GOYOJO GUF750

GOYOJO GUF750 Ultrasonic Flaw Detector User Manual

Model: GUF750 | Brand: GOYOJO

1. Introduction

The GOYOJO GUF750 Ultrasonic Flaw Detector is a portable, high-performance instrument designed for non-destructive testing (NDT) applications. It utilizes ultrasonic waves to detect internal defects such as cracks, inclusions, and porosity in various materials. Featuring a 5-inch IPS touchscreen, the GUF750 offers advanced functions including DAC (Distance Amplitude Correction) and AVG (Amplitude Gain Value) for precise flaw characterization and thickness gauging. This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your device.

2. Safety Information

Please read and understand all safety instructions before operating the GOYOJO GUF750. Failure to follow these guidelines may result in injury or damage to the device.

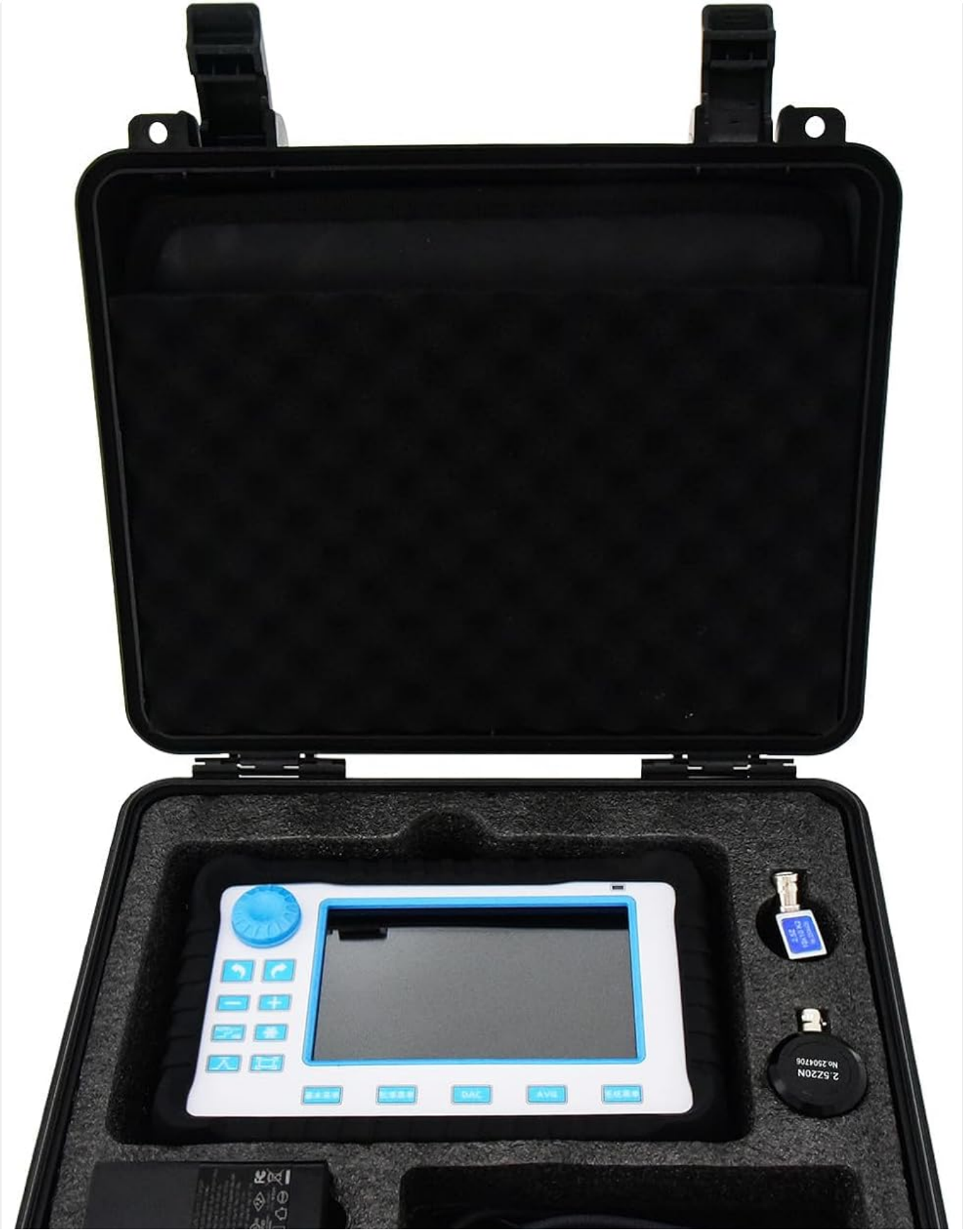
- **Power Supply:** Use only the provided power adapter and cables. Ensure the power source matches the device's requirements.
- **Environment:** Operate the device within the specified temperature and humidity ranges. Avoid exposure to extreme temperatures, direct sunlight, moisture, or corrosive environments.
- **Handling:** Handle the device with care. Avoid dropping or subjecting it to strong impacts.
- **Maintenance:** Do not attempt to disassemble or repair the device yourself. Refer all servicing to qualified personnel.
- **Probes:** Ensure probes are correctly connected and maintained. Damaged probes can lead to inaccurate readings.
- **Battery:** Do not expose the battery to high temperatures or dispose of it in fire. Follow local regulations for battery disposal.

