

What's In Your Tires??

I had a request to touch on tire inflation and pressures, So I thought I would cover this area now as the driving season is upon us. I got the title name idea from the credit card commercial on TV asking what's in your wallet! Proper tire inflation is critical to safety as well as handling. So What's in YOUR tires??

For what it is worth, the air in our atmosphere is a mixture of about 78% Nitrogen, 21% Oxygen, and the last 1% is a mix of Argon, Carbon Dioxide, and a few other trace gasses. Also note on humid summer days the moisture content can be around 2%. The **moisture content** in the air is what gives the race car driver the most problems with expansion when the tires get hot. The hot tire air pressures increase dramatically!

To resolve a lot of the moisture and expansion problems, the Race and Autocross drivers inflate their tires with pure Nitrogen. Nitrogen is a more stable gas, and it contains no moisture. Because it is more stable, and has no moisture, the tire pressures change a lot less during the heat of the race. Have you ever checked your tire pressure in a cool morning, and then driven on a highway trip? If you checked them when heated you could see as much as a 5 psi pressure increase. Never leave that air out when the tires are hot, as when they cool it will return back to normal. If you do a lot of highway trip driving, or racing, you might want to think of having your tires filled with Nitrogen.

Tire pressures are critical for safety, as well as handling. "Excess" sidewall flex is a problem with under inflated tires. This excess sidewall flex can lead to tire failure as the sidewalls heat up tremendously and then the tire body cords fail. This can lead to a serious accident at high speeds. Extreme over inflation can be a problem too. If you run way too much pressure in the tires, then the center of the tread is pushed down against the road more than the edges. This can cause loss of some traction, and premature wear in the middle of the tire. Loss of traction with over inflated tires on a wet road can be disastrous too!

Mazda has the tire pressure recommendations on the sticker inside the driver's door frame. This is the recommended pressure for the type and size tires your car came with. Some of us have experimented with different type and size tires from the OEM type to better suit our particular driving needs. Also note if you have a 2006 or newer, and you put dedicated Snow Tires on your Miata, Mazda recommends adding 4-5 psi to the tire pressure (Check your handbook). Why you may ask? This is because of the softer sidewalls on snow tires verses the stiff sidewalls on high performance tires. This same situation can be applied to someone who may put tires on the Miata that are more focused on sport touring instead of the original high performance tires on the car. I have High Performance All Season tires on my '06 Miata, and have found by adding 2 psi to the factory suggestion I get better traction on the corners. These tires have a slightly softer sidewall than the OEM tires, so this little extra pressure seems to help me.

If you want to see how your tires are contacting the road as far as traction and wear goes, take a white chalk and mark a 1" wide line across the face of a couple tires as evenly as you can. Then as you drive, see how the chalk wears off. If the chalk wears off evenly, then your pressure should be ok. If the center wears off faster, you may have too much air in them, but never go below the factory recommendations. Note also because of cornering, the front tires may wear the chalk off the outside edges faster too.

On my previous 2002 Miata which is still in the club, I had a sporty touring tire on it. I found with my type of driving, the tires performed the best around 33 to 34 psi. The factory setting with performance tires was only 26 psi. With the All Season tires I now have on my 2006 Miata, the factory setting is 29, but I prefer to run 31 psi.

If you remember nothing more from this article, please remember to treat tire pressure as if your life depends on it..... as it really does. Always check your tire pressures around the same time of the day, BEFORE you drive the car. I like to always check mine in the cooler mornings. But if you like to check your tires in the afternoons when the day is warmer, so be it. The consistency of WHEN you check them is what will help your tires wear more evenly, and your car handle the same all of the time.

Here is a link to the "Tire Rack" web page. For further reading there are many articles on tire inflation and tire selection. Enjoy!

<http://www.tirerack.com/tires/tiretech/techpage.jsp?techid=1>

So Check your tire pressure often, and Zoom - Zoom with care!

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