

QPKING TG501

QPKING TG501 Coating Thickness Gauge User Manual

Model: TG501

1. INTRODUCTION

The QPKING TG501 Coating Thickness Gauge is a high-precision instrument designed for measuring the thickness of non-magnetic coatings on magnetic metal substrates (such as iron, steel) and non-conductive coatings on non-magnetic metal substrates (such as aluminum, copper, zinc). This device is suitable for various applications including industrial, automotive repair, marine, and aerospace fields. It features an intuitive interface, high stability, and portability.

2. SAFETY INFORMATION

- Read this manual thoroughly before operating the device.
- Do not attempt to disassemble or modify the device, as this will void the warranty and may cause damage.
- Keep the device away from strong magnetic fields, high temperatures, and corrosive environments.
- Ensure the measurement surface is clean and free of debris for accurate readings.
- Dispose of batteries according to local regulations.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x TG501 Coating Thickness Gauge
- Calibration Films (various thicknesses)
- Ferrous (Fe) Calibration Substrate
- Non-Ferrous (Al) Calibration Substrate
- Wrist Strap
- User Manual



Image: The TG501 Coating Thickness Gauge, along with its included accessories such as the wrist strap, calibration films, and user manual.

4. DEVICE OVERVIEW

The TG501 features a clear display and intuitive button layout for ease of use.

