



Physical Test Solutions

Innovative Solutions in Material Test Equipment

Rockwell and Brinell Hardness Testers



ROCKWELL & BRINELL
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Rockwell Hardness Testers

Physical Test Solutions (PTS) offers a complete line of hardness testers for Rockwell testing applications. Reliability and repeatability is a trait in all models including the basic analog model as well as the digital model. All testers are delivered with a standard set of accessories including hardness test blocs, anvils and penetrators.

RHCNTT

A convex nose twin hardness tester is ideal for normal Rockwell testing applications with the added benefit of a special penetrator design for difficult to access parts. The tester performs both Rockwell and Rockwell superficial tests. With a technological design, the unit has the following functions; upper-lower limit settings, alarm, statistical data including, average, maximum value, minimum value, superficial Rockwell scale conversions, conversions to Vickers, Brinell, Knoop, and curve correction for cylindrical and spherical materials.

Features and specifications:

- ✓ Rockwell test scales HRA, B, C, D, E, F, G, H, K, L, M, P R, S, V
- ✓ Rockwell Superficial test scales: HR15N.T; 30N.T; 45N.T, W, X, Y
- ✓ Pre-loads: 29.4N (3Kg), 98.07N (10 Kg)
- ✓ Rockwell Loads: 588.4N (60 Kg), 980.7 (100 Kg), 1471N (150 Kg)
- ✓ Rockwell Superficial loads: 147.1 (15 Kg), 294.2 (30 Kg), 441.3N (45 Kg)
- ✓ Dwell time: 2-50 seconds
- ✓ LCD display
- ✓ Menu selectable keypad
- ✓ Automatic test process
- ✓ RS232 port
- ✓ Complies with ISO 6508.2 and ASTM E-18
- ✓ Vertical test space 250 mm (8.6")
- ✓ Horizontal test space 150 mm (6")
- ✓ Tests external round bars with minimum diameter of 3mm (0.120")
- ✓ Tests internal ring parts with minimum diameter of 23mm (0.900")



Standard Accessories

- 120 deg Diamond cone indenter
- 1/16" (1.6 mm) ball indenter
- Three certified test blocks
- Flat anvil
- Vee anvil

Power Supply: 110/220 V, 50/60 HZ
Dimensions: 720 mm x 240 mm x 815 mm
Weight: 120 Kg

NRHT-150

Model NRHT-150 is a new stylish Rockwell hardness tester that combines elegant design with reliability at cost effective price.

Specifications

- ◆ Measuring range: 20-88HRA, 20-100HRB, 20-70HRC
- ◆ Test force: 588.4, 980.7, 1471N (60,100,150kgf)
- ◆ Maximum test specimen height: 200 mm
- ◆ Throat depth: 165 mm
- ◆ Dimensions: 522 x 300 x 700 mm
- ◆ Weight: approx. 85kg

Standard Accessories

- ✓ Diamond penetrators
- ✓ 1/16"steel ball penetrators
- ✓ Rockwell standardized test block: 5 pieces.
- ✓ Large flat anvil
- ✓ Small flat anvil
- ✓ V-notch anvil: 1 pc.



RHTD

Model RHTD Rockwell hardness tester performs standard Rockwell tests with the convenience of a digital display. The unit uses a frictionless loading shaft instead of the conventional type. The application of preliminary test force is controlled by a magnetic clutch, so that the accuracy of preliminary test force is greatly increased. The process of applying, holding and releasing of total test force is performed automatically, thus eliminating human error in those operations. The measured hardness value and data processing result can be recorded automatically on the printer.



Specifications

- Measuring range: 20-88HRA, 20-100HRB, 20-70HRC
- Test force: 588.4, 980.7, 1471N (60, 100, 150kgf)
- Maximum height of test piece: 170mm
- Throat depth: 130mm
- Unit for display: 0.1HR
- Power supply: 220V AC or 110V AC, 50/60Hz
- Dimensions: 500 x 250 x 700mm
- Weight: approx. 75kg

Standard Accessories

- Large flat anvil
- Small flat anvil
- Large V anvil
- Diamond penetrator
- 1/16"steel ball penetrator
- Rockwell test block: 5 pieces
- Printer

Tru-Blue II Closed Loop Hardness Tester

The Tru-Blue II was the first closed loop Rockwell hardness tester to be introduced into the market. The unit complies with ASTM E18, ISO 6508 specifications and NIST recommendations. Having no dead weights, pivot points and knife edges to move out of adjustment, the Tru-Blue II can be moved to a new location without having to be re-calibrated.

