

# MAGNUSON

## SUPERCHARGERS

### Installation Instructions for: CORVETTE SUPERCHARGER SYSTEM 2014-2017 C7 LT1 CORVETTE



Step-by-step instructions for installing the  
**HeartBeat** of supercharger systems.

**\* PREMIUM GASOLINE FUEL REQUIRED \***



**ATTENTION!**  
Your MAGNUSON SUPERCHARGER kit  
is sensitive to corrosion!  
Use only the vehicle manufacturer  
recommended coolant for your engine in  
the intercooler system as well.

Magnuson Products LLC  
1990 Knoll Drive, Bldg A, Ventura, CA 93003  
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# INSTALLATION MANUAL

## Magnuson Supercharger Kit: GM 6.2 Liter Engine Chevrolet Corvette 2014-2017 C7 LT1 HeartBeat

Please take a few moments to review this manual thoroughly before you begin work. Make a quick parts check to be certain your kit is complete (see Bill of Material (BOM) parts list inside the accessory box). If you discover shipping damage or shortage, please call our office immediately. Take a look at exactly what you are going to need in terms of tools, time, and experience. Review our limited warranty with care. When unpacking the supercharger kit DO NOT lift the supercharger assembly by the black plastic bypass actuator. This is pre-set from the factory and can be altered if used as a lifting point!

Caution: Relieve the fuel system pressure before servicing fuel system components in order to reduce the risk of fire and personal injury. After relieving the system pressure, a small amount of fuel may be released when servicing the fuel lines or connections. In order to reduce the risk of personal injury, cover the regulator and fuel line fittings with a shop towel before disconnecting. This will catch any fuel that may leak out. Place the towel in an approved container when the job is complete.

### Use only premium gasoline fuel, 91 octane or better.

Magnuson Products recommend that you run a minimum of one (1) tank of premium fuel through your vehicle prior to installation of the system to prevent any possible damage that may occur due to running the supercharged engine on lower octane fuel.

Magnuson Products Supercharger systems are designed for engines and vehicles in "GOOD" mechanical condition. Magnuson Products recommend that a basic engine system "Health Check" be performed prior to the installation of this supercharger system. Be sure to check for any pending or actual OBDII codes and fix/repair any of the stock systems/components causing these codes. If there are codes prior to the installation they will be there after the installation.

Magnuson Products also recommend the following services to be performed on your vehicle before starting and running the vehicle post supercharger system installation:

- Fuel Filter change
- Engine oil and filter change using brand name oil (organic or synthetic) and filter  
Note: It is VERY IMPORTANT to use the factory specified oil viscosity. The original equipment manufacturer has selected this grade of oil to work with your other engine systems such as hydraulic chain tensioners and variable cam controls. Deviation from this specification may cause these systems to fail or not function properly. Please refer to your owner's manual for the recommended oil viscosity for your engine and application.

- On newer vehicles not requiring new spark plugs it is important to verify the spark plug air gap.

On older vehicles Magnuson Products recommend these additional services to be performed:

- New spark plugs with the air gap set at the factory specifications OR new specifications if required by the installation manual.
- Coolant system pressure test and flush.

### NOTE: YOU MUST USE THE GM SPECIFIED COOLANT MIXTURE

Non "Magnuson Approved" calibrations or "tuning" will Void ALL warranties and CARB certification.

Drive belt = Dayco #21-2798 (Custom 2435 mm length) Order through Magnuson Products

### **Tools Required**

Metric wrench set  
1/4" - 3/8" and 1/2" drive metric socket set (standard & deep)  
3/8" and 1/2" drive Ft-lbs and in-lbs torque wrenches  
Phillips and flat head screwdrivers  
1/2" breaker bar  
Fuel line quick disconnect tools (included in kit)  
Small or angle 3/8 drill motor  
Funnel  
Drain pan  
Hose cutters  
Hose clamp pliers  
Safety glasses  
Small drift punch  
Hammer  
Nut driver  
Compressed air  
Blow gun  
Metric Allen socket set 3/8 drive  
Metric Allen wrenches  
Torx socket set 3/8 drive  
Plastic pry bar  
Drill bit (1/4), and hole saws (5/8", 1-1/4")  
Rotabroach (3/4") (Highly Recommended)

### **Contact Information:**

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NOTE: This instruction manual follows the process we used to complete this installation on our test vehicle.  
This does not imply there aren't alternate approaches.