3. Package Contents

Verify that all items are present and in good condition upon unpacking.

- GOYOJO GUF750 Ultrasonic Flaw Detector Unit
- Ultrasonic Probe (e.g., 2.5Z20N)
- Probe Connection Cable

- Power Adapter
- USB-C Cable
- Mini-USB Cable
- SD Card
- Carrying Case
- User Manual (this document)



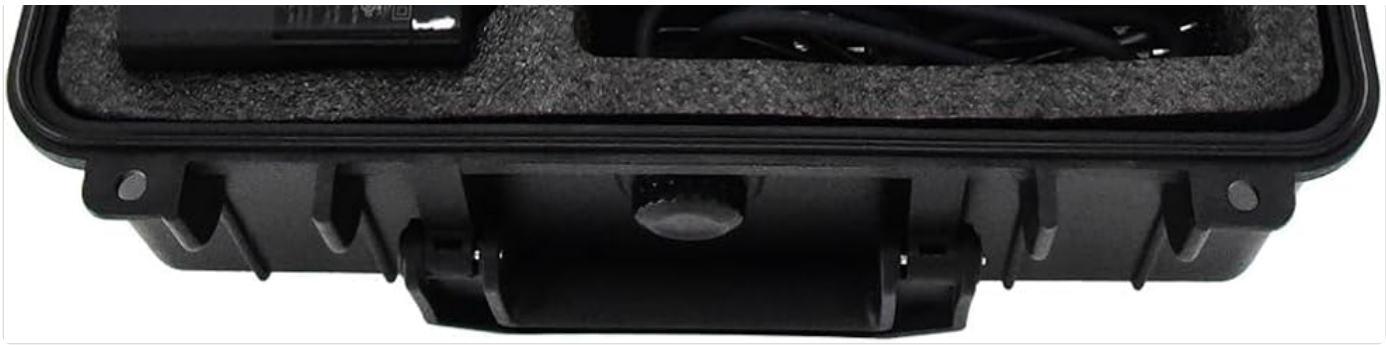


Image: GOYOJO GUF750 Ultrasonic Flaw Detector and its accessories, including probes, cables, and power adapter, neatly organized within a durable protective carrying case.

4. Setup

4.1 Charging the Battery

The GUF750 is equipped with a 7.4V 8000mAh Lithium Polymer battery. Before first use, fully charge the device.

1. Connect the provided power adapter to the device's charging port (USB-C).
2. Plug the power adapter into a suitable electrical outlet.
3. The charging indicator on the device will show the charging status. A full charge typically provides up to 12 hours of runtime.

4.2 Connecting the Probe

The GUF750 features dual LEMO-00 probe ports for versatile testing configurations.

1. Identify the appropriate ultrasonic probe for your application.
2. Connect the probe cable to one of the LEMO-00 ports on the device. Ensure a secure connection by aligning the connector and twisting until it locks.
3. Connect the other end of the cable to the ultrasonic probe.

