

# Flyin' Miata

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## FM V-Maxx suspension

Congratulations on purchasing your new suspension. These instructions will not tell you how to remove/install Miata springs and shocks, but will give you V-Maxx-specific instruction. If you'd like details on how to pull the shocks out of a Miata, we recommend *Mazda Miata Performance Projects*, available from Flyin' Miata.

### Initial assembly:

Slide the bumpstop down onto the shock shaft - it doesn't matter which way is up. On an NB (1999-05), you will have to remove the upper washer first, then replace it. When assembling the spring/shock assembly, it doesn't matter which of the two springs goes on top. There is no rubber between the machined blue spring guide and the upper mount. When you tighten the top nut, do NOT use an impact wrench. You will strip things. If you can't get them all the way tight, get the nut as tight as possible, then install the assembly. Once all four corners are done, put the car on its wheels, then tighten the top nut. If it's still spinning, put a floor jack under one control arm, lift it a bit (not a lot) and try again. For the lower bushings (connecting the shock to the control arm), don't tighten that until all four corners are on the ground. Do not lift the car to gain access, although you can use ramps if need be.



The assembly sequence for the NB shocks is shown here.

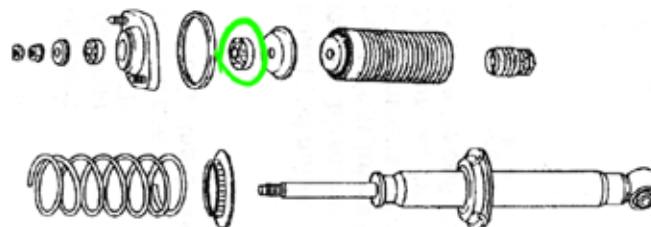
Note the lower bushing is the one with the TOP marking - this marking goes towards the top when installed. If you have one of the NB conversion kits, all the parts you need will be supplied.

Please note that the V-Maxx shocks have a shorter body than other Miata shocks, and are thus incompatible with our FM upper shock mounts or other high-travel mounts as this will extend the shock travel beyond the limitations of the Miata suspension.

It's a good idea to be sure that the springs are on the correct shocks. The front (longer) shocks should have the "XXX-70" (sport) / "XXX-90" (track) springs, the rear (shorter) shocks should have the "XXX-46" (sport) / "XXX-60" (track) springs. The smaller springs are the same for all four corners.

An installed bumpstop on a 1999-05 shock. 1990-97 cars do not have the upper washer.

The instructions included with the NB V-Maxx shocks tell you to remove this bushing. Don't. You need it. Assemble the shock as shown.



## Perch heights / damping:

The ride height of the car is set by the height of the adjustable perches. The range of adjustment in the V-Maxx shocks allows you to lower the car to the point of uselessness. We don't recommend you slam the car too low, as you need to retain some suspension travel for good handling and ride. If you measure from the center of the wheel to the bottom of the fender, a good target would be between 12-12.5" in the front and 12.5-13" in the rear.

To start, set the perches as follows, measured from the center of the lower mounting point to the bottom of the lower perch / lock nut.

1990-97: 8 3/8" front, 5 1/2" rear

1999-05 (and 1990-97 cars using the NB setup): 9 3/4" front, 5 1/2" rear

If you got the V-Maxx XXtremes, you'll want to set the damping as follows. All settings are from full stiff (full stiff = all the way clockwise):

	Front	Rear
Track	2 clicks	4 clicks
Sport	18 clicks	20 clicks

## Alignment:

A good alignment makes a huge difference to car handling. The standard numbers from Mazda are fairly vague and don't necessarily flatter the Miata. A precision alignment can make even a standard Miata more fun to drive.

These are the numbers that we use at Flyin' Miata. They work well for cars fitted with our suspension kits or stock setups. There is no odd tire wear. Racers might want to vary their setup based on their particular needs of course. If you take your car to an alignment shop, ask them to come as close as possible to these settings. For a full discussion of what these numbers mean, you can read Miata Performance Projects.

It's possible that not all cars will be able to reach these numbers. If this is the case, please call our tech line (970.464.5600) and our techs will be able to advise you.

### Front:

Caster: 5.0 degrees

Camber: 1.0 degrees negative

Toe-in: 1/16" or 9 minutes total (1/32" or 4.5 minutes per side)

### Rear:

Camber: 1.5 degrees negative

Toe-in: 1/16" or 9 minutes total (1/32" or 4.5 minutes per side)