FPQSCPTCB

SW6200 Integrated Leeb Hardness Tester User Manual

Model: FPQSCPTCB
Brand: Generic

1. Introduction

The SW6200 Integrated Leeb Hardness Tester is a state-of-the-art portable instrument designed for precise and rapid hardness testing of metal materials. Utilizing the dynamic rebound method, it is ideal for on-site measurements, especially in confined spaces or on concave surfaces. This manual provides comprehensive instructions for the proper setup, operation, maintenance, and troubleshooting of your SW6200 device.

Key Features

- Very suitable for rapid on-site hardness testing in narrow space and concave environment.
- Tests hardness according to the Leeb hardness measurement principle.
- Supports multiple metal materials.
- Adopts a 128 x 64 black and white display.
- Features automatic shutdown and software calibration functions.

2. Product Overview

The SW6200 combines the impact device and display unit into a single, compact instrument, making it highly portable and easy to use.

This image shows the SW6200 Integrated Leeb Hardness Tester from a front-side perspective, highlighting its compact design and integrated probe.

A side view of the SW6200 Leeb Hardness Tester, clearly showing the USB-C charging port located on the side of the main unit.

3. Setup

3.1 Charging the Device

Before first use, ensure the SW6200 is fully charged. The device features a Type-C lithium direct charge capability.

1. Locate the USB-C port on the side of the device.
2. Connect the provided USB-C cable to the device and a compatible USB power adapter (not included) or a computer USB port.
3. The charging indicator on the display will show the charging status. A full charge provides approximately 11 hours of continuous operation with its 350mAh lithium battery.

The SW6200 Leeb Hardness Tester is depicted connected to a power adapter via its Type-C USB port, illustrating the direct lithium battery charging capability. The image also indicates a 350mAh battery capacity providing approximately 11 hours of continuous operation.

3.2 Powering On/Off

- To power on: Press and hold the power button (usually located near the display) until the screen illuminates.
- To power off: Press and hold the power button again until the device shuts down. The instrument also has an automatic shutdown function to conserve battery life.

4. Operating Instructions

4.1 Understanding the Display

The SW6200 features a clear 128x64 black and white display that provides all necessary measurement data.

The SW6200's 128x64 black and white display is shown, indicating recorded measurements (REC), average values (AVG), impact direction, and the selected hardness system (HL). It also shows the material type, such as 'Steel and Cast Steel'.

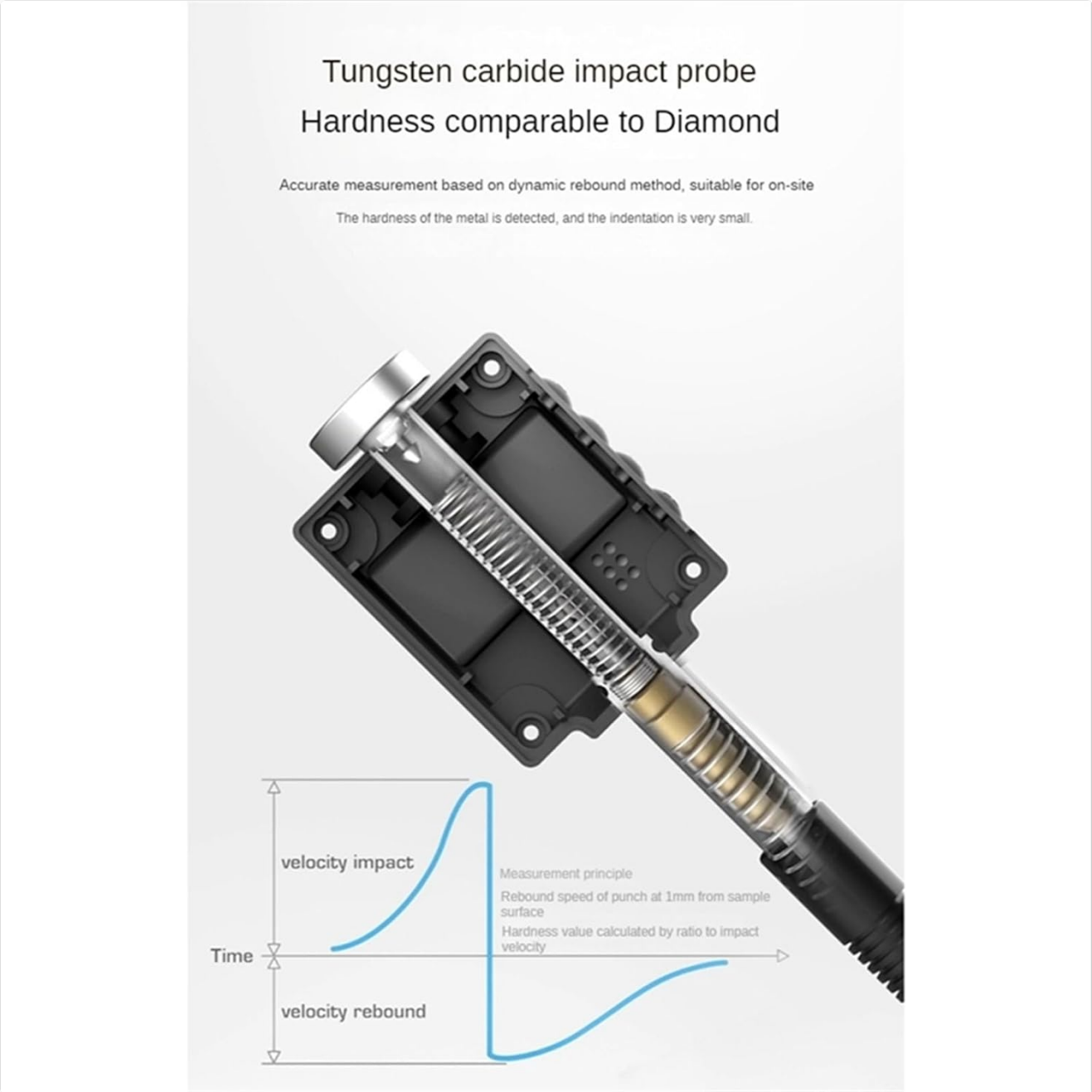
- **REC:** Displays the current measurement number and total number of measurements in the current series (e.g., 3/5 means 3rd measurement out of 5).
- **AVG:** Shows the average hardness value of the current measurement series.
- **HL:** Indicates the selected Leeb hardness scale.
- **Battery Indicator:** Shows the current battery level.
- **Material Type:** Displays the currently selected material (e.g., Steel and Cast Steel).

