo**

# wizhard

The Wizhard® HR-500 offers three different types of hardness testing, Rockwell, Rockwell Superficial and Brinell\*<sup>1</sup> 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.

\*<sup>1</sup> 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

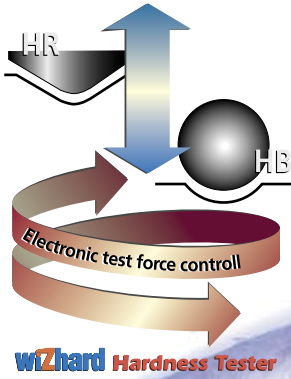
Order No.

HR-511	
Standard type	Long type
810-208□* <sup>2</sup>	810-209□* <sup>2</sup>



Mitutoyo





## Wizhard HR-521

Rockwell/Rockwell Superficial/Brinell\*<sup>1</sup> 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	
Standard type	Long type	Standard type	Long type
810-202□* <sup>2</sup>	810-205□* <sup>2</sup>	810-203□* <sup>2</sup>	810-206□* <sup>2</sup>

## Wizhard HR-523

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

Order No.

HR-523	
Standard type	Long type
810-204□* <sup>2</sup>	810-207□* <sup>2</sup>



\*<sup>2</sup> In a code No. box, fill in the following marks corresponding to the power supply specifications that can be accepted in a country using the testing machine.

- none:100V (for Japan)
- A:120V (for U.S.)
- C:110V (for Taiwan)
- D:220V (for E.U.)
- E:240V (for U.K.)
- K:220V (for Korea)
- DC:220V (For China)

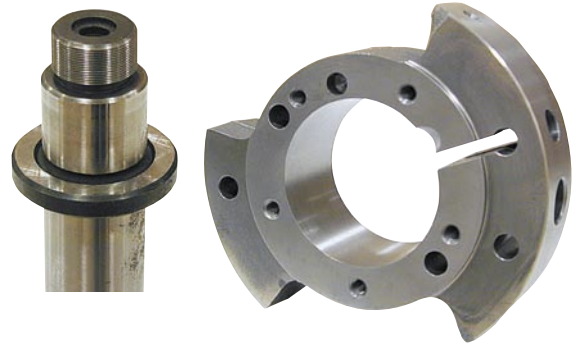


# FEATURES

- Multiple test force generation for Rockwell, Rockwell Superficial and Brinell hardness.
- Dolphin-nose indenter arm for easy reach of interior (min.  $\varnothing 40\text{mm}/\varnothing 22\text{mm}^*$ ) 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 provide stable test force generation.
- Compact body with large working space.
- Various data output, RS-232C, Centronics and Digimatic Code.



## 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-511

## 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-521/522/523

# 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\*
- 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\*)

Standard type: 205x150mm (8.07x5.90")

Long type: 395x150mm (15.55"x5.90")

\*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)

Standard type machine: 250x670x605mm (9.84"x26.38"x23.82")

Long type machine: 250x670x750mm (9.84"x26.38"x29.53")

Control unit: 165x260x105mm (6.50"x10.23"x4.13")

## Mass

Standard type: Approx. 65kg (143 lbs.)

Long type: Approx. 75kg (165 lbs.)

# ACCESSORIES



## Diamond indenter

**19BAA073:** (Min. to  $\varnothing$ 40mm)

## Diamond indenter

**19BAA292:** (Min. to  $\varnothing$ 22mm)



## 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)

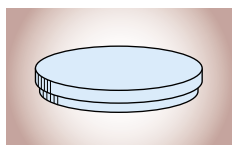


## 1/2" DIA steel ball indenter

**19BAA077**

## Spare 1/2" steel ball

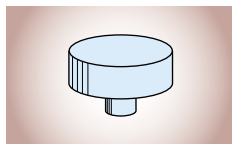
**19BAA085:** (10 pcs. set)



