Clockwise Tools DITR-0105N

Clockwise Tools DITR-0105N Digital Indicator User Manual

Model: DITR-0105N

1. Introduction

This manual provides detailed instructions for the proper use, setup, operation, and maintenance of your Clockwise Tools DITR-0105N Digital Indicator. This precision instrument is designed for accurate dimensional measurement in various applications, including machining, metalworking, and quality control. Please read this manual thoroughly before operating the device to ensure optimal performance and longevity.

2. Safety Information

- Handle the digital indicator with care to avoid damage to the precision components.
- Do not expose the device to extreme temperatures, humidity, or direct sunlight.
- Avoid dropping the instrument or subjecting it to strong impacts.
- Keep the device clean and free from dust, oil, and other contaminants.
- Store the indicator in its protective case when not in use.

3. Product Overview

The Clockwise Tools DITR-0105N Digital Indicator features a large LCD display, dual unit conversion, and a robust design for reliable measurements.

Key Features:

- **Dual Unit Conversion:** Supports both inch and metric readings.
- **Extra-Large LCD Display:** 1.6" x 0.7" high-contrast screen for easy readability.
- **High Precision & Accuracy:** 0-1" (25.4mm) measuring range, 0.00005" (0.001mm) resolution, and ±0.0002" (0.005mm) accuracy.
- **Versatile Mounting:** Includes flat back and lug back options (6.5mm hole size), 3/8" stem diameter, and UNF 4-48 threaded tip.
- **RS232 Data Transfer:** Equipped with a port for seamless measurement logging (requires Clockwise Tools DTCR-01 cable, sold separately).

Components:

1. LCD Display
2. Inch/mm Button
3. OFF/ON Button
4. ZERO Button
5. Measuring Spindle/Contact Point
6. Mounting Stem
7. Data Output Port (Micro USB RS232 compatible)
8. Battery Compartment

