SHIMANO RD-M591

Shimano RD-M591 Deore SGS Rear Derailleur Instruction Manual

Model: RD-M591

1. Introduction

This instruction manual provides essential information for the proper installation, adjustment, operation, and maintenance of your Shimano RD-M591 Deore SGS Rear Derailleur. Adhering to these instructions will ensure optimal performance and longevity of the component. The RD-M591 is designed for 9-speed bicycle drivetrains, featuring a long cage for wide gear range compatibility.



Figure 1: Shimano RD-M591 Deore SGS Rear Derailleur. This image displays the complete rear derailleur unit, highlighting its black finish, long cage, and pulley wheels. The Shimano and Deore branding are visible on the body.

2. Safety Information

Always observe the following safety precautions to prevent injury and damage to your bicycle.

- Read all instructions thoroughly before installation and use.
- Wear appropriate safety gear, including eye protection, during installation and maintenance.
- Ensure all bolts are tightened to the manufacturer's specified torque values. Overtightening can strip threads, and undertightening can lead to component failure.
- Keep hands and clothing clear of moving parts, especially the chain and derailleur pulleys, when the bicycle is in motion or being adjusted.
- If you are unsure about any installation or adjustment procedure, consult a professional bicycle mechanic.
- Regularly inspect the derailleur for signs of wear, damage, or loose components.

3. Package Contents

Verify that all components are present before beginning installation.

- Shimano RD-M591 Deore SGS Rear Derailleur (1 unit)
- Instruction Manual (this document)
- *Note: Mounting bolt and cable fixing bolt are integrated into the derailleur.*

4. Setup and Installation

Proper installation is crucial for optimal shifting performance.

4.1 Mounting the Derailleur

1. Ensure your bicycle frame has a direct mount derailleur hanger.
2. Apply a small amount of grease to the derailleur hanger threads.
3. Thread the derailleur mounting bolt into the hanger. Tighten to the manufacturer's specified torque (typically 8-10 Nm).

4.2 Cable Installation and Routing

1. Route the shift cable through the frame's cable guides and housing.
2. Ensure the cable housing is cut cleanly and has ferrules installed at each end.
3. With the shifter in the highest gear (smallest cog position), pull the cable taut and secure it to the derailleur's cable fixing bolt. Tighten the bolt to the specified torque (typically 5-7 Nm).

4.3 Chain Installation and Length

Install a 9-speed compatible chain. The correct chain length is critical for proper shifting and to prevent damage.

- Wrap the chain around the largest chainring and largest cog, bypassing the derailleur.
- Add two full links (one inner and one outer) to this length. This is the minimum length.
- Connect the chain using a master link or chain pin according to the chain manufacturer's instructions.

4.4 Limit Screw Adjustment

Limit screws prevent the derailleur from shifting the chain off the smallest or largest cog.

1. **High Limit (H) Screw:** Shift the chain to the smallest cog. Adjust the 'H' screw so that the upper guide pulley is directly aligned with the outer edge of the smallest cog.
2. **Low Limit (L) Screw:** Shift the chain to the largest cog. Adjust the 'L' screw so that the upper guide pulley is directly aligned with the inner edge of the largest cog.

4.5 B-Tension Adjustment

The B-tension screw adjusts the distance between the upper guide pulley and the cogs.

- Shift the chain to the largest cog.
- Turn the B-tension screw until there is a small gap (approximately 5-6mm) between the upper guide pulley and the largest cog. This prevents the pulley from rubbing the cog.



Figure 2: Close-up view of the Shimano RD-M591 derailleur body. This image provides a detailed look at the adjustment screws (H, L, B-tension) and cable routing point, which are crucial for proper setup.

5. Operating Instructions

The Shimano RD-M591 Deore SGS Rear Derailleur is designed for smooth and precise 9-speed shifting.

- **Shifting:** Use compatible 9-speed Shimano RapidFire shifters to change gears. Push the larger lever to shift to a larger cog (easier gear) and the smaller lever to shift to a smaller cog (harder gear).
- **Smooth Operation:** For best results, shift gears while pedaling with moderate pressure. Avoid shifting under heavy load or when stationary.

- **Chain Tension:** The strong guide spring helps maintain consistent chain tension, reducing chain slap and improving shifting accuracy.

6. Maintenance

Regular maintenance ensures reliable performance and extends the lifespan of your derailleur.

- **Cleaning:** Periodically clean the derailleur body, cage, and pulley wheels to remove dirt and grime. Use a degreaser specifically designed for bicycle components.
- **Lubrication:** Apply a small amount of bicycle-specific lubricant to the pivot points of the derailleur and the pulley wheel bearings. Avoid over-lubrication, which can attract dirt.
- **Inspection:** Regularly check for bent derailleur hangers, worn pulley wheels, loose bolts, or damaged cables/housing. Replace worn or damaged parts promptly.
- **Cable Tension:** Over time, shift cables can stretch. If shifting becomes less precise, adjust the cable tension using the barrel adjuster on the shifter or derailleur. Turn clockwise to loosen (shift to smaller cog), counter-clockwise to tighten (shift to larger cog).

7. Troubleshooting

Refer to the following common issues and their solutions.

Problem	Possible Cause	Solution
Chain skips gears or shifts poorly	Incorrect cable tension, bent derailleur hanger, worn chain/cassette, improperly adjusted limit screws.	Adjust cable tension with barrel adjuster. Check and straighten derailleur hanger. Inspect and replace worn drivetrain components. Re-adjust limit screws.
Derailleur does not shift to smallest/largest cog	Limit screws set too tight.	Loosen the 'H' (for smallest cog) or 'L' (for largest cog) limit screw slightly.
Upper pulley rubs against cogs	Incorrect B-tension adjustment.	Adjust the B-tension screw to increase the gap between the pulley and the largest cog.
Noisy shifting	Lack of lubrication, dirty components, misaligned derailleur.	Clean and lubricate the derailleur and chain. Check derailleur alignment.

8. Specifications

Brand	SHIMANO
Model Number	RD-M591
Speed Compatibility	9-Speed
Cage Type	SGS (Long Cage)
Maximum Cassette Capacity	34T
Mounting Type	Direct Mount

Material	Alloy Steel
Item Weight	0.8 Pounds (approx. 363g)
Product Dimensions (L x W x H)	6.5" x 4.25" x 3.75"
UPC	689228295469

9. Warranty and Support

For warranty information and technical support, please refer to the official SHIMANO website or contact your authorized SHIMANO dealer. Keep your proof of purchase for warranty claims.
Visit the SHIMANO Store on Amazon for more product information and support resources.

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