P.S.I.™ THE INFLATION SYSTEM

COMMERCIAL FLEET TIRE DIGEST

The authoritative guide to reducing commercial tire expenditures from Pressure Systems International, the global leader in Automatic Tire Inflation Systems

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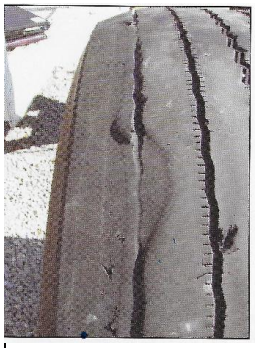
Balancing Truck Tires with Weights



Example of cupping/scallop/ wavy wear due primarily to a tire being out of balance.

Radial truck tires for class 8 vehicles weigh around 135 pounds for the common 295/75R22.5 drive tire size and in the 180-pound range for the 445/50R22.5 widebase tires. Having one of these excessively out of balance will have negative effects on tread wear and vehicle handling. Today's truck tires are built around the world with state of the art hi-tech manufacturing equipment. Tires are not always in perfect balance brand new out of the factory but they are pretty close. When radials were first introduced in the 70's, most fleets balanced steer and drive tires but only a very few balanced trailer tires. If a tire does not run "true", irregular wear and vibration will develop leading to premature tire removals. In addition to reducing the safety of the vehicle, fuel economy also drops significantly if the tire is hopping over the highway due to an imbalance condition.

The vast majority of fleets today will spend the time and money to balance their steer tires primarily because of the driver. With the driver shortage, fleets exert a lot of effort to keep the driver happy so they will stay with the company long term. Steer tires when out of balance will cause a vibration that the driver will feel.

The TMC of the American Trucking Association recently updated their recommended practice on balancing the tire wheel assembly with balance weights (RP 245A) which contains detailed information on this subject.

Prior to 2009, lead was the most commonly used material for balancing weights. Later that year, the EPA began an initiative called NLFWWI. This unusual and not very creative acronym identifies the National Lead-Free Wheel Weight Initiative. This was a joint initiative among government, industry and environmental groups and is strongly encouraged. However, there are NO regulatory controls restricting the use of lead weights.

Everyone recognizes that lead is bad and very toxic. Some interesting statistics about lead weights:

- 50 million pounds of lead is/was used annually to produce tire weights around the world
- 1.6 million pounds of lead weight is estimated to be lost when wheel weights fall off during driving

If your fleet still uses lead weights, it is very important to be careful in the disposal and handling of these weights. Any employee who handles lead weights must wash their hands before eating or smoking. Even trace amounts of lead is very bad. Old wheel weights should be sent to the recycler and not be reused. Reused wheel weights are prone to falling off when the clips are sprung or not matched to the rim flange.

Wheel weights have different designs depending upon whether the wheel is aluminum or steel. There are several different styles of clip-on flange wheel weights. Work with your tire professional to insure your wheel weights clip-on contour matches the contour of your rim flange.

When it comes to aluminum wheels, the recommended practice is to first deflate the tire to 50% of the recommended tire pressure and apply mounting lubricant to the lower sidewall before attaching the weight. Also, the aluminum wheel producers recommend the use of coated wheel weights to protect the wheel finish from the effects of corrosion.

It is always a good idea for trucking fleets to stay away from using lead weights if possible. There are alternative materials now available in the marketplace.

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Q&A PSI ANSWERS YOUR QUESTIONS

Q. What is a good source of information to diagnose irregular tire wear conditions?
A. The TMC publishes the Radial Tire Conditions Analysis guide which is considered the Bible of the industry. To order click here.