DATA SHEET

Quality Assurance

Product Name: Digital Barcol Impressor
Product Code: HBa-1+

HBa-1+ is a digital indentation hardness tester for very soft pure aluminum to a very hard aluminum alloy. Effective test range is equivalent to the Brinell Hardness of 25~150 Hb.

It has good stability convenient calibration and high accuracy of detection. Small in size, portable, single hand operation, easy to use and can be used in any occasion as long as the hand can reach.

Can be used for measuring not only Barcol Hardness but also Brinell Hardness (HB), Vickers Hardness (HV), Webster Hardness (HW), Rockwell Hardness (HRB/HRE/HRF/HRH)

Operation Instructions

1. Press the power menu key to switch on the tester
2. The tester can be switched off in two ways
    a) Automatic Power Off: When there is no operation for 10 minutes the tester is switched off automatically
    b) Manual Power Off: Press and hold the Power/Menu Key in the boot state for 3 seconds to switch off the tester manually
3. The specimen thickness should not be less than 1.5mm. It should be ensured that the minimum distance between the pin tip to any edge is not less than 3mm
4. The pin must be perpendicular to the surface of the specimen
5. Specimen should be placed stably. Small specimen should be placed on a solid baking e.g. steel, glass etc
6. Specimen should not be tilted or have any slide or elastic deformation in the process of testing
7. Measuring Procedure: Hold the tester, place the tester on the specimen, placidly and rapidly push the tester with enough pressure. Read the displayed reading, this reading is the hardness value
8. Press the Maximum/Plus Key to get the Maximum Value Hold Function, which is displayed on the upper right corner. To quit press the Maximum/Plus Key again the MAX disappears

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Technical Parameters

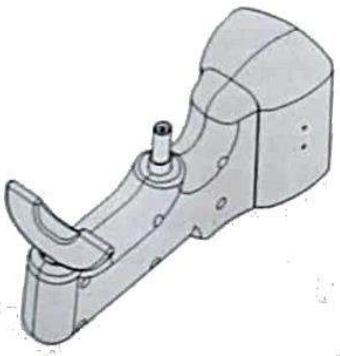
Parameters: Barcol Hardness (HBa)
Brinell Hardness (HB)
Vickers Hardness (HV)
Webster Hardness (HW)
Rockwell Hardness (HRB/HRE/HRF/HRH)
Measurement Range: 0~100 Hba, equivalent to the Brinell Hardness of 25~150 HB
Resolution: 0.1 Hba
Indication Error: 81~88 HBa ± 1 HBa
42~48 HBa ± 2 HBa
Repeatability Error: 81~88 HBa ± 1.5 HBa
42~48 HBa ± 2.5 HBa
Operating Conditions: Temperature: 0~5^{0}C
Humidity: <80% RH
Power Supply: 2 x 1.5 V AAA (UM-4) Battery
Dimensions: 170x6.3x82 mm
Weight: 390 g (Not including Battries)

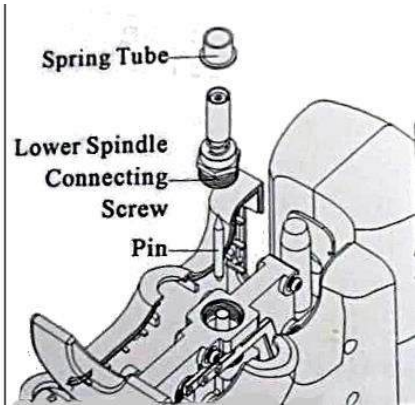
Collocation

1) Digital Barcol Tester
2) Test Block - High Value (1 pc.)
3) Test Block - Low Value (1 pc.)
4) Spare Indenters (2 pcs.)
5) Calibration Wrench
6) Screw Drivers (3 pcs.)
7) Carrying case

Maintenance

1. When the battery indicator is displayed, it is necessary to replace the batteries. Install the batteries correctly according to the pattern in the battery box
2. With frequent use of the tester the pressure pin will wore out. If the tester is not able to get 2 values within the standard range it is time to replace the pin





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3. Pin Replacement:

    a. Loosen all the 12 screws on both sides of the handle with a screw driver

    b. Take off the case, take out the Spring Tube

    c. Loosen the Lower Spindle Connecting Screw with a spanner, take off the Lower Spindle

    d. Take off the used pin and replace it with a new one

    e. Reinstall the Lower Spindle and lock it with spanner

    f. Put on the Spring Tube, remount the case, lock it with the Screws

4. Place the configured hardness blocks on a hard, flat surface, measure the hardness blocks. The measurement reading should be in the indicated range of two hardness blocks. If it is out of the range calibrate according to part

Calibration of the Tester

The Calibration of this tester includes Low End, High End and Display Value Calibration. Before out of factory the tester is Calibrated. If the reading is out of the indicated range on the test block when checking the tester, or after the replacement of the pin, calibrate the tester.

