

*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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Why Do My Tires Lose Air?

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Air loss in tires can be affected by a variety of reasons including the quality of the materials used in manufacture, simple osmosis, punctures and issues with the valve stem

With all the rubber and steel that goes into the manufacture of a commercial tire, one would think that the air molecules would take a really long time to migrate out of the tire. Tires may all look black and round but they can be produced with a wide range of materials that may affect not only how a tire performs for treadwear and traction, but also how the air is trapped inside the tire and wheel. The first line of defense in trapping air inside the tire is the tire innerliner compound. Butyl based rubber compounds are typically used by the tire producers to minimize the osmosis of the air to the outside of the tire. There are many options when it comes to innerliner gauge. Heavier innerliner gauge will help reduce the osmosis but comes at a weight and price penalty because the butyl based innerliner compounds use higher priced materials. The actual rubber that is used is commonly chlorinated and/or brominated which improves the barrier compound making it harder for the air to escape.

However, even the best tires will lose 1 - 2 psi per month simply through osmosis. This does not sound like very much until you put it into proper perspective. A truck tire may be inflated initially when it goes into service to 100 psi, but a year later, it could be 85 psi or lower. Tires will run a lot hotter at low air pressures and the footprint becomes longer leading to high rolling resistance and bad fuel economy, so your tire program should ensure that psi is maintained at the optimum pressure as regularly as possible.

Another major reason why tires lose air is nail punctures in the tread area. These are typically slow leakers but still you can now be losing 1 - 2 psi or more per DAY instead of losing 1- 2 psi per month. Just because you checked all the tire pressures in the morning does not mean that you can't pick up a puncture just driving out of the terminal. Slow leaking nail punctures are very common when you consider the road conditions and especially conditions in the areas where you go to drop off a load.

Another major contributor for tires losing air is the tire valve. Standard valve caps which help protect the valve core from air leaks may easily go missing. There are non-removeable alligator flow-thru valve caps available that cost a little more, but since they are not taken on and off, there is little chance of losing them. Over tightening Schrader-type valve cores beyond the recommended 4 inch-pounds can also lead to air leaks. Tire supply companies sell a pre-set torque tool for this purpose. Anyone responsible for tightening the tire valve should have one.

Working with your tire professionals to insure you have a serious tire pressure program is one of the best ways to maximize tire mileages, improve fuel economy, and insure your vehicle is not out of operation waiting for a tire related roadside service call.

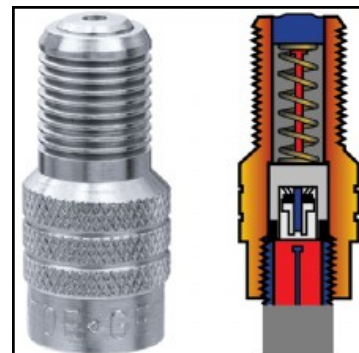
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