

VGVG EPX5500

VGVG EPX5500 Portable Hardness Tester User Manual

1. INTRODUCTION

This manual provides comprehensive instructions for the VGVG EPX5500 Portable Hardness Tester. This device is designed for accurate hardness measurement across various metals, featuring automatic impact device type identification. Please read this manual thoroughly before operation to ensure correct usage and optimal performance.

2. PRODUCT OVERVIEW

The VGVG EPX5500 is a portable instrument for measuring the hardness of metals. It typically consists of a main display unit, an impact device, and a test block. An optional portable printer may also be included for immediate result documentation.



Figure 2.1: VG/VGV EPX5500 Portable Hardness Tester components. Shown are the main display unit (left), the impact device connected to a test block (right), and a portable printer (top center).

Key Components:

- **Main Display Unit:** Features a large LCD with backlight and touch screen for displaying measurements and navigating menus.
- **Impact Device:** The probe used to make contact with the test surface. It contains a hard metal test tip.
- **Test Block:** A material of known hardness used for calibration and verification.
- **Portable Printer (Optional):** For printing measurement results directly from the device.

3. PRINCIPLE OF OPERATION

The VG/VGV EPX5500 operates on a dynamic hardness testing principle. An impact body, equipped with a hard metal test tip, is propelled by spring force against the surface of the test piece. Upon impact, the test surface undergoes deformation, resulting in a loss of kinetic energy from the impact body.

This energy loss is precisely calculated by measuring the velocity of the impact body during both the impact and rebound phases. A permanent magnet within the impact body generates an induction voltage in the impact device's coil. The voltage signal's magnitude is directly proportional to the impact body's velocity. Electronic processing of this signal provides the hardness reading, which is then displayed and stored.

4. SETUP AND INITIAL USE

1. **Charge Battery:** Ensure the internal rechargeable Ni-MH battery is fully charged before first use. Connect the appropriate charger to the main display unit.

2. **Connect Impact Device:** Carefully connect the impact device cable to the designated port on the main display unit. Ensure a secure connection.
3. **Power On:** Press the power button on the main display unit to turn on the device. The LCD screen will illuminate.
4. **Calibration/Verification:** Before taking measurements, it is recommended to verify the device's accuracy using a standard test block of known hardness. Follow the on-screen instructions for calibration or verification procedures.

5. OPERATING INSTRUCTIONS

5.1 Taking a Measurement

1. **Prepare Test Surface:** Ensure the test surface is clean, smooth, and free from scale, oil, or other contaminants. The surface should be stable and sufficiently thick to prevent deformation during impact.
2. **Select Material:** On the display unit, select the appropriate material type for the test piece.
3. **Position Impact Device:** Hold the impact device firmly and perpendicular to the test surface. Apply steady pressure to ensure good contact.
4. **Initiate Impact:** Press the release button on the impact device or follow the on-screen prompt to initiate the impact. The device will automatically perform the measurement.
5. **Read Results:** The hardness value will be displayed on the LCD screen. The device supports various hardness scales (HL, HV, HB, HSD, MPa, HRC, HRB).

5.2 Data Storage

The EPX5500 can store up to 500 measured values internally. Navigate through the menu using the touch screen to access storage functions, view saved data, or delete entries.

5.3 Printing Results (Optional)

If an optional portable printer is connected, you can print measurement results directly. Refer to the printer's specific instructions for setup and operation, then select the print option from the main unit's menu.

6. SPECIFICATIONS

Parameter	Value
HL Display Range	0 999HLD
Accuracy	± 6 HL
Displayer	Large LCD, backlight, touch screen
Internal Data Storage	500 measured values
Resolution	1 (for HL, HV, HB, HSD, MPa); 0.1 (for HRC, HRB)
Battery	Rechargeable Ni-MH battery
Operating Temperature	0°C~+50°C (32°F~122°F)
Storage Temperature	-10°C~+60°C (14°F~140°F)
Dimension	130 x 87 x 28 mm

Parameter	Value
Weight	240g (device only)
Item Model Number	240491751

7. APPLICATION RANGE

The VGVGV EPX5500 Portable Hardness Tester is suitable for a wide range of applications:

- Effective for all types of metals, ideal for production level testing.
- Optimally suited for on-site testing of heavy, large, or already installed components.
- Convenient for testing in difficult-to-access or confined locations.
- Features automatic compensation for impact direction, enhancing measurement reliability.
- Excellent for material selection and acceptance tests in various industries.
- Provides easy and accurate measurements on curved test surfaces (with a radius $R > 10$ mm).

Typical Industries and Sectors:

- Metal production & processing
- Automotive & transportation
- Machinery & power plants
- Petro-chemical & refineries
- Aerospace & shipyard
- Metal constructions
- Testing services & laboratories

8. MAINTENANCE

To ensure the longevity and accuracy of your VGVGV EPX5500 Hardness Tester, follow these general maintenance guidelines:

- **Cleaning:** Keep the display unit and impact device clean and free from dust and debris. Use a soft, dry cloth. Avoid abrasive cleaners or solvents.
- **Storage:** Store the device in its protective case in a dry environment within the specified storage temperature range (-10°C to +60°C).
- **Battery Care:** Recharge the battery regularly, even if the device is not in frequent use, to maintain battery health. Avoid fully discharging the battery for extended periods.
- **Impact Device Inspection:** Periodically inspect the impact device's tip for wear or damage. Replace if necessary to maintain measurement accuracy.

9. TROUBLESHOOTING

This section addresses common issues you might encounter with your hardness tester. If you experience problems not listed here, please contact customer support.

- **Device does not power on:**
 - Ensure the battery is charged. Connect the charger and try again.
 - Check if the power button is fully pressed.

- **Inaccurate readings:**

- Verify calibration using a standard test block.
- Ensure the test surface is clean, smooth, and stable.
- Check the impact device tip for wear or damage.
- Confirm the correct material type is selected on the device.

- **Impact device not triggering:**

- Check the cable connection between the impact device and the main unit.
- Ensure the impact device is properly loaded (if applicable to the specific type).

10. CUSTOMER SUPPORT

For technical assistance, warranty information, or service inquiries, please contact VGVGV customer support. Refer to your product packaging or the official VGVGV website for the most current contact details.