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Cardone 13-4020

Cardone Select 13-4020 New Brake Master Cylinder Instruction Manual

Brand: Cardone | **Model:** 13-4020

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your Cardone Select 13-4020 New Brake Master Cylinder. The brake master cylinder is a critical component of your vehicle's hydraulic braking system, responsible for converting the mechanical force from the brake pedal into hydraulic pressure to actuate the brake calipers or wheel cylinders.

Cardone New Master Cylinders are engineered to meet Original Equipment (O.E.) performance standards. They feature O.E.-quality seals and cups, and are endurance-tested to ensure precise fit, function, and reliable performance. Bores are manufactured to critical micro-finish specifications to prevent pitting and corrosion, while castings are treated with a protective coating to enhance durability.



Image 1.1: Front view of the Cardone Select 13-4020 New Brake Master Cylinder. This image displays the main body of the cylinder with its integrated fluid reservoir.

2. Safety Information

WARNING: Brake system work requires specialized knowledge and tools. Improper installation or maintenance can lead to brake failure, resulting in serious injury or death. If you are not confident in your ability to perform this installation, seek assistance from a qualified automotive technician.

- Always wear appropriate personal protective equipment, including safety glasses and gloves, when working on vehicle brake systems.
- Brake fluid is corrosive and can damage paint and other surfaces. Handle with care and clean up spills immediately.
- Never mix different types of brake fluid. Use only the type specified by your vehicle manufacturer.
- Ensure the vehicle is securely supported on jack stands before beginning any work.
- Consult your vehicle's specific service manual for detailed removal and installation procedures.

3. Package Contents

Verify that all components are present and undamaged before beginning installation.

- Cardone Select 13-4020 New Brake Master Cylinder
- Mounting hardware (where applicable)
- Bleeding kits (where applicable)

4. Setup and Installation

The following steps provide a general overview. Always refer to your vehicle's specific service manual for precise instructions and torque specifications.

1. **Preparation:**
    - Park the vehicle on a level surface and engage the parking brake.
    - Disconnect the negative terminal of the vehicle's battery.
    - Place a drain pan beneath the master cylinder to catch any spilled brake fluid.
2. **Removal of Old Master Cylinder:**
    - Carefully disconnect the brake lines from the master cylinder using a flare nut wrench to prevent rounding the fittings.
    - Remove the mounting nuts or bolts securing the master cylinder to the brake booster.
    - Gently pull the old master cylinder away from the booster and remove it from the vehicle.
3. **Installation of New Master Cylinder:**
    - Bench bleed the new master cylinder before installation. This involves filling the reservoir with new brake fluid and using the provided bleeding kits (if applicable) to expel air from the cylinder's internal passages.
    - Mount the new master cylinder onto the brake booster, ensuring proper alignment.
    - Secure the master cylinder with the mounting nuts or bolts, tightening to the vehicle manufacturer's specified torque.
    - Reconnect the brake lines to the master cylinder, ensuring fittings are clean and tightened securely.
4. **Bleeding the Brake System:**
    - After installation, the entire brake system must be bled to remove any air that may have entered the lines.

- Follow your vehicle's service manual for the correct bleeding sequence and procedure. This typically involves bleeding the wheel furthest from the master cylinder first, then working closer.
- Maintain the brake fluid level in the master cylinder reservoir throughout the bleeding process.

5. **Final Checks:**
   - Inspect all connections for leaks.
   - Test the brake pedal for firmness. If the pedal feels spongy, re-bleed the system.
   - Reconnect the battery.
   - Perform a road test in a safe area at low speed to confirm proper brake function.



Image 4.1: Rear view of the Cardone Select 13-4020 New Brake Master Cylinder, showing the mounting flange and piston rod.

5. Operating Principles

The Cardone Select 13-4020 Brake Master Cylinder operates on the principle of hydraulic pressure. When the brake pedal is pressed, it pushes a piston (or pistons) inside the master cylinder. This action forces brake fluid through the brake lines to the calipers (disc brakes) or wheel cylinders (drum brakes) at each wheel. The hydraulic pressure generated causes the brake pads or shoes to engage the rotors or drums, slowing or stopping the vehicle.

The dual-circuit design of modern master cylinders, including this unit, provides a safety feature by separating the hydraulic system into two independent circuits. If one circuit fails, the other can still provide some braking capability.

6. Maintenance

Regular maintenance of your brake system, including the master cylinder, is crucial for safe vehicle operation.

- **Brake Fluid Level:** Periodically check the brake fluid level in the master cylinder reservoir. The level should be between the 'MIN' and 'MAX' marks. A consistently low fluid level may indicate a leak in the system or worn brake pads.
- **Brake Fluid Condition:** Brake fluid absorbs moisture over time, which can lead to corrosion and reduced braking

performance. Consult your vehicle's service manual for recommended brake fluid flush intervals.

- **Leak Inspection:** Regularly inspect the master cylinder and surrounding brake lines for any signs of fluid leaks. Address any leaks immediately.
- **System Performance:** Pay attention to changes in brake pedal feel, such as sponginess or excessive travel, which could indicate air in the system or a master cylinder issue.

7. Troubleshooting

If you experience issues with your brake system, consider the following common problems and potential causes related to the master cylinder:

Symptom	Possible Cause (Master Cylinder Related)	Action
Spongy Brake Pedal	Air in the master cylinder or brake lines; internal master cylinder seal failure.	Bleed the brake system thoroughly. If issue persists, inspect master cylinder for internal leaks.
Brake Pedal Sinks Slowly	Internal master cylinder seal failure allowing fluid bypass.	Inspect master cylinder for internal leaks; replacement may be necessary.
Brake Fluid Leaks	External master cylinder seal failure; loose brake line fittings; cracked reservoir.	Inspect for visible leaks. Tighten fittings. Replace master cylinder if seals or reservoir are compromised.
Hard Brake Pedal	Often related to brake booster, but a seized master cylinder piston can contribute.	Check brake booster function. If master cylinder is suspected, inspect for free movement of piston.

If troubleshooting does not resolve the issue, or if you suspect a critical brake component failure, discontinue driving the vehicle and consult a qualified automotive technician immediately.

8. Specifications

Key specifications for the Cardone Select 13-4020 New Brake Master Cylinder:

Specification	Value
Manufacturer	Cardone
Brand	Cardone
Model	New Brake Master Cylinder
Item Weight	1.4 pounds
Product Dimensions	11.9 x 7.6 x 7.1 inches
Item Model Number	13-4020
Exterior	Machined
Manufacturer Part Number	13-4020
OEM Part Number	4720142190

9. Warranty Information

For specific warranty terms and conditions applicable to your Cardone Select 13-4020 New Brake Master Cylinder, please refer to the documentation included with your purchase or visit the official Cardone website. Warranty coverage typically addresses defects in materials and workmanship under normal use.

10. Support

If you require technical assistance, have questions regarding installation, or need to report a product issue, please contact Cardone customer support through their official website or the retailer from whom the product was purchased. When contacting support, please have your product model number (13-4020) and purchase details readily available.

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