## Section 1: Tuning your Vehicle Computer and Initial Steps

**Any reference to left or right side of vehicle is given from driver's seat perspective.**

1. If your kit came with the SCT tuner follow the provided SCT instructions for uploading the new tune to your vehicle. If your kit did not come with an SCT tuner you will have to use HP Tuners or equivalent to load your calibration.
2. Your Intercooler system is sensitive to corrosion. It's very important to use the OEM recommended coolant mixture in your super-charger system as well.



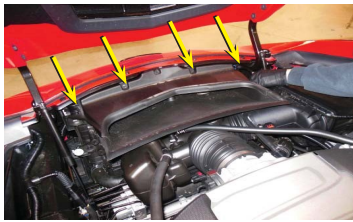
3. Your system requires the use of minimum 91 Octane gasoline fuel. This system is not compatible with E85 fuel.



4. Remove the negative cable from battery with a 10mm wrench. The battery is located in the right rear of car under the carpet. Place a rag over the negative terminal to prevent accidental connection. Place a rag over the rear hatch latch to prevent locking.



5. Install fender covers to protect the paint while working on the car. Remove the radiator duct bolts (4 each) with a 7mm nut driver. Remove the radiator duct.



6. Remove the plastic beauty covers (2 each) by pulling up on the inboard side. Then push towards the middle of the vehicle. Repeat on the opposite side of the engine.



## Section 2: Removal of Factory Intake Manifold and Accessories

7. Remove the vent hose from indicated locations shown. Push the gray buttons on connector to release.



8. Release the four quick connects on the dry sump vent hose assembly. Release the plastic clip securing the hoses near the alternator.



9. Take extra care while removing the hose at the valve cover connection. Pry from the top slowly. Do not pull left-right or you will break off the internal plastic clips.



10. Dry sump vent hose assembly can now be removed.



11. Remove the air duct shown with an 8 mm nut driver or a slotted screwdriver. Loosen the clamps at the throttle body, and air box. This part will not be reused.



12. Disconnect the Mass Air Flow (MAF) sensor harness by pulling back on the red slide, and pushing down on the black tab. Do not remove the sensor.



13. Remove the air box duct with a T25 socket. Two bolts are located at the top of the duct. Once the bolts are loose tilt the lid away from the base and then pull up to disengage the lower tabs. The bolt will remain in the lid.



14. Alternate view of the air box duct being removed. Pull up on the hoses to get clearance.



15. Remove the air box base screws (2 each) on either side with a 10 mm swivel head socket and extension.



16. View of the air box base being removed. Pull up on hoses to gain clearance while extracting. Rubber grommets hold the air box base in place. Remove the air box base by pulling straight out.



17. Disconnect the Manifold Absolute Pressure (MAP) connector. This is located near the left side valve cover. Pull blue tab to the side to unlock connector prior to removal.



18. Remove the Electronic Throttle Control (ETC) connector where shown. Pull back on the red plastic lock first, then push down on the black tab to disconnect.



19. Use a plastic pry bar to remove 4 wire tie anchors on both sides of the intake manifold cover.



20. View of the wire tie anchors dismounted. Remove the cable ties by releasing the clamps if you would like to reuse them, or cut them off. Repeat on right side of engine.



21. Disconnect the EVAP connection from the right side front of the manifold. Pull back and push in on the grey plastic locking tab to release the connector.



22. Remove the bolts (4 each) holding the manifold cover in place. These will require a 10 mm 3/8" drive deep socket to get over the stand-off connectors for the coil covers. Arrows indicate the four locations.



