

### FM COOLANT REROUTE TURBO CONNECTION KIT 09-61000



This kit is intended to work with our FM coolant reroute kit, allowing you to reroute the turbo water so that the engine as a whole runs cooler. It's a simple install, but be sure to route the lines carefully. If you have any questions or suggestions for improvements, please don't hesitate to get in touch with us.

**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!**

#### Required tools:

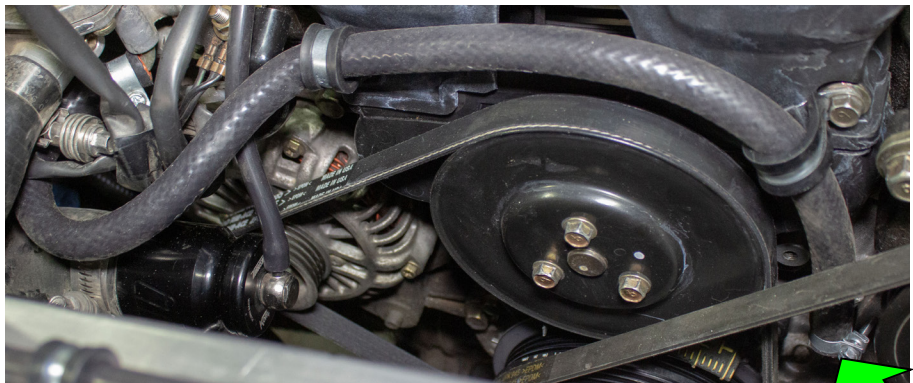
- 1/2" combo wrench
- 7mm socket + extension
- 19mm combo wrench (pref. short)
- 12mm socket
- Ratchet

#### Torque specs

- NPT threads: hand-tight + 1.5-3 turns

These instructions assume you're installing this kit on a car that has a Flyin' Miata turbo kit. This kit will work fine on non-FM turbo kits, but if you don't have one of our kits you'll need to tweak as necessary. However, it is critical that the port from the bottom of the reroute be plumbed into the turbo from the bottom - the water must flow vertically into the turbo. Conversely, the upper port on the reroute must be plumbed to the turbo such that the hose at the turbo points up, away from the turbo. Water flows out of the lower port of the reroute and back into the upper port, so this means the water will flow up, into the turbo, then up again, away from the turbo. This is important for the thermal siphoning that happens after the engine is shut off.

1. Drain the cooling system. Remove the silicone intake hose on the front of the turbo.
2. Remove the heatshield around the turbo to gain access to the water lines. On FM heat shields, there should be one bolt near the shock tower, one nut and bolt near the master cylinder, and one bolt underneath the heater hoses.
3. Start by removing the original turbo water lines. We won't be reusing them or their heat sleeves. We'll reuse both the banjo bolts and banjo fittings, though. (If you have our non-reroute hard line kit you'll need new banjo fittings, but you'll still reuse your existing banjo bolts.) The inboard banjo will need to be pointed down - this is most likely its current orientation, if so the banjo bolt doesn't necessarily need to be loosened. The outboard banjo fitting will need to point straight up, so you'll most likely need to re-orient it (don't fully tighten it yet). Replace all crush washers (included) on banjos that get loosened. If the banjo isn't loosened there's no reason to replace the washers.
4. **On non-MSM (Mazdaspeed) engines only**, use the new 5/16" silicone hose and two of the included hose clamps to connect the water pump inlet (1) to the thermostat neck (where the turbo water lines were originally connected). If you're removing the thermostat neck, run a hose from the water pump inlet to the idle air control valve (where the other hose on the thermostat neck went). Use the 5/8" P-clamps to secure the hose as shown. It's critical to do this, as the hose will be easily cut by the belts and pulleys otherwise.





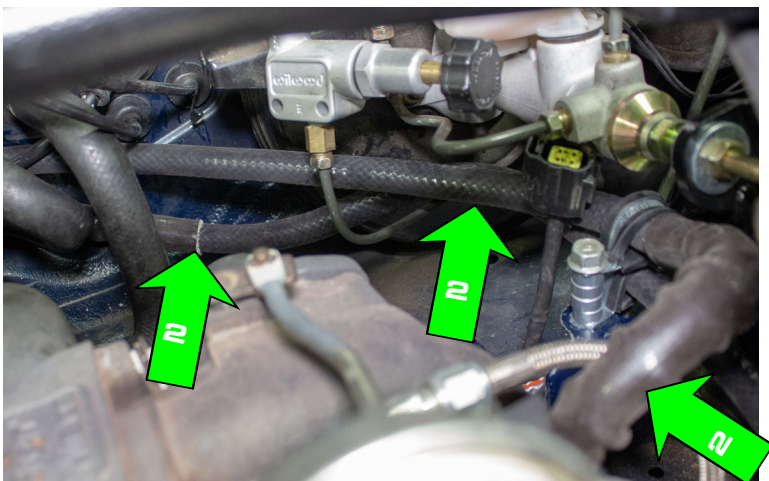
5. Find the included stepped stud (36-16450) and thread it into the weldnut near the shock tower, as shown (look for the stacked P-clamps in the other pictures). Thread it down until roughly 1/4" of thread protrudes through the bottom. Grab the M8 nut (36-20240) and thread it onto the lower part of the stud (underneath the tab the stud is tightened into). Tighten it into place to secure the stud.



