

MD Alignment

Are Alignments on Trucks and Buses a GREEN procedure or a Money Drain (Part 2)

If we want to resolve the problem it is first necessary to define the characteristics of the tire wear and handling issues as seen on today's vehicles. In my experience 95% of them can be identified by five descriptors. There will be many situations that will have more than one descriptor and that can help lead to the primary issue.

Comprehensive presentations on the items that follow were first published in my book "Truck Wheel Alignment A Common Mans Guide" by M.D. Alignment Svc, Copyright 1995. Some of this has since been adapted by other companies as a useful diagnostic process.

Tire wear can be broken down into two major categories:

1. Feathered Wear
2. Cupping.

Handling complaints tend to have three components:

1. Right Pulls
2. Vibrations
3. Road Wander

The first item, Feathered Wear, is not something new. Alignment and tire people have been aware of it but the combination patterns can be confusing. This wear condition is caused by dragging the tire sidewise (lateral drag). That is the only thing that will cause it. An outside force has to be present and the most common are incorrect toe setting and incorrect drive axle alignment.

Simply put, toe in causes a wear that is worse on the outside edges of the tire and feathering that points toward the frame of the vehicle. Toe out is just the opposite.

Drive axle alignment issues cause one front tire to show toe in wear and the other front tire to show toe out wear. Inside wear on the Left front tire and outside wear on the right front is the common pattern here in North America.

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However when you combine a toe problem with a drive axle alignment issue you wind up with one front tire wearing much worse than the other. For example: a slight toe out setting in the front axle combine with a mis-alignment of the drives will produce rapid and irregular wear on the left front tire and little or no wear on the right front. The left front will display toe out feathering but the right front will have little or no feathering.

It is important to note that this wear pattern can start at any time during the life of a tire. Alignment conditions do not remain constant because the suspension is subject to wear and tear. Just like oil leaks can start at any time, alignment settings can change because of wear to any part of the suspension and cause this pattern to begin. Constant inspection of the tires for feathering is necessary to protect the tires from premature wear. When you feel the pattern starting it is time for an alignment not just when you replace your tires.

At this point of the discussion we come to a significant disagreement. The tire is telling me one thing, toe in or toe out or drive problems, but the alignment system is saying something else. Who is correct? Who do I trust to solve this issue. My experience is that the tire is telling what is happening and the machine is limited by to major factors.

1. The process it is designed to use.
2. The alignment specs used in the settings.

Coming up we will explore these items before moving on.

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