23. The manifold cover is shown being removed.



24. Disconnect the EVAP line at location shown near the cowl. Push the white plastic button to release.

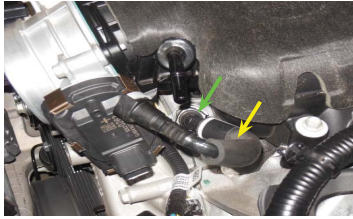




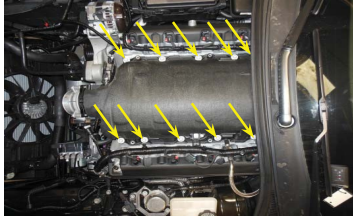
25. Remove the opposite end of the EVAP line at the solenoid. Push the white plastic button to release.



26. Remove the PCV hose from the manifold in the location shown. Push the white plastic button on both ends to release. Using a 24 mm deep socket or open end wrench, remove PCV valve at green arrow. Set aside, it will be re-used in a later step.



27. Remove manifold bolts (10 each) indicated with arrows using a 10 mm socket wrench. One bolt is hidden from view. Screws are captive, and will stay in place once fully removed. You can use a swivel socket to extract the right side rear fastener that is hidden.



28. Remove the brake booster line at the left rear corner of the manifold. Push in on the red clip, while keeping it pushed in, pull the hardline away from the manifold. It will help to have an assistant hold the manifold forward, and steady.



29. The engine is shown with the manifold removed. Clean intake port areas with a clean dry rag. Then use Simple Green or other appropriate degreaser to clean port surfaces. Vacuum out any debris from the intake ports. Ensure that nothing gets inside the combustion chamber.



30. Use blue tape to cover the ports as shown.



31. Remove the insulation from the manifold valley. This will be not reused. Vacuum out the manifold valley.



32. Disconnect the brake booster line from the vacuum pump.





33. Disconnect the brake booster line on from the booster. It may help to use a non-marring pry tool. You may hear a hissing sound while removing this connection. This is normal.



34. Disconnect the brake booster check valve sensor. Pull back then push in on the grey slide tab.



35. Loosen the T30 Torx fasteners (2 each) at the coil covers.



36. Remove the coil cover. Repeat on the opposite side.



37. Disconnect the spark plug wire from rear coil on the left side. Disconnect the electrical connector on top of the coil. Remove the two screws securing the coil using a 10 mm socket.



38. Set coil aside for reinstallation later. Repeat rear coil removal for right side.



### Section 3: Fuel Line Replacement

39. Remove the fuel safety clips from the fuel line as shown. Use a screwdriver to pry up on the back side of the clip. Then slide the clip out from under the fuel line connection.



40. Remove the fuel safety clip from the other end of the fuel line.



41. Place the plastic tool provided over the fuel line at the location shown. Place rags under the fuel line connection. Push the fuel line in towards the engine. Now pull the plastic tool towards the fuel line. This will disengage the fuel line connection allowing you to pull the line off.



42. Remove the bolt at the fuel line bracket using a 10 mm socket wrench.



43. Use the plastic tool provided to disconnect the opposite side of fuel line. Use the same process as before.



44. Remove the safety clip from the old fuel line for use on the new fuel line.



45. Install the provided fuel line in the location of the old fuel line. Install the safety clip removed from the old fuel line in the last step.



46. Use the factory fastener to attach the new bracket for the new fuel line.

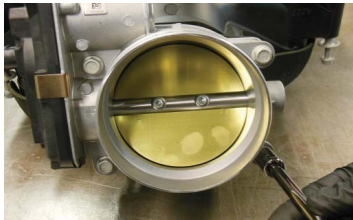


47. Connect the new fuel line where shown. Attach the safety clip to the connection from the previous step. Orient the safety clips on both sides to face left for clearance as shown in the picture.



#### **Section 4: Evap. Solenoid and Vacuum Block Installation**

48. Remove the four bolts securing the throttle to the factory manifold using a 10 mm socket. Set the throttle and fasteners aside for use later.



49. Remove the bolt securing the EVAP solenoid using a 10 mm socket. Set the solenoid aside for use in the next step. The bolt will not be reused.



50. Gather the following parts. The fastener and "Vacuum Block" (Shown in upper right) are provided in the kit. The PCV valve, and EVAP solenoid were taken from the car earlier.



51. Apply Lubriplate grease to the PCV valve O-ring. Now install into vacuum block by hand, making sure the O-ring does not get pinched. Use an adjustable, or 24 mm, wrench to tighten.