6. Cut the included heat sleeve into 1' sections and slip one section onto the end of the 5/16" hose. This will be a relatively tight fit, so there are a few hints to ease the job. First, it's easier to push the heat sleeve on than pull it on. Once it's started, you can push a larger section on, which will create a roll of heat sleeve which can then be worked down the length of the hose. Short-lived lubricant - e.g. Simple Green - can also ease its installation.

7. The water lines will route from the turbo, loop around towards the brake master cylinder (2, behind the brake lines), then run parallel to the heater hoses. With that in mind, route the 5/16 hose (36-40120) from the stud you just installed towards the heater hoses (don't run the line to the turbo yet). Route the hose cleanly through the brake lines, then parallel to the heater hoses. Slip a hose clamp (36-70202) onto the end of the hose (don't cover the heat sleeve) before it's inaccessible, then push it onto the lower hose barb. This can be an awkward place to push the hose on, so a little Simple Green on this barb (and the rest of them) will make your life easier.

8. Secure the hose to the stud using another 5/8" P-clamp. Put the hose on the outboard (farthest from the engine) side of the stud. Don't put a nut on the stud yet.



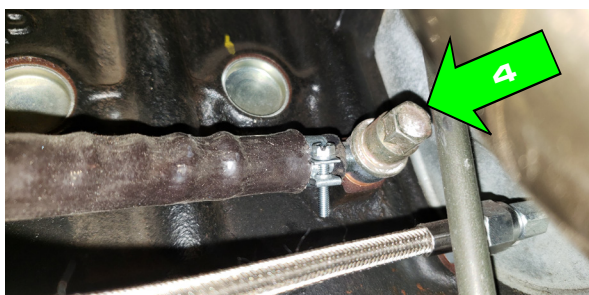


9. Carefully route the hose under the compressor inlet (which has been temporarily removed), through the power steering hose (3, as shown), then back around to the banjo fitting. Measure the length needed, and cut the hose to length. It's much easier to cut more hose off than to put it back on, so experiment conservatively. Be sure the routing is clean everywhere before you make the final cut. Pull the hose back out, and slip a foot of heat sleeve onto it, then slip it back into place. Slip a hose clamp over the end, then push it onto the hose barb. Secure the hose with the hose clamp and be sure the banjo bolt is tight. It's very important that the hose not rub on any metal edges. Rearrange stock hose clamps and secure as needed. A sharp edge will quickly cut through the hose.



10. It's time for the other turbo water line now. Slip the heat sleeve over the end of the hose, then route it similarly to the first hose. **For '90-'97 cars only**, you'll most likely want to route it under the speedometer cable near where the cable comes out of the firewall, then over the speedometer cable closer to the reroute itself. Route this hose up, then back down to the outside banjo fitting that's pointing up (it should be routed forward of the oil supply line). Slip the 1" long spacer over the P-clamp on the newly installed stud, then use another P-clamp to hold this hose in place. Put this P-clamp on the same side as the other one, and locate it to help hold the hose clear of both the oil supply line and the heatshield. Both will easily cut straight through the silicone hose. Measure the length and cut the hose. Again, experiment and be conservative. Be certain the entire length of the hose is routed properly before you make the final cut. Slide the heat sleeve over the hose, slip a hose clamp on, then push it onto the hose barb. Tighten the banjo fitting such that the hose will be held clear of the oil supply line.

11. **On MSM engines *without* the stock turbo only**, you'll need to connect the original water port in the block (4) to the water port on the heater bypass pipe (5). Use your existing banjo bolt, fitting, and crush washers (don't loosen the bolt), along with your original clamps and the new (included) hose and heat sleeve to connect the two ports. If you have a Garrett GT2560R turbo, use the included P-clamp and hardware to secure the line to the bracket on the turbo. Simply capping the bypass pipe isn't a good long-term solution, so running a hose between the two will keep everything sealed up for a long time. (MSM engines *with* the stock turbo should be using our MSM turbo connection kit, 09-61050.)



12. Take another look at everything. Be certain that everything is routed cleanly and that the hoses are safe from any chafing. When appropriately routed, these hoses should live a long life. Be sure you're happy, then reinstall the heat shield and continue with the main instructions.