

On the Line

Driveline Bump

It Feels Like a Brake Related Problem

The symptoms are that of the vehicle being bumped in the rear by another vehicle immediately following a stop or when accelerating from a stop, which is often referred to as launch. When the condition first occurred, the customer thought they had been hit in the rear by another vehicle. One shop had advised that the condition was related to the brakes' hydraulic system and more specifically the anti-lock system, requiring some costly repairs. Fortunately, the customer elected to get a second opinion.

Isolating a brake, suspension, or driveline related condition can be difficult, as the symptoms often share similar characteristics. We have seen extensive brake repairs performed in a futile effort to resolve the described symptoms.

The symptoms can be elusive, even for the most experienced technician. With many of today's systems, the technician will face many challenges in making an accurate diagnosis. We have moved from pattern failures, which simplify the diagnosis, to deficiencies that share similar characteristics with other systems or components. For example... it is not uncommon to encounter a seemingly brake related symptom that may require re-programming a PCM or modifications to a driveline or suspension component to eliminate an elusive symptom. The first step in the diagnosis should involve a road test, preferably with the vehicle owner. Far too often the technician accepts the customer's diagnosis, such as "My brakes are grabbing," which can lead to unnecessary repairs that will not satisfy the customer's complaint. When the repair fails to fix the problem, the customer often becomes upset, forcing the shop owner to forfeit some labor hours to retain the customer. Without prior knowledge and never having encountered the condition, the technician will have difficulty in determining if the described symptoms are brake, suspension or driveline induced problems.

BUMPING SENSATION

It is not uncommon for a customer to complain of a brake grabbing sensation following a stop or accelerating after coming to a stop. Immediately, you get this "BAM" sensation, much like that of being bumped in the rear by another vehicle. The symptoms are not brake related; instead they are the result of a slip/stick condition of the

propshaft/driveshaft, slip yoke, or transmission output shaft splines, depending on the application. Following are some applications whereby the vehicle manufacturers have offered corrective solutions:

GM APPLICATIONS... GM advises that 2007–2008 Avalanche, Suburban, 2007–2009 Tahoe, 2007–2010 Silverado, GMC Sierra (new body style) w/single piece driveshaft, 2007–2008 GMC Yukon XL, and 2007–2009 Yukon vehicles may encounter a slip/stick condition between the driveshaft slip yoke and the transmission (4L60 auto/2WD) output shaft splines. GM recommends cleaning and lubricating the slip yoke splines with GM lubricant P/N 19257121 (Canada P/N 19257122). If this procedure fails, a revised nickel-plated slip yoke is available from GM. Our experience has been the new yoke is a permanent fix.

FORD APPLICATIONS... 2009–2012 F150 vehicles equipped with a 2-piece driveshaft built on or before 7/30/2012 may encounter a rear driveshaft slip/bump symptom during light to moderate acceleration from a stop, or during a stop with light braking. The repair involves cleaning and lubricating the internal splines on the vehicle's rear driveshaft slip yoke.

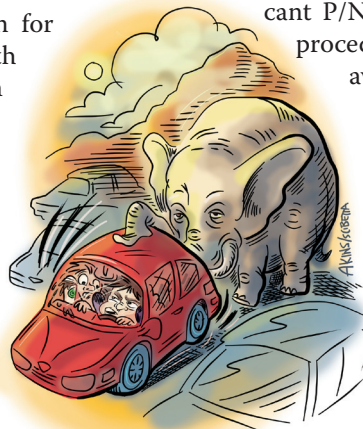
Additional Ford vehicles include 1997–2004 F150, 1997–2006 E-Series and 1999–2006 F-Super Duty applications, which require lubricating the driveshaft slip yoke with Motorcraft PTFE lubricant to eliminate the slip/stick condition. 1998–2005 Ranger 4x4 Super Cab vehicles require the same treatment.

TOYOTA APPLICATIONS... Toyota advises that a clunking noise from the rear or a "bump-from-behind" sensation just prior to a stop or when accelerating from a stop, may require a revised propeller shaft/drive shaft assembly. Vehicles involved include 2012–2010 4Runner, 2011–2007 Tundra 2 WD and 2010–2008 Landcruiser. (See Toyota T-SB-0148-11 for revised propeller shaft.)

The symptoms described can pose some challenging events for the most experienced technician. When these conditions are present, a lot of parts and labor hours can be invested without resolving the customer's complaint. Keep these symptoms and solutions in mind when troubleshooting brake, suspension and driveline related symptoms.



By Larry Hammer
Technical Services



"HEY! RELAX! THERE'S NOTHING WRONG WITH THE TRANSMISSION! YOUR PROBLEM IS ALL THOSE DOUBLE ESPRESSOS AT STARBUCKS!"