

**Tech Article**  
**By Jim Jones**  
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I was asked to do a tech article for the monthly newsletter. Since spring is coming and most of our cars get less than normal use during the winter, I thought I would start with tires.

This is a good time to just take a close look at your tires and wheels for visible damage. Winter road conditions such as potholes and debris on the road can cause tires to be cut and wheels to crack or bend. After the visual inspection, measure the depth of your tread. This can be done with a device that measures to the nearest 32nd of an inch. They are available at most auto parts stores and are cheap. Measure across the tire in two or three places. If all measurements are equal, or nearly so, your alignment and balance are probably ok. However if there is a notable difference as you measure across the tire you probably need to have the alignment checked. If you notice random cupping or flat spots in the tread you probably need the balance checked. New tires usually have 9/32" or 10/32" tread depth and are at the wear bars at 2/32". Now check the air pressure. This should be done before driving the car and preferably in the cool of the morning before any tire is exposed to the sun. One of the most accurate tire gauges (according to a leading Consumer Reporting Magazine) is the Accutire Digital Gauge. It is also relatively cheap, available at Wally World and most auto stores, and is consistently accurate to +/- 1/2 pound. It is rated higher than gauges costing much more. Tire pressure should be checked at least monthly even when you have a car with the latest Tire Pressure Monitoring System (TPMS). All that system does is let you know too late that you're driving on a flat tire.

One last thing that should be checked is the tightness or torque applied to your lug nuts. I highly recommend that everyone have a torque wrench whether you're a mechanic or not. There are various types available and they range in price from reasonable to real expensive. The reason I think everyone should have one is that very few tire shops bother to ACCURATELY check the torque when they install your wheels. The Miata owner's manual has the correct torque value for your year but I believe most with aluminum wheels call for 85-95 pound feet. I know that some impact wrenches are capable of tightening to over 200 pound feet and some of the bozos using them extract every pound available. This can crack or break the wheel plus if you ever have a flat tire on the side of the road it is impossible to remove the nuts. I just had new wheels installed and as soon as I got home I checked the torque. To loosen the lug nuts I ended up using a 14 inch breaker bar with an 18 inch pipe extension and still had a hard time. Some shops use what is called a torque stick on the impact wrench but it is not very accurate.

Which tire brand to buy is a personal decision. Opinions of which is best are like belly buttons – everybody has one. However I will discuss different types of tires suitable for the Miata. Generally, Original Equipment (OEM) tires are rated as "Summer Max Performance" tires. They are a compromise of comfort, performance, tread life and noise and are supposed to be used only during warm weather. Other choices for replacement

tires are Summer Ultra High Performance, Summer Grand Touring, All season Ultra High Performance, All Season High Performance, All Season Grand Touring and Winter/Snow Performance. If all out performance is your priority then a Summer Ultra High Performance tire is a good choice. These tires have a very soft rubber compound, corner and stop really well, and usually wear quickly, becoming noisy as they wear. If the majority of your driving is club events and cruising around the local area an "All Season" Grand Touring or High Performance tire will probably fit your type of driving. This type of tire can be used summer and winter, including light snow conditions. The compound is somewhat harder and tread wear can exceed 50,000 miles.

For an education on tires go to <http://tirerack.com>. They have a private tire testing track and post the results of their independent tests plus customer ratings for hundreds of tires. They also include tons of general info about tires including how to decode data such as speed ratings, date of manufacture, etc that is imprinted on the sidewalls of today's tires.

Keep the shiny side up.