

←INSIZE→
www.insize.com



HDT-B430

**PEN-TYPE LEEB HARDNESS TESTER
OPERATION MANUAL**

1. Forewords

1.1. History

The Leeb measuring method was first brought into measurement technology in 1978. It is defined as the quotient of an impact body's rebound velocity over its impact velocity, multiplied by 1000. Harder materials produce a higher rebound velocity than softer materials. For a specific group of material (e.g. steel, aluminum. etc.), Leeb hardness value represents a direct relationship to its hardness properties. For ordinary metal, conversion curves of hardness HL versus other standard static hardness (HB, HV, HRC, etc.) are available, enabling you to convert HL into other hardness values.

1.2. Leeb Hardness Test (definition)

An impact body with a spherical test tip made of tungsten carbide is propelled against the sample surface by a spring force and then rebounds back. At a distance of 1mm from the sample surface, the impact and rebound velocity of the impact body are measured by the following method: A permanent magnet embedded in the impact body, when passing through the coil in its coil holder, induces in the coil an electric voltage proportional to the velocities of the magnet. Leeb hardness is expressed by the following formula:

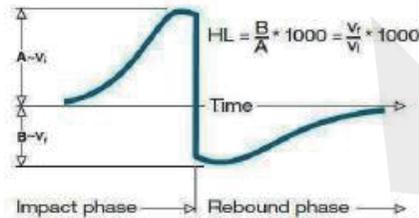
$$HL = \frac{V_r}{V_i} * 1000$$

Where: HL is Leeb Hardness

V_r is the rebound velocity of the impact body

V_i is the impact velocity of the impact body

The voltage characteristic of output signal, when the impact body passes through the induction coil is illustrated in the following figure:



Voltage characteristic of output signal

A Leeb's Hardness Tester measures the hardness of sample material in terms of Hardness Leeb (HL), which can be converted into other Hardness units (Rockwell B and C, Vicker, Brinell and Shore D).

1.3. Notation of Leeb's Hardness

When measuring the hardness of a sample material using the traditional static

hardness testing method, a change of applied pressure will result in a change in the hardness reading. This will also happen during a Leeb's Hardness test when one changes the impact device. In hardness measurement of the same test sample with different impact devices, the Leeb's hardness values obtained will vary.

For example: 720HLD#720HLC

Because different converting curves are obtained from different impact devices, when

converting hardness HL into another hardness values, the notation for the converted hardness value should include the impact device used.

For example:

Hardness HRC converted from hardness L using impact device D should be written as 35, 9 HRCLD.

Where: 35=Hardness value HL

9=Hardness value HRC

L=Leeb's Method

D=Impact device

2. Features and Applications

2.1. Introduction

This instrument is an advanced state-of-the-art palm sized metal hardness tester with many new features which are light weight, easy operation, integrated design, high contrast display, low operating temperature, auto compensating for impact direction and etc. It can be widely used for measuring hardness of almost all ferrous and non-ferrous metal materials for scale of Leeb hardness, Rockwell C, B &A, Brinell, Vickers, Shore and Strength.

It has a memory which can be downloaded to computer via USB port or wirelessly. The measuring value can be printed out from tester to micro-printer or from PC. All stored data can be recalled and read on the tester easily.

It also has a very unique feature, which impact device can convert between D and DL simply by changing impact body. This two-in-one probe is equivalent to two individual probes. With this optional accessory, you can take measurement at very narrow surface such as slot bottom, gear tooth that probe D cannot match.

The 3.7V Li-ion rechargeable battery inside the tester can be charged via USB from PC or via individual USB charger from mains wall power. With data software for PC, customers can download measuring values from the tester to PC and make process such as save, delete, create testing report and export them to Excel.

