Syclone & Typhoon Silicone Vacuum Harness

Step 1: Remove Old harness

Quick Overview:
Remove vacuum hose and fittings including:

- Main Harness: starts at the front of the intake manifold and connects to the vacuum ball, EGR, cruise control, and hard plastic line that goes into the firewall for HVAC controls.
- Charcoal Canister Line: starts on the bottom of the throttle body and connects to the charcoal canister.
- Rear Manifold: The rear intake manifold source to MAP & FPR.

Detailed Instruction:
The stock system used metal hose clamps. These are not reusable with the new kit, and will most likely be your least favorite part of installation. I haven't come up with a sure fire method of removal beyond clamping down on them with a pair of wire cutters and prying them loose enough to slip the fitting off. Always be careful not to bend or damage the barbed fittings under each clamp. They are usually metal and fairly strong, but just remember you don't want to damage them. The same goes for the original plastic tubing. It can be brittle and will only bend so much, so be careful when removing.

Remove as needed:

Main Harness:

- The front intake manifold vacuum source is located right above the thermostat housing behind/below the throttle linkage. It should be a brass fitting pointing to the passenger side. Remove the rubber line from this connection.
- Disconnect both connections on the front of the EGR Solenoid located above the driver's side valve cover.
- Disconnect the EGR valve located on the rear passenger side of the intake manifold.
- Disconnect the line feeding the cruise control. This line comes from the big plastic check valve on the main harness near the FPR, going directly to the driver's side of the engine into the cruise control unit. Simply pull it off the nipple located there. It's the smaller of the two lines going into the cruise control.
- Disconnect the vacuum ball. This is the most difficult location to reach. The vacuum ball is located under the battery tray. If you have your fender well out, It should be easy to reach through the wheel opening. Otherwise, you will have to remove the battery, and battery tray. Start by disconnecting positive and negative terminals on the battery and pull the battery out. 4-5 bolts hold the battery tray in. One facing out from each corner, except the top right that bolts down into the fender well. The vacuum ball is attached to the bottom of the battery tray by 2 bolts. Simply pull the vacuum line off the ball.
- Disconnect the hard HVAC line located at the rear of the engine bay between the fuel pressure regulator and the distributor cap leading into the firewall. This is the last connection for the main harness, you should be able to carefully remove the entire harness and set it aside. The hard lines for the EGR and MAP sensor may be taped together with some of the wiring harness near the distributor cap.

MAP/FPR Harness:

- The rear manifold vacuum source is located at the rear of the intake manifold. It's a large brass fitting which points downward toward the ground. Remove the hoses connecting to the brass fitting.
- Disconnect the Fuel Pressure Regulator just a few inches away on the passenger side of the intake manifold.
- Disconnect the Manifold Absolute Pressure Sensor. The sensor is located on the driver's side of the intake manifold near the EGR Solenoid. You'll have to pull the black plastic rectangular box out of its retaining bracket (it just snaps in). 4 plastic prongs hold it in. Usually I can remove mine by pulling on it one side at a time. Once it's free you should be able to remove the vacuum line from the bottom of the MAP Sensor.

Charcoal Canister Harness:

- The vacuum source is located on the throttle body. It points directly downward from the front, bottom side of the throttle body where it meets the intake manifold. The fitting has no barb, so you can most likely twist/pull the line off without any fuss.
- The other end goes down below the Air Intake Box. Remove the screw that holds the intake box down, and unclamp the intake tube near the turbo's orange hose (be very very careful here as the plastic on either end of the intake tube is prone to cracking if stressed or over-tightened, there is no need to apply any significant force to these clamps). Pull the line off the charcoal canister and set aside.

Turbo:
Remove both hard lines on the turbo. One connects the turbo to the wastegate solenoid, and the other goes from the solenoid to the wastegate.

Step 2: Installation

Quick Overview:
Replace all vacuum hoses with the ones included in the kit. Make sure to keep wide enough radius bends to prevent kinking, and keep the hose away from high heat sources (exhaust manifolds, downpipe, turbo exhaust housing) and battery acid. Adding a zip tie as needed will complete the connections you make. Always tighten the zip tie behind the barb to prevent the hose from slipping.

