

MD Alignment

Are Alignments on Trucks and Buses a GREEN procedure or a Money Drain (Part 20)

Tall Tire/Short Tire

In Post 19 I indicated that wearing both shoulders of a WB tire can come from excessive speed. To explain that I need to start with a simple pair of dual tires. If you match a tall tire next to a short tire in a dual position you will wear out the short tire first. Counter intuitive though this may be, it is true. Although the tall tire is carrying more weight than the short tire and is working harder, the short tire cannot travel the same distance in one revolution as the tall tire. For example if the tall tire is 10 ft around it will travel 10 ft in one revolution. If the short tire is 9 ft 10 inches around it will have to drag 2 inches each revolution in order to keep up and since the tall tire will rotate 528 times per mile the short tire will slide 88 ft per mile traveled.

A rubber tire does not slide smoothly on asphalt or concrete so it will chatter as it drags and create a cupped pattern around the tire. This classic pattern can be caused by several issues. First, two tires with different circumferences. Second, tires with different inflation. A 295/75R22.5 tire at 80 PSI will have a loaded rolling circumference 1 ½ inches less than at 100 PSI. This would cause a drag of 66 ft per mile in the under inflated tire. Third, matching different brand tire casings side by side can cause this. All brands of tires do not have the same loaded rolling circumference. And today with the conversion we are experiencing to Low Rolling Resistance tires, you will see that matching brands of tires may not be enough. Matching models may also be necessary.

These issues can be created in your shop or by your local tire service company. It frequently occurs on the road when a replacement tire is purchased due to a tire failure. If care is not taken to match the replacement to the existing tire, the repair cost can escalate by the premature failure of one of the tires in the pair.



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In the next post I will explain how this concept of Tall Tire/Short Tire can exist within a single tire.