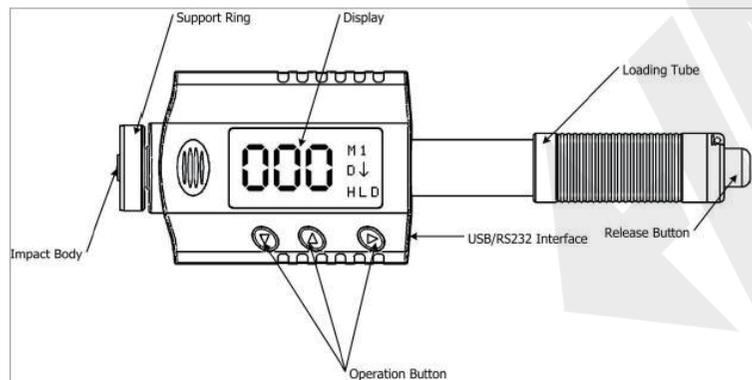
2.2. Specifications

Resolution	1HLD,1HV,1HB,0.1HRC,0.1HRB,0.1HRA.,0.1HSD,16b
Accuracy	±6HLD(when HLD=800)
Measuring range	HLD170-960/HRC17-70/HRB13-109/HB20-655/HV80-940HSD32-99.5/HRA30-88/ob(rm)255-2180N/mm ²
Applicable workpiece	minimum weight: 5kg (direct measurement),2kg (on solid support),0.05kg (coupled on plate)
	minimum thickness: 5mm
	minimum radius of curved surface: 30mm
	maximum roughness (Ra): 2um
Output	USB and bluetooth
Power supply	3.7V Li-ion rechargeable battery
Dimension	148x44x28mm
Weight	110g

2.3. Applications

Hardness tests on installed machines or steel structures: e.g. on heavy and large work-piece or on permanently installed system parts.
 Rapid testing of multiple measuring areas for examination of hardness variations over larger regions.
 Measuring hardness for produced parts at production line.
 Identifying metallic material stored in a warehouse.
 Ineffectiveness analysis of permanent parts, pressure -vessel, turbo generator.

3. Layout of instrument



4. Symbols and Illustrations

Symbols	Illustrations
HLD	Leeb hardness value used with impact device D
LDL	Leeb hardness value used with impact device DL
HB	Brinell hardness value

HRB	Rockwell B hardness value
HRC	Rockwell C hardness value
HS	Shore hardness value
HV	Vickers hardness value
HRA	Rockwell A hardness value
σb (N/mm2)	Strength value

5. Preparation before Measuring

5.1. Requirements for the sample

5.1.1. The surface temperature of sample should be less than 120 °C
 5.1.2. The samples must feature a metallic smooth, ground surface, in order to eliminate erroneous measurements brought about by coarse grinding or lathe scoring. The roughness of the finished surface should not exceed 2µm.

5.2. Requirements for the weight of the sample

For samples weighing over 5 kg and of compact shape, no support is needed. Samples weighing between 2-5 kg, and also for heavier samples with protruding parts or thin walls, should be placed on a solid support in such a manner that they do not bend or move by the impact force. Samples weighing less than 2 kg should be firmly coupled with a stable support weighing over 5 kg. For coupling purposes,

- ☆ The coupling surface between the sample and base plate should be flat, plane parallel and ground.
- ☆ A thin proper layer of coupling paste is to be applied to the contact surface of the sample.
- ☆ The sample should be firmly pressed against the surface of the base plate by moving it with a circular motion.
- ☆ The direction of impact should be perpendicular to the coupling surface.
- ☆ For the coupling operation, the following prerequisites must be fulfilled:
 - ☆ The contact surface of the sample and the surface of the base plate must be flat, plane parallel and ground.
 - ☆ The direction of the test impact must be perpendicular to the coupled surface.
 - ☆ Minimum thickness of the sample for coupling (5mm).

Proper Coupling:
 Proper coupling requires a little experience. Insufficiently coupled samples

produce large variations of individual measurements, L-values which are too low and the operation is characterized by a rattling noise upon impact of the test tip.

Example for coupling a test piece with a base plate:



Application of the coupling Paste (As thin as possible).

Mutual rubbing of both parts while firmly press the sample against the base plate.

A particular advanced of coupling is the possibility of obtaining a very uniform, rigid connection between the sample and the support, totally eliminating stresses at the sample surface. The resulting variation in measured values is very low.

5.3. Requirement for the surface hardened layer of the sample

Surface -hardened steels and especially case-hardened steels produce L-values which are too low when case-hardening depth is small because of their soft core. When measuring with impact device D/DL the depth of the hardened layer should be no less than 0.8 mm.

5.4. Surface of the test sample should not be magnetic.

5.5. For test sample of curving surface with radius of curvature R less than 30mm, a small support ring should be used.

5.6. Supporting the Samples during Testing

Type of impact device	Classification of samples		
	heavy	Medium-weight	Light-weight
D/DL	More than 5 kg	2-5kg	0.05-2kg

When measuring hardness with this tester, the following has to be noticed: Despite the low mass of the impact body and low impact energy, a relatively large impact force of short duration is generated when the impact body hits the measuring surface. The max. impact force of impact device D/DL is 900N.

