



Tech Tip

BRAKES 125

CHEVY TRUCK BRAKES Solving Pattern Complaints and Failures

When the hotlines and brake technicians are inundated with multiple complaints of the same nature on a given series vehicle, it's almost certain that the symptoms are a normal characteristic for that platform. While the symptoms may be normal for that vehicle, the owner may not be that understanding. For example, when a customer has a brake job performed on their vehicle they expect a good pedal feel, a quiet stop and no pedal pulsations. Anything less spells trouble for the technician. When you identify a vehicle that has certain characteristics, it would be to your advantage to discuss those conditions with the customer prior to performing the service. It will save you a lot of time defending your service later.

With the Chevy trucks, one such complaint that continues to rear its ugly head is the brake pedal feel, especially following a brake job. The symptoms were present all along, but now that a brake service has just been performed, the pedal feel is the primary focus. Technicians often force several quarts of brake fluid through a system in a futile attempt to obtain a firm pedal feel on one of the mentioned Chevy trucks. If the vehicle is a 1993 or newer truck equipped with four wheel anti-lock, a springy and spongy pedal sensation has been present since the vehicle was new. While the brakes will stop the vehicle perfectly, the vehicle owner and the technician may associate the pedal feel with aerated fluid. It is impossible to achieve a full, firm pedal feel while under power assist. The pedal didn't feel that way when the vehicle was new. The key is determining when you have achieved the best possible pedal height and firmness, and we are about to show you how to confirm that.

MEASURING PEDAL TRAVEL

Once you have bled the system and you are satisfied that all the air has been purged, perform the following pedal travel measurement. If the system passes

this test, you have returned the system to its original spec and this is the best that you can do.

- 1) With the brake system cool and the ignition switch off, apply and release the brake pedal 4-5 times to release the power brake booster's vacuum reserve or power assist.
- 2) With a tape measure, record the distance measured from the steering wheel to the brake pedal.
- 3) Now apply and maintain 100 lbs. of force on the brake pedal and hold the pedal at that position. Measure the distance from the steering wheel to the brake pedal.

Kentmore/OTC offers a brake pedal effort gauge (J28662) that straps to the brake pedal. The gauge will enable the technician to accurately measure the brake pedal force being applied when diagnosing pedal travel.

- 4) Release the pedal and perform the same test described in #3 again. **Reason...**we are establishing an average of the two measurements.
- 5) Now subtract the initial (unapplied) measurement described in #2 from the averaged pedal applied measurement described in #3. This will establish the brake pedal travel.
 - a) Vacuum assisted...the maximum pedal travel (switch off, system cool, power assist depleted) is 2.5 inches.
 - b) Hydraulic assisted...the maximum pedal travel (switch off, system cool, power assist depleted) is 3.5 inches.

CAUTION: Do not be surprised if the pedal feel is springy or spongy once the engine is running and the system is under power assist. It has always been that way. Take the vehicle for a test drive and make 10-12 slow stops from 30 mph to seat the pads to the rotors, being careful not to overheat the pads. Once completed, the vehicle will stop with minimum pedal effort and pedal travel.

The vehicle manufacturers recommend making 20-30 stops and caution against overheating the pads for the first 200 miles of pad break-in.

PREMATURE REAR PAD WEAR

Premature rear disc pad wear is not uncommon on 1999–2004 Chevy Silverado and GMC trucks. We hear the complaint often. In most cases the right rear pad is the first to encounter premature wear. The condition occurs on vehicles that have been used extensively off-road or in inclement weather conditions. Road debris or contaminants collect on the caliper and restrict caliper movement, promoting residual drag conditions and premature wear. The crown of the road/highway may contribute to the condition being more pronounced on the right side, as the water and debris would naturally accumulate on that side of the highway.

Minimizing the accumulation of debris on the rear calipers is the solution. GM recommends installing mud flaps (splash shields) P/N 15765007 forward of each rear wheel. When installed, the splash shields are positioned forward of the bed panel braces (see Fig. 1)

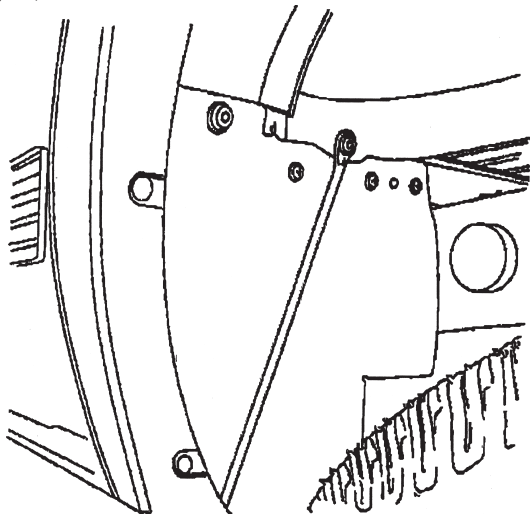


Fig. 1 Splash Shield Installed

LOW PEDAL/RED BRAKE LAMP ILLUMINATED/ WARNING MESSAGE ON

Customer complaints of a low brake pedal condition, the red brake lamp illuminated, and the brake system warning message on, may be due to a loose

caliper banjo bolt. If the vehicle is used in extreme off-road conditions, debris may make contact with the brake hose and loosen the caliper banjo bolts, resulting in a brake fluid leak. A farm vehicle or a teenage driver who does a lot of 4-wheeling are two good examples of extreme service. Most GM trucks from 2000–2004, in addition to Suburban, Avalanche and Yukon XL may be affected.

Inspect the rear calipers for evidence of fluid leakage. If a leak is present, the banjo bolt copper gaskets should be replaced and the caliper thoroughly cleaned. To prevent a reoccurrence, GM recommends installing a shield kit (P/N 15188166) on each rear caliper to prevent debris from making contact with the brake hose and banjo bolt (see Fig. 2). Included in the kit are two new caliper guide pin bolts and attaching nuts, necessary to secure the protective shield to the caliper.

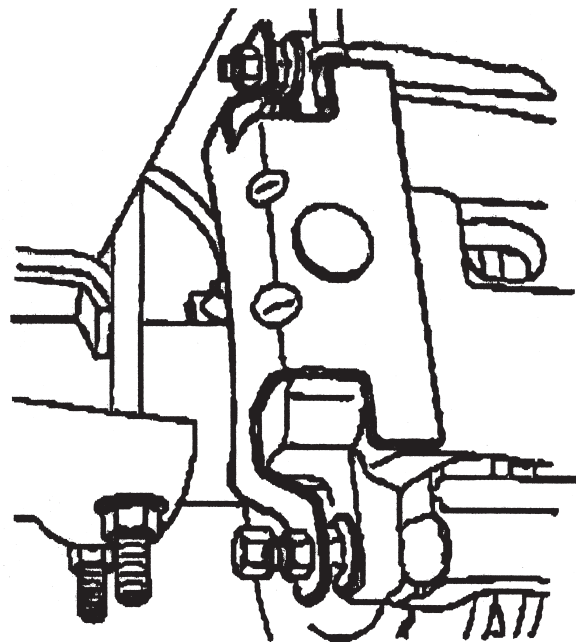


Fig. 2 Rear Caliper Shield

The most experienced technician is no match for a problem or condition that results due to the design of the system. Having access to any factory information and good communication with the vehicle owner is the only way to deal with the symptoms.

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