



## PORTABLE LEEB HARDNESS TESTER

**PLT-1000A**





# PORTABLE LEEB HARDNESS TESTER

## PLT-1000A

### APPLICATION

The PLT-1000A and PLT-2000A have many applications in the primary metals, metal fabrication, utilities, petroleum, chemical, automotive and aerospace industries. Their small size and easy to use, one-handed operation make them ideal for testing large and heavy forgings or castings, such as steel mill rolls and turbine housings. Also, due to their small size and portability, the tester can be used to test individual parts of a large assembly without taking the finished assembly apart. 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.

### OPERATION

Operation of the PLT-1000A/PLT-2000A is easy and test results can be obtained in just seconds. To obtain a reading, simply load the tester, position it on the material, and push the button. Setting up the instrument is also very simple. Four function keys are used to select up to 10 materials, 6 hardness scales and 5 testing directions. For users who require a print-out of their readings, the PLT-2000A includes a wireless infrared printer. Using it is simple - just aim the tester's IrDA transmitter at the printer's receiving window to transmit test results. The PLT-2000A can also transmit test results to Palm PDA systems.

### PRINCIPLE

The PLT-1000A and PLT-2000A hardness testers operate on the Leeb principle, a dynamic hardness test method based on velocity measurement. Each tester includes a guide tube and an impact body. The impact body contains a tungsten-carbide or diamond ball and a magnet. Measurements are performed using a spring to propel an impact body through a guide tube towards the test surface. When the ball is within 1mm of the part's surface, the magnet induces a voltage into a coil surrounding the guide tube. After penetration, the impact body rebounds and the magnet returns through the coil, inducing a second voltage. Both voltages are proportional to the velocity of the impact body. Leeb hardness value (HL) is determined using the following formula:  $HL = (V_b/V_a) \times 1000$  Where  $V_b$  is the rebound velocity of impact body and  $V_a$  is the impact velocity of impact body.

#### PLT-1000A PACKAGE INCLUDES:

- PLT-1000A Hardness Tester
- Standard Test Block
- Support Ring .79" (20 mm)
- Support Ring .53" (13 mm)
- Plastic Carrying Case
- Tube Cleaning Brush
- CR-2330 Lithium Batteries (2)
- Operating Manual

#### PLT-2000A PACKAGE INCLUDES:

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- (2) Operating Manual



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#### SPECIFICATION

**Testing Range:**

200-900 HL (Leeb Value)

**Scales:**

HL, HV, HB, HRB, HRC, HS

**UTS:**

Kgf/cm<sup>2</sup>, Tons/in<sup>2</sup>, Lbs/in<sup>2</sup>(PLT-2000A only)

**Accuracy:**

+/- 4HLTesting

**Direction:**

Any Direction

**Materials:**

Low carbon steel, high alloy steel, stainless steel, bearing 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:80 hours continuous (5,000 test results)

Shelf Life:2 Years

**Printer:**

10,000 lines/one full charge

**Data Storage:**

Automatically records up to 500 test results including readings, conversions,

average values, hardness scale, material, direction, date, and time

**Time and Date:**

Real time and date with a 10 year calendar

**Tester Dimensions:**

6.5"(165 mm) x 1.1"(28mm) x 1.1"(28mm)

**Weight:**

4.2 oz (120 grams)



SPECIAL SUPPORT RINGS



LONG TEST TIP IMPACT BODY



DIAMOND IMPACT BODY