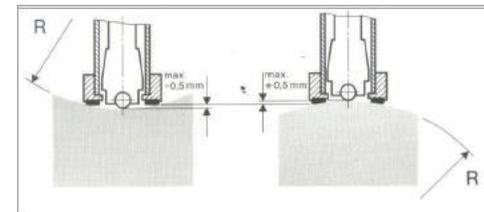
For heavy samples of compact shape, no particular precautions are necessary. Smaller and lighter samples or work pieces yield or flex under this force, producing L-values which are too small and of excessively large variation. Even with big or heavy work pieces it is possible for thin-wall regions or thinner protruding parts to yield upon impact. Depending on the frequency of the resilient yielding action, the measured L-value may be too small or too large. In many situations, potential problems can be checked in the following manner:

- a) Medium-weight samples and also heavier samples with protruding parts or thin walls should be placed on a solid support in such a manner that they do not move or flex during the test impact.
- b) Light-weight samples should be rigidly "coupled" with a non-yielding support such as a heavy base plate. Clamping in a vice is of no value, since the samples become exposed to stress and because complete rigidity is never attained. As a rule, the measured L-values would be too small and show excessive variations.

5.7. Samples with Curved Surfaces

Impact testers only work properly, if the impact body has a certain position in the guide tube at the moment of impacting the test surface. In the normal position, automatically present when testing flat and convex-cylindrical samples (such as round samples), the spherical test tip is located exactly at the end of the guide tube.

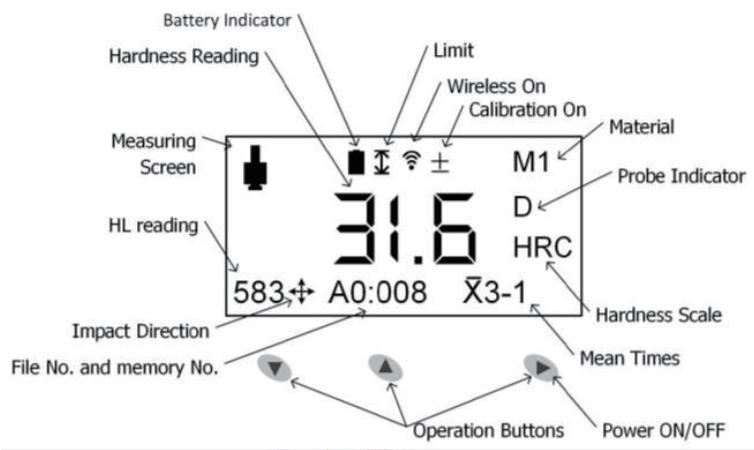
However, when testing spherically or cylindrically shaped concave surfaces, the impact body remains further within the guide tube or protrudes further therefore. Thus, with such types of curved surfaces, it is to be observed that radii of curvature do not drop below the values indicated in the following Fig. Curved surfaces should always be tested with the small support ring.



Impact device types D R_{min}=30mm

For impact devices D, special support rings are available to accommodate smaller radii on convex or concave surface.