## Round tables

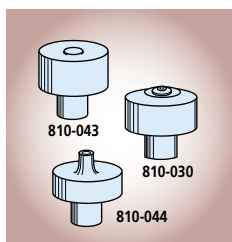
**810-037:**  $\varnothing$ 180mm

**810-038:**  $\varnothing$ 250mm



## Flat anvil

**810-039**



## Spot anvils

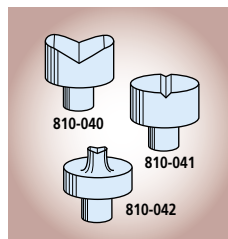
**810-043:**  $\varnothing$ 12mm

**810-030:** Diamond tipped type for Rockwell Superficial

**810-044:**  $\varnothing$ 5.5mm

## Level

**19BAA098**

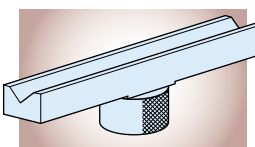


## V-anvils

**810-040:**  $\varnothing$ 40mm, 30mm groove width

**810-041:**  $\varnothing$ 40mm, 6mm groove width

**810-042:**  $\varnothing$ 10mm, 8mm groove width



**810-029:** 400mm length, 30mm groove 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:**  $\varnothing$ 1mm carbide ball indenter

**19BAA279:**  $\varnothing$ 2.5mm carbide ball indenter

**19BAA280:**  $\varnothing$ 5mm carbide ball indenter

**19BAA284:**  $\varnothing$ 10mm carbide ball indenter

**19BAA281:** Spare  $\varnothing$ 1mm carbide ball (5pcs. set)

**19BAA283:** Spare  $\varnothing$ 2.5mm carbide ball (5pcs. set)

**19BAA162:** Spare  $\varnothing$ 5mm carbide ball (1pc.)

**19BAA163:** Spare  $\varnothing$ 10mm 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.)



**Printer DPU-414**

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



**Digimatic Mini-Processor DP-1VR**

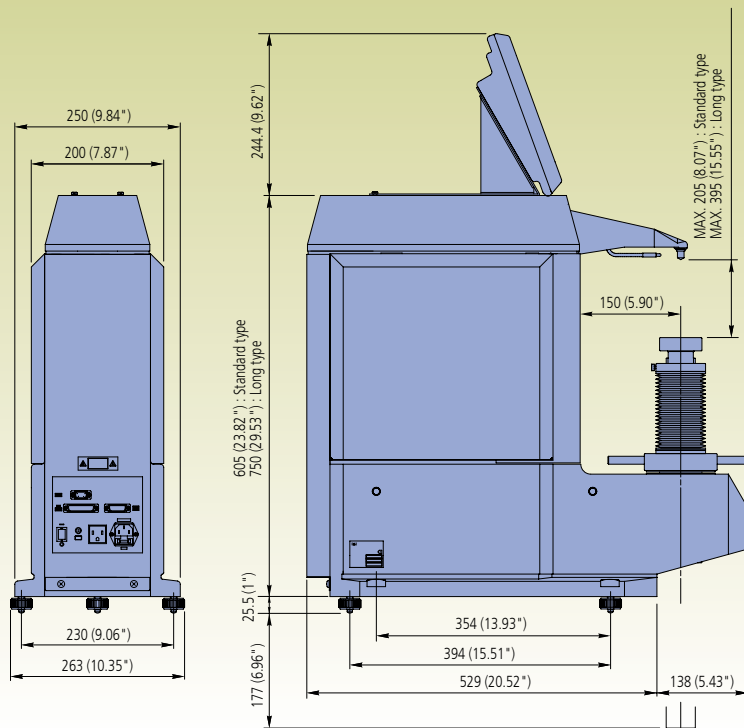
- 264-504-5A: DP-1VR (120V, for U.S.)
- 264-504-5D: DP-1VR (220V, for E.U.)
- 264-504-5E: DP-1VR (240V, for U.K.)
- 264-504-5F: DP-1VR (230V, for Australia)
- 264-504-1K: DP-1VR (220V, for Korea)
- 937386: Connecting cable
- 09EAA082: Printer paper (10 rolls set)

**Measuring microscope**

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



**Dimensions**



Unit: mm (inch)



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