



NOVOTEST

Analog Brinell, Rockwell, Vickers Hardness Tester NOVOTEST TB-BRV



Datasheet

2022

1. Introduction

Analog Brinell, Rockwell, Vickers Hardness Tester NOVOTEST TB-BRV implements direct Brinell, Rockwell and Vickers methods of hardness testing in accordance with ISO 6508, ASTM E10, ASTM E92, ASTM E18.

Application The device allows user to perform:

- hardness testing of ferrous metals (steel, cast iron, low carbon steel and tempered steel, etc.)
- hardness testing of non-ferrous metals (alloys from aluminum, copper etc.)
- hardness testing of hard alloys, carbonized and chemically treated layers

Description

Analog Brinell, Rockwell, Vickers Hardness Tester NOVOTEST TB-BRV is designed as universal one, it can be used in industry, scientific research laboratories, plants and workshops, etc.

Hardness Tester NOVOTEST TB-BRV has a new design and provides high usability and high repeatability of the results and also is very easy in operation.

This hardness tester uses a multi-stage test load and different types of indenter to measure and determine the hardness value of tested products in different scales: Brinell, Rockwell and Vickers.

Hardness tester is supplied with a special table which allows user to measure the diameters of imprints without removing the sample. The hardness tester has special stand for the microscope, which significantly simplifies operating the device.

The device has an electric actuator – the main test load is completely automated.

Hardness tester provides the high sensitivity and accuracy of the load level, and the high accuracy of the measuring values. The machine has built-in high precision microscope with backlighting.

Tester application with different methods allows user to solve almost all hardness measurement tasks: hardness measurement of different materials and in a wide range – from very soft up to the hardest materials.

2. Specifications

2.1 Advantages

- Easy in operating and servicing
- Multi-functional instrument in its class. User can measure hardness in various scales (methods) and have no problems with hardness measurement in a wide range – from very soft materials up to some of the hardest materials
- Special movable table which allows user to measure the diameters of prints without removing the sample from the device
- Special stand for the microscope, which significantly simplifies operating the device
- Built-in high precision microscope with backlighting
- An electric actuator – the main test load is completely automated
- Allows user to maximize the efficiency of the using portable hardness testers. Using this device user can verificate standard hardness test blocks and calibrate portable hardness testers according to any of the most popular hardness scales.

2.2 Specifications

Indenter	<ul style="list-style-type: none"> •Rockwell: Conical diamond indenter (120 °) – diamond tip as a cone with 120 degrees of the cone apex angle and the bead size of 1/16 inch (1.5875 mm) •Brinell: Hard alloy steel ball with a diameter of 1.5875, 2.5, 5 mm •Vickers: four-sided diamond pyramid (136 °)
Scales	<ul style="list-style-type: none"> •Rockwell: HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK •Brinell: HBW2.5/31.25, HBW2.5/62.5, HBW5/62.5, HBW2.5/187.5 •Vickers: HV30, HV100
<ul style="list-style-type: none"> •Initial load •Tolerance: ± 2.0% 	98.07N (10Kg)
<ul style="list-style-type: none"> •Testing load •Tolerance: ± 1.0% 	<ul style="list-style-type: none"> •Rockwell: 60kgf (588N), 100kgf (980N), 150kgf (1471N) •Brinell: 31.25kgf (306.5N), 62.5kgf (612.9N), 187.5kgf (1839N) •Vickers: 30kgf (294.2N), 100kgf (980.7N)
Measuring time	5~60 sec
Testing materials	<ul style="list-style-type: none"> •Ferrous metals (steel, cast iron, low carbon steel and tempered steel, etc) •Non-ferrous metals (alloys from aluminum, copper and its alloys, etc) •Hard alloys, carbonized and chemically treated layers
Hardness range	<ul style="list-style-type: none"> •Rockwell: (20-88) HRA, (20-100)HRB, (20-70)HRC •Brinell: (8-650) HB •Vickers: (14-3000) HV
Max height of test sample	<ul style="list-style-type: none"> •Rockwell indenter – 170 mm (can be produced up to 400 mm) •Brinell – 140 mm (can be produced up to 370 mm) •Vickers – 140 mm (can be produced up to 370 mm)
Max depth of test sample	165 mm
Microscope zoom	15X
Lense zoom	2.5X, 5X
Data output	<ul style="list-style-type: none"> •Rockwell – dial indicator •Brinell – measuring microscope •Vickers – measuring microscope
Recommended operating conditions	<ul style="list-style-type: none"> •Air temperature: 0...+40 °C •Air pressure: 94 – 106.7 kPa •Humidity: up to 65%
Net weight	60 kg
Gross weight	75 kg
Package dimensions	630*500*860 mm (L*W*H)

2.3 Available options

- Indenters (Brinell, Rockwell, Vickers)
- Standard hardness test blocks
- Microscope
- Weight
- Large testing table
- Medium testing table
- V-shaped testing table
- Movable testing platform
- Bolt adjuster
- Fuse
- Power cable

2.4 Standard package

- Universal Hardness Tester NOVOTEST TB-BRV
- Rockwell indenter (Conical diamond indenter (120 °)
- Vickers indenter (Four-sided diamond pyramid (136 °)
- Brinell indenter (1.5875, 2.5, 5 mm diameter hard alloy steel balls – 3 pcs. in total)
- Weight (5pcs)
- Large testing table
- Medium testing table
- V-shaped testing table
- Movable testing platform
- Rockwell Hardness Test Blocks (HRC – 2 pcs, HRB – 1 pc. – 3 pcs. in total)
- Brinell Hardness Test Block (1pc.)
- Vickers Hardness Test Block (1pc.)
- Bolt adjuster (4 pcs.)
- Power cable
- Fuse (2 pcs.)
- Operating manual
- Calibration certificate
- Transportation box