It is necessary to loosen the Main Spindle Adjusting Screw before Zero Calibration and Full Scale Calibration

Low End Calibration

1. Press and hold the Power/Menu Key for about 9 second, 'CAL' is shown on the display screen

2. Release the Power/Menu Key a digit appears on the display

3. Press the Maximum/Plus Key or the Average/Minus Key to adjust the digit till it equals to the indicated value on the Pin Length Calibration Block

4. Press the Power/Menu Key to quit

5. Use a small screw driver to loosen the Main Spindle Adjusting Screw in counter-clockwise direction till the end

6. Put the Pin Tube into the hole pf the Pin Length Calibration Block, push the tester so that the pin draws back completely into the Pin Tube, the reading value should equal to the thickness value indicated on the Pin Length Calibration Block

7. If it is exceeded press the Low End Calibration Button, the standard value will be displayed

8. Release the Low End Calibration Button, the Low End Calibration is Completed

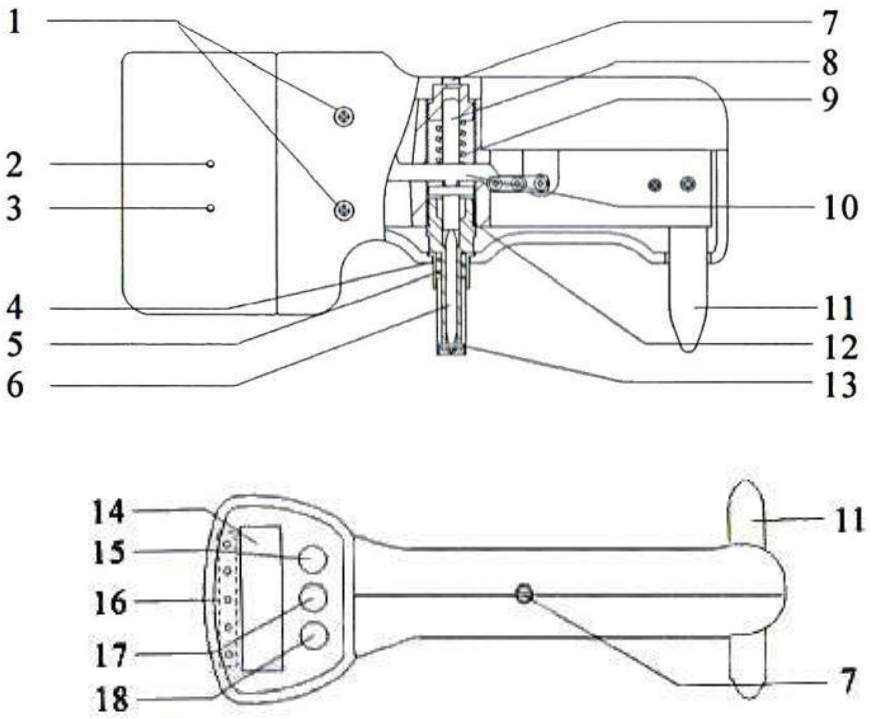
High End Calibration

1. Use a small screw driver to loosen the Main Spindle Adjusting Screw in counter-clockwise direction till the end
2. Place the tester on a solid flat surface such as glass plate.
3. Push the tester so that pin draws back completely into the Pin tube, 100.0 should be shown on the display
4. If it is exceeded press the High End Calibration Button 100.0 is displayed
5. Release the High End Calibration Button, the High End Calibration is Completed

Display Value Calibration

1. Use a small screw driver to adjust the Main Spindle Adjusting Screw, the display value decreases when turning in clockwise direction and increases while turning in anticlockwise direction
2. Adjust the screw till the measured value is in the indicated range of the 2 Standard Blocks

List of Parts for HBa-1+ Tester



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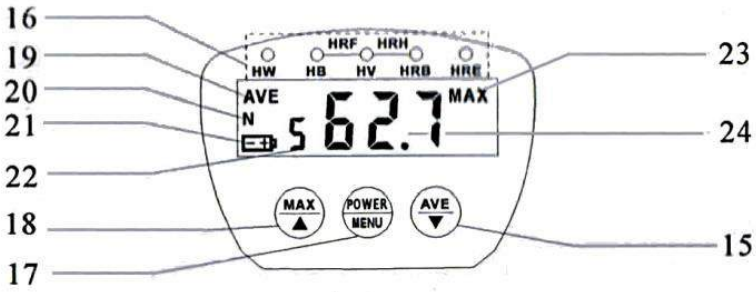

S. No.	Part No.	Description
1	HBa-1-1	Screw od Case
2	HBa-1-2	High End Calibration Button
3	HBa-1-3	Low End Calibration Button
4	HBa-1-4	Spring Table
5	HBa-1-5	The Lower Spindle Spring
6	HBa-1-6	Pin
7	HBa-1-7	Main Spindle Adjusting Screw
8	HBa-1-8	The Upper Spindle
9	HBa-1-9	The Upper Spindle Spring
10	HBa-1-10	Lever
11	HBa-1-11	Supporting Feet
12	HBa-1-12	The Lower Spindle Connecting Screw
13	HBa-1-13	Shield Ring
14	HBa-1-14	Display
15	HBa-1-15	Average/Minus Key
16	HBa-1-16	Hardness Scale
17	HBa-1-17	Power/Menu Key
18	HBa-1-18	Max/Plus Key
19	HBa-1-19	Average Indicator
20	HBa-1-20	Statistical Number Indicator
21	HBa-1-21	Battery Indicator
22	HBa-1-22	The Number of Recorded Measurements
23	HBa-1-23	Maximum Indicator
24	HBa-1-24	Measurement Reading

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