

FRONT END ALIGNMENT

Ralph Seekins

Question: My car constantly pulls to the right. It is very irritating. How important is it to get it checked out?

Answer: Pulling to one side or the other is a good indicator that your car needs to be checked for alignment. It's more than an irritation. It's important for your safety and tire wear that you do it soon.

Basically, the wheels on a vehicle are "aligned" when all four are perpendicular to each other and parallel to the ground. Then, when driven on level ground, the car will track straight and true. However, driving on a more slanted road will cause even a properly aligned car to pull to the downhill side to some degree. If the pull is there on straight and level ground, you probably need to see a good alignment technician. And now that we are coming into the time of year where we will be driving most often on dry pavement, alignment is even more important in terms of safety and tire wear.

There are three basic wheel alignment terms, **CAMBER**, **CASTER**, and **TOE IN**.

Camber is the angle of the wheel, measured in degrees when looking at the wheel from directly above. If the wheel leans to the outside, it has positive camber, negative camber if it leans in. If the camber is too far negative, it will wear the inside of the tire. If it is too far positive, it will wear the outside of the tire. If the camber is not the same on both sides, the car will pull to the side with the most positive camber.

Caster is the angle of the steering pivot. When you turn the wheels, the wheels pivot around a pivot on the suspension system. If caster is out of adjustment, it can affect how your car tracks down the road. If caster is not the same on each side, the car will pull toward the side with the least positive caster. It will not affect tire wear. However, it does affect steering effort and tracking quality.

Toe In relates to the difference in measurement between the front of the tires and the back of the tires. Toe in is generally set close to zero difference so that the tires are parallel to each other. Toe-in means the tire fronts are closer than the rears. Toe-out means just the opposite. Improper toe-in will cause tires to wear equally and rapidly on both sides in a saw-toothed manner.

A responsible alignment technician will start with a test drive. He will check brakes, power steering, front end system, tire air pressure, general tire condition, and tire wear patterns. Then, the technician will attach a state of the art alignment system to all four wheels which allows him or her to check things like camber, caster, toe, steering axis inclination, included angle, scrub radius, set back, thrust angle, steering center and toe out on turns. Once set to proper specifications, the car will once again be test driven to check for handling quality.

I suggest you have your car or truck checked for alignment any time you are experiencing pulling or what appears to be abnormal tire wear on any of the four tires. And, when you change

from winter to summer tires or back again or during your annual tire rotation, ask your automotive service provider to do a visual inspection of your tires for indications of alignment concerns. Our rough roads cause many alignment problems but careful attention will save on tires and provide a more comfortable and safer driving experience.

As with all things automotive, if you have questions as to how to best equip or properly operate your vehicle in sub-arctic and arctic environments, it is in your best interest to consult with the local dealer franchised to sell your brand of vehicle.