

Nitrogen Tire Inflation Today

Ten Things to Consider Before You Buy.

By Brian Brasch

Nitrogen tire inflation is here to stay. Currently, there are over 10,500 locations providing nitrogen and that number is growing quickly. As we've seen fuel costs skyrocket, consumers are demanding better fuel economy and are willing to pay to get it. With over 400 million miles of testing, nitrogen inflation has proven that it will meet consumer demand.

You've seen competing dealerships pay off their systems in a matter of weeks and then begin adding four or five digits to their bottom line every month. You've decided that now is the time to buy a nitrogen system. But what should you know before buying? What are your options? With over twenty manufacturers out there, how do you know which nitrogen system is best for you?

After talking to hundreds of companies that have made an investment in nitrogen, here are the top ten things they felt you should know before buying a system.

1. You have alternatives

There are many system types available, but not all of them will fit your business.

If you are only going to fill up one car a day, start off by using a nitrogen cylinder system. If you are going to fill up

two or more cars per day, or 1 SUV, a nitrogen generator is the best choice. It will be more efficient, will pay for itself in less than a year and you don't have to worry about running out of nitrogen in the middle of a conversion.

Another alternative is Pressure Swing Absorption or PSA technology. This has been around for many years but has many moving parts which create the potential for downtime. John Lucidi, Product Sales Manager - Nitrogen Inflation at Parker Hannifin, states: "Parker Hannifin is one of the world's leading suppliers of PSA nitrogen generation systems. However, due to the regular maintenance requirements associated with PSA systems, we didn't feel that it was a viable solution for the automotive market. Membranes offer a more hands-off, trouble-free installation without the regular supervision that PSA systems require."

Almost all systems in the marketplace

use membrane technology to separate nitrogen from air. When you force high-pressure air through a permeable membrane, the small molecules such as water vapor and oxygen will be removed while the larger nitrogen molecules will be contained. These escaping oxygen molecules are the first to leave your tire as well, resulting in a loss of inflation pressure. Nitrogen, a dry, non-flammable gas which has a large molecular structure, is considerably less permeable than the smaller molecules of water vapor and oxygen. The result? Less nitrogen leaking from a tire and more stable pressure.

2. 60 tires per hour may not be what it seems

I wish whoever started selling nitrogen systems using tires-per-hour would explain to me why they picked that method. It doesn't make any sense! For example, we talked with a tire dealer that sells 1,000 tires a month.



He currently has a system that, according to the manufacturer, can inflate approximately "140 tires per hour". Mathematically, I suppose. Well, guess what? In peak times this tire dealer can't keep up with demand and he's thinking of upgrading to a system that can handle "280 tires per hour". (I bet you'd like to hire the guy who can inflate 280 tires per hour, huh?). The numbers just don't add up.

Here's an example with a more typical nitrogen system:

- 60 tires-per-hour system rating = 30 real tires-per-hour (because you must purge twice to eliminate the moisture)
- 60 tires-per-hour system rating = 12 SUV tires-per-hour (because they have over twice the volume of a passenger tire)
- Don't expect to fill the SUV tires back to back. It will take 20 minutes for that machine to recharge between vehicles. A 60 tires-per-hour machine will take 35 minutes to fill an 80 gallon tank.

And these figures are strictly mathematical. They still do not account for the actual time it takes to physically perform the simple task of moving tires and vehicles around. Tires-per-hour is simply not a realistic way to measure nitrogen requirements or output of a nitrogen system. Did you know that a 40 tire-per-hour system will take over 75 minutes to fill up one light truck with dual wheels?!

The best method for you to know what you're getting is to use cubic feet per minute (cfm). It measures the actual output of the system rather than a number of tires-per-hour.

Here's a quick reference chart:

Typical cfm choices

- 3 cfm = Medium size dealership - 1 vehicle at a time
- 6 cfm = Large dealership - 500 tires per month
- 12 cfm = Largest dealership - 1000 tires per month

- 24 cfm = Large commercial truck dealership

3. A larger tank is not always better

You just finished nitrogen inflation on an SUV. Unfortunately the SUV also polished off your tank reserve. Before filling the tires on the next vehicle you will first need to get that tank back up to pressure. You can do both at the same time, but doing so will cause your customer to wait because the system has to split the pressure between the tank and the tires. The Get Nitrogen Institute (GNI) recommends that you buy a tank that holds 10 gallons for every cubic foot per minute (cfm) output. That way your tank will always be able to refill in 10

minutes and your customer's wait time will be reduced significantly.

- 3 cfm = 30 gallon tank
- 6 cfm = 60 gallon tank
- 8 cfm = 80 gallon tank
- 24 cfm = 240 gallon tank

In Part 2 of this series we will continue examining the 10 considerations for purchasing a nitrogen system.


Brian Brasch is the president of the Get Nitrogen Institute. The GNI is a non-profit organization formed in 2005 to promote nitrogen tire inflation and to educate on the benefits of using nitrogen to



prolong tire life, increase fuel economy, reduce dependence on foreign oil and protect the environment by reducing consumption of oil by-products used to manufacture tires. ■

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