Fowler 52-215-006-1

Fowler 52-215-006-1 Outside Micrometer Set (0-6 inch) Instruction Manual

Model: 52-215-006-1 | Range: 0-6 inches

1. Introduction

This manual provides comprehensive instructions for the proper use, care, and maintenance of your Fowler 52-215-006-1 Outside Micrometer Set. This set includes six micrometers designed for precise dimensional measurements from 0 to 6 inches. Each micrometer features a Vernier scale for accurate readings and is constructed with durable materials for long-lasting performance.

2. Setup

2.1 Unpacking and Component Identification

Carefully unpack the micrometer set from its fitted wooden case. Inspect all components for any signs of damage. The set includes:

- Six outside micrometers (0-1", 1-2", 2-3", 3-4", 4-5", 5-6" measuring ranges)
- Five setting standards (1", 2", 3", 4", 5")
- Adjustment wrenches
- Instruction manual

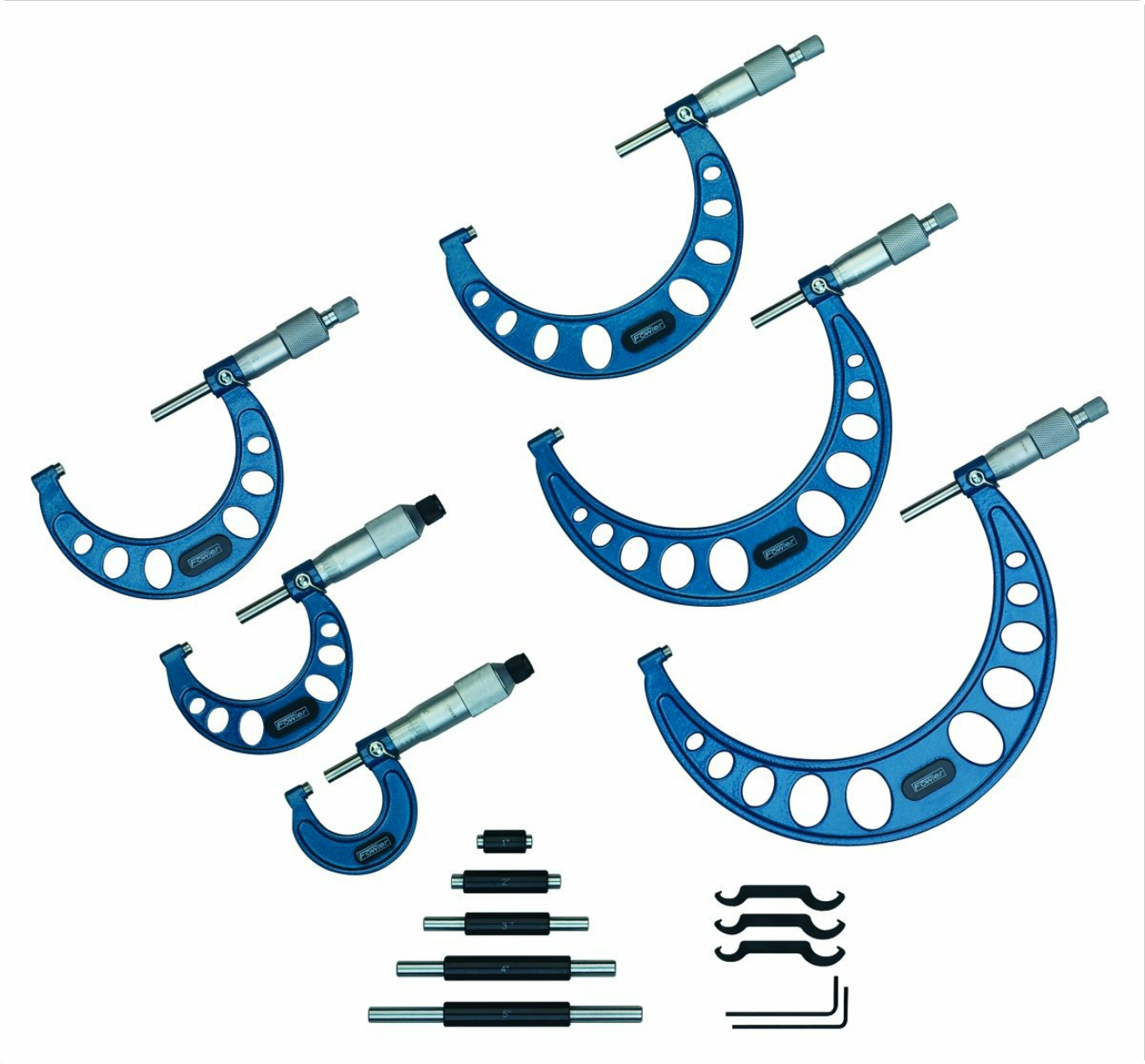

Figure 2.1: The complete Fowler 0-6 inch Outside Micrometer Set, including six micrometers, setting standards, and adjustment wrenches, housed in its protective blue case.

