

## Making it Handle...

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Thank goodness! Someone just came along and asked a question that broke writer's block! You know, when you're supposed to write something pithy for the newsletter, but NOTHING comes to mind? Of course, those of you who know me, would never conceive that I might not be able to come up with something to talk about, huh? :O)

Anyway, Wes M. was just asking about how to go about improving the handling of his Miata... on a budget, of course. Well, I'm going to TOTALLY cheat and use my response to him for this month's newsletter soliloquy. Next month perhaps we'll tackle the brakes... in the meantime, thanks Wes!

So here's my 2 cents... put another 97 with it and you might be able to buy a cup of coffee at the local convenience store!

**1. Tires** – most everyone already knows about this one, but the single biggest thing you can do to improve your handling is tires. Unfortunately, good tires in the 14 inch size are getting pretty hard to find. An easy upgrade is moving to a 15" wheel with a 38 to 40mm offset. That's pretty close to the factory size/offset if you don't want to find an actual set of factory 15s. Check out [www.good-win-racing.com](http://www.good-win-racing.com) for a great selection of affordable 15" wheels & tires. Also try [www.edgeracing.com](http://www.edgeracing.com) for tire/wheel bundles.

For a 15" wheel, both the 195/50 and 205/50 tire sizes work well. In addition to the Falken Azenis, the Hankook RS2 is a great performer that is very affordable. I think it's easily the equal of the Azenis; I ran it very successfully as an autocross tire for 2 years. I've heard good things about the new Kumho XS as well. For more money, the Bridgestone RE010R and Toyo R1R get you slightly better grip, but you're not likely to notice the difference in street driving.

**2. Alignment** - all the grippy rubber in the world is wasted if the tire isn't planted properly on the pavement. We're fortunate that the Miata is SO adjustable. The difference between an everyday "straight down the road" alignment and a performance alignment is VERY noticeable. You can get pretty crazy with camber, but it's not necessary unless you're racing. I've ran the specs below for 4-5 years now and they work very well, and tire wear has always been very good.

Take the car to your favorite shop and talk to the guy doing the alignment. He'll likely say that the numbers are silly, and it won't matter and you'll just wear the tires faster. But he likely doesn't own or race a Miata, so take his comments with a grain of salt. Tell him you're going to be autocrossing the car and there are plenty of Miata owners running these specs without a problem.

Oh... and insist on being allowed to sit in the car or have your weight ballasted in the driver's seat. If he tells you it won't matter, either go somewhere else, or tell him you'll prove it to him. Have him zero out the machine and get the car ready. When you hop in the car, he'll be surprised at how much the numbers change. Remember, the NA Miata only weighs about 2300 pounds. Putting a 200 pound man in the driver's seat adds nearly 10% of the car's weight! And it adds it to the driver's side! Here are some good starting specs:

Rear Camber = 1.5\*-

Rear Toe = 1/8 inch IN

Front Camber = 1.0\*-

Front Toe = ZERO both sides

Front Caster = between 4\* & 5\* (sacrifice caster to get the camber if necessary)

One last thing... make sure you request that the final adjusted specs are equal on both sides to within .1 degrees, i.e. 1.0L and 1.1R is OK. .9L and 1.1R is not.

**3. Sway bars** - You can do a lot to help or hurt the handling of a Miata. The factory did a pretty darn good job with it to start with. However, going faster is often a matter of making the driver feel more comfortable with the car. Body roll usually makes drivers nervous, so reducing it helps. Fortunately, it's cheaper and easier than shocks or springs!

Sway bars are available from a number of vendors. A matched set of front and rear sway bars from Flynn Miata is only \$199. The car will corner flatter and feel more response with little, if any, ride penalty. The FM bars are adjustable as well and come with good tuning and installation instructions. Another plus is that they are easy to install by the DIY type of person. To get a bigger bang for your buck will require spending bigger bucks...

**4. Shocks/Springs** - Now it starts getting complicated and depends on how much money you have, and what you want to accomplish. If you want to stay with the stock springs, the KYB AGX, Tokico Illumina and Koni Adjustables and Bilstein HD all work very well. While they will certainly last longer than the stock units, they don't last forever. My AGXs have about 90,000 miles on them and the only decent setting on them now is full-stiff. Anything less and they're just too soft these days.

You can count on shocks being "about" \$400 for the set, plus installation. You can do shocks yourself, but I wouldn't advise it unless you're pretty handy around the garage, have good help, or preferably both. You can also go with a new coilover setup, but that's a bit beyond the scope of this discussion. Check out [www.fatcatmotorsports.com](http://www.fatcatmotorsports.com) for the latest in Miata suspension tuning and upgrades.

Again, this is just my opinion; all the usual caveats definitely apply here! For those who are wondering what I have on my own car ('99 LS), it's just tires, alignment and shocks (sways would put me out of stock class in autocross). So go out there and spend some money... give the economy a little of your own stimulus.

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