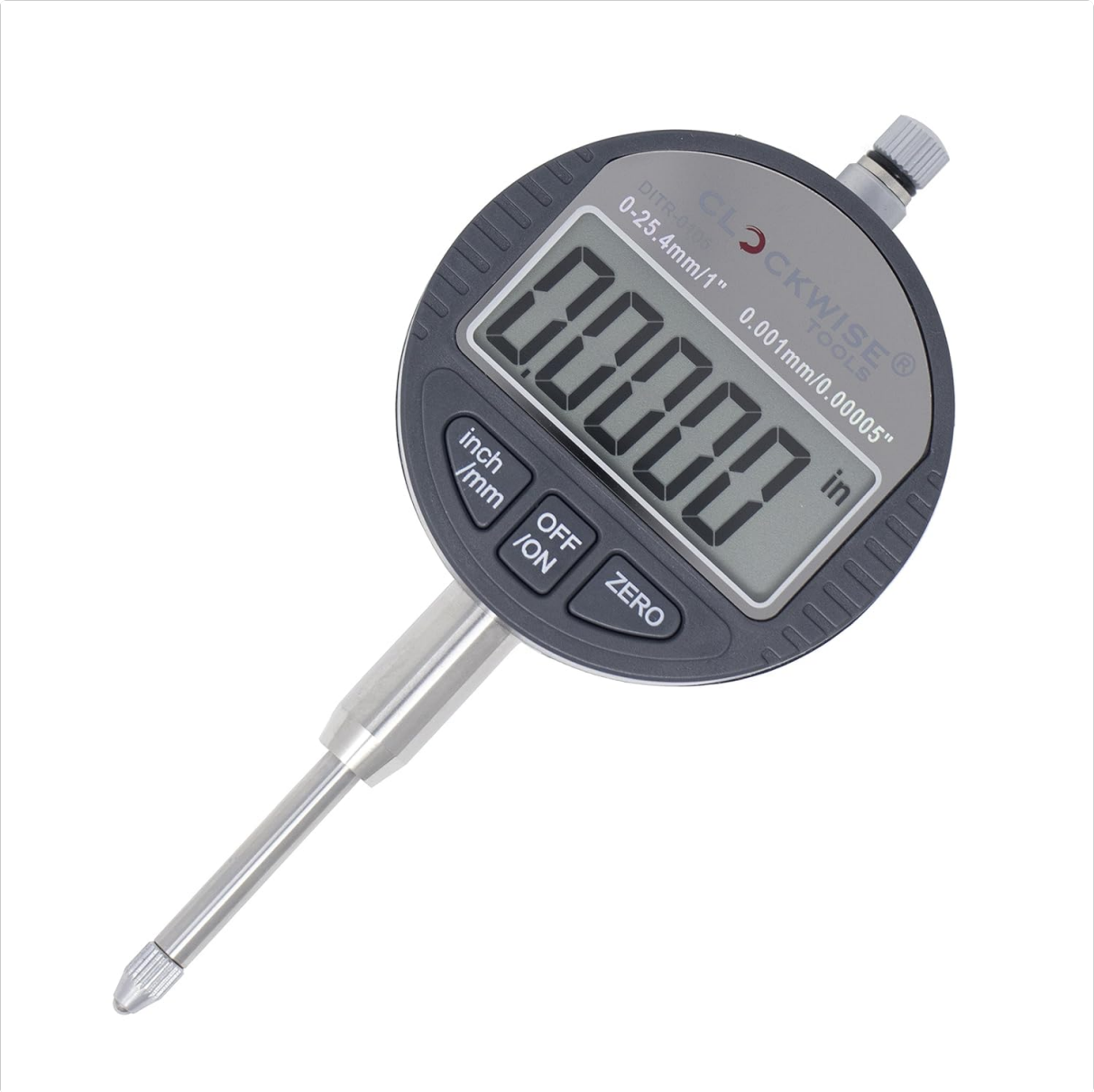

Figure 3.1: Front view of the Clockwise Tools DITR-0105N Digital Indicator, showing the LCD display and control buttons. This image illustrates the main body of the digital indicator, including the large digital readout, the 'inch/mm' button for unit conversion, the 'OFF/ON' button for power, and the 'ZERO' button for setting a reference point. The measuring spindle extends from the bottom.

4. Setup

4.1 Battery Installation

The DITR-0105N requires two CR2032 batteries (included). To install or replace batteries:

1. Locate the battery compartment cover on the back of the indicator.
2. Use a small screwdriver or coin to gently open the cover.
3. Insert the two CR2032 batteries with the positive (+) side facing up.
4. Close the battery compartment cover securely.

