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INSIZE 3281-6

INSIZE 3281-6 Screw Thread Micrometer User Manual

Model: 3281-6 | Brand: INSIZE

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and effective use of the INSIZE 3281-6 Screw Thread Micrometer. This precision instrument is designed for accurately measuring the pitch diameter of screw threads within a range of 5 to 6 inches, with a graduation of 0.001 inches. Please read this manual thoroughly before operation to ensure proper handling, measurement accuracy, and longevity of the tool.

2. PRODUCT OVERVIEW AND COMPONENTS

The INSIZE 3281-6 Screw Thread Micrometer is a specialized measuring tool. Key components include the frame, anvil, spindle, thimble, sleeve, and ratchet stop. The unique design features specialized measuring tips for engaging with screw threads.



Figure 1: INSIZE 3281-6 Screw Thread Micrometer. This image displays the complete micrometer, highlighting its U-shaped frame, the anvil on the left, the spindle on the right with its measuring tip, the thimble with graduations, and the ratchet stop at the far right. The INSIZE logo and measurement range are visible on the frame.

Key Features:

- Measures pitch diameter of screw threads.
- Graduation: 0.001 inch.
- Equipped with a ratchet stop for consistent measuring force.
- Supplied with 60° setting standards (for ranges greater than 1 inch).
- Optional accessory: 55° setting standards (part no. 3281-Sp).
- Measuring tips (part no. 7381) are interchangeable.

3. SETUP

Before initial use, ensure the micrometer is clean and free from any debris.

3.1 Zero Adjustment

1. Clean the measuring faces of the anvil and spindle with a lint-free cloth.
2. For micrometers with a range greater than 0-1 inch (like this 5-6 inch model), use the appropriate setting standard (60° standard supplied).
3. Place the setting standard between the measuring faces.
4. Turn the thimble until the measuring faces gently contact the setting standard. Use the ratchet stop to apply consistent, light pressure until it clicks 2-3 times.
5. Check if the zero line on the thimble aligns perfectly with the datum line on the sleeve.
6. If misalignment occurs, use the supplied wrench to adjust the sleeve until the lines align. Refer to the specific instructions for your micrometer model for detailed adjustment procedures.

4. OPERATING INSTRUCTIONS

Follow these steps for accurate measurement of screw thread pitch diameter.

1. **Preparation:** Ensure the micrometer and the workpiece are clean and at a stable temperature.
2. **Positioning:** Hold the micrometer firmly. Position the screw thread between the specialized measuring tips (anvil and spindle). Ensure the tips engage correctly with the thread flanks.
3. **Measurement:** Slowly turn the thimble until the measuring tips make gentle contact with the thread. Continue turning the ratchet stop until it clicks 2-3 times. This ensures consistent measuring force.
4. **Reading:** Lock the spindle if your micrometer has a locking mechanism. Read the measurement from the sleeve and thimble scales.
5. **Interpretation:**
 - Each numbered line on the sleeve represents 0.100 inch.
 - Each unnumbered line between the numbered lines represents 0.025 inch.
 - Each graduation on the thimble represents 0.001 inch.
 - Add the readings from the sleeve and thimble to get the total measurement.
6. **Repeatability:** For critical measurements, take multiple readings and average them to minimize errors.

5. MAINTENANCE

Proper maintenance ensures the accuracy and longevity of your micrometer.

- **Cleaning:** After each use, wipe the micrometer clean with a soft, lint-free cloth. For stubborn grime, use a small amount of instrument cleaning fluid, then wipe dry.

- **Lubrication:** Periodically apply a thin film of light machine oil to the spindle thread to ensure smooth operation and prevent corrosion. Avoid over-lubrication.
- **Storage:** Store the micrometer in its protective case when not in use. Keep it in a dry, temperature-controlled environment, away from direct sunlight, dust, and corrosive substances.
- **Inspection:** Regularly inspect the measuring faces for wear or damage. Ensure the ratchet stop functions correctly.
- **Calibration:** For professional applications, periodic calibration by a certified laboratory is recommended to maintain accuracy.

6. TROUBLESHOOTING

Common issues and their solutions.

Problem	Possible Cause	Solution
Inaccurate Readings	<ul style="list-style-type: none"> • Incorrect zero adjustment • Dirty measuring faces • Excessive measuring force • Wear on measuring faces 	<ul style="list-style-type: none"> • Perform zero adjustment (Section 3.1) • Clean measuring faces • Use ratchet stop for consistent force • Inspect and replace measuring tips if worn (Part No. 7381)
Stiff Spindle Movement	<ul style="list-style-type: none"> • Lack of lubrication • Dirt or debris in spindle thread 	<ul style="list-style-type: none"> • Clean and lightly lubricate spindle thread • Carefully clean spindle thread with a soft brush and instrument cleaner
Ratchet Stop Malfunction	<ul style="list-style-type: none"> • Internal mechanism issue 	<ul style="list-style-type: none"> • Contact INSIZE customer support for service

7. SPECIFICATIONS

- **Model:** 3281-6
- **Brand:** INSIZE
- **Measurement Range:** 5 - 6 inches
- **Graduation:** 0.001 inch
- **Measurement Type:** Screw Thread Pitch Diameter
- **Setting Standards:** Supplied with 60° setting standards (for ranges > 1 inch)
- **Ratchet Stop:** Yes
- **Manufacturer:** INSIZE

8. WARRANTY AND SUPPORT

For warranty information, technical support, or to inquire about replacement parts and optional accessories (e.g., 55° setting standards part no. 3281-Sp, measuring tips part no. 7381), please contact INSIZE customer service or visit the official INSIZE website.

Manufacturer: INSIZE

Website: www.insize.com (Example link, actual link may vary)

