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SHIMANO FH-M770-S

Shimano XT FH-M770-S Freehub Body Instruction Manual

Model: FH-M770-S | Brand: SHIMANO

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Shimano XT FH-M770-S Freehub Body. The freehub body is a critical component of your bicycle's rear hub, allowing the cassette to rotate freely when coasting and engage the wheel when pedaling. Understanding its function and proper care will ensure a smooth and reliable cycling experience. Shimano freehub bodies are hub-specific. If your current freehub body is exhibiting grinding noises or if the internal race is pitted due to lack of maintenance, replacing it with the correct model will restore smooth and quiet operation to your rear wheel.

2. SETUP AND INSTALLATION

The Shimano XT FH-M770-S Freehub Body is designed for compatibility with Shimano XT M770, M775, and M785 series rear hubs. Ensure your hub is compatible before proceeding with installation.

Required Tools:

- Cone wrenches (specific sizes may vary)
- Hex wrench (typically 10mm or 12mm for the fixing bolt)
- Cassette lockring tool
- Chain whip
- Grease

Installation Steps:

1. **Remove the Cassette:** Using a chain whip and cassette lockring tool, remove the cassette from the existing freehub body.
2. **Disassemble the Hub:** Carefully remove the axle, cones, and locknuts from the non-drive side of the hub.

3. **Remove Old Freehub Body:** Locate the freehub fixing bolt inside the hub shell (accessible from the non-drive side). Use the appropriate hex wrench to loosen and remove this bolt. The old freehub body can then be pulled off.
4. **Prepare New Freehub Body:** Apply a thin layer of grease to the threads of the new FH-M770-S freehub body and to the freehub fixing bolt.
5. **Install New Freehub Body:** Slide the new freehub body onto the hub shell, ensuring the splines align correctly. Insert the fixing bolt and tighten it securely with the hex wrench. Refer to Shimano's technical documentation for specific torque values if available.
6. **Reassemble Hub:** Reinstall the axle, cones, and locknuts. Adjust the hub bearings to eliminate play while allowing the axle to spin freely.
7. **Install Cassette:** Slide the cassette onto the new freehub body, ensuring the splines align. Secure it with the cassette lockring, tightening to the manufacturer's specified torque.



Figure 1: The Shimano XT FH-M770-S Freehub Body. This image shows the complete freehub body with its splined interface for the cassette and the fixing bolt attachment point, ready for installation onto a compatible Shimano XT hub.

3. OPERATING PRINCIPLES

The freehub body houses a ratchet mechanism (pawls and springs) that allows the rear wheel to spin independently of the cassette when you stop pedaling (coasting). When you begin to pedal, the pawls engage with the hub shell, transferring power from the cassette to the wheel. A properly functioning freehub body provides immediate and smooth engagement when pedaling and silent, friction-free coasting.

4. MAINTENANCE

Regular maintenance of your freehub body is crucial for its longevity and performance. While the FH-M770-S is a sealed unit, external cleaning and periodic inspection are recommended.

- **Cleaning:** Keep the exterior of the freehub body and cassette clean from dirt and grime. Use a degreaser for the cassette and a damp cloth for the freehub body. Avoid spraying high-pressure water directly into the hub area, as this can force contaminants past seals.
- **Inspection:** Periodically check for any lateral play in the cassette. Excessive play can indicate wear in the freehub body bearings or a loose fixing bolt. Also, listen for any unusual noises during coasting or engagement.
- **Lubrication:** The internal mechanism of the freehub body is factory-lubricated. Disassembly for internal lubrication is generally not recommended for this sealed unit unless specific issues arise and you possess the necessary technical expertise and tools. Improper reassembly can lead to malfunction.

5. TROUBLESHOOTING

Addressing common issues can help maintain your freehub body's performance.

- **Grinding Noise or Rough Spinning:** This is a primary indicator of internal wear or contamination within the freehub body. If cleaning and external inspection do not resolve the issue, replacement of the freehub body is typically required.
- **Excessive Cassette Wobble/Play:** First, ensure the cassette lockring is tightened to the correct torque. If wobble persists, check for play in the hub bearings. If hub bearings are properly adjusted and the lockring is tight, the freehub body's internal bearings may be worn, necessitating replacement.
- **Freehub Not Engaging (Pedals Spin Freely without Moving Wheel):** This indicates a failure of the internal pawl mechanism. This usually requires freehub body replacement.
- **Freehub Not Freewheeling (Wheel Locks Up when Coasting):** This is a serious issue, often caused by seized pawls or contaminated lubricant. Immediate replacement of the freehub body is necessary to prevent damage and ensure safe operation.

6. SPECIFICATIONS

Brand	SHIMANO
Model Number	FH-M770-S (Manufacturer Part Number: Y3CZ98040)
Compatibility	Shimano XT M770, M775, M785 series hubs
Material	Aluminum
Item Weight	5.44 ounces (approx. 154 grams)
UPC	689228220508
GTIN	00689228220508

7. WARRANTY AND SUPPORT

For specific warranty information regarding your Shimano XT FH-M770-S Freehub Body, please refer to the documentation provided with your original hub or contact Shimano customer support directly. Shimano

products are designed for durability and performance, and genuine parts ensure continued reliability. If you require technical assistance or have questions not covered in this manual, please visit the official Shimano website or contact an authorized Shimano dealer or service center.