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Exedy MC501

EXEDY MC501 Clutch Master Cylinder User Manual

Model: MC501 | Brand: Exedy

1. PRODUCT OVERVIEW

The EXEDY MC501 Clutch Master Cylinder is a critical component in a vehicle's hydraulic clutch system. It is designed to convert the mechanical force from the clutch pedal into hydraulic pressure, which is then transmitted to the clutch slave cylinder to disengage or engage the clutch.

This master cylinder is manufactured by EXEDY, a global leader in clutch and powertrain products, known for its commitment to quality and reliability.



Image 1.1: The EXEDY MC501 Clutch Master Cylinder. This component is essential for the proper functioning of a hydraulic clutch system, translating pedal input into hydraulic force.

2. INSTALLATION (SETUP)

Installation of the EXEDY MC501 Clutch Master Cylinder requires mechanical expertise and should ideally be performed by a qualified automotive technician. Improper installation can lead to system malfunction, vehicle damage, or personal injury.

2.1 Safety Precautions

- Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Ensure the vehicle is securely supported on jack stands or a lift.
- Disconnect the vehicle's battery before beginning work.
- Exercise caution when handling brake fluid, as it can damage paint and is an irritant.

2.2 General Installation Steps

1. **Preparation:** Locate the existing clutch master cylinder. Place a drain pan beneath the master cylinder to catch any leaking fluid.
2. **Fluid Drainage:** Carefully disconnect the hydraulic line(s) from the old master cylinder and allow fluid to drain. Cap lines to prevent excessive fluid loss and contamination.

3. **Removal:** Unbolt the old master cylinder from the firewall or mounting bracket. Disconnect the pushrod from the clutch pedal.
4. **Installation of New Unit:** Mount the new EXEDY MC501 master cylinder in place, ensuring proper alignment. Reconnect the pushrod to the clutch pedal.
5. **Hydraulic Connections:** Reconnect the hydraulic line(s) to the new master cylinder. Ensure all connections are secure and tightened to manufacturer specifications.
6. **Fluid Fill:** Fill the clutch fluid reservoir with new, clean brake fluid (typically DOT 3 or DOT 4, as specified by the vehicle manufacturer).
7. **Bleeding the System:** This is a critical step. The hydraulic clutch system must be properly bled to remove all air. Follow the vehicle manufacturer's specific bleeding procedure, which usually involves pumping the clutch pedal while opening and closing a bleed screw on the slave cylinder. Repeat until no air bubbles are visible in the fluid.
8. **Final Checks:** Inspect for any leaks around the master cylinder and hydraulic lines. Test the clutch pedal for proper feel and engagement/disengagement.

Refer to your vehicle's specific service manual for detailed, model-specific installation instructions and torque specifications.

3. OPERATING PRINCIPLES

The EXEDY MC501 Clutch Master Cylinder operates as the primary hydraulic pump in your vehicle's clutch system. When the driver depresses the clutch pedal, the master cylinder's internal piston moves, forcing hydraulic fluid (typically brake fluid) through the hydraulic line to the clutch slave cylinder.

This hydraulic pressure causes the slave cylinder to actuate the clutch release fork, which in turn disengages the clutch from the flywheel, allowing for gear changes. When the clutch pedal is released, the master cylinder allows fluid to return, re-engaging the clutch.

Proper operation relies on a sealed system free of air and with adequate fluid levels. Any air in the system or low fluid can compromise the master cylinder's ability to generate sufficient pressure, leading to a spongy pedal or incomplete clutch disengagement.

4. MAINTENANCE

Regular maintenance of your vehicle's hydraulic clutch system, including the master cylinder, is crucial for its longevity and reliable performance.

4.1 Fluid Level Check

- Periodically check the fluid level in the clutch fluid reservoir. This reservoir is often shared with the brake system.
- Ensure the fluid level is between the 'MIN' and 'MAX' marks.
- If the fluid level is consistently low, inspect for leaks in the system.

4.2 Fluid Condition

- Observe the color of the clutch fluid. It should be clear or light amber. Dark or cloudy fluid indicates contamination and requires replacement.
- Refer to your vehicle's service manual for recommended fluid replacement intervals.

4.3 Leak Inspection

- Visually inspect the master cylinder, hydraulic lines, and slave cylinder for any signs of fluid leaks.
- Address any leaks promptly to prevent system failure and potential damage to vehicle components.

5. TROUBLESHOOTING

If you experience issues with your clutch system, the master cylinder may be a contributing factor. Below are common symptoms and potential causes related to the master cylinder:

Symptom	Possible Cause (Master Cylinder Related)	Action
Spongy or soft clutch pedal	Air in the hydraulic system; low fluid level; internal seal failure in master cylinder.	Check fluid level and bleed the system. If issue persists, inspect master cylinder for internal failure.
Clutch not fully disengaging (difficulty shifting gears)	Insufficient hydraulic pressure from master cylinder due to air, low fluid, or internal wear.	Check fluid level and bleed the system. If issue persists, master cylinder may need replacement.
Fluid leaks around master cylinder	Damaged seals or housing; loose connections.	Inspect for visible leaks. Tighten connections. If leaks persist, master cylinder likely needs replacement.
Clutch pedal sticks to the floor	Internal master cylinder failure (piston sticking).	Master cylinder likely requires replacement.

If you are unable to diagnose or resolve an issue, it is highly recommended to consult a certified automotive technician.

6. SPECIFICATIONS

The following specifications apply to the EXEDY MC501 Clutch Master Cylinder:

- **Manufacturer:** EXEDY
- **Brand:** Exedy
- **Model:** MC501
- **Item Weight:** 1.15 pounds
- **Product Dimensions:** 10 x 5.5 x 2.5 inches
- **Country of Origin:** Taiwan
- **Exterior Finish:** Machined
- **Manufacturer Part Number:** MC501
- **ASIN:** B0049TUI82

7. WARRANTY AND SUPPORT

EXEDY Globalparts Corporation (USA) is a wholly owned subsidiary of the EXEDY Corporation of Japan. EXEDY (Japan) was founded in 1923 and its clutch manufacturing business and prominent brand name Daikin Clutch are known throughout the world for supplying quality powertrain products. Our pursuit of perfection and the assurance of safety underlie our famed quality and reliability.

For specific warranty information, terms, and conditions related to your EXEDY MC501 Clutch Master Cylinder, please refer to the warranty documentation included with your purchase or visit the official EXEDY website. For technical support or assistance with product-related inquiries, please contact EXEDY customer service or an authorized EXEDY dealer.



Image 7.1: The official EXEDY company logo, representing a commitment to quality and innovation in powertrain products.

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This manual is for informational purposes only. Always consult a qualified professional for installation and service.