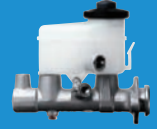
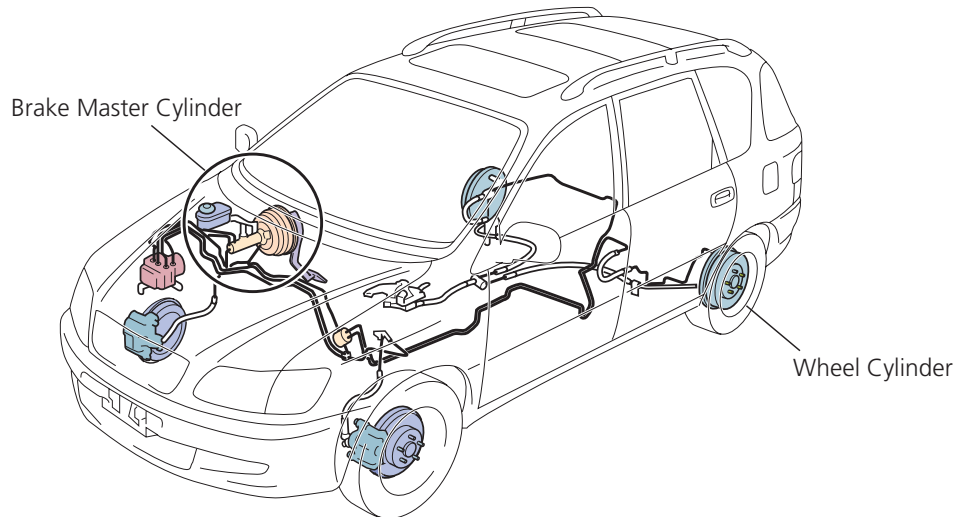


# Brake Master Cylinder

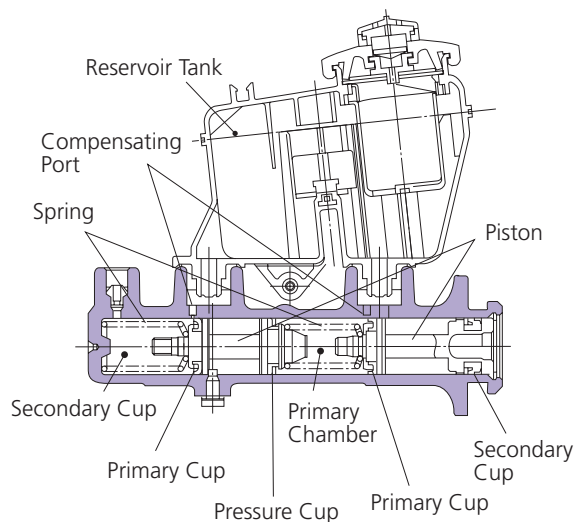


## Function



The brake master cylinder is a device that transforms mechanical force into hydraulic pressure. As the driver presses the brake pedal, the pedal lever applies force to the brake master cylinder which transmits hydraulic pressure to the rest of the brake system components such as the ABS unit, brake calipers and wheel cylinders.

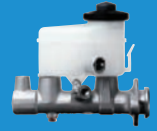
## Structure and Components



The brake master cylinder provides the necessary force to control the application of brake power, and consists of the body, pistons, cups, springs and reservoir tank.

On the front of the body, the primary cup creates hydraulic pressure when fluid is forced inside by the piston. On the back of the body, the secondary cup guides the piston and prevents fluid from leaking. In the center of the body, the pressure cup separates brake fluid from the primary and secondary chambers. When the brake pedal is pressed, the primary cup is blocked away by the piston from the oil spill port leading to the reservoir tank, pressure in the cylinder rises as the fluid is fed through the brake lines. The secondary cup functions similar to and in synchronization with the primary cups. When the brake pedal is released, the hydraulic pressure and the force of the return spring pulls back the piston to relieve fluid back into the reservoir.

