Mitutoyo

Mitutoyo Quality

Rebound-Type Portable Hardness Tester

Pocket Vick HH-V400

Test Equipment

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Easy for Anyone, with One Press of a Button

Instantly Test Hardness Anywhere, Anytime

Simply Set and Press the Button !

The HH-V400 is a rebound-type hardness tester for metals.
Hardness is determined from the ratio of the impact hammer's rebound velocity to its impact velocity.

POINT 1
Portable, One-click Device

POINT 2
Wide Range of Test Targets

POINT 3
Selectable Hardness Scale

Note: Photograph is for illustrative purposes only. In an actual test, be sure to firmly hold the coil holder at the bottom of the detector.

For hardness testing of all metals, including large structures.

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Greatly improved functionality and operability, including color LCD display and enhanced statistical calculation functions

Fully Redesigned Calculation Display

Clearer | **Simpler** | **More User-friendly**

NEW

Color LCD

- Backlit
- Eco mode function
- Auto off

Easy-Operation Keys

Easy-to-understand icons

- Power on/off
- Menu screen display
- Confirm
- Back (return to previous screen)
- Data output
- ◀▶▲▼ Change items and values

SPC Connector

- Data output

USB Connector

- Data output, charging

Rechargeable Battery

- Continuous operation for 8 hours

External Output Devices (Optional)

You can enter test data into Excel, Notepad, etc.

IT-020U

For printing out test data.

DP-1VA LOGGER

Test data can be output wirelessly and processed on a PC.

U-WAVE-R
Data reception unit

U-WAVE-T
Data transmission unit

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NEW Key Points of the Calculation Display Unit

Can automatically save up to 1800 test results

Can register up to 100 samples

Includes acceptance judgment, offsetting, and statistical calculation functions

Convenient external output function

Easy and convenient test setup with easy-to-understand operation key icons

Includes useful functions such as acceptance judgment, offsetting, and statistical calculation

Sample Material Selection

Select the sample material from the material table.
Example) A-1: Iron and steel

Offset Value

Set the offset value.

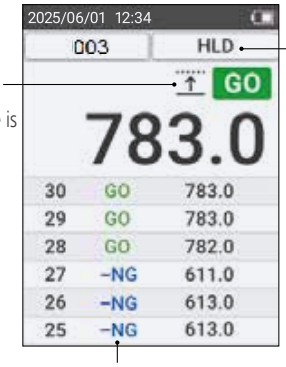
Acceptance Judgment

Set upper and lower limits.

Statistical Calculation

Set the number of test repetitions (N) and perform statistical calculations.

Test Results



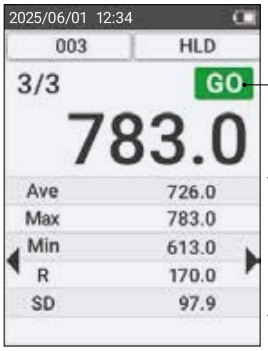
Offset Icon
The offset value is reflected in the test results.

Test Scale
Example) HLD: Leeb hardness

You can switch between various test scales.

Acceptance Judgment

Statistical Calculation Results



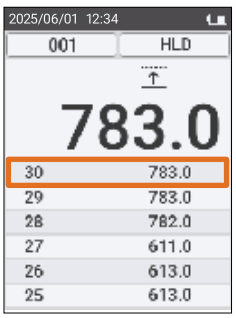
Acceptance Judgment

Ave (average value)
Max (maximum value)
Min (minimum value)
R (range [variance])
SD (standard deviation)
are calculated.

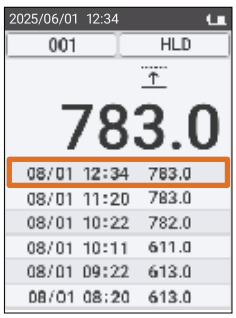
Toggle the test results display between items

Easy display of test results and data management

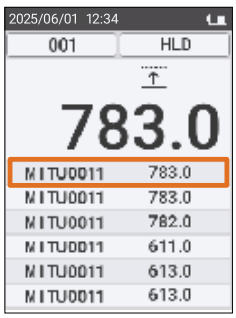
Test Number Display



Date Display



Sample Display



Register up to 100 samples.

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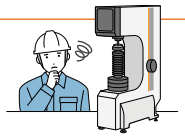
POINT Key Points of the Product

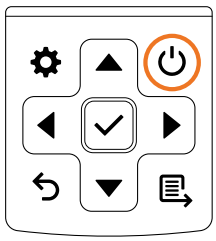
1. Portable, One-click Device

The HH-V400 is cordless with a rechargeable battery for portability and simple on-site testing. The tester can also be used for objects that cannot be placed onto a tabletop testing machine or that are not easily accessible.



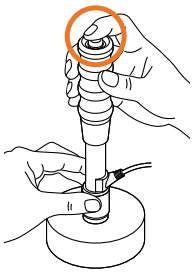
When you want to do on-site measurement...

Simply press the detector against the sample surface and press the push button.
No adjustment work is required when connecting the detector.