52. Apply Lubriplate grease to the O-ring shown on EVAP solenoid.

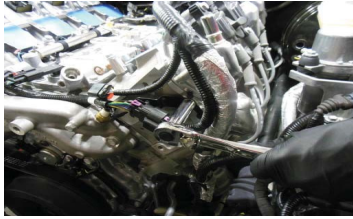


53. Install EVAP solenoid into vacuum block where shown. Thread the provided 25 mm long fastener into the vacuum block to secure the solenoid. Use a 10 mm socket to torque the fastener to 80 in-lbs.



54. **If you own a 2014 model year, skip this step.**

If you own a 2015, use a 13 mm socket to remove the bolt securing the wire harness bracket to the front of the left cylinder head as shown.



55. **If you own a 2014 model year, skip this step.**

Remove the bracket from the backside of the electrical connection. There should be a little tab retaining the bracket. Use a pick to pry it free.



56. Disconnect the electrical connection shown. **If you own a 2014 model year, this will be on the right side.** Pry it free from the cylinder head as well.





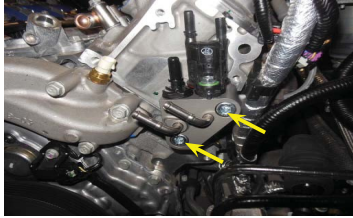
57. Remove all other connections for the wiring harness shown.



58. The harness from the previous step shown removed.



59. Install the "Vacuum Block" with the provided M10 x 60 mm length bolts (2 each). Torque "Vacuum Block" bolts to 25 ft-lbs.



60. Gather the "banjo fitting" and thin O-rings (2 each) shown. Apply Lubriplate grease to the O-ring grooves on both sides of the "banjo fitting". Install the O-rings (2 each) in the greased O-ring grooves of the "banjo fitting". The grease will also help retain the O-rings in the next few steps.



61. Gather the "banjo bolt" and install the remaining thicker O-ring in location shown. Apply Lubriplate grease to O-ring.



62. Install the "banjo fitting" over the "banjo bolt" as shown.



63. Install banjo assembly in location where the PCV valve was removed. Use the 6 in. long 5/16" I.D. vacuum hose to "clock" the banjo assembly before fully tightening. This hose will run to the lower barb on the vacuum block.



64. Torque the "banjo bolt" to 150 in-lbs. Make sure the hose is not kinked or stretched. You can now remove the hose, and set it aside for reinstallation later.





## Section 5: Coolant Drainage, Thermostat Replacement, and Belt Installation

65. Remove the vehicle coolant cap.



66. Loosen petcock valve shown with arrow. Drain coolant for 20-30 minutes. \*Picture shown with fascia removed for clarity.



67. Place rags around thermostat housing and hoses. Avoid getting any coolant on pulleys. Disconnect clamps for vent hose and upper radiator hose. Remove vent hose and upper radiator hose. If required twist hose to break bond before pulling.



68. Remove bolts (3 each) from thermostat housing using a 10 mm socket. Remove thermostat assembly.



69. Disengage the belt tensioner (Shown Below) using 15 mm socket and breaker bar. Remove serpentine belt.



70. Remove the upper alternator bolt shown with a 15 mm socket.



71. Install provided alternator bolt/stud fastener in upper alternator mount. Use a deep well 16 mm socket to torque new alternator fastener to 25 ft-lbs.



72. Install the provided nut all the way on the stud with the flange facing out for later adjustment.



73. Thermostat/Idler bracket shown. This will be installed in the old thermostat location.



74. Gather the M6 x 40 mm length bolts shown for Thermostat/Idler bracket installation. They are packaged with the Thermostat/Idler bracket.



75. Loosely install the provided thermostat/idler bracket onto the water pump. Make sure the stud from the alternator passes through the right hole on the bracket.



76. Tighten M6 x 40 mm length bolts (3 each) to secure thermostat/idler bracket using a 10 mm socket. Torque thermostat/idler bracket to 106 in-lbs.



