

NDT DLH-100 Leeb Hardness Tester



The design of the DLH-100 is simple to use and is ruggedly built. It easily fits in your hand and is well protected by the black rubber boot included with the instrument.

The large and bright LED display is sharp and easy to see in all working conditions.

The keys are well positioned making it easy for the operator to select:

- Material
- Probe
- Probe Orientation
- Hardness Scale – Leeb, Brinell, Rockwell, etc...
- Number of measurements to be averaged
- Output measurements

Results can be stored and sent to a PC at a later time or transmitted to a printer by optional Bluetooth.

A self-calibration feature allows the user to offset (+/-) a reading to match the hardness of a secondary standard made from your material and / or compensate for probe wear.

The DLH is a great value in a Leeb (Dynamic) Hardness Tester.

NDT Supply.com, Inc.

7952 Nieman Road
Lenexa, KS 66214-1560 USA



How Does It Work?

A spring in the probe projects the tungsten carbide ball tipped indenter at the test piece. Impact velocity is measured immediately prior to impact and then on rebound. The quotient is computed and displayed as the Leeb Hardness Value. On hard materials, the rebound velocity will be higher than that from softer materials, which will absorb more of the impact energy.

For a correct and repeatable measurement, certain conditions must be met:

- The material must be smooth and free of paint, rust, oxide, etc...
- The grain size of the test part must be small in relation to the indentation size.
- The material cannot move or be deflected by the impact of the indenter.
- Correction factor must be applied for the material's elastic modulus.
- Correction for effect of gravity must also be made.

Discussion

Surface: The test piece surface needs preparation by filing, sanding or grinding. As a general rule, if you drag your thumbnail across the surface and it drags, the surface is too rough.

Grain Structure: Materials such as cast iron, that have a coarse (large) grain structure, will cause inconsistent measurements. The use of a much larger indenter "G" probe will often correct for this condition.

Thickness & Mass: Test parts that have a low mass or thickness need to be supported to prevent movement or deflection.

Material: Selection of the material corrects for material type. The following materials can be selected: Steel / Cast Steel, Gray Cast Iron, Nodular Cast Iron, Cast Aluminum, Brass, Bronze, Copper, Stainless Steel, Forged Steel and Tool Steel*.

Probe Position: Set; Up, Down, Sideways, 45° up or 45° down.

*Leeb measurements are affected by the material elasticity. To a large degree this is taken care of by selecting the most similar material type from the Material list. If you find that your measurements are high or low, it is because the built-in correction factor does not match your material. You can try a different material to see if this gets you closer to a correct measurement. You can also use a known hardness sample of your test material (having enough mass and thickness) to determine the +/- error and then adjust the reading to match using the Calibration facility.

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DLH-100 Kit Includes:

- DLH-100 Instrument
- D Probe with Large Support Ring & Cable
- HLD Calibration Block
- Small Support Ring
- Cleaning Brush
- User's Manual
- Rubber Boot
- Carrying Case
- DataView Software & I/O Cable (Optional)

Optional Accessories:

- Bluetooth
- Printer
- Probe Types: D, DC, DL, C, D+15, E, G
- Spare Probe Cable
- Support Rings

Phone: 913-685-0675
Fax: 913-685-1125

sales@ndtsupply.com
www.ndtsupply.com

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Probes:

The DLH-100 is supplied with a type "D" General Purpose Probe. It can be used with types: D, DC, DL, C, D+15, E and G. The DLH-100 is compatible with most manufacturers' probes including EquoTip.

