Behind the Wheel

The job of a vehicle suspension is to maximize the friction between the tires and the road surface, to provide steering stability with good handling and to ensure comfort for you and your passengers. Usually changes in steering performance are so subtle that many motorists do not think to have their steering and suspension checked until there is an obvious control problem. There are a number of items that play a very important part in safe vehicle handling. Here are some of these components and their functions located between your front wheels.

A **ball joint** is similar to a hip joint. It services as a pivot between the tires and suspension. Ball joints are used on the front end of virtually every car and light truck. The most common symptoms associated with worn ball joints are vehicle wandering, uneven tire wear and erratic steering.

The **steering knuckle** is the pivot point of the steering system, which allows your wheels to turn. On a coil spring suspension, the knuckle includes a spindle and connects the upper and lower ball joints. On a strut suspension system, the steering knuckle allows connection of the C.V. axle shaft to the hub and bearing assemblies.

The **tie rod** transmits force from the steering center link or the rack gear to the steering knuckle causing the wheels to turn left or right. A tie rod consists of an inner and outer end, which pivots on the steering knuckle. A worn tie rod end can cause wandering, erratic steering and excessive tire wear. Whenever a tie rod is replaced, a vehicle front-end alignment must also be performed.

The **idler arm**, which is found on most rear wheel drive vehicles and many light trucks, is a pivoting support for the steering linkage. A worn idler arm will cause vehicle wandering, tire edge wear, and loose or erratic steering.

A **sway bar** (anti-sway bar or stabilizer bar) is a spring steel bar that effectively joins each side of the suspension together. The sway bar combats the roll of a vehicle on its suspension as it corners transferring weight to the opposite side. A broken sway bar link can cause excessive leaning on turns as well, worn or missing sway bar bushings can cause excessive leaning or rattling sounds when going over bumps.

These devices all work together to give maximum control and handling over all types of road surfaces. If you hear clunking or feel abnormal movement when turning corners, if the steering wheel has too much play or your vehicle pulls left or right consistently, it is time to have the components inspected for wear and repaired to ensure a safe commute for everyone on the road.

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