Detailed Instruction:

Main Harness:
- Lay the harness out so that the appropriate tees are facing the correct directions (cruise and EGR go right, the long vac ball line goes left)
- Connect the rear connection to the HVAC hard line coming from the firewall. I routed the main harness along the passenger side of the FPR. The line for the cruise control will go around the back of the FPR, and the line leading to the EGR solenoid will route in front of the FPR.
- Run the vacuum ball line behind the intercooler, into the front most fender opening, down out the bottom fender opening, and into the vacuum ball. This will route it around the battery tray to prevent kinking. Re-install the battery tray and battery AFTER YOU INSTALL THE LINES FOR THE TURBO.
- Run the Cruise control line between the cap and the intake manifold down to the cruise control and attach.
- Run the EGR feed line between the distributor cap and intake manifold. Attach it to the outer most nipple on the EGR solenoid.
- Attach the separate EGR line to the other nipple, route back behind the intake along side the EGR feed line, and attach to the EGR valve.
- Run the larger line on the harness under the throttle body and attach to the front manifold intake source.

MAP/EGR Harness:

- Attach the short leg to the rear manifold source.
- Connect one of the legs to the FPR.
- Connect the other end to the MAP sensor, running between the cap and the intake manifold. Reseat MAP sensor in place.

Charcoal Canister Harness:
- Attach the wider end to the charcoal canister. You can feel the nipple it slips onto on to at the top of the canister. It is just to the left (passenger side) of the other line going to the canister. No zip tie required here, as there wasn't any clamp before.
- Run the line up, behind the air box, over the valve cover, between the intake manifold and the pulleys. Remember to keep this line away from the serpentine belt.
- Attach and zip tie the end with the check valve to the throttle body source.

Turbo:
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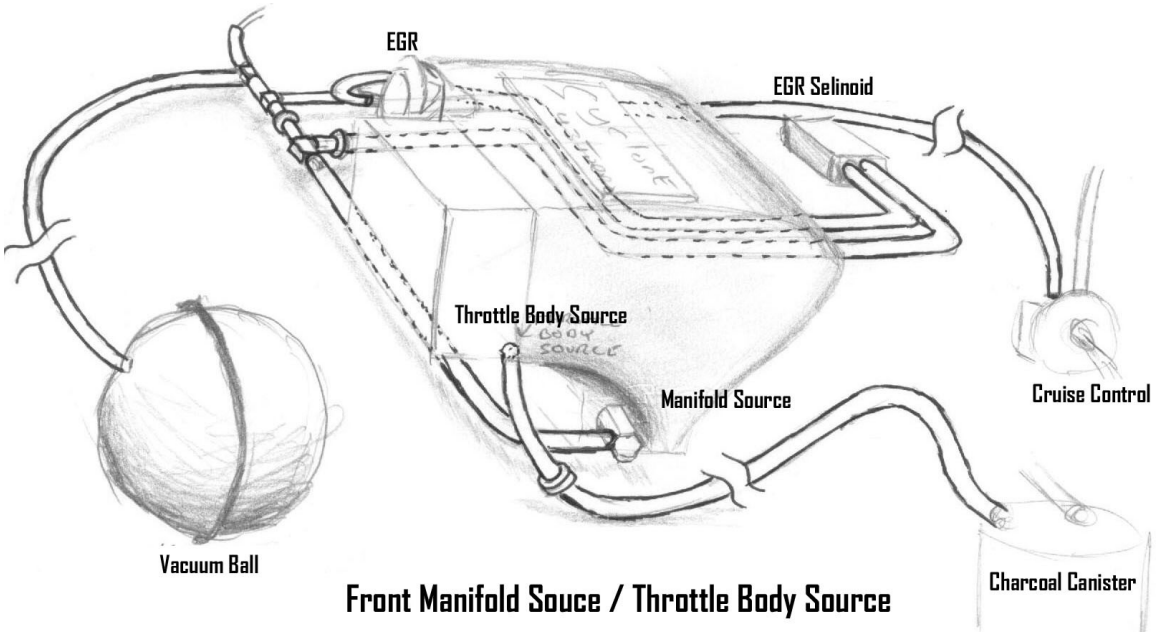
Step 3: TestingThe shorter line attaches the upper nipple on the turbo housing to the passenger side nipple on the boost/wastegate solenoid.

