NOVOTEST

# Leeb Hardness Tester
# NOVOTEST T-D2


**Datasheet**

**2022**

# 1. Introduction

The Leeb Hardness Tester NOVOTEST T-D2 correspond to to ASTM A956 is the most popular metal hardness testing method in the world, because of very easy to use and does not require special skills from the operator. The probe is mounted on the sample, and by pressing the release button, measurement is performed, and the hardness value is displayed on the device's screen. The method works well with low alloy steels, stainless steels, as well as non-ferrous metals.

It is usually used for bulk products, without thorough surface preparation and is less sensitive to inhomogeneous or coarse-grained materials.

### 1.1 The main advantages of the Leeb Hardness Tester NOVOTEST T-D2:

- ***HARDNESS TESTER IS CALIBRATED FOR DIFFERENT MATERIALS AND SCALES***

The Leeb Hardness Tester NOVOTEST T-D2 is calibrated to measure the hardness of steels, cast iron, stainless steels, aluminum on all major scales – Rockwell, Brinell and Vickers. And also the hardness tester allows user to evaluate the tensile strength. If necessary, the user can create additional calibration for any scale and material.


- ***DYNAMIC METHOD IS NOT MUCH REQUIRED FOR THE SURFACE OF THE PRODUCT AND THE HOMOGENEITY OF THE MATERIALS***

The Leeb method allows user to measure the hardness of products with a poorly prepared surface (roughness up to 3,2 Ra), as well as coarse-grained materials such as cast iron, etc. However, it must be noted that the dynamic method without additional measures allows to test the hardness of only sufficiently massive products (weight over 5 kg, wall thickness at the measurement site more than 10 mm).

- ***DEVICE MAY BE USED IN EXTREME CONDITIONS OF OPERATION***


Shock-resistant, rugged housing with a silicone protective bumper cover allows the hardness tester to be made shockproof. The indicator of the device is clearly visible in the sun, when used in the dark – it has a display backlight with adjustable backlight. The hardness tester can be used both in the cold (up to -25 °C), and in conditions of high temperatures. Thus, user can measure hardness in the most severe conditions without worrying that the device can let him down.

- ***DIFFERENT PROBE'S TYPES***

If necessary, the device can be equipped with a probes of various types to solve various tasks of hardness measuring

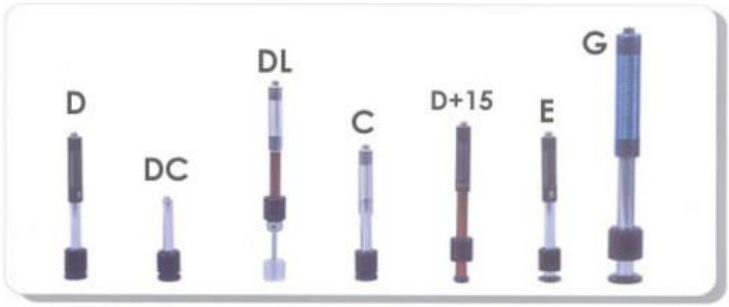
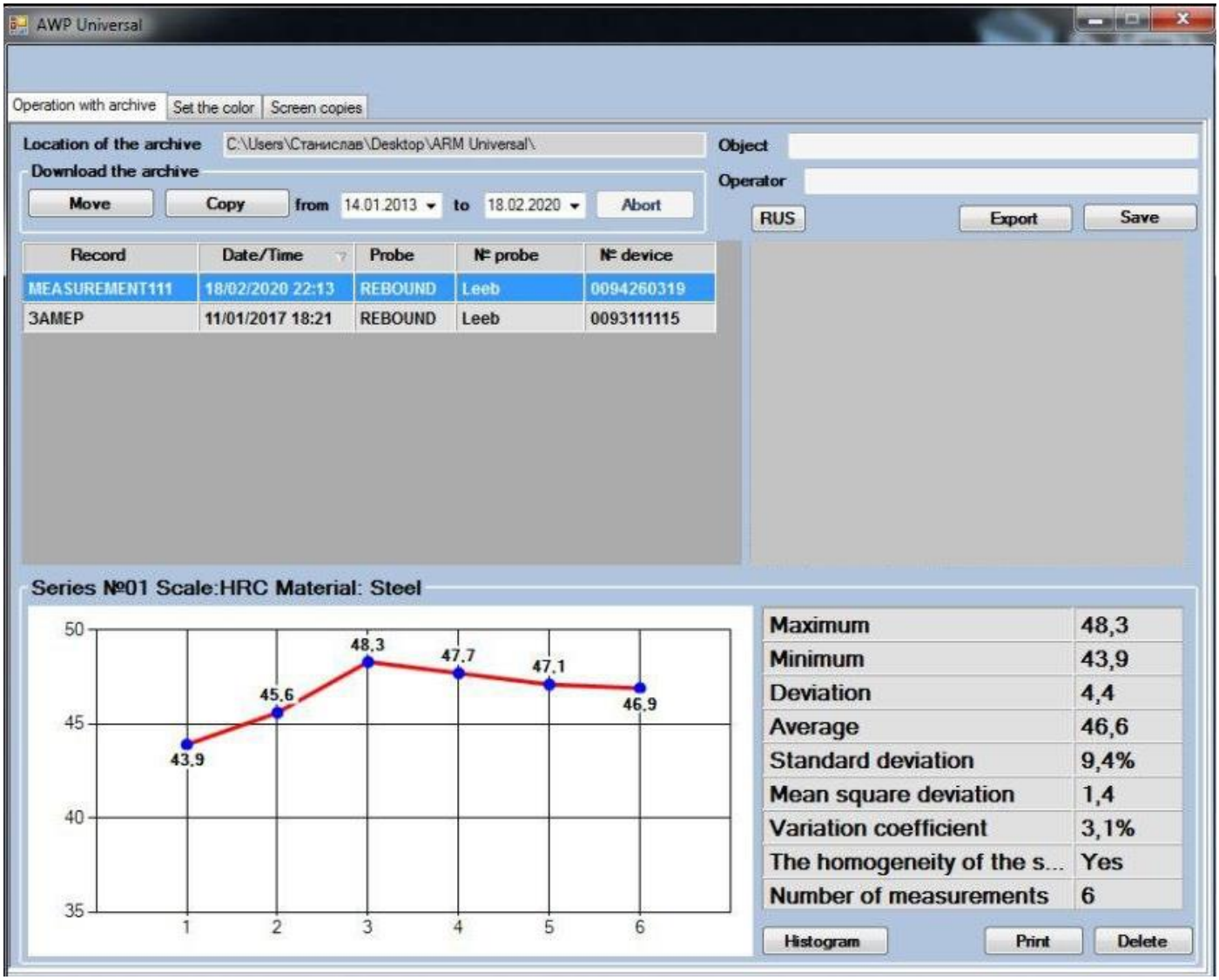