DISPLAY DETAILS

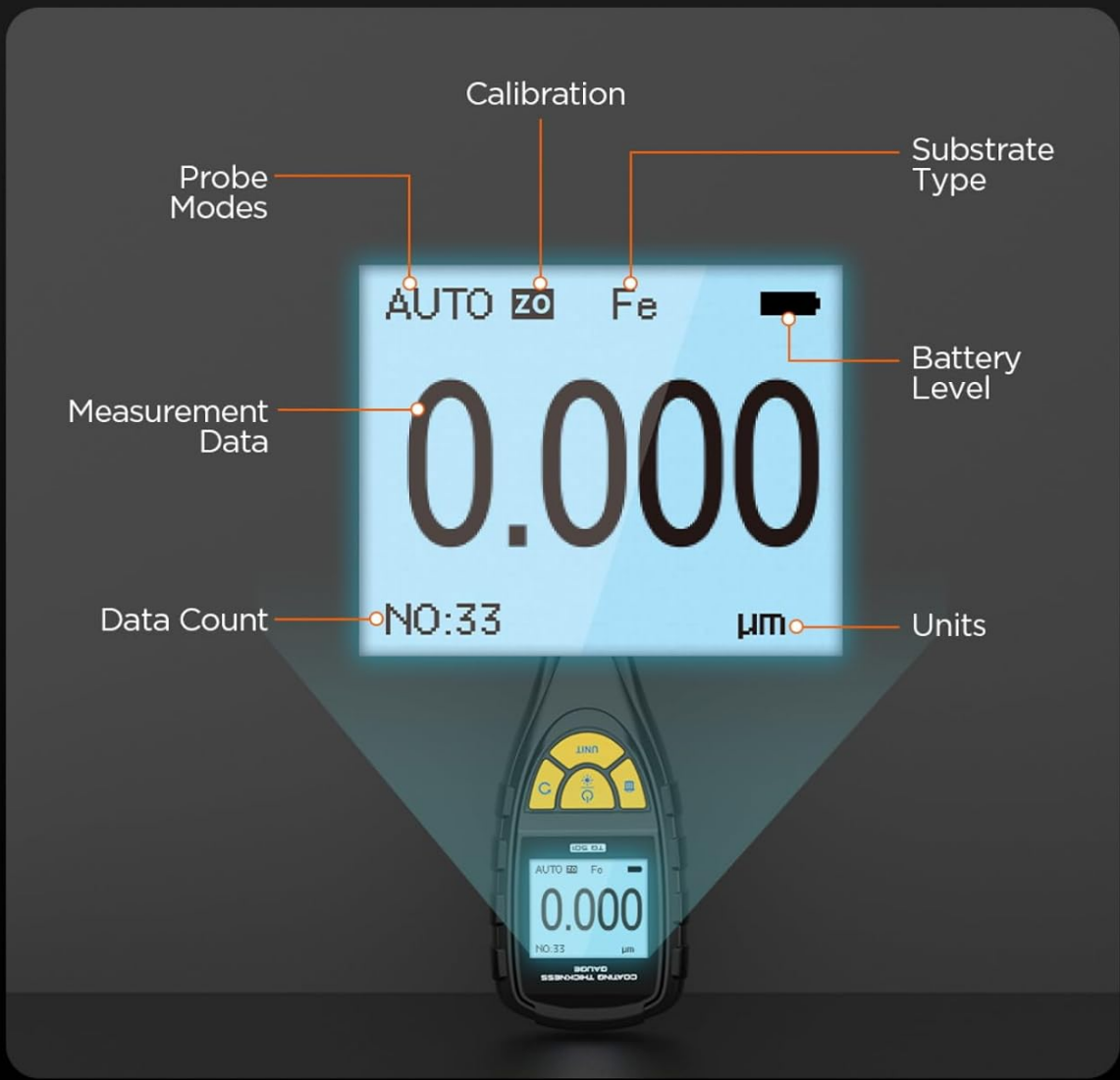


Image: A close-up of the TG501 display, highlighting indicators for probe modes, calibration, substrate type, battery level, measurement data, data count, and units.

4.1. Key Components

- **Display Screen:** Shows measurement data, mode, battery level, and other indicators.
- **Power/Backlight Button:** Turns the device on/off and controls backlight.
- **Unit Button:** Switches between measurement units (µm, mil, mm).
- **Calibration/Delete Button:** Used for calibration and deleting stored data.
- **Probe:** The sensor tip that contacts the surface for measurement.

5. SPECIFICATIONS

Feature	Description
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Feature	Description
Measurement Principle	Fe (Magnetic Induction), NFe (Eddy Current Effect)
Measurement Range	0-2,000 μm
Resolution	0.1 μm (0-100 μm), 1 μm (>100 μm)
Accuracy	±(3%+1 μm)
Units	μm, mil, mm
Calibration	Zero Calibration
Substrate Recognition Range	3-500 μm
Substrate Minimum Curvature Radius	Convex 5mm, Concave 25mm
Minimum Measurement Area	Diameter 15mm
Minimum Substrate Thickness	Fe: 0.30mm, NFe: 0.05mm
Maximum Measurement Speed	2 readings per second
Power Supply	3 * AAA 1.5V batteries
Operating Environment	Temperature: -10°C-50°C, Humidity: 20%RH-90%RH
Protection Level	IP40
Housing Material	ABS

HIGH PRECISION MEASUREMENT SENSOR

Features exceptional precision, sensitivity, and lightning-fast response times.



Image: The high-precision measurement sensor of the TG501, illustrating its measurement thickness range of 0-2,000 μm and highest resolution of 0.1 μm .

6. SETUP

6.1. Battery Installation

1. Locate the battery compartment cover on the back of the device.
2. Slide or unclip the cover to open it.
3. Insert three (3) AAA 1.5V batteries, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.

6.2. Power On/Off

- **To Power On:** Press and hold the Power button () for approximately 2 seconds. The display will light up.
- **To Power Off:** Press and hold the Power button () for approximately 2 seconds. The device also features an automatic

power-off function after a period of inactivity to conserve battery life.

7. OPERATION

7.1. Measurement Modes and Substrate Recognition

The TG501 automatically identifies the substrate type (ferromagnetic or non-ferromagnetic).

- **Fe (Ferromagnetic):** For coatings on iron, steel, and other magnetic metals.
- **NFe (Non-Ferromagnetic):** For coatings on aluminum, copper, zinc, and other non-magnetic metals.
- **AUTO:** The device automatically detects the substrate type. This is the default and recommended mode.

