

Renishaw OMP40-2

Renishaw OMP40-2 Machine Tool Probe Kit User Manual

Model: OMP40-2

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the Renishaw OMP40-2 Machine Tool Probe Kit. The OMP40-2 is an ultra-compact 3D touch-trigger probe designed for precise workpiece set-up and inspection on small to medium machining centers, including those with high-speed capabilities and small HSK and spindle tapers.

Please read this manual thoroughly before installation, operation, or maintenance to ensure optimal performance and safety.

2. KEY FEATURES

- **Ultra-compact Design:** Ideal for small to medium machining centers.
- **3D Touch-Trigger Technology:** Provides accurate and repeatable measurements.
- **Optical Signal Transmission:** Ensures reliable data transfer in challenging environments.
- **Versatile Application:** Suitable for workpiece set-up, in-process measurement, and post-process inspection.
- **Compatibility:** Designed for machines with small HSK and spindle tapers.



Figure 2.1: Front view of the Renishaw OMP40-2 probe, showing its compact design.

3. PACKAGE CONTENTS

Upon opening the Renishaw OMP40-2 Machine Tool Probe Kit, verify that all components are present and undamaged. The standard kit typically includes:

- Renishaw OMP40-2 Probe Unit
- Quick Start Guide / User Manual
- Batteries (typically 2x 1/2 AA Lithium batteries)
- Associated documentation and accessories



Figure 3.1: The Renishaw OMP40-2 probe kit as packaged in its box, showing the probe, manual, and batteries.