Tru-Blue II Features:

- 15 regular scales.
- 15 superficial scales.
- 5 preset load dwell times including plastics.
- Computer controlled application of loads.
- Display resolution: points, tenths and hundredths.
- Serial, Parallel & PS/2 Connections.
- Statistics: Avg, range, min/max, Std deviation and number of tests.
- Vacuum fluorescent display.
- Cylindrical correction.
- Hardness value conversion.
- Parts IN/OUT limit alert.
- Bi-directional loading capability.
- Parts clamping device.
- Direct certification: Depth, load, hysteresis & timing.
- Vertical capacities: 10, 14, 18 & 20 inches.
- Throat depth: 5.5 in 120-240 VAC, 50/60 Hz. Single phase, 1 amp.



HTU

HTU is a versatile universal hardness tester. Educational institutions demand universal hardness testers to facilitate teaching activities. The universal hardness tester affords the versatility to perform Rockwell, Brinell and Vickers tests. This “all in one tester” can also be a practical addition to any metallurgical laboratory.

Specifications

- ◆ Measuring range: 4-450HBS, 20-88HRA, 20-100HRB, 20-70HRC, 200-1000HV
- ◆ Test force: 294.2, 306.5, 588.4, 612.9, 980.7, 1471, 1839N (30, 31.25, 60, 62.5, 100, 150, 187.5kgf)
- ◆ Maximum height of test piece: 200 mm
- ◆ Throat depth: 160 mm

Standard Accessories

- ✓ Large flat anvil
- ✓ Small flat anvil
- ✓ V-notch anvil
- ✓ Diamond cone penetrator
- ✓ Diamond pyramid penetrator
- ✓ Steel ball penetrators: 1.588, 2.5, 5 mm
- ✓ Brinell test block
- ✓ Rockwell standardized block: 5 pieces
- ✓ Vickers standardized block
- ✓ 40X Readout microscope



Power supply: 220V or 110V AC, 50/60Hz
Dimensions: 480 x 250 x 760 mm
Approximate weight: 120 kg

Brinell Hardness Testers

Brinell hardness is commonly required for testing unquenched steels, cast iron, non-ferrous metals and soft bearing alloys. The **Physical Test Solutions (PTS)** Brinell hardness testers offer accuracy, versatility, durability, and affordability. Brinell testers are available in bench and portable type configurations. Automatic and in-line testers are also available upon request.

BEHT

This tester unit features a new design of Brinell hardness tester which integrates mechanical and electronic technology. The unit has no weights as the force is applied by electric power and measured by load cell. An automatic overload protection is part of the system.

Specifications

- ◆ Measuring range: 4-450HBS, 4-650HBW
- ◆ Test force: 612.9, 980.7, 1225.9, 1838.8, 2451.8, 4903.5, 7355.3, 9807, 14710.5, 29421 N, (62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000 kgf)
- ◆ Maximum test piece height: 240 mm
- ◆ Depth of throat: 180 mm
- ◆ Power supply: 220V AC, 50Hz
- ◆ Dimensions: 630 x 250 x 1000 mm
- ◆ Weight: Approx. 250kg

Standard Accessories

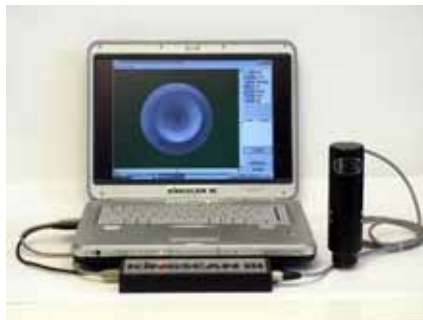
- ✓ Brinell test block: 2 pieces
- ✓ Steel ball penetrators: 2.5, 5 and 10mm
- ✓ 20 X microscope
- ✓ Large flat anvil
- ✓ Small flat anvil
- ✓ V-notch anvil



King Brinell Tester

A production environment frequently requires Brinell tests to be performed in the field. For those applications portable testers provide the solution. The King tester is a popular tester that has proven reliability.

A full range of Brinell accessories including video microscopes is also available.



Portable Hardness Testers

Large materials or field hardness applications demand portable units to meet the measuring task. The challenges are diverse and so are the solutions. To meet the requirements PTS offers the following solutions.

HT-1000 / 2000 Series Leeb's Hardness Testers

The HT-1000 and HT-2000 have many applications in the primary metals, metal fabrication, utilities, and petroleum, chemical, automotive and aerospace industries. Their small size and easy to use, one-handed operation makes them ideal for testing large and heavy forgings or castings, such as steel mill rolls and turbine housings. The testers can be used vertically or horizontally, and require only a small surface area to obtain a quick and accurate reading.