4.2 Performing a Hardness Test

Follow these steps to perform an accurate hardness test:

1. **Prepare the Sample:** Ensure the surface of the material to be tested is clean, smooth, and free of oil, rust, or scale. The sample should be stable and thick enough to prevent deformation during testing.
2. **Select Material:** Use the navigation buttons to select the appropriate material type (e.g., steel, cast iron, aluminum) from the device's menu. This ensures accurate conversion of Leeb hardness values.

3. **Position the Tester:** Place the impact probe firmly and perpendicularly against the surface of the test sample. Ensure there is no gap between the probe and the sample.
4. **Initiate Test:** Press the trigger button (or apply pressure, depending on the model's design) to initiate the impact. The tungsten carbide impact body will strike the surface and rebound.
5. **Read Measurement:** The hardness value will be displayed on the screen almost instantly. The device automatically calculates and displays the Leeb hardness value based on the rebound principle.
6. **Repeat Measurements:** For best accuracy, perform multiple measurements (typically 3-5) at different points on the sample, ensuring each impact point is at least 3mm away from previous ones. The device will calculate the average.



This diagram illustrates the internal components of the SW6200's tungsten carbide impact probe, demonstrating the dynamic rebound measurement principle. It highlights the velocity impact and velocity rebound phases, showing how hardness is determined by the rebound speed of the punch.

4.3 Material Selection

The SW6200 supports hardness testing for a variety of metal materials. It is crucial to select the correct material type in the device's settings to ensure accurate conversion of the Leeb hardness value to other scales (e.g., HRC,

HB, HV, HS, HRB). Refer to the device's on-screen menu for available material options.

5. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use abrasive cleaners or solvents. Ensure no liquid enters the device.
- **Storage:** Store the SW6200 in a dry, dust-free environment at room temperature. When not in use for extended periods, ensure the battery is partially charged (around 50%) to prolong its lifespan.
- **Probe Care:** The tungsten carbide impact probe is durable but should be handled with care. Avoid dropping the device or subjecting the probe to excessive force when not in use.
- **Calibration:** The instrument has software calibration functions. If you suspect inaccuracies, refer to the on-screen menu for calibration options or consult professional service.

6. Troubleshooting

This section addresses common issues you might encounter with your SW6200 Leeb Hardness Tester.

Problem	Possible Cause	Solution
Device does not power on.	Low battery; device malfunction.	Charge the device fully. If problem persists, contact support.
Inaccurate readings.	Incorrect material selected; poor surface preparation; unstable sample; probe wear.	Ensure correct material is selected. Clean and prepare sample surface properly. Secure the sample. Consider software calibration or professional service if probe wear is suspected.
Display is blank or frozen.	Software glitch; low battery.	Recharge the device. Perform a hard reset (if applicable, refer to specific device instructions or contact support).
Device shuts down unexpectedly.	Low battery; automatic shutdown feature.	Charge the device. Note that the device has an automatic shutdown feature to save power.

7. Specifications

Detailed technical specifications for the SW6200 Integrated Leeb Hardness Tester:

Feature	Detail
Model Number	FPQSCPTCB
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	4.41 Pounds
Display	128 x 64 black and white display
Charging Interface	Type-C USB
Battery Capacity	350mAh (approx. 11 hours continuous operation)
Manufacturer	Lifyn2
Country of Origin	China
First Available Date	December 13, 2023

8. Warranty and Support

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact the manufacturer directly. Keep your purchase receipt as proof of purchase for any warranty claims.

For additional support or inquiries, please reach out to the seller or manufacturer through the contact information provided with your product.