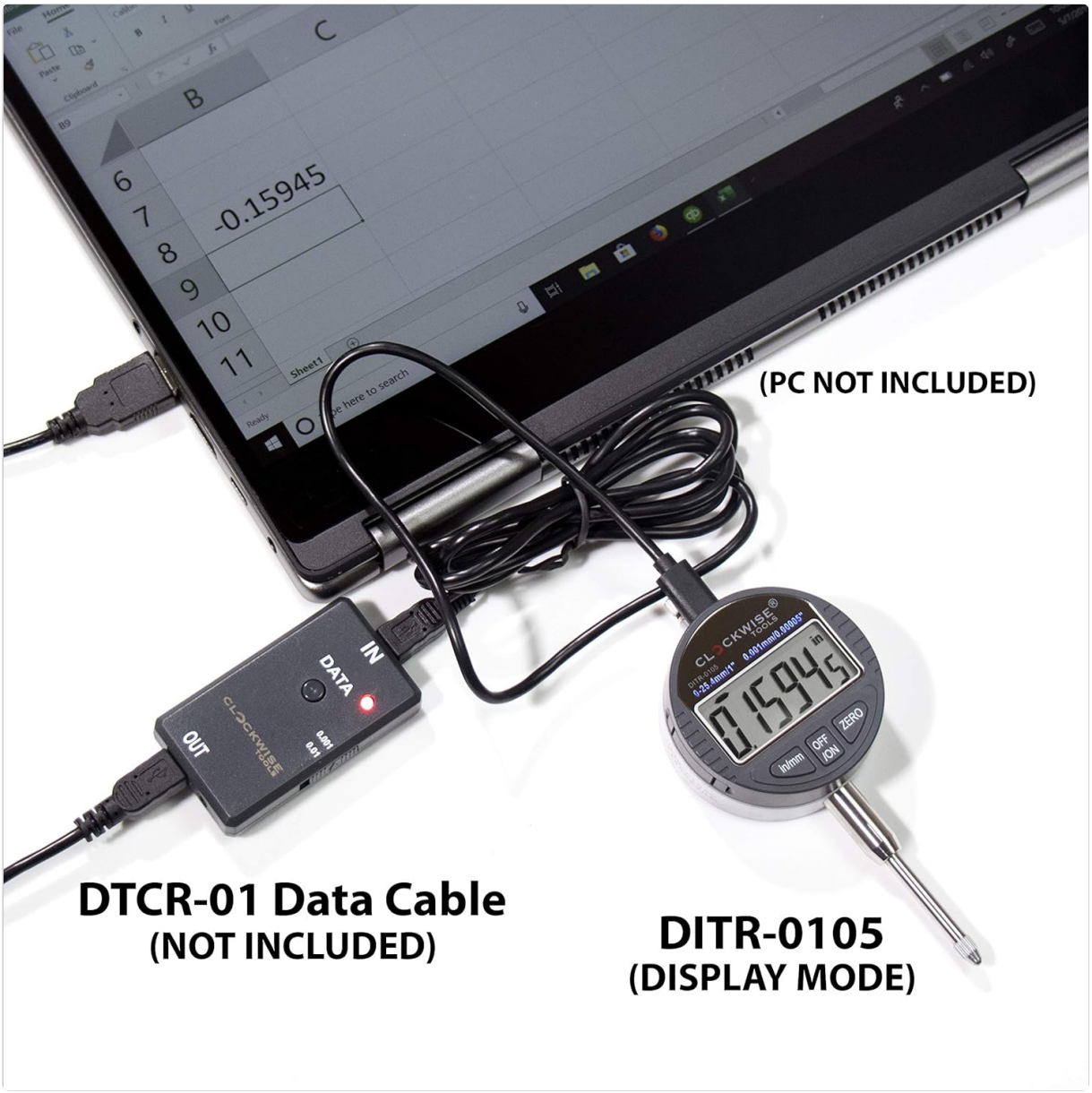

Figure 4.1: Close-up view of the digital indicator's side, highlighting the Micro USB RS232 data port with an anti-dust cap and the 3V battery compartment. This image shows the location of the battery and the data transfer interface.

4.2 Mounting the Indicator

The indicator can be mounted using its 3/8" stem or via the included lug back attachment.

- **Stem Mounting:** Insert the 3/8" diameter stem into a compatible fixture or stand and secure it.
- **Lug Back Mounting:** Attach the lug back plate to the indicator's rear using the provided screws. Then, mount the lug back to a fixture using its 6.5mm hole.