These versatile testers can be easily used by anyone, anywhere, to obtain direct accurate hardness readings.

Specifications

- **Testing Range:** 200-900 HL (Leeb Value)
- **Minimum Workpiece thickness HT-1000A / 2000A:** 3mm (0.11")
- **Minimum Workpiece thickness HT-1000C / 2000C:** 0.2 mm (0.007")
- **Scales:** HL, HV, HB, HRB, HRC, HSD
- **UTS:** Kgf/cm², Tons/in², Lbs/in² (HT-2000A only)
- **Accuracy:** +/- 4HL
- **Testing Direction:** Any Direction
- **Materials:** Low carbon steel, high alloy steel, stainless steel, gray iron, nodular iron, aluminum, brass, bronze, copper
- **Operating Temperature:** Operating 14 °F to 104 °F (-10 °C to +40 °C)
Storage 4 °F to 122 °F (-20 °C to + 50 °C)
- **Batteries:** Tester: Two 3V Lithium CR-2330 Batteries; Printer: Rechargeable Li-Ion Battery
- **Battery Life:** Tester Work Life: 40 Hours continuous (2,500 test results); Shelf Life: 2 years
- **Printer:** 10,000 lines/once full charge
- **Data Storage:** Automatically records up to 200 test results including readings, conversions, average values, hardness scales, material, direction, date and time.
- **Time and Date:** Real time and date with a 10 year calendar.
- **Tester Dimensions:** 6.5" (165mm) x 1.1"(28mm) x 1.1"(28mm)
- **Contact Diameter:** 0.79"(20mm) and 0.53"(13.5mm)
- **Weight:** 4.2 oz (120 grams)



HT-1000A / HT-1000C Package Includes:

- ✓ HT-1000A or HT-1000C Hardness Tester
- ✓ Standard Test Block
- ✓ Support Ring .79"(20mm)
- ✓ Support Ring .53"(13mm)
- ✓ Plastic Carrying Case
- ✓ Tube Cleaning Brush
- ✓ CR_2330 Lithium Batteries (2)
- ✓ Operating Manual



HT-2000A / HT-2000C Package Includes:

- ✓ HT-2000A or HT-2000C Hardness Tester
- ✓ Standard Test Block
- ✓ Support Ring .79"(20mm)
- ✓ Support Ring .53"(13mm)
- ✓ OM-6240 Infrared Printer
- ✓ CR_2330 Lithium Batteries (2)
- ✓ Operating Manual
- ✓ Plastic Carrying Case
- ✓ Tube Cleaning Brush



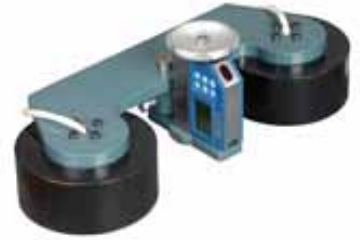
RH-150 Rockwell Hardness Tester

For portable test applications that demand hardness tests in compliance with ASTM E 18, model RH-150 is the solution. When equipped with one of its many accessories, no task is impossible for model RH-150.



Specifications

- **Testing Range:** 20-88 HRA, 20-100 HRB, 20-70 HRC
- **Scales:** HRA, HRB, HRC, HV, HB
- **Tensile Strength:** 110-363 Lb/In², 77 – 266 Kg/cm²
- **Accuracy:** 0.5HRC (between 55-68HRC)
- **Operation Temperature:** Operation 32 °F to 104 °F (0 °C to 40 °C)
Storage 4 °F to 122 °F (-15 °C to 50 °C)
- **Batteries:** 1.5V AA
- **Data Storage:** Automatically records up to 500 test results, includes readings, convert results and average.
- **Tester dimension:** 7" x 3.25 x 1.25" (182mm x 84mm x 34mm)
- **Weight:** 2.4lb (1.1Kg)



Standard Accessories

- ✓ RH-150 Hardness Tester
- ✓ Standard Test Blocks: 20-30 HRC, 35-55 HRC, 59-65 HRC
- ✓ Diamond Indenter
- ✓ Carbide Ball Indenter
- ✓ Plane Supporter
- ✓ V Type Supporter
- ✓ 1" (25mm) Retaining Frame
- ✓ 2" (50mm) Retaining Frame
- ✓ 3" (75mm) Retaining Frame
- ✓ 4" (100mm) Retaining Frame
- ✓ AA Batteries 2
- ✓ Pin Wrench
- ✓ Hex Key
- ✓ Plastic Carry Case



RH-150 Optional Accessories

Micro IrDA Printer



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