

**TECHNICAL TIPS – “*WENCH WITH A WRENCH”* By Gail Wagner**

 **Fall 2013**

Hi, Fellow Miata Folks,

I’m offering a brief, practical overview about choosing and selecting tires. I hope you enjoy. This will be my last column until spring. Please email me (gwagner@ithaca.edu) if you have any comments or suggestions for future columns. And, by the way, per the above picture, I really don’t use a pipe wrench to work on my car. Nice prop though, huh?

**Tires 101 – They’re Just Not Those Round Black Things**

**Part 1: Choosing the Right Tire**

Selecting the right tires for your Miata is an important and expensive decision. Your safety, handling, comfort, noise level, mileage, tire wear and cost will be determined by the tires you choose with a balance of those characteristics. Check your Miata’s OEM (Original Equipment Manufacturer) inside door sticker or owner’s manual for the recommended size tire for the year and model of your Miata. This sticker will also recommend tire air pressure, an important thing to know.

Consider your needs and driving uses and find a trusted source or store to research and/or recommend the type of tire you need. A good salesperson will ask pertinent questions and consider tread life, ride comfort, handling and driving conditions (summertime in our case!) to help determine which tire is right for you. (Just a personal suggestion: I’m a big fan of The Tire Rack since the 1970’s, a huge national on-line tire and wheel seller (www.tirerack.com). You can shop by typing in your Miata year and model and it will spit out plenty of tire suggestions, actual owner’s reviews and information or call their 800- number for a tire consultant who will help if you are unsure. If you purchase, tires are delivered via UPS to your home and their prices are good even with shipping charges.)

Here’s a few things to think about when shopping for new tires whether it’s one or four:

**Just one tire or a pair of tires?** – If you just need to replace one tire, select the same brand, model, size and speed rating, if possible. Try to match what’s already on your car. All four tires should be as identical as possible or it will affect steering control and handling. Incidentally, if just two of your tires are worn faster than the others, have your Miata checked for wheel alignment, tire balance, lack of tire rotation or loose parts.

**Summer tires or all-seasons?** Do you only drive on sunny days or occasionally in rain and need wet traction? Are you looking for high performance handling or just a comfortable ride? If you are pondering “summer” or “all-season” tires, there is a difference. Summer tires have great grip and handling characteristics but tend to wear out faster and offer a harsher ride than all-seasons. All-seasons not give the precision handling, stopping and higher speed rating of a summer performance tire but on the plus side they do last longer, are generally less noisy and produce a smoother ride. They also have a “lower rolling resistance” (refers to how much the tire resists rolling) so there’s an added benefit of higher gas mileage. And, of course, all-seasons are adequate on ice and snow whereas summer tires are downright dangerous but we really don’t care about that, do we?

**Tire Size and Reading Sidewall Markings** – Besides the tire brand and model, there’s lots of interesting information stamped right on the sidewalls of your tires such as the size and ratings. Take a look. There’s a lot more info on each tire but here’s the basics:

**Example: 225/50R 16 91S**

**225** = “section width” – in this case, 225mm across the widest point of the tire

**50** = “profile or aspect ratio” – the sidewall height is 50% of its section width. The higher the number, the taller the sidewall. The lower the number, the lower the sidewall (i.e., a “lower profile tire”)

**R**= radial construction (does anyone remember the old pre-radial “bias ply” or will admit it?)

**16** = tire and wheel diameter in inches, matched together

**91 S** – Load index number and speed rating letter (see below)

Again, be sure all tires are the same size and speed rating if you’re buying only one or two. Note: While plus-sizing your tires (and maybe your wheels) to a larger size diameter than the OEM recommendation may improve performance, handling and appearance, large changes can alter the accuracy of your odometer and speedometer, the effectiveness of the anti-lock braking system (ABS), traction control and vehicle stand vehicle stability system. Check with your salesperson before plus-sizing.

**Load Index** – This is a tire’s requirement to be able to carry the weight of your vehicle. An assigned numerical value is used to compare relative load carrying capabilities. The higher the tire’s load index number, the greater the load carrying capacity. In the example above, 91 index carries a load of 1,356 lbs. per tire. You can find vehicle load index charts on the Internet. Your Miata’s load capacity is listed on the inside door sticker or owner’s manual.

**Speed rating is more than just the need for speed** – Make sure all your tires have the same speed rating. Speed ratings make a difference in maximum tire speed but also ride comfort, wear and cornering ability. The higher the speed rating, the better the road grip and stopping power but the lower the tread life and harsher ride due to the softer tire compound. Do you really need a tire that’s rated for over 150 mph? Didn’t think so. Unless you are seeking out “high performance” tires that are rated for ultimate handling (i.e., V=up to 149 mph; Z=149+ mph), an “H-rating” is good for 130 mph. The “S” rating in the above example is 112 mph. I confess I’ve gotten up to 100 mph on my summer high performance Z’s but don’t tell my husband. I’m obviously not recommending it. ☺

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**Tread life considerations** - Check the tire’s D.O.T. (U.S.Government’s Department of Transportation) required UTQG (Uniform Tire Quality Grading) rating for the tire’s mileage life expectancy. 100 is the baseline grade. A tire with a 200 rating theoretically lasts twice as long as the 100-rated. High performance **/** higher speed-rated tires are a made with a softer rubber compound and have a shorter tread life.

**Wet weather requirements** – Yup. We certainly have that in CNY, don’t we? Mud and snow ratings (M&S) are not a factor as most of us store over winter here in the East but it’s really important to consider a tire that has good wet pavement handling unless you never take your Miata out in the rain or expect to be caught in it (good luck). Tire reviews and good salespeople can assist.

**Ride quality** - A low-profile tire such as a 50- or 40-series looks great but offers a harsher ride over bumps or rough pavement compared to a 55- or 60-series. They have stiffer sidewalls which improve handling and cornering but increase ride harshness. Lower profile tires may expose your wheels to damage more easily but increase ride harshness. Lower profile tires may expose your wheels to damage more easily but they sure look cool!

**Noise** – Some tire treads are much noisier (and annoying) than others even between brands and tread designs. For highway driving and “Miata cruising”, a good salesperson or an Internet tire review such as www.tirerack.com will tell you which tires are quieter among any you’re considering. Note: If you are experiencing obvious tire vibrations while driving (I call it AJSWS: “Annoying Jiggling Steering Wheel Syndrome”) have them checked and rotated and/or your alignment checked. This is definitely not a good thing and can cause premature tire wear.

**Breaking In New Tires** – Tires are made of many layers of rubber, steel and fabric. It’s universally recommended that new tires require a small break-in period to allow these components to begin working together for maximum tire performance. Additionally, a lubricant is applied to the tires during manufacture to help release them from the tire mold. Some of the lubricant stays on the tires and may reduce traction until it’s worn away. Be patient. Five hundred miles of easy acceleration, cornering and braking to wear off the external lubricant is a good idea.

**Part II – “Care and Feeding of Your Tires”** to be continued Summer 2014.

 Gail

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