

NB KONI SUSPENSION KIT INSTALL TIPS 13-58018 & 13-163X0



Thank you for purchasing our Flyin' Miata suspension kit for your 1999-05 Miata! These directions are not intended to replace a shop manual and don't attempt to cover the whole installation. They will, hopefully, give you a few pointers specific to our setup. If you have any questions during installation or suggestions for improvement to the product or the instructions - please don't hesitate to call or email.

WARNING: Not everyone can perform every installation. It is critical that you be honest with yourself in regards to your ability. We're more than happy to help, but there are only so many things we can do from the other end of a phone / computer. If in doubt, discuss the install with us before you dive in. Improper installation could cause injury and / or death!

First you need to remove the stock shocks and springs (as an assembly) from your car. Disconnecting the sway bar end links will make this process much easier, as will removing the bolt holding the upper front control arm to the subframe.

Once the assemblies are out, you'll need to remove the shock mounts / top hats. Be sure to use a spring compressor (carefully!) to safely do this.

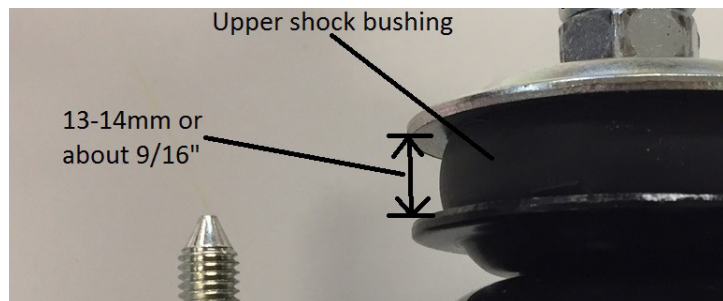
The factory shock assemblies often had rubber insulator pads at the top and bottom of the factory springs. They are not intended to be used with Konis with FM springs on NBs or an undesirable increase in the ride height will occur.

The springs are labeled clearly front and rear. Install them as labeled.

The "open coil" on the spring fits into the stepped seat on the shock, the "closed coil" fits into the bottom of the shock mount / top hat. Be sure to follow the diagram on the next page to get all of the parts in the correct order. The Konis have an additional thin white plastic spacer that must be put on the shock shaft of each shock. It's most likely pre-installed, but be sure it's there.

Be sure to drill out the stock top and bottom washers to 12mm / 15/32".

Be very careful tightening the nut on the top of the shock shaft! Since the shaft is hollow, it's possible to over-tighten this nut. Be sure the threads are clean and lift the lower control arm with a jack. Tighten the shock shaft nut until the top washer is roughly 9/16" (14mm) away from the shock mount (as shown), but do not exceed 37 lb-ft. There are two flats on the top of the shaft that can be used to keep the shaft from spinning. A broken shaft (much like a scratched shaft) is not a warranty, and you'll have to purchase another shock. Be sure to install the supplied lock washer before you install the nut.



Once the springs have been installed, crack all of the bushings loose (aside from those that are already loose). Specifically, the bottom of shock, all control arm bushings, end links - anything that twists the rubber bushing. This will ensure proper ride height and undamaged bushings. Instead, loosely install the bolts, put the wheels on, roll the car back and forth a few feet, then tighten the bolts. Make sure that the car is on its wheels when you tighten the bolts. Or, if you have our hub stands, use those - they'll make your life much easier.

We recommend that the damping be set 3/4 of a turn from full soft. In other words, using the included white plastic adjuster, spin the knob in the opposite direction of the "firm" arrow, without forcing anything, then turn it 3/4 of a turn back. Please note that these are not pre-set.

The ride height of the springs has been chosen to allow a good combination of looks, low center of gravity and suspension travel. They should end up with the front wheels about 12.5" in the front and 13" in the rear, when measured from the center of the wheel to the fender lip. If you'd prefer a lower car, cutting one of the dead coils off will lower the car about 1" without affecting the rate.

You will need a four-wheel alignment after installing these springs, as lowering the car will add negative camber. Our recommendations are below / on the backside of this page. Negative toe (toe-out) in front will give a slightly faster turn-in, may make the car a little darty for daily use and will wear tires faster. For a street car I would stick to a little positive toe (toe-in).

Front

Caster: 5.0°
 Camber: 1.0° negative
 Toe-in: 1/16" total (1/32" per side)

Rear

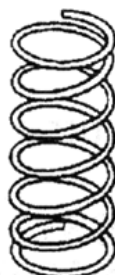
Camber: 1.5° negative
 Toe-in: 1/16" total (1/32" per side)

Conversions:

1/16" toe = 0.15° = 9 arcminutes

Torque Specs:

Upper shock nut: not to exceed 37 lb-ft
 End links: 32-44 lb-ft
 Front lower shock bolts: 69-86 lb-ft
 Rear lower shock bolts: 54-70 lb-ft
 Upper shock mount nuts: 22-27 lb-ft
 Front upper inner control arm bolts: 87-101 lb-ft
 Front lower inner control arm bolts: 69-83 lb-ft
 Rear upper control arm bolts: 40-56 lb-ft
 Rear lower inner control arm bolts: 54-70 lb-ft
 Rear lower outer control arm bolts: 47-54 lb-ft



SPRING



WASHER



UPPER BUSHING



UPPER MOUNT



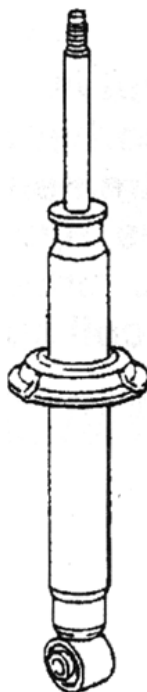
LOWER BUSHING ("TOP") AT TOP



BUMPSTOP SUPPORT OR WASHER



BUMPSTOP



SPRING PERCH

SHOCK NB SHOCK ASSEMBLY
Flyin' Miata

Koni part numbers:

- NB front shocks - 8041 1251SPORT
- NB rear shocks - 8041 1252SPORT