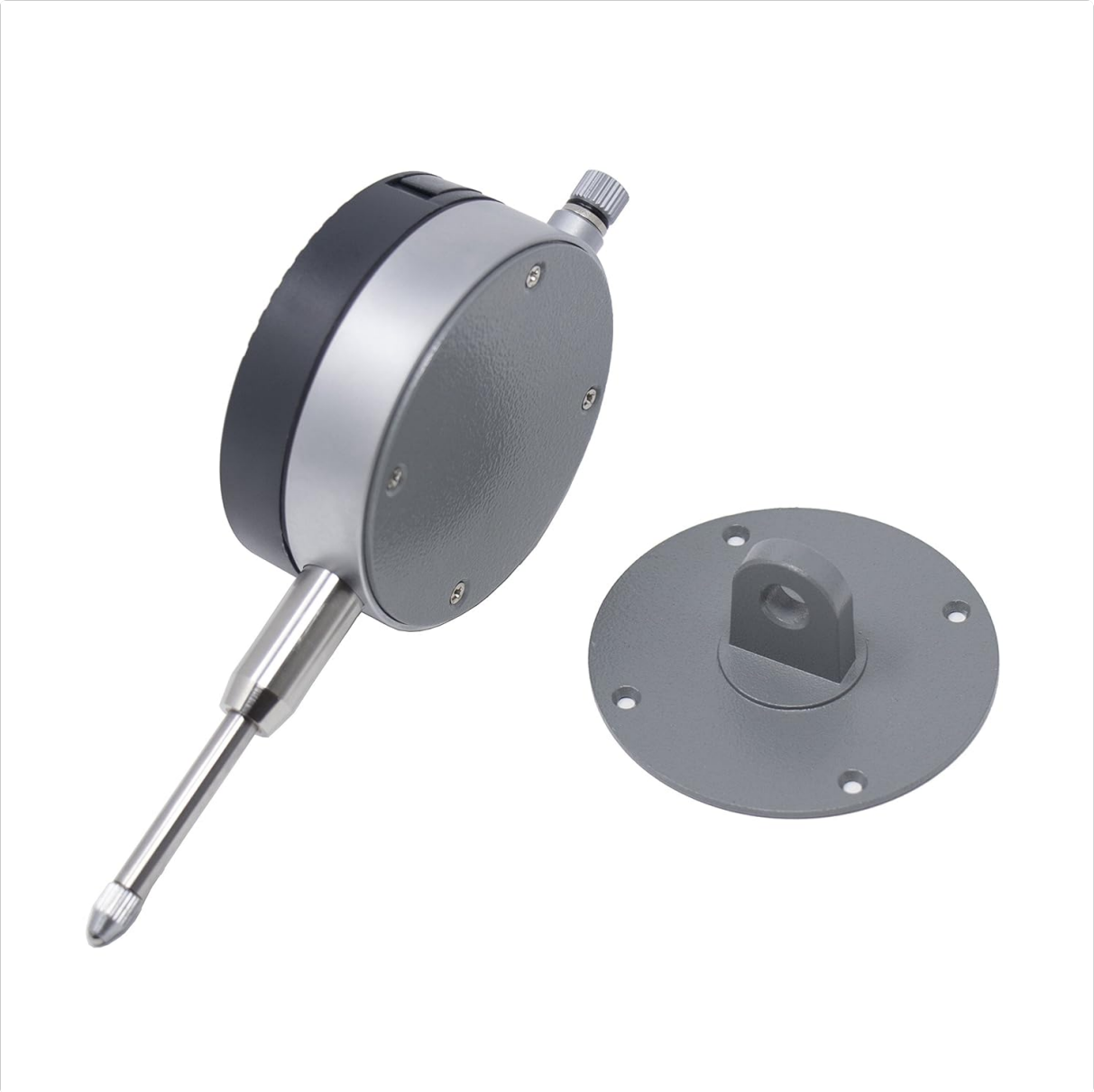

Figure 4.2: Rear view of the digital indicator alongside a separate lug back mounting plate. This image demonstrates the versatility of mounting options, showing the indicator's flat back and the accessory lug back with screw holes for secure attachment to various setups.

5. Operation

5.1 Power On/Off

- Press the **OFF/ON** button to turn the indicator on.
- Press and hold the **OFF/ON** button to turn the indicator off. The device does not have an auto-off feature.

5.2 Zeroing the Display

To set a reference point (zero) for your measurements:

1. Position the measuring spindle at the desired reference point.
2. Press the **ZERO** button. The display will show '0.0000' (or '0.000' in metric), and all subsequent measurements will be relative to this point.

5.3 Inch/Metric Conversion

To switch between inch and millimeter units:

- Press the **inch/mm** button. The display will toggle between inch (in) and millimeter (mm) readings.