Figure 2.2: An open view of the blue case, displaying the six micrometers, setting standards, and the instruction manual neatly arranged within the foam inserts.

2.2 Zero Adjustment/Calibration

Before use, ensure the micrometer is properly calibrated. The zero point of each micrometer has been carefully set and tested at the factory. However, it should always be checked before use. For micrometers with a measuring range greater than 0-1" (0-25mm), the zero point is checked using the supplied standard (or a gauge block).

1. Clean the measuring faces of the micrometer and the standard thoroughly.
2. For 0-1" micrometers, close the spindle until the anvil and spindle faces meet. The zero line on the thimble should align with the datum line on the sleeve.
3. For micrometers with a range greater than 0-1", place the appropriate setting standard between the anvil and spindle. Close the spindle until it gently contacts the standard.
4. If the zero line does not align, use the supplied adjustment wrench to turn the sleeve until the zero line on the thimble aligns with the datum line on the sleeve.

Video 2.3: This video demonstrates the unboxing and key features of the Fowler 52-215-006-1 micrometer set, including the various micrometer sizes and setting standards.

3. Operating Instructions

3.1 Holding the Micrometer

Hold the micrometer firmly by the frame, ensuring your hand does not unduly heat the instrument, which could affect accuracy. The heat insulating plate helps minimize heat transfer from your hand to the frame.

3.2 Measuring Technique

Place the workpiece between the anvil and the spindle. Rotate the thimble to bring the spindle into contact with the workpiece. For micrometers with a 0-1" and 1-2" range, a **friction thimble** is used, which stops turning when the correct measuring force is applied. For micrometers with a 3-6" range, a **ratchet thimble** is used, which provides an audible click when the correct measuring force is achieved. Always use the friction or ratchet mechanism to ensure consistent measuring force.

Figure 3.1: A close-up view of a single micrometer, highlighting the thimble and sleeve for precise adjustments.

3.3 Reading Measurements

Read the main scale on the sleeve, then the thimble scale, and finally the Vernier scale for the most precise reading. The Vernier scale provides 0.0001" graduation intervals.

3.4 Locking Mechanism

Once the measurement is taken, use the positive locking lever on the spindle to secure the reading. This prevents accidental changes and ensures accuracy when transferring the micrometer or reading the value.

Figure 3.2: A detailed view of the micrometer's spindle and the locking lever, which secures the measurement in place.

4. Maintenance

4.1 Cleaning

After each use, wipe all grease, dust, and other foreign substances from all surfaces of the micrometer. Pay particular care to the precision-ground, micro-lapped carbide measuring faces of the spindle and the anvil. Use a clean, lint-free cloth.

4.2 Storage

Store the micrometer set in its original fitted case in a dry, temperature-controlled environment. Avoid storing in direct sunlight or near heat sources. The foam inserts in the case are designed to protect the instruments from damage and maintain their calibration.

5. Troubleshooting

5.1 Inaccurate Readings

- **Zero Point Deviation:** If the micrometer does not return to zero when closed (or does not match the standard), perform a zero adjustment as described in Section 2.2.
- **Improper Measuring Technique:** Ensure consistent measuring force is applied using the friction or ratchet thimble. Avoid tilting the micrometer during measurement.
- **Contamination:** Clean the measuring faces and the workpiece to remove any debris that could affect accuracy.

5.2 Spindle Movement Issues

- **Stiff Movement:** Clean the spindle and thimble threads. Apply a small amount of micrometer oil if necessary.
- **Loose Movement:** If the spindle feels loose, it may indicate wear or damage. Contact customer support for assistance.

6. Specifications

Feature	Specification
Model Number	52-215-006-1
Measuring Range	0-6 inches (6-piece set)
Graduation Intervals	0.0001 inches (Vernier scale)
Measurement Accuracy	0.00015"-0.00025" (up to 2")
Anvil/Spindle Material	Hardened, precision-ground, micro-lapped carbide
Measuring Face Diameter	0.256 inches
Flatness	0.00003 inches
Parallelism	0.00005 inches
Thimble Type	Friction (0-1", 1-2" micrometers), Ratchet (3-6" micrometers)
Finish	Satin chrome on thimble and sleeve, hammertone blue baked enamel on frame
Case Material	Plastic (fitted)

7. Warranty

The Fowler 52-215-006-1 Outside Micrometer Set comes with a **1-year warranty** covering material and workmanship defects. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, please refer to the official Fowler website or contact customer support.

8. Support

For technical assistance, service, repair, or calibration, please contact Fred V. Fowler Company, Inc. Customer support is available to help with any questions or issues you may encounter with your micrometer set.
Manufacturer: Fred V. Fowler Company, Inc.
Headquarters: Canton, MA, USA
Website: www.fowlerprecision.com