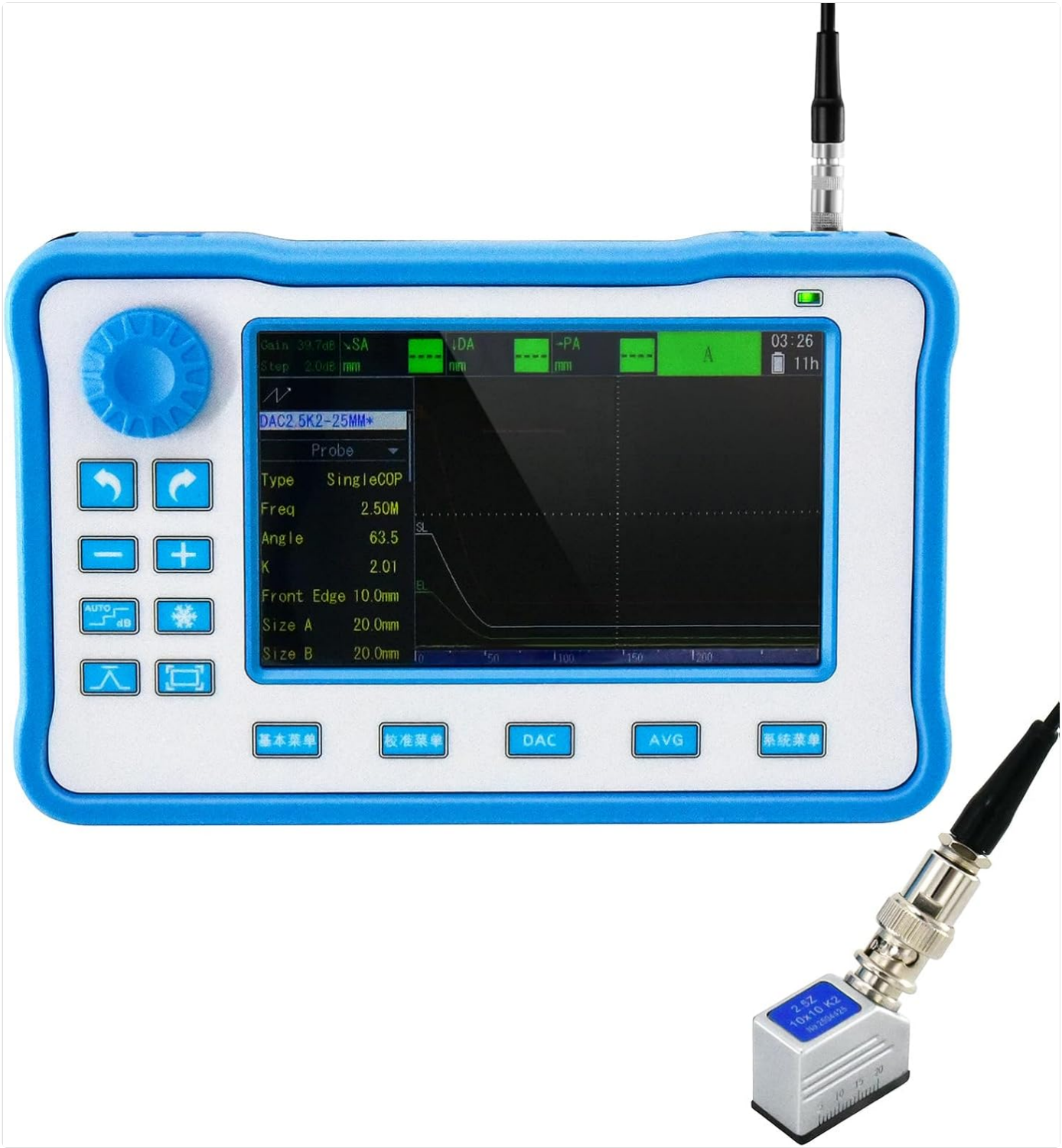


Image: The GOYOJO GUF750 Ultrasonic Flaw Detector shown with an ultrasonic probe securely connected to one of its LEMO-00 ports, ready for operation.

4.3 Powering On/Off

- **To Power On:** Press and hold the power button located on the device until the screen illuminates.
- **To Power Off:** Press and hold the power button until a shutdown prompt appears, then confirm. Alternatively, a short press may bring up a power menu.

5. Operating Instructions

The GUF750 features a 5-inch IPS touchscreen and intuitive physical buttons for navigation and control.