77. Adjust backing nut to contact bracket as shown with arrow. Ensure pulley ribs line up with alternator pulley. Install the remaining provided nut to the front of the bracket, sandwiching the bracket between the two nuts.



78. Using a 15 mm open wrench hold the backing nut securely in place. Torque the front nut to 25 ft-lbs with a 15 mm socket. Make sure the backing nut does not move. After torquing, make sure the idlers line up with the alternator pulley.



79. Install new serpentine belt starting at the crank pulley. Use diagram provided for belt routing.

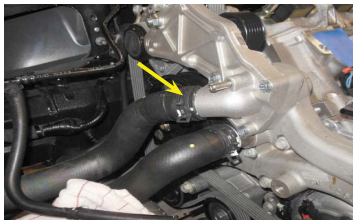
**Use belt diagram given in Appendix A.**



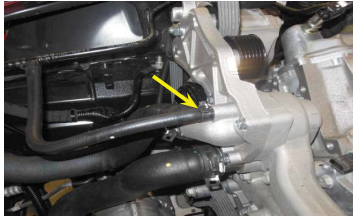
80. Belt shown fully installed. Install cable tie at arrowed location. This will keep belt in place for later installation on the supercharger.



81. Install the upper hose to the thermostat/idler bracket.



82. Install the vent hose to the thermostat/idler bracket.



83. Gather the provided EVAP extension harness shown.



84. Connect the male end of the breakout (closest to "tee" intersection) to the factory EVAP harness and lock connector in place.



85. Close up shown of the connection made in the last step.



86. Route the EVAP extension along the backside of the water pump. Connect to the relocated EVAP solenoid.

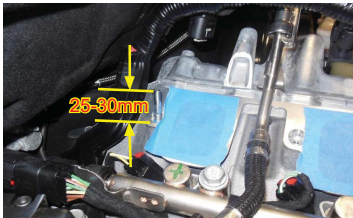


87. Route the pump trigger breakout along the backside of the alternator. Leave it loose for now.



### Section 6: Preparing the Supercharger and Installation

88. Apply blue Loctite 242 to longer thread section of the stud provided. Install prepped stud into threaded hole at the left side rear head inlet port location. Adjust the thread height to 25-30 mm.





89. Supercharger assembly shown. Remove lid bolts (17 each) from the top with an 8 mm socket. Note the bolt locations for replacement in later steps.

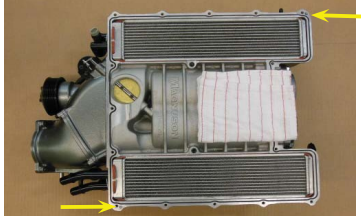


90. Remove lid carefully. Make sure not to damage the O-ring seal on top of the housing.



91. Top view of supercharger without lid. Place rag over the rotors to keep the area clean.

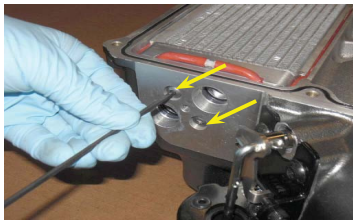
**Check that the alignment pins are still installed in the locations shown.**



92. Remove the spigot retaining bolt from the supercharger with a 4 mm Allen wrench as shown. Then carefully remove the retaining bracket and spigots. Repeat on opposite side, taking note of spigot length and location.



93. Remove the charge air cooler fasteners (2 each) with a 3 mm Allen wrench. Repeat on opposite side.



94. Carefully pull out the charge air coolers by hand.



95. Ensure that O-ring shown is installed on the supercharger as seen in the next step. There are eight of these intake port O-rings.



96. Ensure that all eight of the O-rings shown in last step are installed into the grooves of the intake ports, and that they are clean and undamaged.



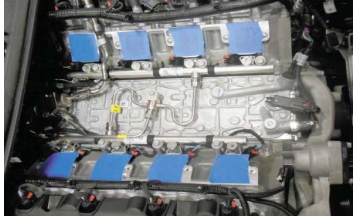


97. **Note: This step may not apply to your supercharger depending on IAT sensor location.** Route IAT sensor wire up front and tuck the connector under the actuator hose as shown.