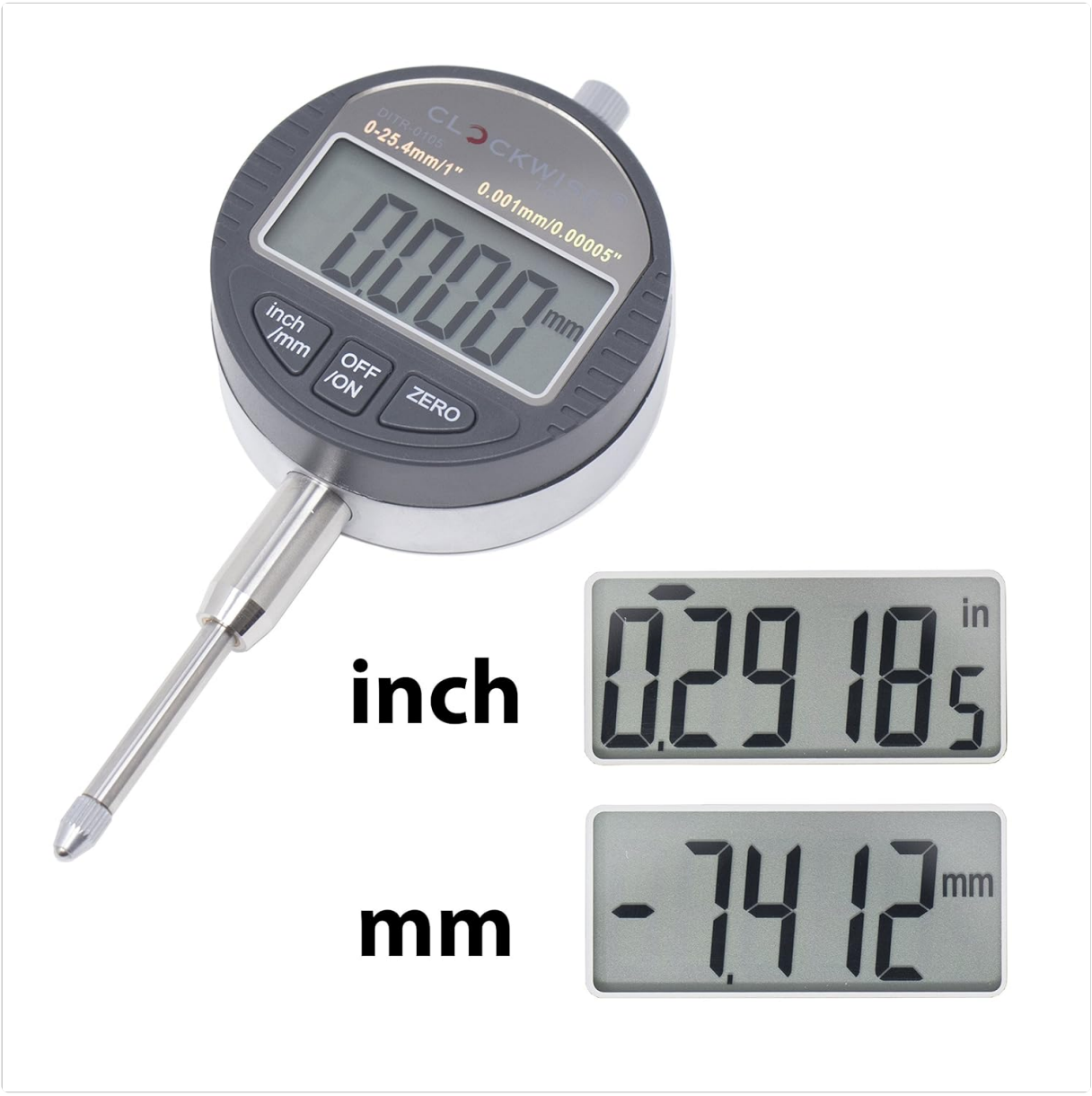

Figure 5.1: Comparison of the digital indicator's display showing a measurement in inches (top) and the same measurement converted to millimeters (bottom). This image clearly illustrates the dual unit conversion capability of the DITR-0105N.

5.4 Data Transfer (RS232)

The DITR-0105N is equipped with an RS232 data transfer port for connecting to a PC for measurement logging. This functionality requires the separate purchase of the Clockwise Tools DTCR-01 data cable.

- Connect the DTCR-01 data cable to the indicator's data port and to your computer.
- Follow the instructions provided with the DTCR-01 cable for software installation and data acquisition.
- Note: The data port is Micro USB RS232 compatible, but it is NOT a standard USB port for direct PC connection without the specific DTCR-01 cable.