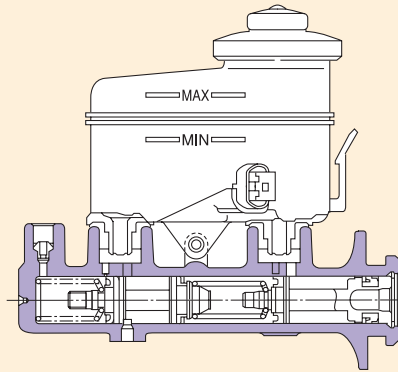
# Variations



There are several variations (types) of brake master cylinders, which is determined by the structure, additional brake assist systems and vehicle application. Though brake master cylinders can be classified into 3 main groups, all types share the basic functions required for braking action such as the generation, retention, and release of hydraulic fluid pressure.

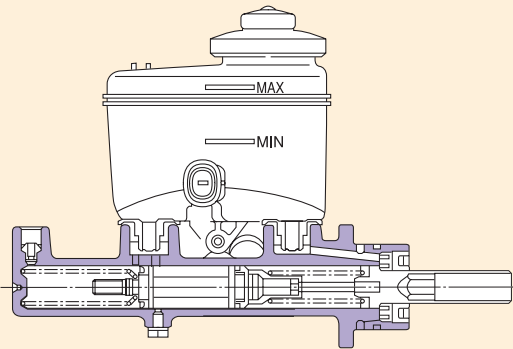
Without ABS

► **Conventional + Conventional**

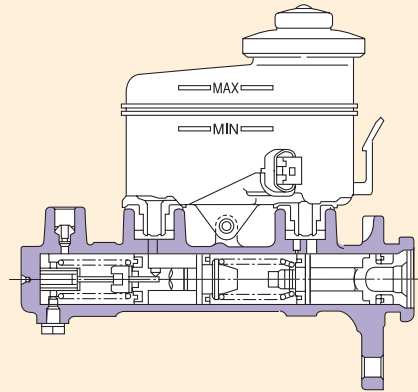


With ABS

► **Long (Conventional + Conventional)**

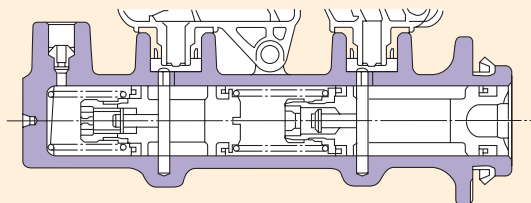


► **Center Valve + Conventional**



With Additional Functions Such as VSC, etc.

► **Center Valve + Center Valve**

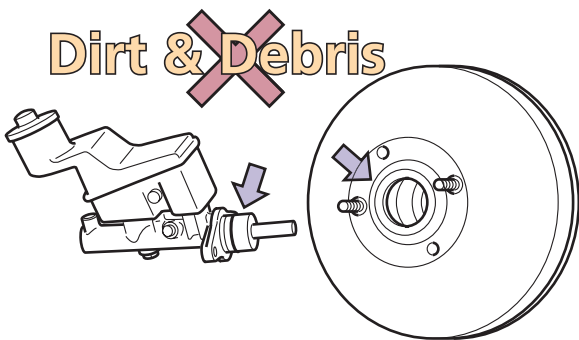


# Installation Procedure

**CAUTION!** Failure to follow recommended procedures may cause brake failure and injury. Always consult the manufacturer's vehicle specific service manual for reference.

1

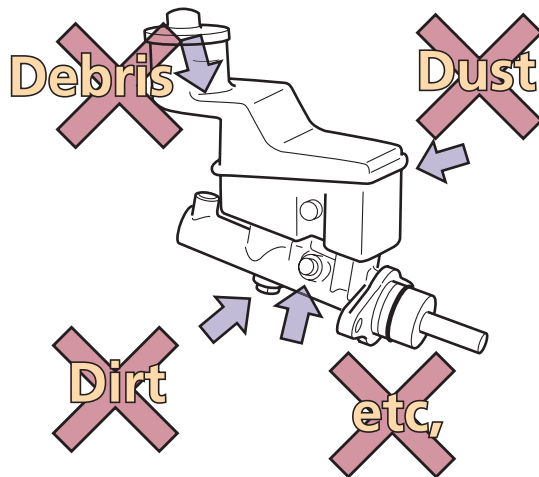
Ensure that mounting areas of the master cylinder and the pipe joints are free of damage and debris.



Fluid leakage and improper hydraulic pressure may cause brake failure.

