



Mazdaspeed Miata Intake Upgrade

11/26/07

Start by inspecting and cleaning the inside of your new intake pipes. Brake cleaner and compressed air works well. We've cleaned them already, but any debris can damage the engine so this is important!

The FM intake parts have been designed to work as a system. If not all the FM components are used, you may have to plug various fittings that are left over.

Throttle Body Inlet Pipe:

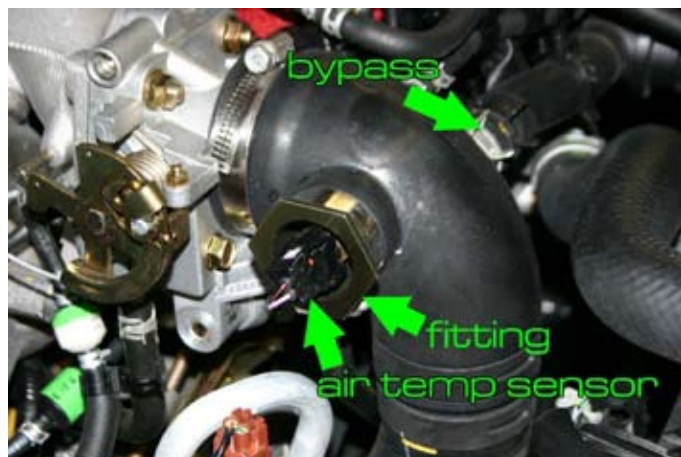
Remove the stock throttle body inlet pipe. Remove all attached hoses as well as the air temperature sensor found on the left side of stock pipe. Remove the sensor itself from the metal fitting. Completely remove the factory bypass valve from the car. Be careful with the stock clamps! They can bite.

Install the new FM pipe using the clamps and hose provided. The two larger clamps go on the throttle body. These clamps are tight when the four washers on top are all in contact. Don't bother tightening any further.

Install the air temp sensor and plug it back in. Remember the factory crush washer that was with the sensor!

Attach the blowoff valve to the side of the throttle body pipe using the supplied hose and clamps. The signal line for the blowoff valve can be attached to the stock location and the stock hose can even be made to fit. If you are using a valve other than our GFB, it's possible you will have to come up with an adaptor to match the size of the fittings. If you have the recirculating valve from GFB, please see the extra sheet of instructions.

Remember - if you are using the stock ECU, you must use a recirculating bypass or diverter valve. We've found that the vent to atmosphere valves that claim they'll work with a stock ECU don't (typically) work as well as advertised.

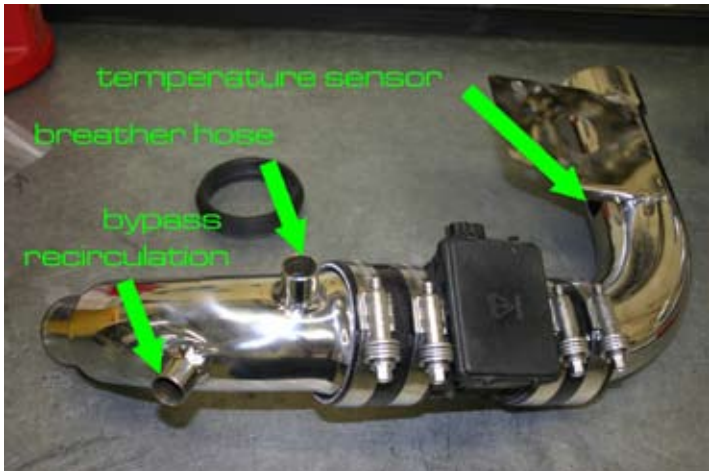


Turbo Intake and Outlet Pipes:

Remove the stock airbox and inlet piping, the air temp sensor in the airbox, and also its rubber grommet. Remove the stock compressor out pipe and attached bits, and also the hoses to the stock boost control solenoid on the front. Undo the two bolts on the shock tower brace as well. Watch out for the black clamps on the stock rubber hoses, they're vicious!



Assemble the intake as shown at right. The MAF sensor can be rotated in the pipe, but be sure it's in the correct way around. There's an arrow on the sensor that should point towards the pipe with the two fittings on it. That's the compressor inlet pipe.



Install the intake in the car. Insert the temperature sensor and grommet into the hole on the air filter pipe. The flat bracket should be sandwiched between the shock tower mount and the brace. Use the factory hose clamp to attach the compressor inlet pipe to the hose on the turbo. Slide the filter over the end of the intake and tighten the hose clamp. The filter is a tight fit, but it does fit. Plug in the MAF. You may find the wires reach better if the MAF is rotated as shown.



For the breather hose, take the stock piece and cut it in half. You can remove the soft padding. One end is oversize. Use the other piece. Use the blue clamp to attach it to the fitting on the intake. This does not see boost so it only has to be tight enough to keep it from falling off.

Install the new compressor outlet pipe. This is the pipe with "Flyin' Miata" engraved on it. It only fits in one orientation - you should be able to read "Flyin' Miata" from the driver's side.

There are a wide variety of bypass valves available on the market. We recommend replacing the factory unit. If you have a valve that recirculates, hook it up to the recirculation fitting on the intake using hose of the appropriate diameter. If you have one that vents to atmosphere, the fitting can be capped.

Boost control

Locate the thin hose coming from the wastegate actuator on the turbo. There is a joint right about where it passes the front of the engine. Pull the hoses apart at this point.

Plug the hose into the outlet end of the boost controller as shown in the picture. The vacuum hose supplied with the kit should be attached to the other end and secured with a zip tie. The other end of this hose should go to the nipple on the compressor outlet pipe (the one with “Flyin’ Miata” engraved on it). This will be a tight fit but it will go over. The hose can be trimmed to make it shorter if desired. Use the included zip tie to hold it in place.



The factory boost control solenoid that is bolted to the front of the valve cover is no longer required. Any hoses attached to it can be disconnected and removed. If your car still has the stock throttle body inlet pipe, the nipple there will need to be capped. Keep the wiring plugged into the factory solenoid or you will get a check engine light. If you do want to remove it completely, use a 50 ohm resistor across the two wires in the harness to prevent the light.

Install the compressor outlet pipe into the two rubber intercooler hoses and use the supplied clamps to hold it in place. The factory clamps will not hold everything together.

Your car is now ready to drive.

To set the boost control, the best way is to use a boost gauge. The goal is to set the boost just under the boost cut threshold. The controller is adjusted by turning the end. Threading it in will raise the boost, unscrewing it lowers the boost. If you have a boost gauge, set the boost level to 9 psi. If you do not, set the boost as high as you can without hitting the (violent) boost cut. You won't hurt your car by hitting the cut but it won't be any fun.