**Be careful not to pinch this wire while installing the supercharger.**



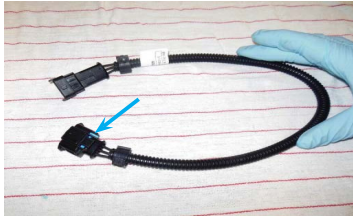
98. Remove the blue tape from the intake ports. Spray a clean rag with Tri-flow or equivalent lubricant. Wipe down the intake port outer sealing surfaces with a rag coated with Tri-flow. Pull back the wiring harness to make clearance for supercharger installation.



99. Have someone help you support the supercharger from the opposite side while installing. Carefully locate the supercharger housing over the stud installed by left side rear intake port. Tuck the housing under cowl.



100. Gather the provided Manifold Absolute Pressure (MAP) harness extension shown. Release the blue lock on harness connector prior to installation by sliding outward.



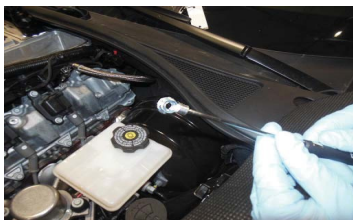
101. Route the MAP harness extension around the left side of the supercharger. The female connector (with the blue locking tab) should be between the gear cover and cowl.



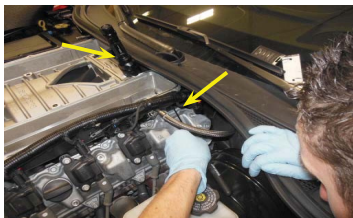
102. Plug the female connector of the harness extension into the MAP sensor. Ensure it "clicks" Then slide the blue locking tab over.



103. Place the provided nut on on end of an extendable magnet. It helps to have the magnet face attach to a flat portion of the hex.



104. Use a magnet to help locate the nut at the stud location installed in step #88. You can use a flashlight to help illuminate the area.

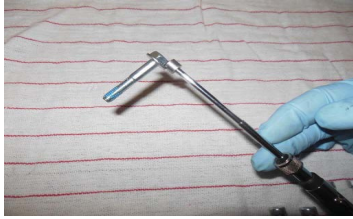


105. Gather the following hardware and coat ends lightly with Loctite 242. From left to right these are M6 x 35 mm length flange head (2 each), M6 x 50 mm length flange head (5 each), and M6 x 35 mm length flange head (2 each).

**Place provided O-rings onto M6 X 35 mm (2 each) and M6 X 50 mm (5 each) as shown. Make sure to apply Lubriplate grease to the O-rings before you apply Loctite 242.**



106. Use magnet to help hold one of the M6 x 35mm length flanged bolts without an O-ring from the previous step. Install at right rear corner of supercharger.



107. Use a flashlight to help see the location of the right side rear mounting bolt location as you guide it in place with the magnet.

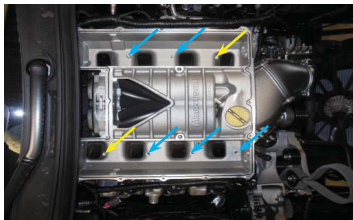


108. Location of rear flanged mounting bolt. Hand tighten at this point until all mounting bolts are located.



109. Install the M6 x 35 mm length hex flange O-ringed bolts (2 each) from step #105 in the locations shown with yellow arrows. Install the M6 x 50mm length hex flanged O-ringed bolts (5 each) in the locations shown with blue arrows. Only hand tighten.

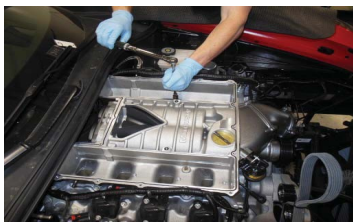
**Be careful not to drop anything into the intake ports.**



110. Install the last M6 x 35mm length flange bolt without an O-ring in the front location shown. Only hand tighten.



111. You will find a torque diagram at the back of the book. Make sure you installed the bolts with the O-rings in the proper locations. You will find the torque order on the diagram. First finger tighten all bolts. Gradually work your way up to the torque specification listed while you follow the numerical order listed in the diagram. **Make 3 passes, slightly increasing tightening each time. