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Mitutoyo VDS-15DCX

Mitutoyo VDS-15DCX Digital Depth Gauge Instruction Manual

Model: VDS-15DCX (571-201-20)

1. INTRODUCTION

The Mitutoyo VDS-15DCX is a high-precision digital depth gauge designed for accurate measurement of depths, steps, and grooves. This manual provides essential information for the safe and effective use, maintenance, and troubleshooting of your instrument. Please read this manual thoroughly before operating the device.



Image: Mitutoyo VDS-15DCX Digital Depth Gauge. This image displays the main unit of the digital depth gauge, showing its digital display, measuring base, and measuring rod.

2. SETUP

2.1 Unpacking and Inspection

- Carefully remove the depth gauge from its packaging.
- Inspect the instrument for any signs of damage that may have occurred during transit. If damage is found, do not use the device and contact your supplier.
- Verify that all components listed in the packing list are present.

2.2 Battery Installation

The VDS-15DCX uses one SR44 silver oxide button cell battery.

1. Locate the battery cover on the back of the digital display unit.
2. Using a small screwdriver or coin, gently turn the battery cover counter-clockwise to open.
3. Insert a new SR44 battery with the positive (+) side facing upwards.
4. Replace the battery cover and turn clockwise to secure.
5. Press the ON/OFF button to confirm the display powers on.

2.3 Cleaning Measuring Surfaces

Before use, gently wipe the measuring base and the tip of the measuring rod with a clean, lint-free cloth. Ensure no dust, oil, or debris is present on these surfaces, as this can affect measurement accuracy.

2.4 Zero-Setting Procedure

To ensure accurate measurements, the depth gauge must be zero-set before use.

1. Place the depth gauge on a flat, stable, and clean reference surface.
2. Ensure the measuring base is flush with the reference surface and the measuring rod is fully retracted.
3. Press the **ZERO** button. The display should show '0.00' or '0.000'.
4. The instrument is now ready for measurement.

3. OPERATING INSTRUCTIONS

3.1 Basic Measurement

1. Ensure the depth gauge is properly zero-set (refer to Section 2.4).
2. Place the measuring base firmly on the top surface of the workpiece or feature to be measured.
3. Slowly extend the measuring rod until its tip makes contact with the bottom surface of the depth or step. Ensure the rod is perpendicular to the bottom surface.
4. Read the measurement value displayed on the LCD screen.

3.2 Unit Conversion (mm/inch)

To switch between metric (mm) and imperial (inch) units, press the **mm/inch** button. The display will show the current unit of measurement.

3.3 Absolute (ABS) and Incremental (INC) Measurement

The VDS-15DCX allows for both absolute and incremental measurements.

- **Absolute (ABS) Mode:** This mode measures from the true zero point, which is set when the gauge is zeroed on a reference surface.
- **Incremental (INC) Mode:** To measure a difference from an arbitrary point, position the measuring rod at the desired reference point on the workpiece and press the **ZERO** button. The display will reset to zero, and subsequent movements will show the incremental distance from this new zero point. Press the **ABS/INC** button to toggle between modes.

3.4 Data Hold Function

If your model includes a **HOLD** button, pressing it will freeze the current reading on the display, allowing you to remove the gauge from the workpiece and record the measurement. Press the button again to release the hold function.

4. MAINTENANCE

4.1 Cleaning

- After each use, wipe the entire instrument, especially the measuring surfaces, with a clean, dry, lint-free cloth.
- For stubborn dirt or oil, use a cloth lightly dampened with isopropyl alcohol. Avoid using strong solvents or abrasive cleaners.
- Do not immerse the depth gauge in any liquid.

4.2 Storage

- Store the depth gauge in its original protective case when not in use.
- Store in a dry environment, away from direct sunlight, extreme temperatures, and high humidity.
- Avoid storing in areas with excessive dust or corrosive fumes.

4.3 Battery Replacement

Replace the battery when the display becomes dim or an indicator (e.g., 'B' or battery icon) appears on the screen. Refer to Section 2.2 for battery installation instructions. Dispose of used batteries according to local regulations.

4.4 Calibration Checks

Periodically check the accuracy of the depth gauge using a known reference standard (e.g., gauge blocks). If the readings are consistently outside the specified accuracy, the instrument may require professional calibration or repair.

5. TROUBLESHOOTING

Problem	Possible Cause	Solution
Display does not turn on	Dead or incorrectly installed battery	Replace battery (Section 2.2) or ensure correct polarity.
Inaccurate readings	<ul style="list-style-type: none"> • Dirty measuring surfaces • Improper zero-setting • Gauge not perpendicular to workpiece • Environmental factors (temperature fluctuations) 	<ul style="list-style-type: none"> • Clean surfaces (Section 2.3) • Re-zero the gauge (Section 2.4) • Ensure proper alignment • Allow gauge to acclimate to ambient temperature
Display shows 'E' or error code	Internal error or sensor issue	Remove and reinsert battery. If error persists, contact customer support.
Buttons unresponsive	Low battery or internal malfunction	Replace battery. If issue continues, contact customer support.

6. SPECIFICATIONS

Feature	Specification
Model Number	VDS-15DCX (571-201-20)
Measuring Range	0-150 mm (0-6 inches)
Resolution	0.01 mm (0.0005 inches)
Accuracy	±0.02 mm (±0.001 inches)
Display	LCD
Power Supply	SR44 (1 pc)
Weight	207 g (0.45 lbs)
Manufacturer	Mitutoyo

7. WARRANTY INFORMATION

Mitutoyo products are manufactured to high standards and are typically covered by a limited warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary by region and product. Please refer to the warranty card included with your product or contact your local Mitutoyo distributor for detailed warranty information.

8. CUSTOMER SUPPORT

For technical assistance, service, or inquiries regarding your Mitutoyo VDS-15DCX digital depth gauge, please contact your authorized Mitutoyo distributor or visit the official Mitutoyo website for regional contact information. When contacting support, please have your model number (VDS-15DCX) and serial number (if applicable) ready.