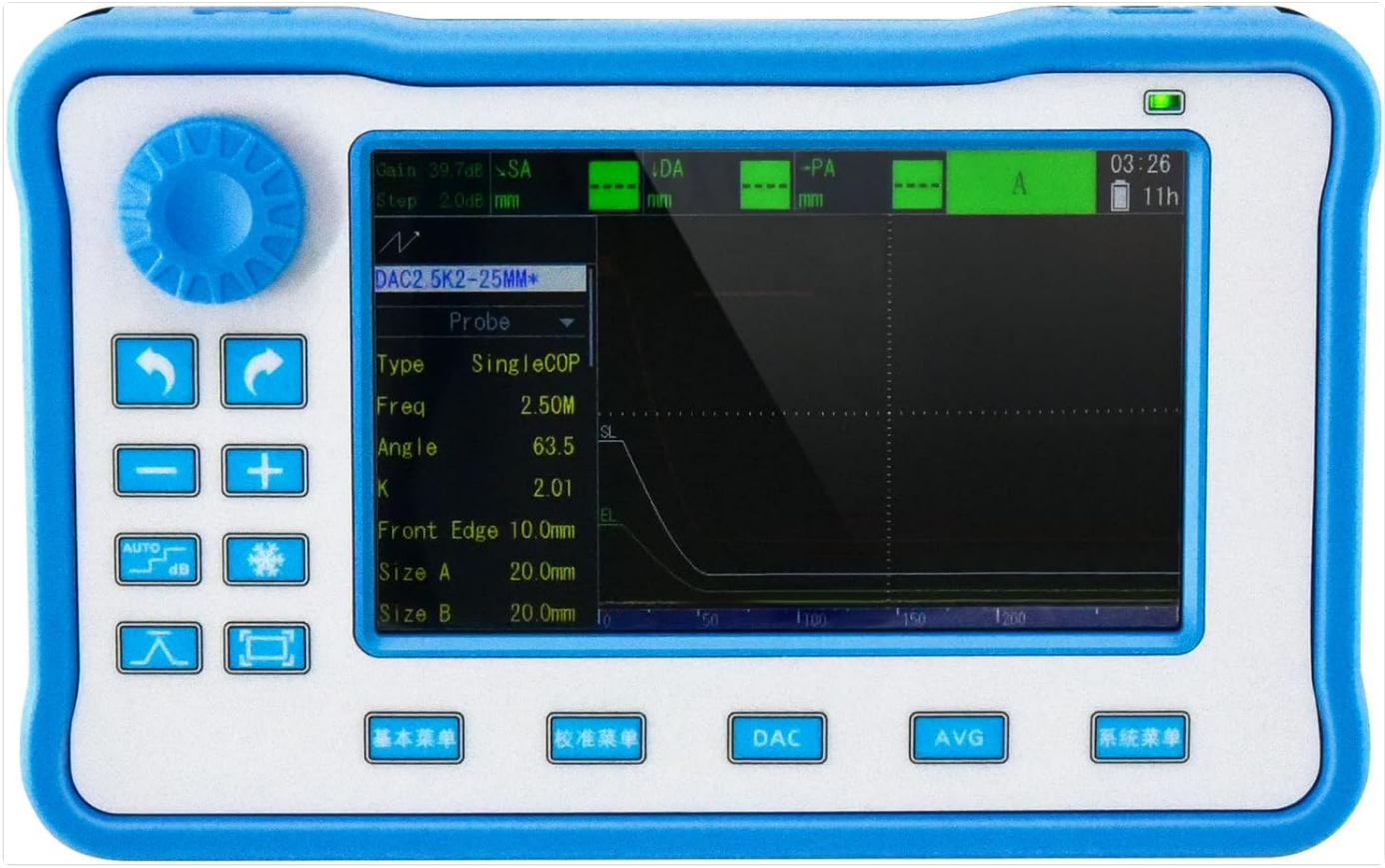


Image: A clear front view of the GOYOJO GUF750, highlighting its 5-inch IPS touchscreen display and the arrangement of its physical control buttons and rotary encoder.

5.1 User Interface Overview

- **Touchscreen:** Navigate menus, adjust parameters, and view waveforms directly on the 5-inch IPS display.
- **Rotary Encoder:** Used for fine-tuning parameters and scrolling through options.
- **Function Buttons:** Dedicated buttons for common functions such as gain adjustment, menu access, and waveform display modes.

5.2 Basic Operation

1. **Probe Calibration:** Perform a system calibration using a known reference block to ensure accurate measurements. This typically involves setting sound velocity, probe delay, and sensitivity.
2. **Gain Adjustment:** Use the gain controls (physical buttons or touchscreen) to adjust the signal amplitude for optimal waveform visibility. The device offers 120dB gain with 0.1dB steps.
3. **Gate Settings:** Configure Dual-Gate (A/B) alarms to monitor specific regions of interest for flaw detection. The gates support peak and leading-edge detection.
4. **Waveform Display:** Select between RF (Radio Frequency) and Full-wave demodulation modes for analyzing ultrasonic signals.
5. **DAC/AVG Functions:** Utilize Distance Amplitude Correction (DAC) and Amplitude Gain Value (AVG) curves for evaluating flaw sizes relative to reference reflectors.
6. **B-Scan Imaging:** The device supports high-resolution B-scan synthesis with φ2mm sensitivity. Up to 500 frames can be recorded.
7. **Data Export:** Export A/B-scans and thickness maps to the SD card for further analysis and reporting.