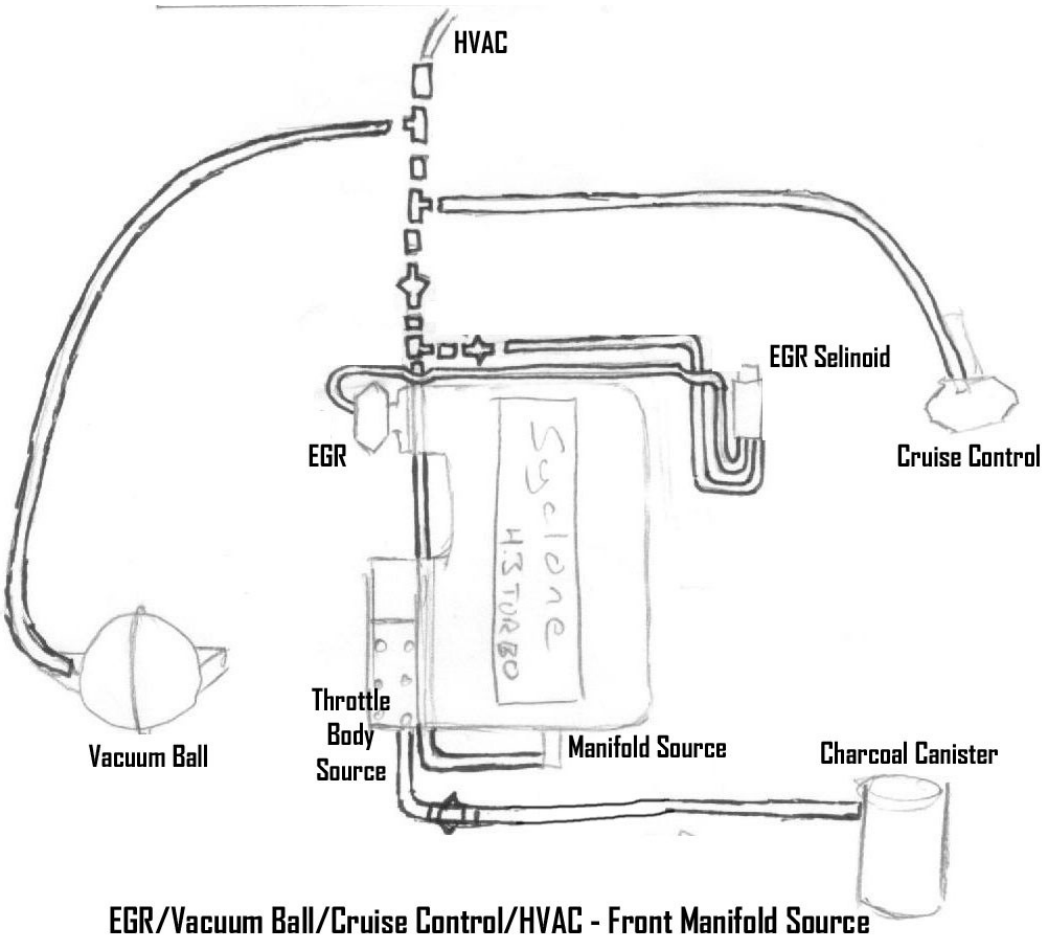
The top most nipple on the right side of the boost/wastegate solenoid (bottom one doesn't connect to anything) attaches to the nipple on the wastegate. It most likely will need to be trimmed a little shorter to keep it from contacting the AC compressor: install the hose and observe the clearance between the hose and the AC compressor pulley. Cut a 1/8" - 1/4" length and re-install to test the clearance. Repeat until your satisfied there is enough clearance. This hose is thicker to make it less prone to kinking for this very reason, but still take caution not to cut it too short and cause a kink.

Once every connection is well made, zip tied, and sealed properly, you should have a happy vacuum system. Start it up and let it idle for a while (your computer was likely reset by removing the battery). Keep your ear open for any noticeable hissing from an open vacuum line. Check your AC system to make sure air blows out of the top vents. Once everything seems normal, go for a ride. If you can, make sure fuel pressure is rising accordingly with boost. If anything seems out of the ordinary, stop and open the hood to investigate for any open, disconnected, or improperly connected lines.

