

# Choices, Choices, Choices

April 2011

Suprise

You never can have too many choices, but sometimes the choices can be pretty bewildering... especially if you're talking about suspension repair, modifications and parts. What to do?

Last month we discussed the ins and outs of the suspension design and potential deficiencies of the three generations of Miata. This month, let's go over some options you have when it comes to repairs and modifications, starting with sway bars. There's a lot of good info available in cyberspace, along with a lot of opinions. I'll try to cover some basics and give you enough info to research on your own. Next month we'll talk shocks, springs and other fun stuff.

## Sway Bars

Let's start this month with sway bars (aka anti-roll bars or anti-sway bars). Sways bars are essentially a torsion spring that controls body roll by connecting the left and right suspension at each end of the car. Sways don't typically wear out unless they rust, but they can be changed out for larger bars to increase handling and decrease body roll.

Sways should generally be changed out in matched pairs (front & rear) in order to maintain the handling balance of the car. In general, a larger front bar will increase understeer, while a larger rear sway will increase oversteer. Most after-market bars come with multiple holes at the ends so you can soften or firm up the bar. Stock-class autocrossers should remember that only the front bar can be changed per stock rules.

So what do you gain by swapping sway bars? You get flatter cornering with less body roll, which usually makes the driver more comfortable with the car in hard cornering. The downside is practically nil. The car will ride slightly firmer, but only when one tire hits a bump and the other doesn't. Your spouse (or your back) isn't likely to even notice.

When swapping sway bars (say that 3 times fast), you can swap the endlinks as well, if you like. The endlink connects the end of the sway bar to the lower control arm. Much ado is made about adjustable endlinks, but the only practical purpose they serve is to ensure your new sway bar doesn't bind. The stock links on the NB and NC are quite good and should be re-used unless you like to spend money. The NA endlinks can serve to slightly stiffen the overall rate of the sway bar when fitted with urethane bushings. Unfortunately, the NB endlinks can't be swapped to the NA without some welding of the lower control arm.

The sway bars are the easiest thing to swap on the suspension and arguably provide the biggest bang for the buck. They can be swapped by anyone with a set of ramps or jackstands and some basic hand-tools. Expect to spend \$120-\$180 on a set of bars. Some are hollow and others are solid. Generally, the hollow ones are lighter, but

frankly, we're not talking about THAT much weight difference. If you're counting pounds and ounces, go with a hollow bar in front... or have Mexican for dinner the night before.

Now for some good sources of info... This isn't a be-all, end-all list, but it should make you dangerous. Online, you can start at [www.Miata.net](http://www.Miata.net). Check out the forum for ideas and reviews and hit the marketplace for vendors. Brian Goodwin runs [www.good-winracing.com](http://www.good-winracing.com) which offers parts and a forum for advice. Don't forget [www.flyingmiata.com](http://www.flyingmiata.com) for all kinds of performance stuff for your Miata, including some really well-sorted out suspension options. Of course, the venerable Moss Motors has plenty to choose from as well at [www.miatamania.com](http://www.miatamania.com).

I also highly recommend Keith Tanner's books, he works for Flying Miata and has done just about everything imaginable with a Miata. Mike Fisher recently ran a group buy on Keith's latest book: "How to Build a High Performance Miata", which is a great source for learning how things on the car work. One of his previous books: "Miata Performance Projects" details how to swap sway bars, shocks, springs, brakes and much more. Both books can be found at the Flying Miata website or via Amazon.com. Barnes & Noble usually has one of them in stock as well.

I hope this gives you some ideas and a place to start. Next month, we'll get into your shock and spring options. :O)

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