2

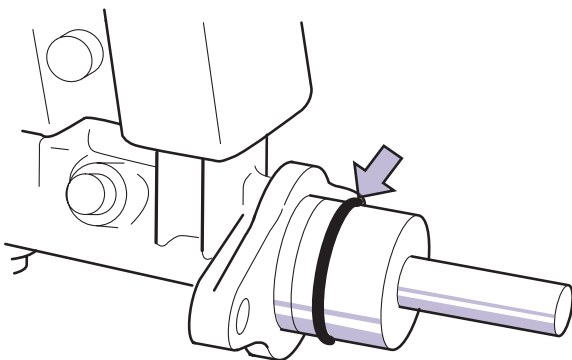
Do not allow dust, dirt, and debris to enter the master cylinder or reservoir tank.



Internal damage may occur, resulting in fluid leakage and improper hydraulic pressure.

3

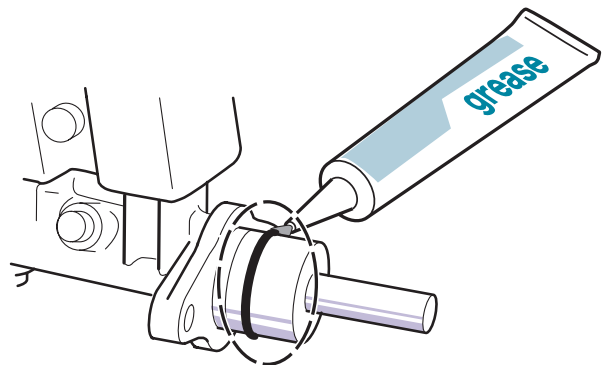
Always use a new O-ring or gasket if required for installation. Ensure proper installation of the O-ring or gasket for proper sealing.



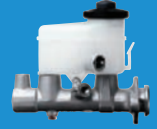
Fluid leakage and improper hydraulic pressure may cause brake failure.

4

Use grease on o-rings and gaskets before installation for proper sealing and installation.



Grease will help seal and install the brake master cylinder correctly to ensure proper hydraulic pressure.



# CAUTION!

Failure to follow recommended procedures may cause brake failure and injury. Always consult the manufacturer's vehicle specific service manual for reference.

5

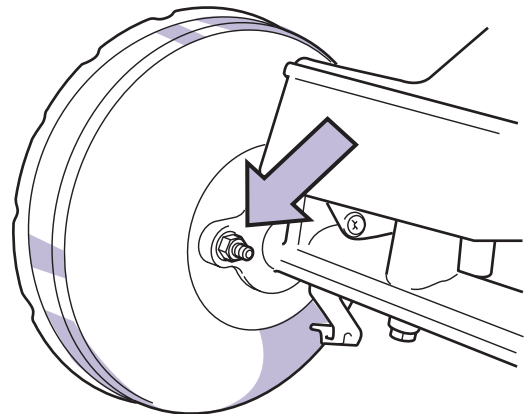
Handle with care. Brake master cylinders are precision manufactured. Do not drop or deform. Never use a damaged unit.



Optimal hydraulic pressure may not be achieved due to damaged internal parts, resulting in incorrect operation and injury.

6

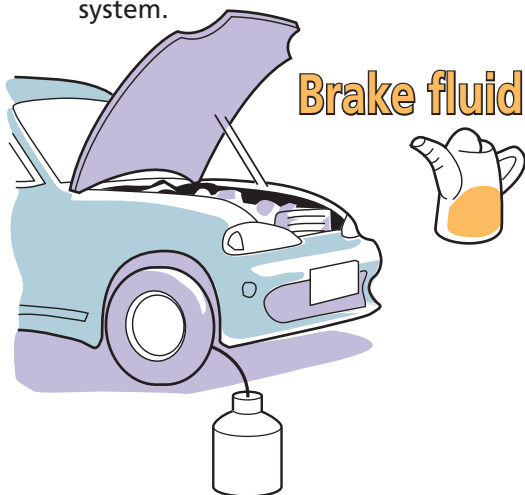
Tighten bolts, nuts, and screws and utilize the proper tools as specified by the manufacturer's vehicle specific manual.



Damage of screws and threads may cause improper braking function.

7

Use new brake fluid that is specified by the manufacturer's vehicle specific manual. Bleed the air accordingly to release trapped air within the hydraulic system.



Optimal hydraulic pressure will not be achieved if correct brake fluid is not used and/or the system was not bled. Brake failure may occur causing damage and injury.