6. Operation

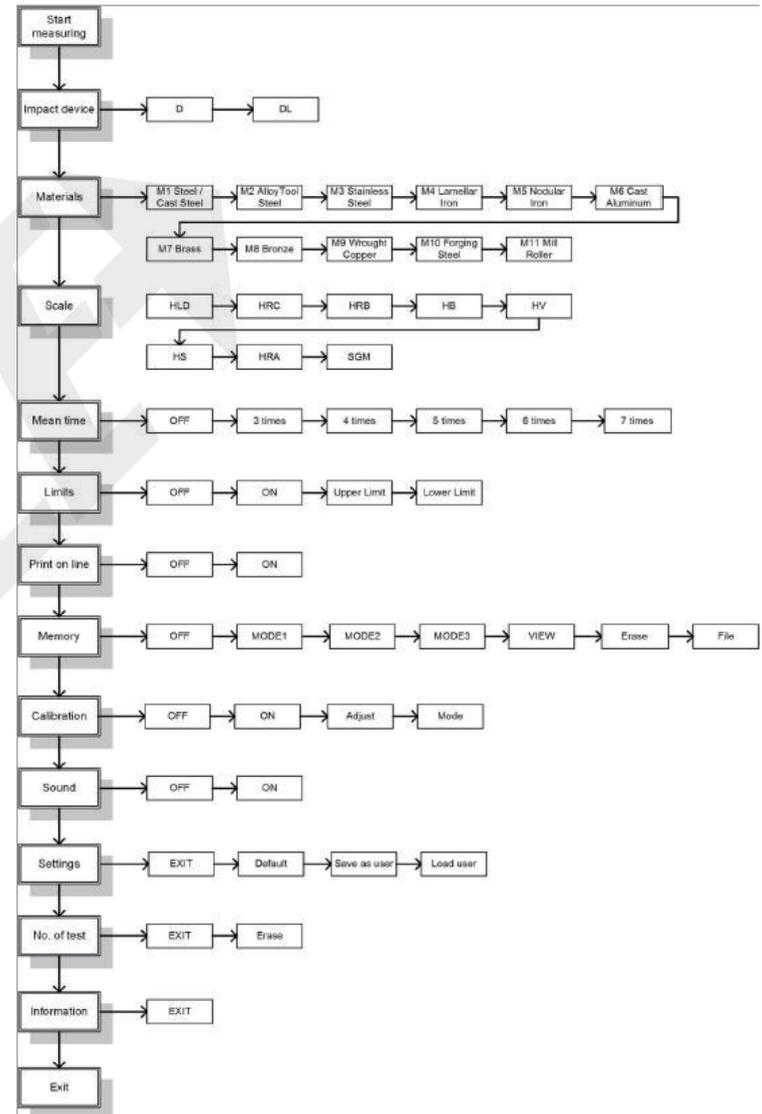


Screen Description

6.1. Button description

▼ (Menu key)	▲	▶ (power On/Off)
<ul style="list-style-type: none"> Menu key, press it to enter main menu Downward key, press it to move cursor downward Press and hold the key to save the settings and exit Press and hold ▼ and ▲ simultaneously in the measuring screen to display the measuring direction Press ▼ and ▲ simultaneously in the measuring screen to display wireless indicator 	<ul style="list-style-type: none"> Upward key, press it to move cursor upward Press and hold it to save the settings and exit Press it in measuring screen to switch in different display modes Press and hold it to delete measurement Press and hold ▲ and ▼ simultaneously in the measuring screen to display the measuring direction Press ▲ and ▼ simultaneously in the measuring screen to display wireless indicator 	<ul style="list-style-type: none"> Press it to switch on the tester Press and hold it to switch off the tester Confirm the selection Press and hold the key to save the settings and exit

6.2. Diagram of Operation



6.3. Power on the instrument

Method 1: Press ▶ to turn on the instrument.
 Method 2: Push the loading tube toward tester slowly until locking the impact

body inside the probe. Then let the loading tube back to original position. The instrument will be powered on.

The screen will display the measuring window after it is switched on, you can start measurement. At this moment, all parameters will be performed by factory default (new tester) or by last settings before closed.



Measuring Mode

6.4. Power off the instrument

Method 1: Press and hold ► for several seconds till the instrument is powered off. Method 2: The instrument will automatically shut down after about 2 minutes without operation.

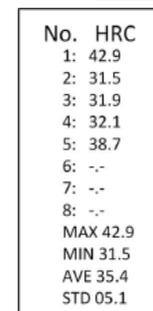
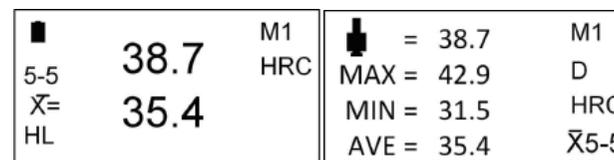
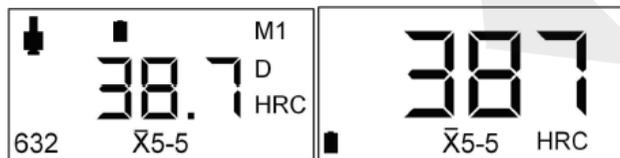
6.5. Language Selection

Press and hold ▼ to enter Language screen. Press ▼ and ▲ to select suitable language, press ► after selection to return to the measuring screen, or press and hold any key to exit without saving and return to the measuring screen.



