

Mitutoyo 147-201



Mitutoyo 147-201 Can Seam Micrometer

INSTRUCTION MANUAL

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1. Introduction

The Mitutoyo 147-201 Can Seam Micrometer is a precision measuring instrument designed for accurately measuring the width, height, and depth of can seams. This manual provides essential information for the proper setup, operation, maintenance, and troubleshooting of your micrometer to ensure accurate and reliable measurements.

Key Features:

- Measures the width, height, and depth of can seams.
- Vernier scale in inch units for taking precise outside diameter (OD) measurements.
- Ratchet-stop mechanism helps provide uniform pressure for precise, repeatable measurement.
- Satin chrome finish on thimble and sleeve helps resist rust and reduce glare.
- High-grade tool steel construction for durability.



Figure 1: Mitutoyo 147-201 Can Seam Micrometer, showing the main body and measuring surfaces.

2. Setup

1. **Unpacking and Inspection:** Carefully remove the micrometer from its packaging. Inspect the instrument for any visible damage that may have occurred during shipping. Ensure all components are present.

2. **Cleaning Measuring Surfaces:** Before first use, gently wipe all measuring surfaces with a clean, lint-free cloth. Ensure no dust, oil, or debris is present on the anvil and spindle faces.
3. **Zero Adjustment:**
 - Rotate the thimble using the ratchet stop until the spindle and anvil faces meet. The ratchet stop will click 2-3 times, indicating proper measuring force.
 - Check if the '0' mark on the thimble aligns perfectly with the datum line on the sleeve.
 - If the '0' mark does not align, use the provided wrench (if applicable) to rotate the sleeve until the '0' mark aligns with the datum line. For minor adjustments, the thimble can sometimes be rotated slightly. Refer to the specific instructions for your micrometer model if a wrench is not provided or if the adjustment method differs.

3. Operating Instructions

Follow these steps for accurate measurement of can seams:

1. **Hold the Micrometer:** Hold the micrometer firmly by the frame, ensuring your body heat does not significantly affect the instrument's temperature, which could lead to expansion and inaccurate readings.
2. **Open the Measuring Faces:** Rotate the thimble counter-clockwise to open the measuring faces wider than the can seam you intend to measure.
3. **Position the Can Seam:** Carefully place the can seam between the anvil and spindle. Ensure the seam is seated correctly and stably for the specific dimension you are measuring (width, height, or depth).
4. **Apply Measuring Force:** Rotate the ratchet stop clockwise until the spindle gently contacts the can seam. Continue rotating the ratchet stop until it clicks 2-3 times. This ensures a consistent and appropriate measuring force is applied, preventing deformation of the can seam or the micrometer.
5. **Lock the Spindle (Optional):** If your micrometer has a spindle lock, engage it to secure the measurement before reading. This prevents accidental movement of the spindle.
6. **Read the Measurement:**
 - Read the main scale on the sleeve for the whole inches and tenths of an inch.
 - Read the thimble scale for the thousandths of an inch.
 - Combine these readings for the final measurement.
7. **Repeat Measurements:** For critical dimensions, take multiple measurements at different points on the can seam to ensure consistency and accuracy.

4. Maintenance

Proper maintenance ensures the longevity and accuracy of your Mitutoyo Can Seam Micrometer.

- **Cleaning:** After each use, wipe the entire micrometer, especially the measuring faces, with a clean, dry, lint-free cloth. Avoid using harsh solvents or abrasive materials, which can damage the finish or measuring surfaces.
- **Storage:** Store the micrometer in its original protective case when not in use. Keep it in a dry environment with stable temperature and humidity to prevent rust and corrosion. Avoid storing it in direct sunlight or near heat sources.
- **Lubrication:** For long-term storage or in humid environments, apply a thin film of rust-preventative oil to all unpainted metal surfaces. Do not over-lubricate, as excess oil can attract dust and debris.
- **Calibration:** Regular calibration by qualified personnel or a certified calibration laboratory is recommended to maintain the instrument's specified accuracy. The frequency of calibration depends on usage and environmental conditions.

- **Handling:** Avoid dropping or subjecting the micrometer to impact, as this can cause permanent damage and affect its accuracy.

5. Troubleshooting

Issue	Possible Cause	Solution
Inaccurate readings	Dirt or debris on measuring faces	Clean measuring faces thoroughly with a lint-free cloth.
	Improper zero adjustment	Perform zero adjustment as described in the Setup section.
	Excessive or insufficient measuring force	Always use the ratchet stop mechanism to apply consistent measuring force.
Ratchet stop not functioning smoothly	Internal mechanism requires cleaning or lubrication	Contact qualified service personnel for inspection and repair. Do not attempt to disassemble the ratchet stop mechanism yourself.
Micrometer feels stiff or difficult to turn	Lack of lubrication or presence of foreign particles	Clean the spindle and thimble area. If the issue persists, apply a very small amount of precision instrument oil to the spindle thread. If still stiff, seek professional service.

6. Specifications

Feature	Detail
Model Number	147-201
Measurement Range	0-0.5 inches
Graduation	0.001 inches
Accuracy	+/-0.00012 inches
Material	High-grade Alloy Steel
Finish	Satin Chrome (thimble and sleeve)
Measuring Mechanism	Ratchet Stop
Product Dimensions	11.68 x 3.81 x 0.1 cm
Item Weight	65 g
Manufacturer	Mitutoyo

7. Warranty & Support

Mitutoyo products are manufactured to high standards and are typically covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the warranty card

included with your product or visit the official Mitutoyo website.

For technical support, service, or inquiries regarding your Mitutoyo 147-201 Can Seam Micrometer, please contact Mitutoyo customer service or an authorized Mitutoyo distributor in your region. Contact information can usually be found on the manufacturer's website or in the product packaging.

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