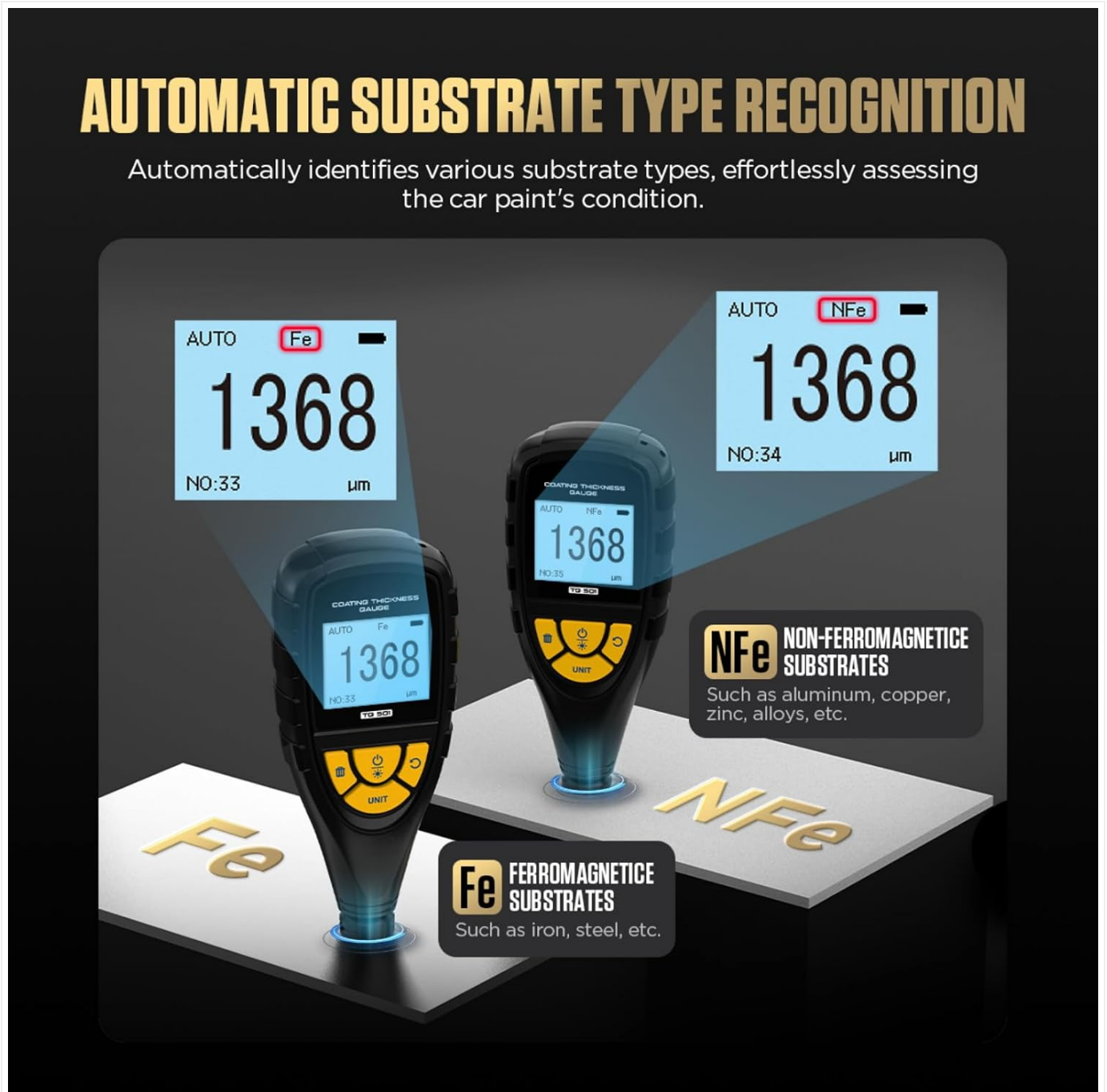


Image: The TG501 gauge displaying measurements on both ferromagnetic (Fe) and non-ferromagnetic (NFe) substrates, illustrating its automatic recognition capability.