5.3 Advanced Features

- **Pulse Control:** Adjust the pulser voltage (25-300V in 5ns steps), select square or dual-square wave modes, and set dynamic damping (100Ω/1000Ω). The Pulse Repetition Frequency (PRF) is adjustable from 0-10KHz.

- **Standards Compliance:** The GUF750 is compliant with industry standards such as AWS D1.1, NB/T 47013, and GB/T 11345 for reliable flaw characterization.
- **Connectivity:** Utilize USB-C and Mini-USB ports for data transfer and charging.

6. Maintenance

Proper maintenance ensures the longevity and accuracy of your GOYOJO GUF750.

- **Cleaning:** Use a soft, dry cloth to clean the device's exterior. For the screen, use a screen-specific cleaning solution and a microfiber cloth. Avoid abrasive cleaners or solvents.
- **Probe Care:** Clean probe surfaces after each use to remove couplant residue. Inspect probe cables for damage. Store probes in a protective manner.
- **Battery Care:** For long-term storage, ensure the battery is charged to approximately 50-70%. Recharge periodically if stored for extended periods to prevent deep discharge.
- **Storage:** Store the device in its protective carrying case in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Software Updates:** Check the manufacturer's website periodically for firmware updates to ensure optimal performance and access to new features.

7. Troubleshooting

This section addresses common issues you might encounter with your GUF750.

Problem	Possible Cause	Solution
Device does not power on	Low or depleted battery; Power button not pressed correctly; Device malfunction.	Charge the battery fully. Press and hold the power button for several seconds. If issue persists, contact support.
No ultrasonic signal or weak signal	Improper probe connection; Insufficient couplant; Incorrect gain settings; Damaged probe/cable.	Ensure probe and cable are securely connected. Apply adequate couplant. Adjust gain. Inspect probe/cable for damage and replace if necessary.
Inaccurate readings	Improper calibration; Incorrect material velocity setting; Surface condition issues.	Perform a system calibration. Verify material sound velocity. Ensure test surface is clean and smooth.
Touchscreen unresponsive	Temporary software glitch; Screen damage.	Restart the device. If unresponsive, try a hard reset (refer to specific model instructions if available). If damage is visible, contact support.
Data export issues	SD card not inserted or faulty; Incorrect file format.	Ensure SD card is properly inserted and functional. Check device settings for export format.

8. Specifications

Technical specifications for the GOYOJO GUF750 Ultrasonic Flaw Detector.

Feature	Specification
Model Number	GUF750
Display	5-inch IPS Touchscreen
Bandwidth	0.1-20MHz

Feature	Specification
Sampling Rate	100MSPS (Hardware), 400MSPS (Equivalent)
Gain	120dB (0.1dB step)
Horizontal Linearity	0.5%
Flaw Characterization	Dual-Gate (A/B) alarm, Peak/Leading-edge detection, RF/Full-wave demodulation, DAC/AVG
Standards Compliance	AWS D1.1, NB/T 47013, GB/T 11345
B-Scan Synthesis	High-resolution, φ2mm sensitivity, ≤500-frame recording
Data Export	SD card (A/B-scans, thickness maps)
Pulser	Adjustable (25-300V, 5ns step), Square/Dual-square wave modes
Damping	100Ω/1000Ω (Dynamic)
PRF (Pulse Repetition Frequency)	0-10KHz
Battery	1 Lithium Polymer (7.4V 8000mAh)
Battery Runtime	Up to 12 hours
Operating Temperature	-10°C to 55°C
Probe Ports	Dual LEMO-00
Connectivity	USB-C, Mini-USB
Item Weight	2.2 pounds (approx. 1 kg)
Package Dimensions	10 x 9 x 5 inches (approx. 25.4 x 22.86 x 12.7 cm)

9. Warranty Information

The GOYOJO GUF750 Ultrasonic Flaw Detector comes with a manufacturer's warranty. Please refer to the warranty card included in your package or visit the official GOYOJO website for detailed terms and conditions regarding coverage, duration, and claim procedures. Keep your proof of purchase for warranty validation.

10. Customer Support

For technical assistance, troubleshooting beyond this manual, or inquiries about your GOYOJO GUF750, please contact GOYOJO customer support. Contact information can typically be found on the official GOYOJO website or on the product packaging.