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Insize ISH-PHB

INSIZE ISH-PHB Portable Leeb Hardness Tester

USER MANUAL

1. Introduction

This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of the INSIZE ISH-PHB Portable Leeb Hardness Tester. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage or injury. Keep this manual for future reference.

2. Safety Instructions

Observe the following safety precautions to prevent personal injury and damage to the instrument:

- Always operate the device in a stable and dry environment.
- Do not expose the device to extreme temperatures, humidity, or corrosive substances.
- Avoid dropping or subjecting the device to strong impacts.
- Do not attempt to disassemble or repair the device yourself. Refer to qualified service personnel.
- Ensure the test surface is clean, smooth, and free from oil, rust, or scale for accurate readings.
- Wear appropriate personal protective equipment (PPE) if required by your work environment.

3. Package Contents

Carefully unpack the box and verify that all items are present and undamaged. If any items are missing or damaged, contact your supplier immediately.

- INSIZE ISH-PHB Portable Leeb Hardness Tester main unit
- Impact device (Type D)
- Standard test block
- Cleaning brush
- USB cable

- Operating manual
- Carrying case



Image showing the main unit of the INSIZE ISH-PHB Portable Leeb Hardness Tester, displaying its screen and control buttons.

4. Setup

Follow these steps to prepare your INSIZE ISH-PHB for use:

1. **Charge the Battery:** Connect the device to a power source using the provided USB cable. Allow the battery to fully charge before first use. The charging indicator will show the status.
2. **Attach Impact Device:** Carefully connect the impact device (Type D) to the main unit. Ensure it is securely fastened.
3. **Power On:** Press and hold the power button until the display illuminates.
4. **Select Material and Hardness Scale:** Navigate through the menu using the arrow keys to select the appropriate material (e.g., Steel, Cast Iron) and hardness scale (e.g., HRC, HV, HB) for your test specimen.
5. **Calibration (Optional):** For critical measurements, perform a calibration using the standard test block provided. Refer to the 'Calibration' section in the full manual for detailed steps.

5. Operating Instructions

To perform a hardness test:

1. **Prepare the Test Surface:** Ensure the surface of the material to be tested is clean, smooth, and flat. Remove any paint, rust, or scale. The minimum thickness of the test piece should be sufficient to prevent deformation during impact.
2. **Load the Impact Device:** Push the impact body down into the guide tube until it locks into place.
3. **Position the Device:** Place the impact device firmly and perpendicularly onto the test surface. Ensure there is no relative movement between the device and the test piece.
4. **Initiate Test:** Press the release button on the impact device. The impact body will strike the surface, and the hardness value will be displayed on the main unit's screen.
5. **Record Reading:** Note down the displayed hardness value. For best accuracy, take multiple readings (e.g., 3-5) at different points on the test surface and calculate the average.
6. **Power Off:** After use, press and hold the power button to turn off the device.

6. Maintenance

Regular maintenance ensures the longevity and accuracy of your hardness tester:

- **Cleaning:** Use the provided cleaning brush to remove any debris from the impact device's guide tube after each use. Wipe the main unit with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device and its accessories in the carrying case in a dry, dust-free environment when not in use. Avoid extreme temperatures.
- **Battery Care:** Recharge the battery regularly, even if the device is not in frequent use, to maintain battery health. Do not allow the battery to fully discharge for extended periods.
- **Calibration:** Periodically check the calibration of the device using the standard test block. If readings deviate significantly, recalibration or service may be required.

7. Troubleshooting

Refer to the table below for common issues and their solutions:

Problem	Possible Cause	Solution
Device does not power on	Low or depleted battery	Charge the battery using the USB cable.
Inaccurate readings	<ul style="list-style-type: none"> • Improper surface preparation • Incorrect material/scale selection • Impact device not perpendicular • Device needs calibration 	<ul style="list-style-type: none"> • Ensure surface is clean, smooth, and flat. • Verify correct material and hardness scale. • Hold impact device firmly and perpendicularly. • Perform calibration with standard test block.
Impact device not loading	Debris in guide tube	Clean the guide tube with the provided brush.

Problem	Possible Cause	Solution
Display shows error message	Internal malfunction	Power off the device, wait a few seconds, then power on again. If the error persists, contact customer support.

8. Specifications

Key technical specifications for the INSIZE ISH-PHB Portable Leeb Hardness Tester:

Feature	Detail
Brand	Insize
Model	ISH-PHB
Hardness Scales	HL, HB, HRB, HRC, HRA, HV, HS
Impact Device	Type D (standard)
Measuring Range	Varies by material and scale (refer to full technical datasheet)
Accuracy	±6 HLD (when HL=800)
Display	LCD with backlight
Power Supply	Rechargeable Li-ion battery
Operating Temperature	0°C to 40°C (32°F to 104°F)
Dimensions	Compact and portable (specific dimensions not provided in source)

9. Warranty and Support

INSIZE products are manufactured to high-quality standards and are warranted against defects in materials and workmanship for a period typically specified at the point of purchase. Please retain your proof of purchase for warranty claims.

For technical support, service, or warranty inquiries, please contact your authorized INSIZE distributor or visit the official INSIZE website for contact information. Do not attempt to repair the device yourself, as this may void the warranty.