BRAKE AND SUSPENSION SOLUTIONS

Diagnosing a squeak, rattle or knocking condition can be a frustrating experience. The first step in the diagnostic process is to always make a road test with the vehicle owner. Identifying the noise or symptom is the first priority, or else you may waste a lot of diagnostic time chasing the wrong problem. Chances are they will not be willing to pay for the lost labor. Let's consider some cases that may save you some diagnostic time and frustration in trying to identify the source of a brake or suspension noise complaint.

SLOW SPEED RATTLE

Customer complaints of front-end rattling noises from owners of 2005–2006 Chevrolet Equinox, 2006 Pontiac Torrent and 2002–2006 Saturn VUE vehicles may be due to front caliper rattle. The condition is especially pronounced when the vehicles are driven on rough road surface conditions. To determine if the noise condition is caliper related, slightly apply the brakes when the noise is present. If this eliminates the symptom and the noise returns when the brakes are released, the lower bushings on the front calipers will require replacement.

PROCEDURE:

1) Raise and properly support the vehicle (think safety).
2) Remove the wheel and tire.
3) Reinstall and tighten 2 lugs to secure the rotor to the hub.
4) With a large C clamp, compress the piston into the caliper bore, and remove the C clamp.
5) Remove the lower caliper guide pin bolt.
6) With the brake hose still attached, pivot the caliper upward and secure the caliper with mechanic's wire (see Fig. 1).
7) Remove the lower caliper guide pin, being careful not to damage the pin boot.
8) Remove the rubber bushing from the caliper guide pin (see Fig. 1).
9) Clean the caliper guide pin and install replacement bushing (GM #15824369). Lubricate the guide pin and bushing with high temp silicone brake lubricant.
10) Remove the support wire and rotate the caliper into position over the disc pads.
11) Install the lower caliper guide pin and torque to 32 ft. lbs.
12) Repeat the procedure on the opposite side.

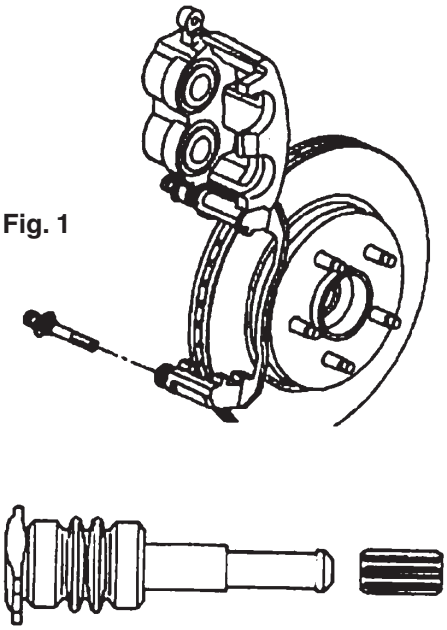

Fig. 1

PARKING BRAKE PROBLEMS AND SOLUTIONS

Little attention is given to the parking brake until a seized cable results in a brake drag condition or a wheel lock-up. We have reviewed many service bulletins from the vehicle manufacturers addressing brake performance or noise related complaints from parking brake systems. From the information we have reviewed, this is certainly an area that we must pay more attention to when servicing the braking system or trouble-shooting a brake or suspension noise related condition. Consider the following examples:

Ford Mustang… Some 2005–2006 Ford Mustangs built prior to 10/1/2005 may encounter parking brake cables that freeze during cold weather. Water may enter the cables through the rear sealing boot on the cable, located at the rear caliper attachment. The boot deteriorates prematurely,

allowing water to enter and freeze, preventing the caliper from releasing. Examine the parking brake cable and components for signs of deterioration. If damage is evident, replace both parking brake cables.

Five Hundred, Freestyle and Montego… 2005 Ford Five Hundred, Freestyle and Mercury Montego vehicles built from 5/17/2004 through 2/21/2005 may encounter a squeaking noise from the rear suspension. The condition is more pronounced during suspension compression, such as when driving over bumps or a rough road surface. The squeaking noise results from movement of the parking brake cable in the nylon grommet located in the rear subframe parking brake cable bracket. Ford recommends applying Krytox grease to the grommet area. Many technicians will be using their brake greases to accomplish the same.

Chevrolet Malibu Sedans… Owners of 2005–2007 Chevrolet Malibu sedans equipped with rear drum brakes may complain of a squeak or creaking noise coming from the rear of the vehicle. The noise is more pronounced during slow speeds, and especially over bumps during wet conditions. GM says the condition may be caused by the parking brake cables rubbing or slip-sticking on their retainer grommet (see Fig. 2). The solution is to replace the existing white parking brake cable grommets with revised Teflon grommets (GM #15807015), which are black in color.

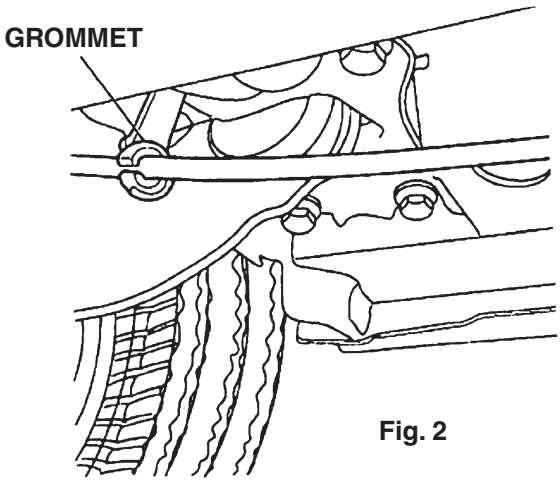

Fig. 2

SNAPPING/POPPING NOISE FROM FRONT END

GM reports that a snapping or popping noise from the front end of the vehicle may be evident, especially during hard turns at slow speeds. Driving over bumps or rough road surface conditions may promote the same symptoms.

VEHICLES AFFECTED INCLUDE:

2003–2005 Cadillac Escalade

2003–2005 Chevrolet Avalanche, Suburban, Tahoe

2004–2005 Silverado with Recirculating Ball Type Steering

2003–2005 GMC Yukon, Yukon XL

2004–2005 GMC Sierra with Recirculating Ball Type Steering

All 1500 Series with 2/wheel drive

GM advises that the condition can be eliminated by slotting the front cross-member mounting holes, on the left side.

GM PROCEDURE:

1) Raise and safely support the vehicle.
2) Remove the mounting bolts and front cross-member from the vehicle.
3) Remove all undercoating from the cross-member in the area of the mounting holes.
4) With a file or die grinder, enlarge the mounting holes on the left side into slots. Cut the slots to the inboard side (toward center of cross-member) approximately 2mm (0.07874 in).
5) Reinstall the bolts and nuts and tighten to 89 ft. lbs.
6) Apply a coat of anti-corrosion coating (GM #12346501) or equivalent to the cross-member where the coating was previously removed.

The popping noise condition may be misdiagnosed as a brake related condition, such as caliper or brake pad movement.

Do not confuse this diagnosis with a clunking noise originating from the intermediate shaft in the steering column. This condition will be felt in the steering wheel and steering column area. It is more pronounced when driving on a rough road with steering wheel input. GM has a redesigned intermediate shaft for this symptom.

When we hear the words brake noise, the natural assumption is a friction-induced problem. A good road test with the vehicle owner and researching the factory service bulletins are the first steps in the diagnostic process. It can save you many hours of diagnostic time, some of which are not billable.

LARRY HAMMER
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