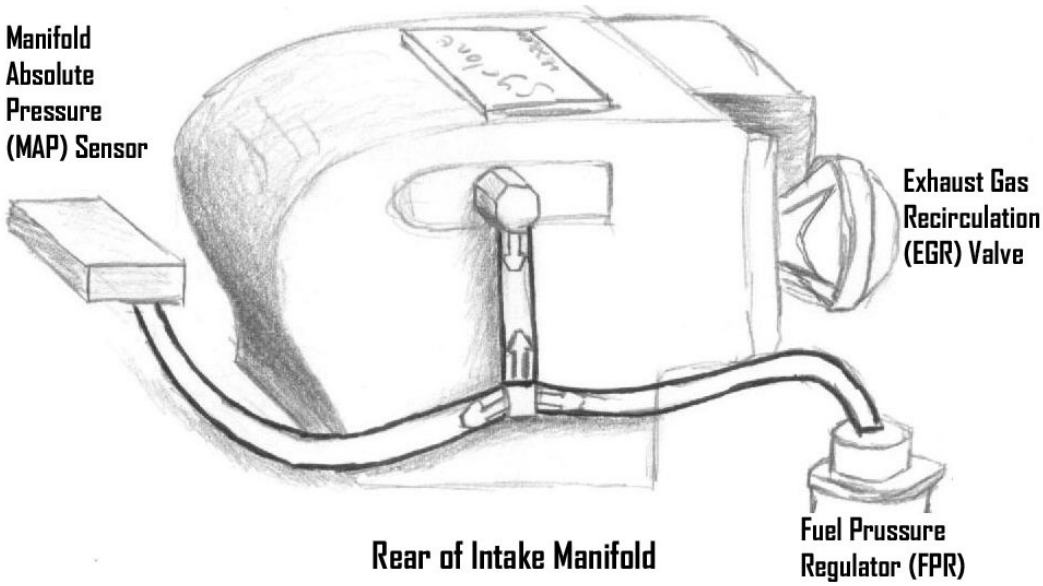
Your done. Rejoice.



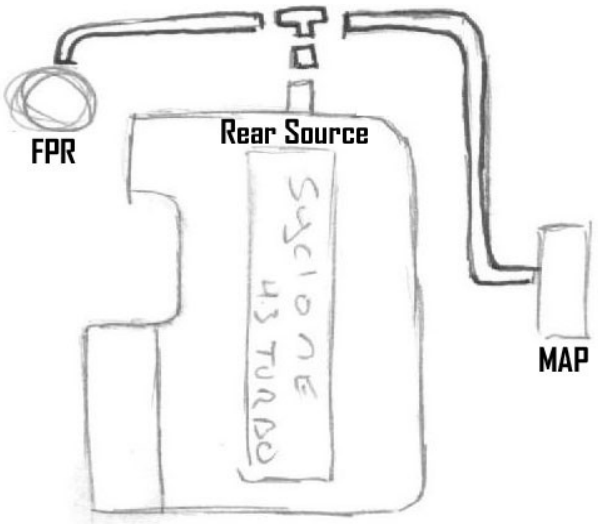
Front Manifold Souce / Throttle Body Source



EGR/Vacuum Ball/Cruise Control/HVAC - Front Manifold Source
& Charcoal Canister - Throttle Body Source



Rear of Intake Manifold



MAP/FPR - Rear Manifold Source

Quick Vacuum Harness Connection Guide

Main Harness Colors	Connects to:
Green	HVAC @ firewall
Red	EGR Solenoid
White	Cruise Control
Yellow	Vacuum Ball
Blue	Front of Intake Manifold
MAP & EGR "T"	
Red	Fuel Pressure Regulator
White	MAP Sensor
Individual Lines	
Red (shorter)	Wastegate Solenoid to Wastegate
Yellow	Wastegate Solenoid to Turbo
Red (longer)	Charcoal Canister to Throttle Body
Blue	EGR Valve to EGR Solenoid