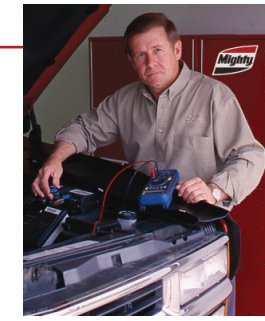
Mighty On the Line

Accessory and Suspension Modifications

These Can Present Diagnostic Challenges



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Accessory components and suspension modifications that enhance the cosmetics or performance of a vehicle are readily available for most vehicle makes and models. Technicians must consider these components and modifications when performing their diagnostics. When modifications are made to steering, suspension, or tire and wheel assemblies, they can have an effect on the handling characteristics of the vehicle, illuminate fault lamps and display failure messages. These additions must be considered in the diagnostic process and how they may affect the performance and life of other system components. Failure to do so and not communicating with the customer may come back to haunt you in the form of a customer returning, convinced the repairs should be made at the shop's expense. In some cases the customer will have to make a choice between removing the accessory, returning the suspension to the factory spec, or accepting a symptom as a normal characteristic.

SUSPENSION MODIFICATIONS

Premature failure of some suspension components may result from cosmetic enhancements such as taller and wider tires, off-set wheels and suspension kits to level, increase, or decrease the vehicle's ride height. These modifications may result in upper ball joint wear-out in 30K miles or less. Taller and wider tires are more aggressive, resulting in a load on the driveline, in addition to causing noise and vibration at highway speeds. Suspension modifications affect u-joint angles, stressing the components, resulting in premature wear and vibration. Drop spindles or other lowering devices can promote the same alignment issues with the u-joints, promoting vibration and premature failure.

ACCESSORIES

Running boards, bicycle or ski racks, brush guard grilles, emergency lighting, etc. can affect the air flow around the vehicle, promoting annoying noises. Steps or running boards mounted rigid to the frame or cab without insulation can transfer noises and create vibrations in the passenger compartment. Pinpointing the source of these noises may require removal of some of these accessories for diagnostic purposes.

STEERING PULL OR WANDER

Low aspect ratio tires can create some challenges for the technician trying to resolve a customer complaint of steering pull or wander. This is considered a normal characteristic for these type tires, as they have a tendency to follow grooves or inconsistencies in the road surface. Increasing the tire pressure above the vehicle manufacturer's recommended specification may stiffen the sidewall and further aggravate the symptom. While wheel alignment is often thought to be a contributing factor, it will not correct this condition.

FLASHING TRACTION CONTROL LIGHT

Vehicle owners may complain of a flashing Traction Control Light that may occur under hard acceleration at higher speeds. In addition, ABS lamp illumination may occur, or they may have a handling or brake related complaint. These symptoms may occur following the installation of a new set of tires or custom wheels. GM states that these symptoms may be the result of tires that do not meet the same tread wear, traction or temperature ratings. Their recommendation is to insure that the original equipment type tires have been installed. The correct type and size will be documented via the VIN number. It is imperative that the same type be installed, such as summer or all season, the original size, and with the same or higher load and speed rating. The information can be accessed on a GM website or their Tire Hotline.

Summary: With today's technology, diagnostics can be a challenge for any technician. Perform the basic checks first. Determine if any added accessory or suspension modification could promote the described symptoms. If so, communicate with the customer and let them make the final decision to remove the components or accept the symptoms as a normal characteristic. This frees the technician and the shop from liability. For additional diagnostic challenges, refer to Mighty Tech Tip #194 VEHICLE MODIFICATIONS.