7.2. Taking a Measurement

1. Ensure the device is powered on and in the desired measurement mode (AUTO is recommended).
2. Place the probe firmly and perpendicularly onto the coated surface.
3. The measurement will be displayed instantly on the screen.
4. Lift the probe from the surface to prepare for the next measurement.

7.3. Unit Switching

Press the **UNIT** button to cycle through the available measurement units: micrometers (μm), mils (mil), and millimeters (mm).

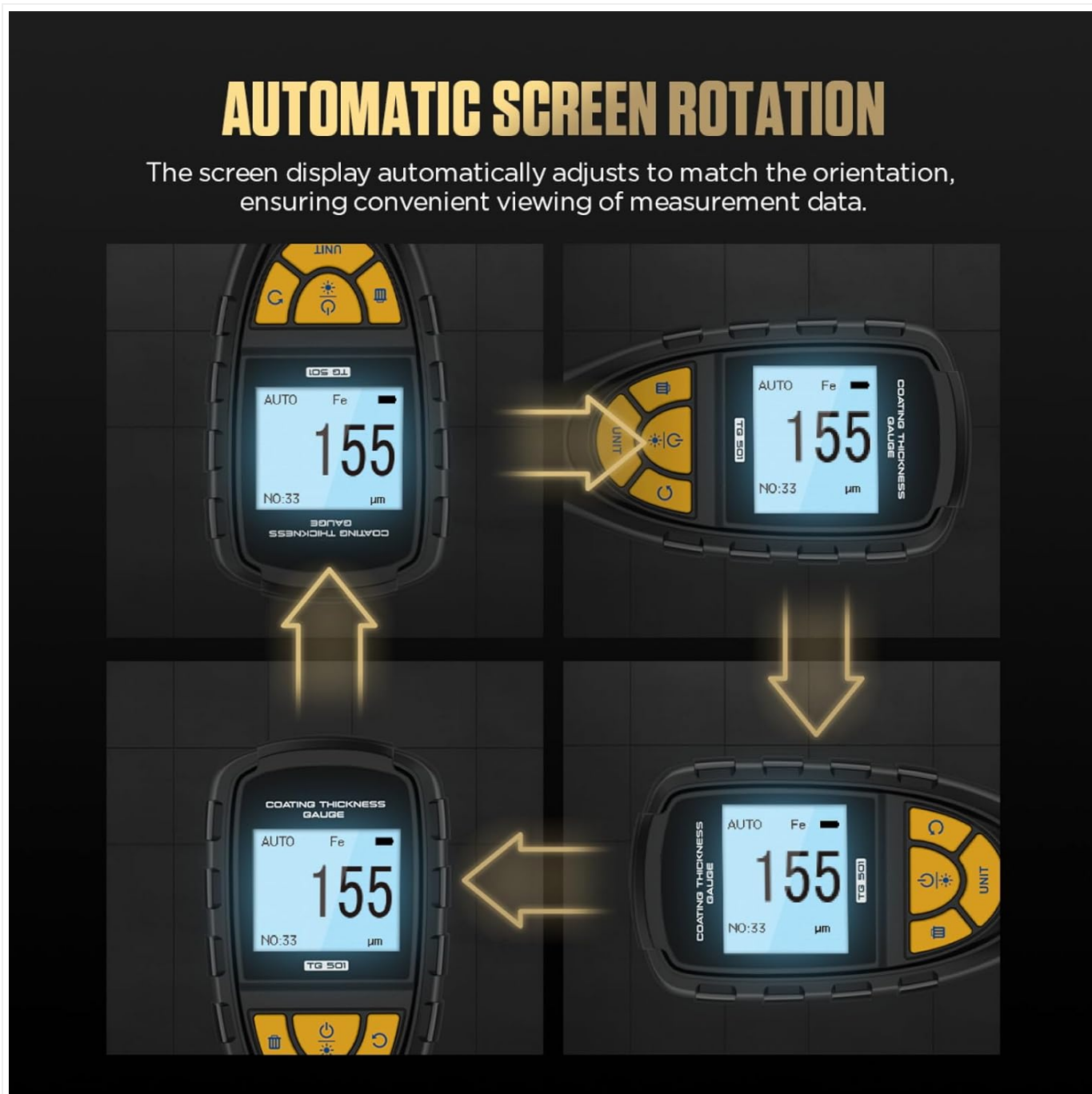


Image: The TG501 gauge demonstrating the unit switching function, cycling between μm , mil, and mm on the display.

7.4. Data Storage and Recall

The TG501 can automatically record up to 80 sets of measurement data.

- Measurements are automatically stored sequentially.
- To recall stored data, press the Memory button (≡). Use the arrow buttons (if available, or repeat pressing Memory button)

to navigate through stored readings.

- To delete stored data, press and hold the Calibration/Delete button () while in data recall mode.

MEASUREMENT DATA STORAGE

Automatically records data while measuring, with storage capacity for up to 80 sets of data.



Image: The TG501 display illustrating its capacity to store up to 80 sets of measurement data, shown as multiple readings on the screen.

7.5. Automatic Screen Rotation

The display automatically adjusts its orientation to match how the device is held, ensuring convenient viewing of measurement data from any angle.

AUTOMATIC SCREEN ROTATION

The screen display automatically adjusts to match the orientation, ensuring convenient viewing of measurement data.



Image: A sequence of images showing the TG501's screen automatically rotating to maintain readability as the device is turned.

7.6. Calibration

Regular calibration ensures the accuracy of your measurements. The TG501 comes with calibration films and substrates.

1. **Zero Calibration:** Place the probe directly onto the bare (uncoated) ferrous (Fe) or non-ferrous (Al) calibration substrate. Press and hold the Calibration button (C) until '0.000' is displayed, indicating successful zero calibration.