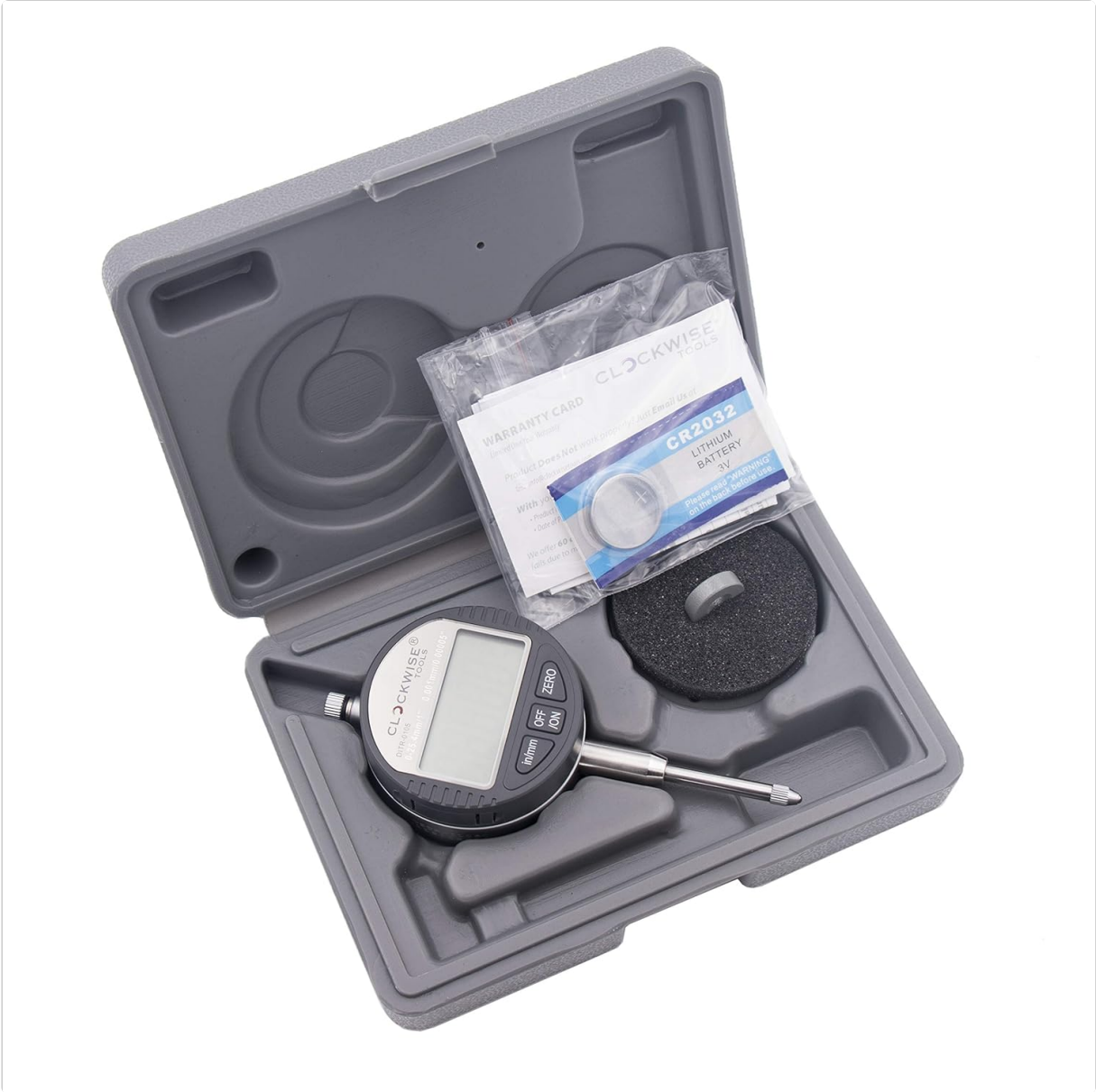

Figure 5.2: The DITR-0105N digital indicator connected to a laptop via the DTCR-01 data cable. This image demonstrates the setup for data transfer, showing the indicator displaying a measurement and the cable facilitating communication with a computer for logging purposes.

6. Maintenance

6.1 Cleaning

- Wipe the indicator's body with a soft, dry cloth.
- For stubborn dirt, use a cloth lightly dampened with mild soap and water, then dry thoroughly.
- Do not use harsh chemicals, solvents, or abrasive cleaners, as these can damage the display or finish.
- Keep the measuring spindle and contact point clean and free of debris to ensure accurate readings.

6.2 Storage

- Store the digital indicator in its original protective case when not in use.
- Ensure the storage environment is dry, clean, and free from extreme temperatures or humidity.
- Remove batteries if the device will not be used for an extended period to prevent leakage.