6.6. Display Modes

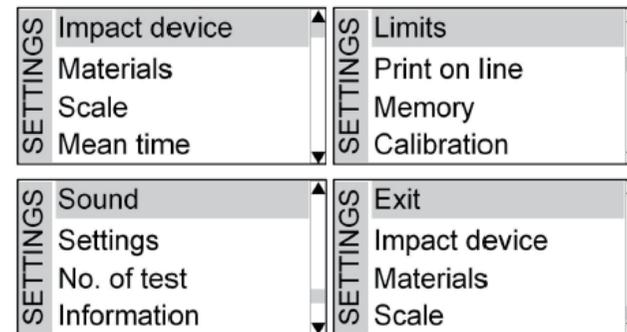
In measuring mode, press ▲ in turn to switch between different display modes.



Different Display Modes

6.7. Settings

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select the menu item. Press ► again to enter the chosen item and press ▼ or ▲ to select. Press ► to confirm and return to the Menu screen, or press and hold any key to save and return to the Measure screen.



Menu

6.7.1. Impact Device

There are two kinds of impact device can be selected. Impact device D is for normal application and DL is for some specific situation, such as narrow step or deep blind hole. When you select impact device DL, you need to change impact body D to DL. (The impact body DL is optional, you need to order separately).

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Impact device and press ► to enter. Press ▼ or ▲ again to select D or DL in cycle. Press ► to

confirm and return to the settings menu, press and hold any key to save and exit to the measure screen.

6.7.2. Materials selection

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Material and press ► to enter. Press ▼ or ▲ again to select the material in cycle. Press ► to confirm after selection and return to the Menu screen, or press and hold any key to save and return to the Measure screen. The symbol of the chosen material will display at right upper of Measure screen.

M1	STEEL/CAST STEEL	M7	BRASS
M2	ALLOY TOOL STEEL	M8	BRONZE
M3	STAINLESS STEEL	M9	WROUGHT COPPER
M4	LAMELLAR IRON	M10	FORGING STEEL
M5	NODULAR IRON	M11	MILL ROLLER
M6	CAST ALUMINUM		

6.7.3. Hardness scale conversion

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Scale and press ► to enter. Press ▼ or ▲ again to select the hardness scale in cycle:

HL→HRC→HRB→HB→HV→HS→HRA→SGM

Press ► to confirm after selection and return to the Menu screen, or press and hold any key to save and return to the Measure screen. The symbol of the chosen unit will display at right of Measure screen.

6.8. Mean Time setup

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Mean time and press ► to enter. Press ▼ or ▲ again to select the mean times in cycle:

X(Off) → X=3→=4→=5→=6→=7.

Press ► to confirm after selection and return to the Menu screen, or press and hold any key to save and return to the Measure screen. The symbol of the mean will display at bottom of Measure screen. For example, as x=3 is chosen, display x3-0. Display the mean value after three measurements are got. (Press ▲ in turn to switch between different display modes to view mean values, please refer to 6.6 Display Modes)

6.9. Upper/Lower Limit

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Limits and press ► to enter. Press ▼ or ▲ again to select the upper/lower limit in cycle:

X(Off) → (On) → Upper → Lower. Select "Off" to disable Upper/Lower limit alarm. Select "On" to enable Upper/Lower limit setting, and the audio alarm will be enabled automatically, prompting alarm sound after overrunning. Select "Upper" or "Lower" and press ► to enter limits setting screen. Press ▼ or ▲ to adjust value. Press and hold ▼ or ▲ for fast adjustment. Press ► to confirm after adjustments and return to Limits menu, select On and press ► save changes and return to the upper-level menu, or press and hold

any key to save and return to the Measure screen. The symbol will display

on the instrument screen after Upper/Lower limit alarm is enabled.

6.10. Print On line

6.10.1. Wireless

There are two kinds of wireless module for HDT-B430 – 2.4G wireless and Bluetooth. You can choose one when ordering the hardness tester. For HDT-B430, 2.4G wireless module is standard and Bluetooth is optional. Accordingly we have two kinds of micro-printer which work with 2.4G wireless or Bluetooth. When you order micro-printer, please specify which module you want.

6.10.2. Connect the printer

Turn on the printer. Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Print on line option and press ► to enter. Press ▼ or ▲ to select X(Off) → (On) in turn. To enable on line printing, please select ON. Press ► to confirm after selection and return to the Menu screen, or press and hold any key to save and return to the Measure screen. After turning on, it will be connected with the printer automatically and wireless for printing of

real time data or stored data. After print on line is enabled, the symbol will display on the screen.