**TABLE X1.1 Specifications of Standard Single Coil Leeb Hardness Testing Devices**

| Property | Symbol | Unit | *D/DC* | *E* | *D*+15 | *DL* | *C* | *G* |
|---|---|---|---|---|---|---|---|---|
| Impact velocity[A] | $v_A$ | m/s | 2.05 ± 1% | 2.05 ± 1% | 2.05 ± 1% | 2.05 ± 1% | 1.39 ± 2% | 2.98 ± 1% |
| Impact body, mass | M | G | 5.45 ± 0,05 | 5.45 ± 0,05 | 7.80 ± 0,05 | 7.23 ± 0,05 | 3.00 ± 0,05 | 20.00 ± 0,05 |
| material: St 18/8, nonmagnetic | | | | | | | | |
| Free flight length | H | mm | 8 ± 1 | 8 ± 1 | 8 ± 1 | 8 ± 1 | 8 ± 1 | 15 ± 1 |
| Tube material: aluminium, nonmagnetic | | | | | | | | |
| Eddy current slit | | | yes | no | yes | yes | yes | no |
| Indenter, radius | R | mm | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.5 |
| material | | | TC[B] | PKD[C] | TC | TC | TC | TC |
| hardness | h | HV | 1600 (typ) | 5000 (typ) | 1600 (typ) | 1600 (typ) | 1600 (typ) | 1600 (typ) |
| Induction signal, peak position | t1 | ms | 0.55 ± 0,15 | 0.55 ± 0,15 | 0.55 ± 0,15 | 0.55 ± 0,15 | 0.62 ± 0,20 | 0.55 ± 0,15 |
| half width | Δt | ms | 2.5 ± 30% | 2.5 ± 30% | 2.5 ± 30% | 2.5 ± 30% | 4.0 ± 30% | 2.0 ± 30% |

[A] Impact direction: vertical down.
[B] TC = tungsten carbite.
[C] PCD = polycrystaline diamond.

The Leeb Hardness Tester NOVOTEST T-D2 has special software for operate with saved measurements.




# 2. Specifications

### 2.1 Advantages

- Wide range of hardness measurement
- Allows to test the products with coarse, non-uniform structure (castings, forgings)
- Very ease and simplicity in setup and operation
- Reasonable price (lower in comparison with the ultrasonic hardness tester)
- User can save the results of hardness measurements into the internal memory of the device and after that, transfer them to the PC. Device allows user to operate in a wide range of the temperature. Hardness tester T-D2 has a brightness high contrast display. Device also has calibration modes for hardness testing of wide range of metals and alloys

### 2.2 Specifications

| | |
|---|---|
| Range of hardness value | •Rockwell, HRC: 20 – 70<br>•Brinell, HB: 90 – 650<br>•Vickers, HV: 230- 940<br>•Can be calibrated for any scale and any range. |
| Measurement accuracy | •HRC: 2HRC<br>•HB: 10HB<br>•HV: 15HV |
| Hardness scale | •Leeb probe – HRC, HB, HV, HL, MPa<br>•Additional custom scales for calibration. |
| Materials | •Leeb probe – pre-calibrated for steel, alloy steel, stainless steel, aluminum or cast iron.<br>•Additional custom scales and materials for calibration. |
| Standards | •ASTM A 956<br>•ASTM E 140<br>•ASTM A 370<br>•ISO 16859<br>•DIN 50156<br>•GB/T 17394<br>•JB/T 9378<br>•ISO 18265 |
| Storage of measurement results | 256 |
| Language | •English<br>•Spanish<br>•Portuguese<br>•French<br>•Russian<br>*additional languages available by request |
| Dimensions, mm | 122*65*23 |
| Operating temperature range, ° C | -20 to +40 |
| Power supply | 2pcs AA batteries |
| Batteries life, not less, h | 20 |
| Weight of electronic unit with batteries, no more, kg | 0.2 |

### 2.3 Available options

- Additional probes of various types of Leeb probes (D, DC, DL, C, D+15, E, G). Also, after the purchase if will be needed, user can order the additional ultrasonic (UCI) probe U1 with activation code and will get combined hardness tester with two probes (Leeb+UCI). So that, user can save money and needn't to buy two probes at one time
- Batteries
- Charger
- Hardness test blocks
- Set of support rings for D, DC type Leeb probes
- Impact bodies for Leeb probes
- Portable grinding machine
- Case for hardness tester

### 2.4 Standard package

- Hardness tester
- Leeb probe (D type)
- 2pcs AA batteries
- Charger
- USB cable
- Operating manual
- Software for PC
- Case