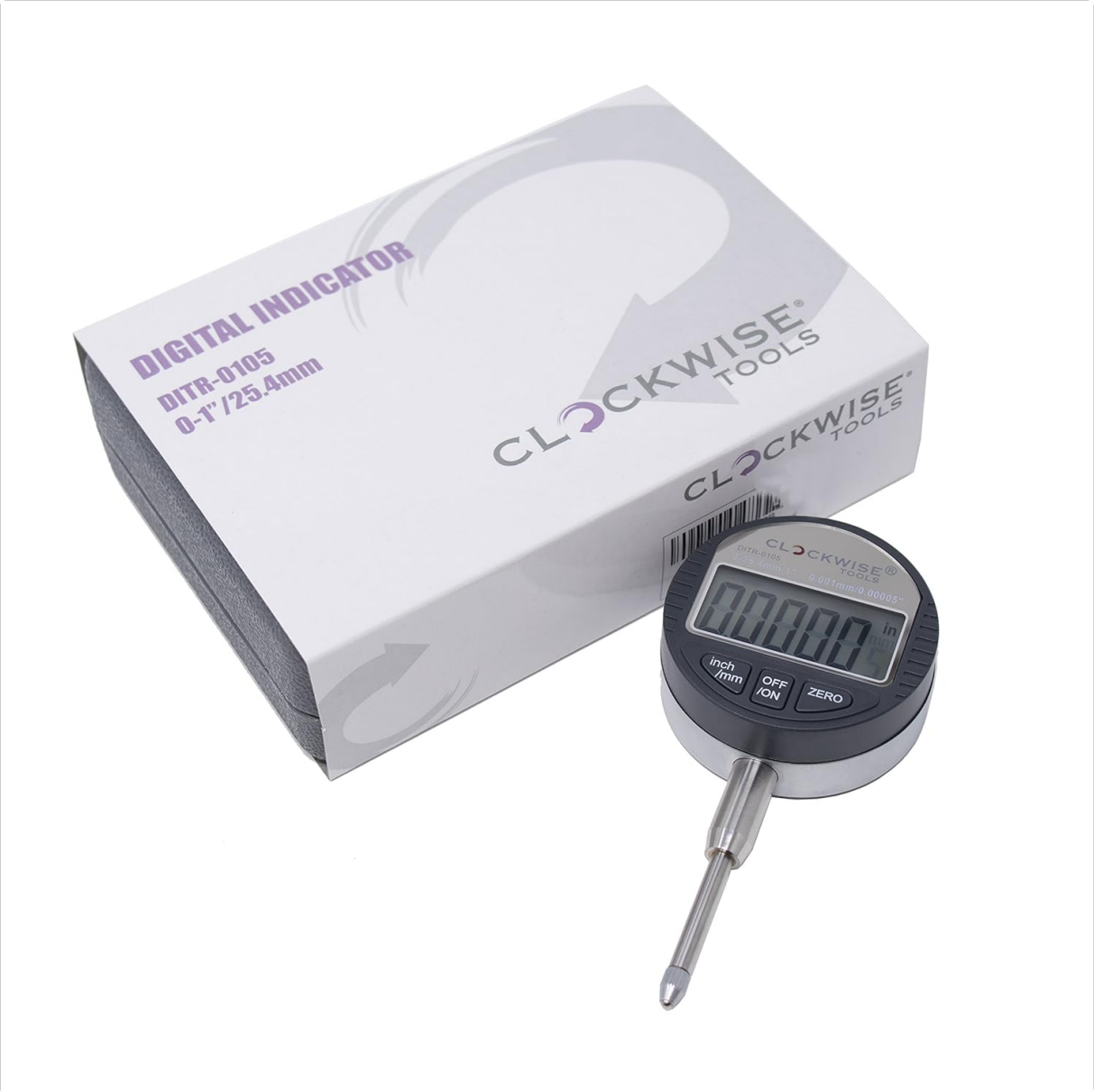

Figure 6.1: The Clockwise Tools DITR-0105N digital indicator neatly stored within its custom-fit protective case, alongside a spare battery and warranty card. This image emphasizes the importance of proper storage for maintaining the instrument's condition and longevity.

7. Troubleshooting

- **Display Not Working:** Check battery installation. Ensure batteries are correctly oriented and have sufficient charge. Replace batteries if necessary.
- **Inaccurate Readings:** Clean the measuring spindle and contact point. Ensure the indicator is securely mounted and stable. Re-zero the display. Verify the workpiece is clean and properly positioned.
- **Buttons Unresponsive:** Ensure the device is powered on. If issues persist after checking batteries, contact customer support.
- **Data Transfer Issues:** Verify the DTCR-01 cable is correctly connected to both the indicator and the PC. Ensure the correct software/drivers are installed on the PC. Consult the DTCR-01 cable manual for specific troubleshooting steps.

8. Specifications

Feature	Specification

Feature	Specification
Measuring Range	0-1 inch (0-25.4 mm)
Resolution	0.00005 inch (0.001 mm)
Accuracy	±0.0002 inch (±0.005 mm)
Stem Diameter	3/8 inch
Contact Point Thread	UNF 4-48
Display	Extra-Large LCD (1.6" x 0.7")
Power Source	2 x CR2032 3V Lithium Batteries (included)
Data Output	RS232 (Micro USB compatible, requires DTCR-01 cable)
Material	Metal
Item Model Number	DITR-0105N
Package Dimensions	6.13 x 4.38 x 1.63 inches
Item Weight	4.4 ounces

9. Warranty and Support

Clockwise Tools products are manufactured to high-quality standards. For warranty information or technical support, please refer to the warranty card included with your product or visit the official Clockwise Tools website. Please have your model number (DITR-0105N) and purchase information ready when contacting support.