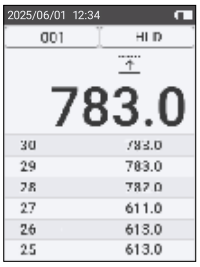


(1) Turn the power on.

(2) Select the material.



(3) Press the push button.



(4) The results are displayed.

■ Material Table Selection

Screen display	Sample material
A-1	Iron and steel
A-2	Alloyed tool-steel
A-3	Gray iron

Screen display	Sample material
A-4	Spherical graphite cast iron
A-5	Stainless steel
A-6	Tool steels for cold-work

Screen display	Sample material
B-1	Brass
B-2	Casting copper-based alloys
B-3	Casting aluminum-based alloys
B-4	Copper-tin-based alloys

The automatic angle-correcting function allows testing in all directions, not just vertically.

Watch a video demonstration of simple omnidirectional measurement.

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POINT Key Points of the Product

2. Wide Range of Test Targets

In addition to general-purpose detectors, we offer a wide range of detectors to suit a variety of test subjects.

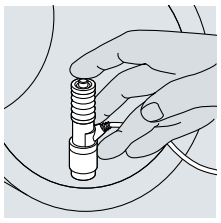
Standard Detector
Standard-type general-purpose detector

Detector D
(Standard type)

*Standard accessory for HH-V400

Optional Detector
Automatic recognition of detectors when changing them

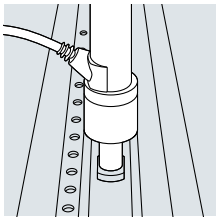
Detector DC
(Compact type)



For narrow spaces such as the insides of pipes

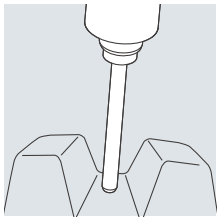
Optional Detector
Automatic recognition of detectors when changing them

Detector D + 15
(15 mm longer than standard)



For gaps, grooves, and parts with shallow steps

Detector DL
(For deep grooves)



For narrow surfaces such as grooves between gear teeth

3. Selectable Hardness Scale

Conversion to various hardness scales based on Leeb hardness values

■ Detector Conversion Ranges

Detector D **Detector DC**

Material	HV/Vickers	HB/Brinell	HRC/Rockwell C	HRB/Rockwell B	HS (ASTM)/Shore	VHS (JIS)/Shore	MPa/Tensile strength
Iron and steel	80 to 940	80 to 647	20.0 to 68.0	38.4 to 99.5	30.1 to 99.5	13.2 to 98.0	390 to 1999
Alloyed tool-steel	80 to 898	–	20.4 to 67.1	–	–	–	–
Gray iron	–	93 to 334	–	–	–	–	–
Spherical graphite cast iron	–	131 to 387	–	–	–	–	–
Stainless steel	85 to 802	85 to 655	19.6 to 62.4	46.5 to 101.7	–	–	–
Brass	43 to 196	40 to 173	–	13.5 to 95.3	–	–	499 to 701
Casting copper-based alloys	–	45 to 315	–	–	–	–	–
Casting aluminum-based alloys	–	20 to 159	–	–	–	–	–
Copper-tin-based alloys	–	60 to 290	–	–	–	–	–

Detector D +15

Material	HV/Vickers	HB/Brinell	HRC/Rockwell C	HRB/Rockwell B	HS (ASTM)/Shore	VHS (JIS)/Shore	MPa/Tensile strength
Iron and steel	80 to 937	80 to 638	19.3 to 67.9	–	33.3 to 99.3	35.3 to 97.8	394 to 1991
Tool steels for cold-work	80 to 935	–	19.8 to 68.2	–	–	–	–

Detector DL

Material	HV/Vickers	HB/Brinell	HRC/Rockwell C	HRB/Rockwell B	HS (ASTM)/Shore	VHS (JIS)/Shore	MPa/Tensile strength
Iron and steel	80 to 950	81 to 638	20.6 to 68.2	37.0 to 99.9	30.6 to 96.8	32.3 to 98.6	390 to 1976

Specifications

Code No.		810-306
Model No.		HH-V400
Testing hardness and range		Leeb hardness: 100.0 to 999.9 HLD
Testing direction		Omnidirectional (with automatic angle-correcting function)
Hardness scale conversion function* (Conversion range varies depending on material.)		Vickers hardness: 43 to 950 HV
		Brinell hardness: 20 to 655 HB
		Rockwell hardness (C-scale): 19.3 to 68.2 HRC
		Rockwell hardness (B-scale): 13.5 to 101.7 HRB
		Shore hardness: 30.1 to 99.5 HS (ASTM) 13.2 to 98.6 HS (JIS)
		Tensile strength: 390 to 1999 MPa
Sample conditions		Minimum thickness: 5 mm
		Minimum mass: 5 kg
		Testing position: At least 5 mm from the edge of the sample and at least 3 mm between test points
		Surface roughness: Ra 2.0 or less
Functions		Automatic angle correction, offset setting, acceptance judgment, hardness scale conversion, data memory storage (1800 points), statistical calculation function, eco mode, auto power-off, backlight
Detector	Type	Detector D (standard type), impact hammer, with carbide ball at the tip
	Dimensions	ø28 x 175 mm (excluding cable)
	Mass	Approx. 150 g
Display unit	Screen	2.83'' (240 x 320 pixels), RGB color LCD
	Dimensions	174 x 68 x 32 mm
	Mass	Approx. 250 g
Power supply		AC adapter, built-in battery (Ni-MH) (Up to 8 hours of operation after 100 minutes of charging)

*HH-V400 guarantees the indicated values based on Leeb hardness.
Converted values are for reference only.