Activating wireless with long time will consume more battery power so the tester is designed to switch off wireless function automatically when the tester turns off. You need to switch if on manually if you need to use it.

6.10.3. Print stored data

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Memory and press ► to enter. Press ▼ or ▲ again to select "View" then press ► to review stored data. Press ▼ and ▲ at the same time in "View" screen, Press ► to confirm printing. Press ▼ or ▲ to cancel. After printing, press ► to confirm and return to the upper-level menu, or press and hold any key to save and return to the Measure screen.

6.11. Memory

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Memory and press ► to enter. Press ▼ or ▲ again to select in cycle: X(Off) → MODE1(Save single)→ MODE2(Save Mean) → MODE3(Manual Save) → View → Erase → File.

X (Off): Do not save the measurement. Press ► to confirm and return to the Menu screen.

6.11.1. MODE1 (Save single)

Save each measurement. Press ► to confirm and return to the Menu screen.

6.11.2. MODE2 (Save Mean)

Only save the mean value. Press ► to confirm and return to the Menu screen.

6.11.3. MODE3 (Manual Save)

Save the data by pressing ► after measuring. Press ► to confirm and return to the Menu screen.

6.11.4. View

To view the stored data. Press ▼ or ▲ for Page/Up/Down. Press ▼ and ▲ at

the same time to print the data. Press ▶ to return to the upper-level menu.

6.11.5. Erase

Clear all data of current file. For example, as file A0 is displayed, all data of file A0 will be deleted. Press ▶ to display “Erase All”. Press ▶ to confirm and delete the data. Press ▼ or ▲ to cancel.

6.11.6. File

Press ▶ to enter the File menu. Press ▼ or ▲ to select the file. Press ▶ to confirm and return to the upper-level menu.

After setting, press ▶ to confirm and return to the upper-level menu, or press and hold any key to save and return to the Measure screen.

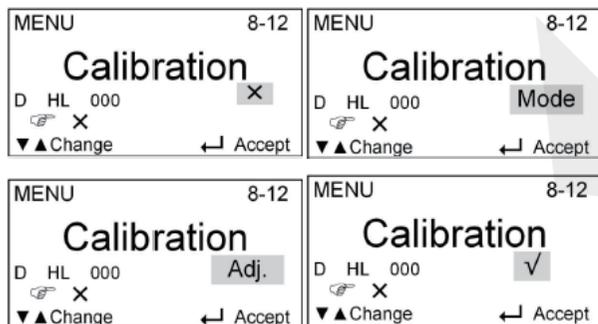
6.12. Calibration

After long time of use, the ball tip on impact body may be worn which would lead inaccuracy. In order to compensate such error, the tester is designed to re-calibrate by user.

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Calibration and press ▶ to enter. Press ▲ to select in cycle: X(Off) → Mode → Adj.(Adjust) → √(On).

The calibration will function only switch on the calibration in menu. You can switch on/off the calibration function at any time. Before activating the calibration function, you need to select calibrate mode – Unified (MODE-U) or Individual (MODE-I). If select MODE-U, only HL value can be adjusted, and if select MODE-I, each scale value can be adjusted. Of course once you switch off the calibration function, all readings will be back to original although you made changes in calibration settings. Then adjust value according to the accuracy,

finally press ▶ to accept changes. After Calibration is done, the symbol ± will display at upper of the screen.



6.12.1. Calibration Mode

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Calibration and press ▶ to enter. Press ▲ to move to “Mode” item then press ▶ to enter modes

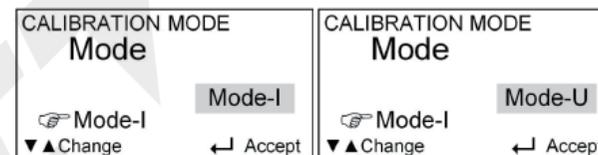
selection. Press ▼ or ▲ again to select different modes.

There are two modes of calibration: Individual Calibration (MODE-I) and Unified Calibration (MODE-U).

Select Unified Calibration, only calibrate the HL value and all other scales will be calibrated accordingly.

Select Individual Calibration, each scale can be calibrated individually. For example, you can calibrate HRC value by increasing or decreasing a few HRC values while other scales will not change.