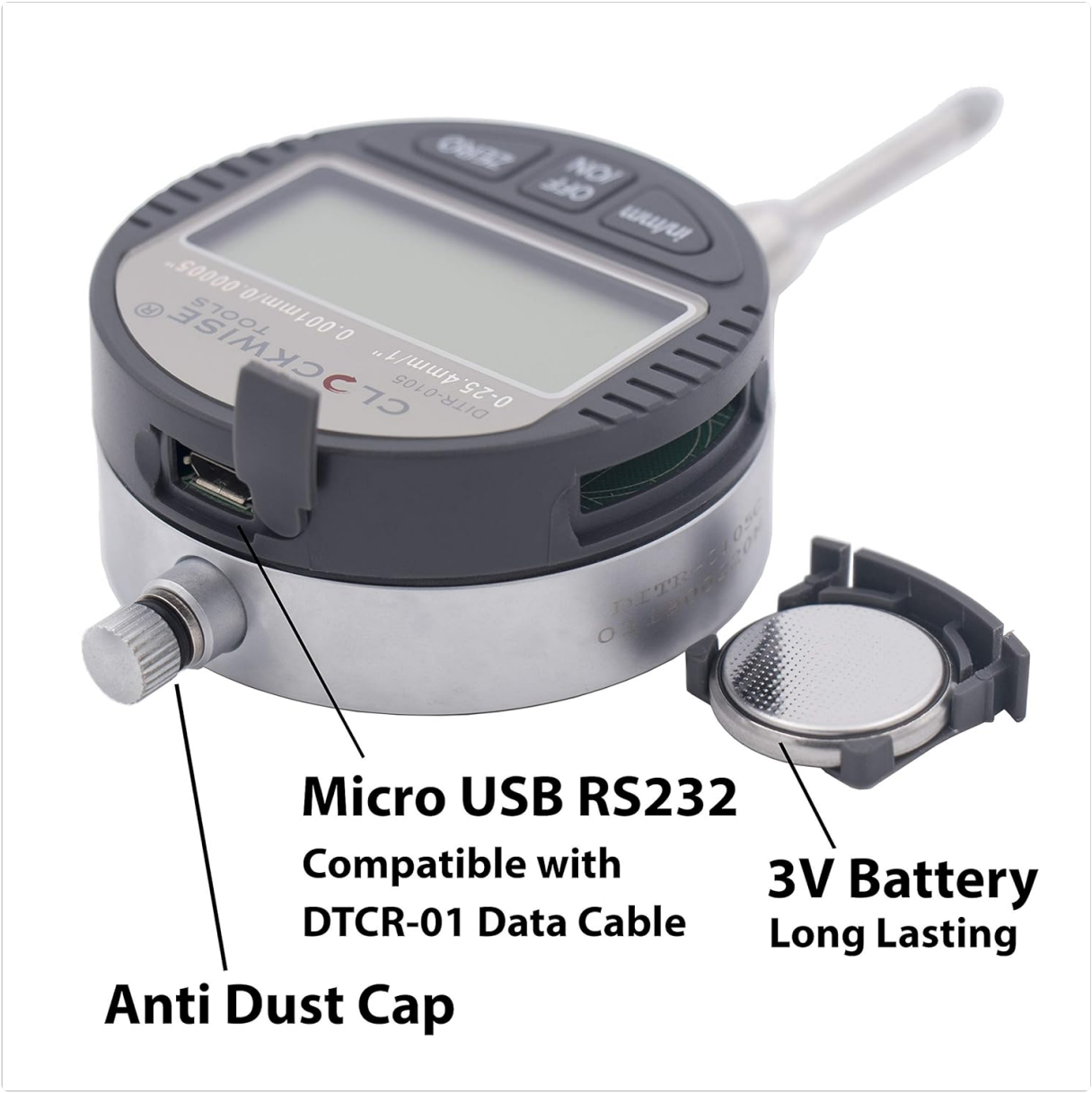

Figure 9.1: The Clockwise Tools DITR-0105N digital indicator presented in its retail packaging. This image shows the product as it would be received, emphasizing the brand and model information on the box.