

MD Alignment

Are Alignments on Trucks and Buses a GREEN procedure or a Money Drain (Part 23)

Handling: Pulls

The tendency of a vehicle to want to pull to the right or left is generally caused by one of four factors. First and most common is the slope or crown of the road. Here in North America we drive on the right side of the road and since the road slopes to the right we are constantly correcting to the left in order to compensate for gravity. As was discussed in Part 5 and Part 6 of this series, attempts to use caster or camber for this issue create more problems than solutions. Drive axle alignment is a much more effective method to solve this pull problem.

Second would be a tire issue. In the 80's early radial tires used here could have a radial pull in 5% of new tires. Today it is almost unheard of for a new tire to have this condition. Used tires that have been run on out of alignment vehicles can develop wear patterns that can create pull issues. When one outside rib is visibly shorter than its mates, then drag developed in the tall/short pattern can cause a pull in the vehicle that can be modified by rotating or flipping tires on the rims. Remember if the primary cause the wear pattern is not corrected, all you have done is apply a bandage to the problem.

Third: Frame distortions such as Diamond frames, Side Swayed frames and Twisted frames will cause pull issues and unless the frame is fixed the issue will not go away. In the same way suspension components that are fatigued or broken can contribute to pull issues. For example front leaf springs that are collapsed will frequently result in pulls.

Fourth and this is not very common, a Steering gear box can have a fault in it that results in a pull. The simple test for this is to jack up the front of the truck and start the engine. If the Gear box is the culprit when you start the engine the wheel will self steer one way or the other.



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As a final point on this subject all vehicles will tend to move toward the down hill side of the road. I classify these in three levels. A Drift or a Pull or a Dive. A Drift at highway speeds will tend to move downhill in about 3 to 4 second to the shoulder of the road. A Pull will move in about 1 to 2 seconds and a Dive will be in the ditch before you can get your hands back on the steering wheel. Drifts are normal. A vehicle that drives perfectly straight in the slow lane will have a pull in the fast lane and experience irregular tire wear.