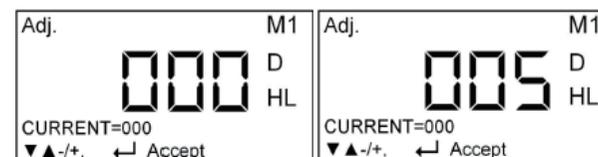
After selecting the mode, press ▶ to accept it and go back to the calibration menu.



6.12.2. Adjust

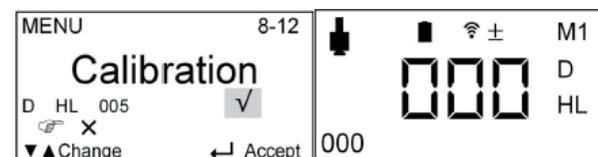
In calibration menu, press ▲ to move to “Adj.” item then press ▶ to enter Adjust screen. Press ▼ or ▲ to adjust the value. If the hardness reading is 5 HL lower than the standard value, please press ▲ to increase 005 to calibrate it. If the hardness reading is 5 HL higher than the standard value, please press ▼ to decrease 005 to calibrate it. Press and hold ▲ or ▼ for fast adjustment.

Then press ▶ to accept the adjustments and return to the calibration menu.



6.12.3. Calibration On

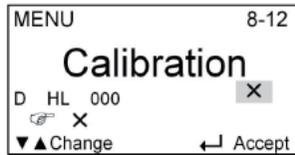
In calibration menu, the current item is “√”(Calibration On), press ▶ to switch on the Calibration and return to the Menu screen. After Calibration is done, the symbol ± will display at upper of the measuring screen.



6.12.4. Calibration Off

If you want to switch off the calibration, in calibration menu, press ▲ to move to “X”, then press ▶ to switch off the Calibration function and return to the Menu

screen.



6.12.5. Calibration for DL probe

For DL probe, you need to make calibration individually by same procedure like D probe.

6.13. Prompt Sound

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Sound and press ► to enter. Press ▼ or ▲ to select X(Off) →\ (On).

Press ► to confirm after selection and return to the Menu screen, or press and hold any key to save and return to the Measure screen.

6.14. Settings

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Settings and press ► to enter. Press ▼ or ▲ again to select in cycle: Exit → Default → Save as user → Load user.

Exit: Return to the Measure screen without modification. Press ► to return to the Menu screen, or press and hold any key to save and return to the Measure screen.

Default: Restore factory settings.

Save as user settings: User can save the set parameters, such as the impact device, materials, mean times, Upper/Lower Limit etc.

Load Settings: Load the saved user settings.

Press ► to return to the Menu screen, or press and hold any key to save and return to the Measure screen.

6.15. No. of Test

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select No. of Test option and press ► to enter, then you can view the current measurement counts for convenient maintenance of the instrument. Press ▼ or ▲ to select Exit or Erase.

Press ► to confirm. Select Erase to clear the measurement counts.

6.16. Information

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Information and press ► to enter. Press ▼ or ▲ to view the data in cycle: Instrument Serial No. → Website → Standards → Patent No. → Manufacture Date → Version.

Press ► after view to return to the Menu screen, or press and hold any key return to the Measure screen.

7. Changing impact body

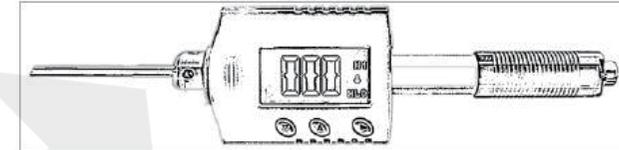
This tester has a very unique feature, which impact device can convert between D and DL simply by changing impact body. This two-in-one probe is equivalent to two individual probes. With this optional accessory, you can take measurement at very narrow surface such as slot bottom, gear tooth that probe

D cannot match.

Please refer to the following steps to change impact body.

Unscrew the support ring from the tester and let the impact body D out.

Insert the impact body DL into probe and screw the guide tube onto the probe.



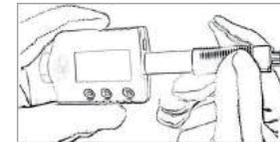
Hardness tester with DL probe

Note: The block D supplied with the new tester indicates the standard HLD value instead of LDL value, when measuring on standard block D with DL probe, the reading is LDL value, which is different from the HLD value marked on the block. If you need standard LDL value, please contact with the manufacturer.

