THE INFLATION SYSTEM

COMMERCIAL FLEET TIRE DIGEST

The authoritative guide to reducing commercial tire expenditures from Pressure Systems International, the manufacturer of the Meritor Tire Inflation System by PSI™

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Tires and Fuel Economy

Fuel and tires are the largest operational costs facing most fleets today and maximizing fuel economy is always a challenge. Many factors affect vehicle fuel economy including:

Vehicle Make & Model - Drivers - Tires - Roads - Routes - Loads - Speed

For a typical 80,000 pound GVW tractor-trailer running at highway speeds of 65 mph, the approximate horsepower requirements are:

-Aerodynamic Drag	35%
-Driveline Losses	15%
-Engine Accessories	10%
-Tire Rolling Resistance	40%
	100%

The faster a vehicle speeds down the highway, the more heat is generated in the tire casing, leading to increased tire rolling resistance & lower fuel economy. Going from 55 to 65 mph increases fuel consumption approximately 15%.

Rule of Thumb: Every 1 mpg increase in speed decreases miles per gallon by 0.1 mpg.

The heavier your loads, the same concept holds true: additional heat generated by the increased tire deflection leads to lower fuel economy.

Tires are designed to run at a given load and inflation pressure. Running 18 tires 30% underinflated will cost you 5% in actual vehicle fuel economy. 10% underinflation will be a ONE 1% penalty in fuel and 20% underinflation will be over 2% loss in fuel economy.

Trailer tires account for approximately 40% of the tire rolling resistance on a typical tandem axle tractor-trailer. Numbers vary depending on specific vehicle and type of tire.

Maintaining proper tire inflation pressure is critical to maximizing your fuel economy. Dual tires which have varying tire pressures (IE. 100 PSI outside dual, 70 PSI inside dual) will increase tire rolling resistance significantly. Tire revolution per mile changes with inflation pressure and dual tires will see severe irregular wear conditions develop, which leads to even lower fuel economy.

Most tire manufacturers have "fuel efficient" tires in their product portfolios. Typically there is a tradeoff in removal miles when you purchase fuel efficient tires so it is important to work closely with your tire professional when purchasing these tires.

Using automatic tire inflation systems will insure that you maximize your fuel economy in your fleet.

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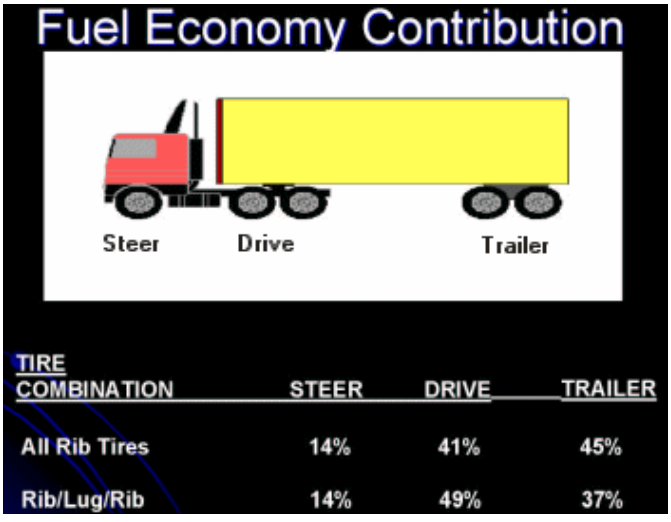

Q & A PSI ANSWERS YOUR QUESTIONS

Q: We have started to move our fleet of over the road tractors and trailers to the new Wide Base tires. We have PSI tire inflation systems on the trailers.
Would we benefit further by converting the tires to Nitrogen?

A: Today's commercial truck tires are built with tire innerliners that are compounded to minimize air diffusion through the tire casing. Tires actually lose very little air due to osmosis trough the tire casing. Primary air loss of a tire is due to punctures and bad valve stems/cores. Air is comprised of 79 % Nitrogen. Using pure Nitrogen in place of air will have only a minimal effect on rate of diffusion through the tire casing.