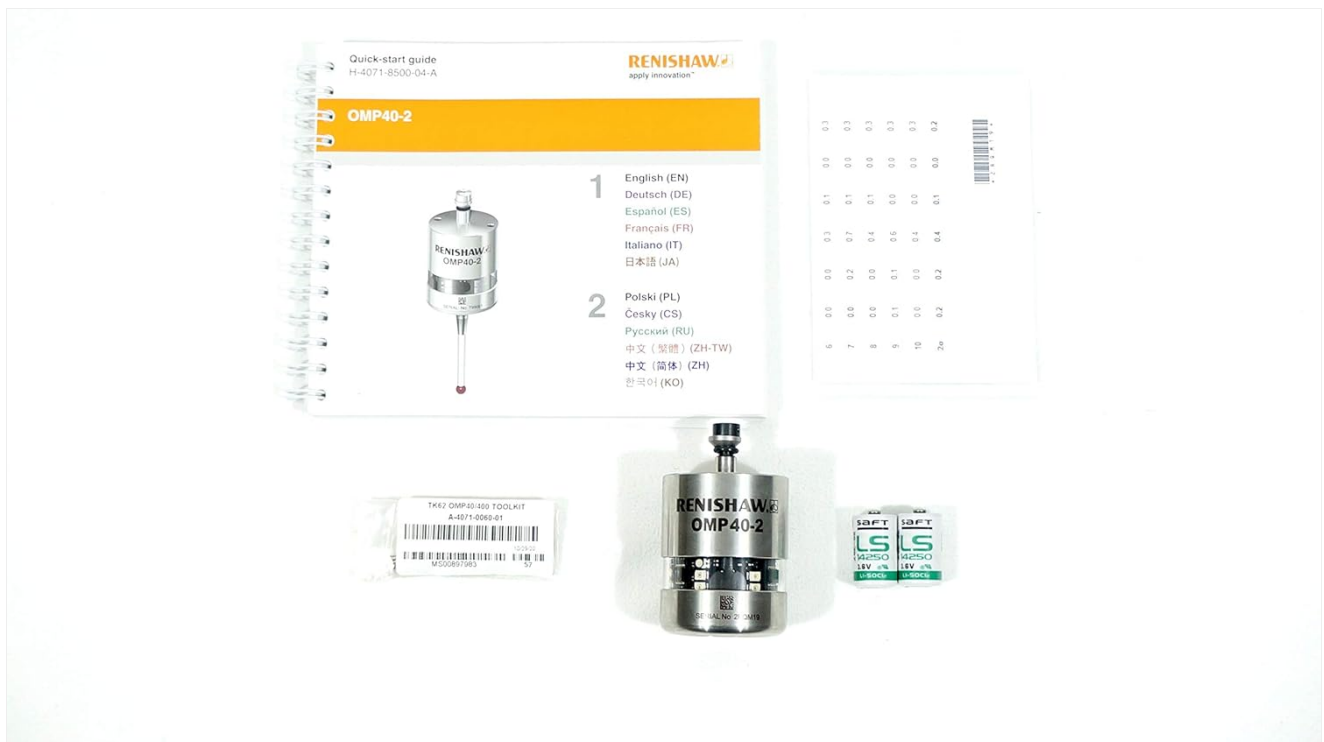


Figure 3.2: Individual components of the OMP40-2 kit, including the probe, quick start guide, and batteries.

4. SETUP AND INSTALLATION

Proper installation is crucial for the accuracy and longevity of your OMP40-2 probe. Refer to the detailed installation guide provided with your kit for specific machine interface instructions.

4.1 Battery Installation

1. Unscrew the battery cap on the probe unit.

2. Insert the two 1/2 AA Lithium batteries, ensuring correct polarity as indicated inside the compartment.
3. Securely fasten the battery cap.



Figure 4.1: The OMP40-2 probe and its batteries, ready for installation.

4.2 Probe Mounting

- Mount the OMP40-2 probe into the machine spindle using the appropriate tool holder.
- Ensure the probe is securely seated and aligned.
- Refer to your machine tool's manual for specific spindle mounting procedures.

4.3 System Pairing and Calibration

The OMP40-2 probe communicates optically with a receiver unit on the machine. Follow these general steps:

1. Power on the machine tool and the probe system receiver.
2. Initiate the pairing sequence as per the machine tool controller's instructions and the OMP40-2 quick start guide.
3. Perform a calibration routine using a known reference artifact (e.g., a calibration sphere) to establish probe offsets and ensure measurement accuracy.
4. Verify successful communication and calibration before proceeding with measurements.

5. OPERATING INSTRUCTIONS

The Renishaw OMP40-2 probe is designed for automated measurement cycles. Operation is typically controlled via the machine tool's CNC program.

5.1 Workpiece Set-up

- Use the probe to accurately locate workpiece datums (e.g., edges, bores, surfaces) before machining operations.
- This allows for precise alignment of the workpiece with the machine's coordinate system, reducing manual setup time and errors.

5.2 In-Process Measurement

- Integrate probing cycles within machining programs to measure critical features during the manufacturing process.

- This enables adaptive machining, where subsequent operations can be adjusted based on real-time measurements, improving part quality and reducing scrap.

5.3 Post-Process Inspection

- After machining, use the probe to perform final inspection of part dimensions and geometry directly on the machine.
- This provides immediate feedback on part quality and can eliminate the need for separate inspection steps.

Note: Always ensure the probe stylus is clean and undamaged before any measurement cycle. Refer to your machine tool's programming manual for specific G-code or macro instructions for probing cycles.

6. MAINTENANCE

Regular maintenance ensures the accuracy and reliability of your Renishaw OMP40-2 probe.

6.1 Cleaning

- **Probe Body:** Wipe the probe body with a clean, soft cloth. Avoid using harsh chemicals or abrasive materials.
- **Stylus:** Gently clean the stylus tip with a lint-free cloth. Ensure no debris is present on the ruby ball.
- **Optical Window:** Keep the optical transmission window clean and free from coolant or debris to ensure reliable signal transmission.

6.2 Battery Replacement

- Replace batteries promptly when the low battery indicator is observed (refer to your machine interface for indicator details).
- Always use recommended 1/2 AA Lithium batteries for optimal performance and battery life.
- Dispose of used batteries according to local regulations.

6.3 Stylus Inspection and Replacement

- Periodically inspect the stylus for wear, damage, or signs of impact.
- A damaged stylus can significantly affect measurement accuracy and must be replaced immediately with a genuine Renishaw replacement stylus.
- After stylus replacement, always perform a full probe calibration.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your OMP40-2 probe.