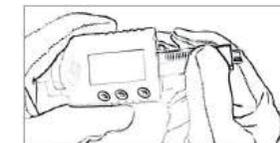
8. Take Measuring

8.1. Loading Spring

8.1.1. Hold the main body (the tester) with left hand while right hand is holding loading tube.



8.1.2. Push the loading tube with a little force against spring force toward tester until to lock the impact body.



8.1.3. Loose the force and let the loading tube returns to the original position.

8.2. Take measurement

Place the tester against onto the surface of object to be measured by the support ring.



Please note: the proper way of holding is important for obtaining better readings. **Attention:** the tester must be placed against object surface firmly and perpendicularly. A slight gap between support ring of tester and surface of object will lead inaccurate reading.

8.3. Release the testing force

After firmly placing the tester onto the surface of object with left hand, hold the loading tube with thumb and middle finger of right hand and press the release button with forefinger.

The impact body inside probe will impact the surface of object with spring force. Then the hardness reading will be displayed on the screen.

Attention: when pressing the release button, please make sure not to press the release button only by single forefinger which may affect the testing accuracy.

9. Maintenance and Repair

Do your best to avoid shock, heavy dust, damp, strong magnetic field, and oil stain.

9.1. Maintenance of the Impact Device

The devices do not require any particular care other than periodic cleaning of the impact body and the guide tube after performing approximately 1000-2000 tests. During cleaning, the following procedures need to be observed:

9.2. Charging Battery

When a low battery indicator displays that reminds you to charge the battery. However it is still possible to measure for some time. Please make sure to obtain additional or replacing battery from the manufacturer. Otherwise it may cause the instrument to get un-accuracy value. Please connect the instrument with USB charger or PC to charge the battery.

In order to avoid damage of battery due to over discharged, please charge the battery at least once every half year after long time of non-use.

Note: The instrument will enter screen saver mode during charging.

10. Introduction of PC software

Data communication software is designed for reading and processing the data of hardness tester. It can read the data from the memory of hardness tester, export the data to the computer and print the data from the computer printer.

10.1. Connect PC and hardness tester by USB cable

Before using PC software, please connect PC and hardness tester using USB cable supplied with new instrument.

10.2. Connect PC and hardness tester wirelessly

Insert USB dongle to PC

Switch on the tester, turn on the print online option:

Press ▼ to enter the Menu screen. Press ▼ or ▲ to select Print on line option and press

▶ to enter. Press ▼ or ▲ to select X(Off) → (On) in turn. To enable wireless connection, please select ON. Press ▶ to confirm after selection and return to the Menu screen, or press and hold any key to save and return to the Measure

screen. After print on line is enabled, the symbol  will display on the screen.

10.3. Driver installation

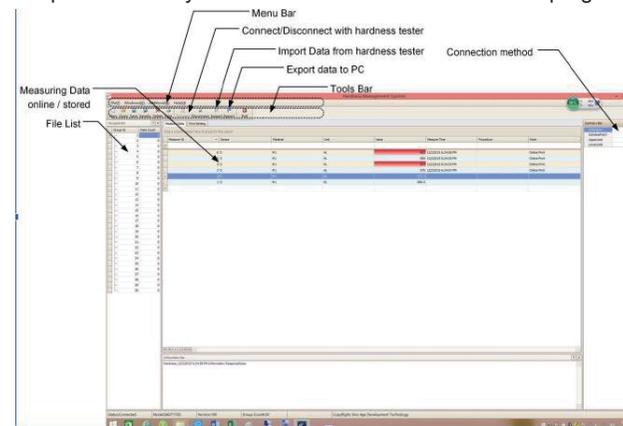
Computer will prompt "Found new hardware" while the hardness tester is connected to the computer first time, please install the driver located in X:\Drivers folder. (X: means CDROM drive letter).

10.4. Software Installation

Double click "setup.exe" to install the PC software. Please follow the installation wizard to finish it.

10.5. Start PC software

After the data communication software is installed, a shortcut will be created on the desktop automatically. Double click the shortcut to run the program.



The main interface of the software is a standard windows form, containing the title bar, menu bar and toolbar.

Please note: After running the software, click the "Connect" from the toolbar to create connection between PC and tester. If it is connected wirelessly, please click "IsWireless" option in the right Summary Bar first, then click "Connect" button to connect wireless connection.