

Setting Your Adjustable Shocks.

Fine tuning the Suspension.

Last Spring I wanted to improve the suspension in my 2006 Miata GT. I started out trying to do this on a budget, and now ended up with what I originally wanted. I just didn't have the extra cash to play with in the beginning. I will skip the troubles I had, but remember how I earlier stated it is easy to make changes and make the Miata worse than before? I proved this to myself this summer. Note what I am going to explain can apply to ALL year Miatas, but the parts for your particular year Miata may be slightly different. The parts discussed below are for the 2006 to 2015, NC Miata.

I ended up with the Flyin' Miata, NC, "Stage 1" Suspension Package to go with the RX-8 sway bars I already had. This Suspension Package consists of 4 Tokico, model HTS adjustable Shock Absorbers, and 4 Springs which were designed by Flyin Miata to compliment the HTS Shocks, and the NC Miata itself. Luckily I saved some money by finding some used items on the Miata.net forum in the For Sale department.

Link to FM, NC, Stage 1 Pkg. for ref.: <https://www.flyinmiata.com/nc-stage-1-suspension-kit.html>

I wanted to improve the suspension because of the softness of the OEM suspension, and how "bouncy" the OEM shocks were. I also wanted to lower it just a little to get an alignment setting I could not get as it was. I wanted it a little firmer so it would corner better too.

After I installed the shocks and springs came the time to adjust the compression and rebound settings on the shock. Compression is when you hit a bump and the wheel goes up. Rebound is when the spring pushes the wheel back down onto the road surface. One thing I like about the Tokico HTS Shocks is that the Compression and Rebound are both adjusted at the same time. This is great for street driving, and is still good for track and autocross. I didn't have a clue as how to set these for optimum handling of the car and still have an acceptable ride for my daily driving, so I had to learn "how" to set them!

If you REALLY want to dig into all forms of suspension tuning, click on this link. This is where I learned the trick that helped me here: http://farnorthracing.com/autocross_secrets6.html.

Imagine a car with 4 springs and no shocks! It would bounce around like 4 Pogo Sticks. The Shocks need to be set to "Damp" the oscillations or cycles of the springs. The word is to "Damp", not Dampen (which is to make wet).

The trick is to have the Springs (and sway bars) control the Body Roll in a corner, and then adjust the Shocks to control the Springs! Some have tried to use the Shocks to control the Body Roll, and in turn made the ride unbearably harsh. The shocks need to be set soft enough to allow the wheel to go up when it hits a hard bump. This lets the Spring absorb some of the harshness of hitting the bump. But you do not want the spring to push the wheel back down so hard and fast that this creates another bounce. The trick is to set the shocks so when you hit a bump, the spring makes ONE CYCLE up and then back into the normal position. This is called Critically, or properly damped. In short, the shocks have to be set soft enough to allow the springs to move, but firm enough to keep the movement to one cycle.

After reading thru the linked article above, I set my springs to about 80% soft and then went to Costco. I then drove over the speed bumps at parking lot speed and closely "watched" how the car reacted when I hit the speed bump. 80% was too soft, so I adjusted the shocks ½ turn firmer at a time until I had a "one cycle" speed bump hit, again at parking lot speed. Now I am doing my daily driving and sporty drives to see how I like it. Per the article, once you have the right setting for your springs, it should be good for all circumstances. The settings can vary for your car, but so far so good for me.

If anyone wants to install Miata springs and shocks, I have a spring compressor, and I just may be willing to supervise too! Let me know.

Zoom-Zoom in control! Bill Latsha