

17-05: Fluid Levels in the Master Cylinder Reservoir

Date: 08-08-2017

Vehicles Involved: All

Condition:

Too Much Brake Fluid:

Overfilling the master cylinder reservoir with brake fluid is a common mistake that causes larger problems with your brake system. Almost all master cylinders on the market today have a max line on the side. The reservoir should not be filled past this line.



Max Line on Master Cylinder Reservoir

As you drive your car and apply your brakes, your brake system heats up, including your brake fluid. As brake fluid heats up, it expands. The path of least resistance leads the brake fluid to expand back into the master cylinder reservoir.

As a test, check your brake fluid level before you go for a drive. Once you are done with your drive, check it again. You will notice that the fluid level is higher because the fluid is hot. As the fluid cools down, it will drop back to a normal level.

This is why it is important not to fill the reservoir above the max line. Most newer vehicle models on the road today have a sealed cap on top of the master cylinder reservoir. If you fill the fluid

above the max line, your fluid runs out of space to expand. This results in your brake pads applying against the rotor automatically without you stepping on the brake pedal. This leads to problems such as:

- Premature pad wear
- Brake drag
- Overheated brake system

Too Little Brake Fluid:

Low fluid levels are caused by:

- Worn down brake pads
- Leakage in the hydraulic system

If the fluid in your master cylinder reservoir drops too low, you run the risk of losing your ability to brake entirely.

It is important to check your fluid level on a regular basis to make sure that it isn't dropping.

Repair Procedure:

Overfilled Master Cylinder:

The repair procedure for an overfilled master cylinder is easy. Simply take a turkey baster and drain the fluid until it sits at the max line.

Underfilled Master Cylinder:

If your fluid levels are low, the first step is to check your brake pads. As your brake pads wear down, the pistons must come farther out of the caliper so that the pads can make contact with the rotor. When the pistons come farther out of the caliper, the void is filled with brake fluid. This causes your fluid levels to drop. To fix this problem, you will have to replace your pads.

If your brakes pads are not worn down, then you have to check your hydraulic system for leaks, including the:

- Master cylinder
- Brake hoses and lines
- Calipers
- Wheel cylinder



Technical

If there is a leak in any of these components, you will either have to repair or replace it. As a reminder, always top off your brake fluid after doing a brake job or repairing a leak.