Problem	Possible Cause	Solution
No signal/communication loss	Low batteries, obstructed optical path, probe out of range, receiver fault.	Check/replace batteries. Clean optical window on probe and receiver. Ensure probe is within receiver's line of sight and operating range. Consult machine tool manual for receiver diagnostics.

Problem	Possible Cause	Solution
Inaccurate measurements	Uncalibrated probe, damaged stylus, debris on stylus, thermal drift, machine geometry errors.	Perform probe calibration. Inspect and replace damaged stylus. Clean stylus tip. Allow machine to reach thermal stability. Verify machine tool accuracy.
Probe not triggering	Stylus stuck, probe damaged, incorrect trigger force setting (if adjustable).	Inspect stylus for obstruction or damage. If probe is damaged, contact Renishaw support. Check machine parameters for trigger force settings.

For issues not listed here, or if solutions do not resolve the problem, contact Renishaw technical support or your authorized distributor.

8. TECHNICAL SPECIFICATIONS

The following specifications are typical for the Renishaw OMP40-2 probe. Refer to the official Renishaw datasheet for complete and up-to-date specifications.

- **Model:** OMP40-2
- **Manufacturer:** Renishaw
- **Transmission:** Optical
- **Probe Type:** 3D Touch-Trigger
- **Application:** Workpiece set-up and inspection on small to medium machining centers.
- **Power Source:** 2 x 1/2 AA Lithium batteries
- **ASIN:** B01HDWK3CM
- **Date First Available:** June 21, 2016

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The Renishaw OMP40-2 Machine Tool Probe Kit is typically sold with a manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation included with your product or contact Renishaw directly. Keep your proof of purchase for warranty claims.


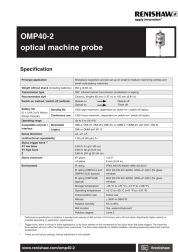
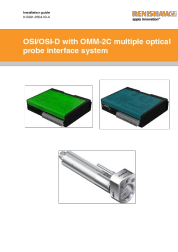



9.2 Technical Support

For technical assistance, service, or spare parts, please contact Renishaw customer support or your local authorized Renishaw distributor. Contact information can usually be found on the Renishaw official website or in the product packaging.

Manufacturer: Renishaw

Website: www.renishaw.com

Related Documents - OMP40-2

	<p>Renishaw OMP40-2 Optical Machine Probe Installation Guide</p> <p>This guide provides comprehensive installation, setup, and configuration details for the Renishaw OMP40-2 optical machine probe, a key component for automated workpiece inspection and job setup in CNC machining environments.</p>
	<p>Renishaw OMP40-2 Optical Machine Probe: Specifications and Performance</p> <p>Detailed specifications, dimensions, installation guide, and performance envelopes for the Renishaw OMP40-2 optical machine probe, designed for workpiece inspection and job set-up on small to medium machining centres.</p>
	<p>Renishaw OSI/OSI-D with OMM-2C Installation Guide: System Setup and Operation</p> <p>Comprehensive installation guide for the Renishaw OSI/OSI-D with OMM-2C multiple optical probe interface system. Covers setup, configuration, maintenance, and troubleshooting for industrial CNC applications.</p>
	<p>Renishaw RMP60 Quick-Start Guide</p> <p>Quick-start guide for the Renishaw RMP60 radio probe, detailing initial setup and operation for machine tool inspection.</p>
	<p>Renishaw Probe Software for Machine Tools: Programs and Features</p> <p>Explore Renishaw's comprehensive probe software for machine tools, detailing programs and features for machining centres, lathes, and multi-axis applications. Discover Inspection Plus, Productivity+™ Scanning Suite, AxiSet™ Check-Up, and smartphone apps for enhanced manufacturing efficiency.</p>
	<p>Renishaw RMP60 (QE) Radio Machine Probe Installation Guide</p> <p>Comprehensive installation guide for the Renishaw RMP60 (QE) radio machine probe. Covers setup, configuration, system integration with RMI-Q/RMI-QE, maintenance, and troubleshooting for industrial metrology applications.</p>