Standard Accessories

Code No.	Product Name	Quantity	Notes
—	Display unit	1	
—	Detector	1	Detector D (standard type)
—	Impact hammer	1	Uses a carbide ball at the tip.
12BAS450	AC adapter	1	Input voltage: AC100 V to 240 V ±10 % (50 Hz/60 Hz) Output rating: DC 5.0 V 2.0 A Number of pins: 6
12BAS451	USB 2.0 cable	1	Type A-C
11BAB687	Handle	2	Ball-replacement tool
11AAA857	Small support ring	1	ø14 mm
05CAA952	Phillips screwdriver	1	For detector replacement
11PAA429	Storage box	1	
99MBG538B	Quick start guide	1	Japanese/English
99MBG537A	Instruction manual	1	English
—	Certificate of inspection	1	
—	Warranty	1	

*Delivered in storage box.

Options

Order No.	Product Name	Specifications
11AAE902	Detector D	ø28 × 174.5 mm (tip diameter ø22 mm)
11AAE903	Detector DC	ø18 × 86 mm (tip diameter ø22 mm)
11AAE904	Detector D +15	ø28 × 189.5 mm (tip width 12 mm)
11AAE905	Detector DL	ø28 × 229 mm (tip diameter ø4 mm)
11AAD241	Hardness reference block	880 HLD
11AAD242	Hardness reference block	830 HLD
11AAD243	Hardness reference block	730 HLD
11AAD244	Hardness reference block	630 HLD
11AAD245	Hardness reference block	520 HLD
11AAD240	Hardness test block	Approx. 800 HLD
19BAA248	Support ring	For convex cylindrical surfaces (R10 to 20 mm): for Detectors D and DC
19BAA249	Support ring	For concave cylindrical surfaces (R14 to 20 mm): for Detectors D and DC
19BAA250	Support ring	For convex spherical surfaces (R10 to 27.5 mm): for Detectors D and DC
19BAA251	Support ring	For concave spherical surfaces (R13.5 to 20 mm): for Detectors D and DC
19BAA457	Carbide ball	For Detectors D, DC, and D +15
19BAA458	Replacement ball shaft	For Detector DL

External Output Devices

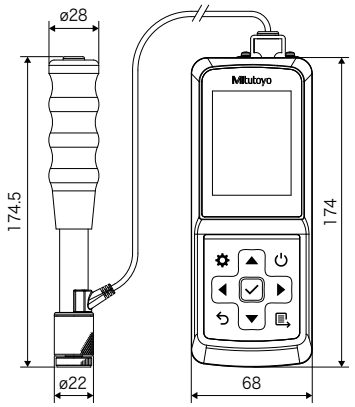
Code No.	Product Name	Specifications
264-506*	Digimatic Mini-Processor DP-1VA LOGGER	Test data printing
09EAA082	Recording paper	For DP-1VA LOGGER (10 rolls)
264-020	USB Input Tool IT-020U	Test data input unit
06AGL011	Connection cable (1 m)	
06AGL021	Connection cable (2 m)	
02AZD730G	U-WAVE-T	Data transmission unit, IP67 type
02AZD880G		Data transmission unit, buzzer type
02AZD810D	U-WAVE-R	Data reception unit
02AZG011	Connection cable for dedicated use with U-WAVE-T (160 mm)	

* To denote your AC line voltage, add the following suffixes. A for North America, D for Europe, E for the UK, K for Korea, DC for China, and no suffix is required for Japan.

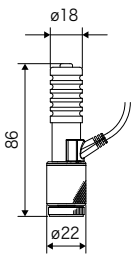
External Dimensions

Unit: mm

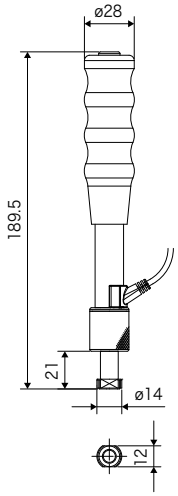
Detector D



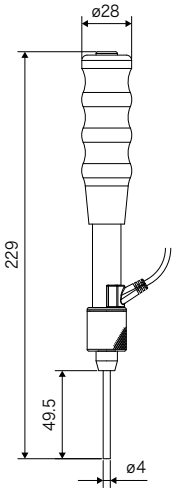
Detector DC



Detector D +15



Detector DL



2508(JP1), Printed in Japan

Whatever your challenges are, Mitutoyo supports you from start to finish.

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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Notes on Export Regulations:
Do not commit an act, which could directly or indirectly, violate any law or regulation of Japan, your country or any other international treaty, relating to the export or re-export of any commodities.