2. **Film Calibration:** After zero calibration, place a known thickness calibration film onto the corresponding substrate. Place the probe on the film and adjust the reading using the arrow buttons (if applicable) to match the film's thickness. Confirm the calibration.

ZERO CALIBRATION FUNCTION

Comes with various calibration metal substrates and thickness plates, aiding users in calibration tasks.



Image: The TG501 gauge alongside various calibration films (Fe, Al, and different micrometers) and substrates, demonstrating the zero calibration function.

7.7. Video Demonstration

Video: A demonstration of the QPKING TG501 Coating Thickness Gauge in use, showcasing its features such as HD backlit display, auto screen rotation, paint thickness measurement, sensitive measurement response, auto substrate recognition, 80 data sets storage, and unit switching.

8. MAINTENANCE

8.1. Cleaning

- Wipe the device with a soft, dry cloth.
- Do not use abrasive cleaners or solvents.
- Keep the probe tip clean and free of dust or residue to ensure accurate measurements.

8.2. Storage

- Store the device in a cool, dry place when not in use.
- Remove batteries if the device will not be used for an extended period to prevent leakage.
- Keep the device in its protective casing to prevent damage.

9. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on	Low or dead batteries; Incorrect battery installation	Replace batteries; Check battery polarity
Inaccurate readings	Device not calibrated; Dirty probe tip; Unstable placement	Perform calibration; Clean probe tip; Ensure firm and perpendicular placement
Display is dim or flickering	Low battery power	Replace batteries
Cannot switch units	Button malfunction; Device frozen	Press the UNIT button firmly; Remove and reinsert batteries to reset

10. WARRANTY AND SUPPORT

QPKING offers a **3-Year Warranty** for the TG501 Coating Thickness Gauge. This warranty covers damage caused by non-human factors. If you experience any issues or require assistance, please contact QPKING customer support. We are committed to responding to inquiries within 24 hours.

For support, please refer to the contact information provided with your purchase or visit the official QPKING website.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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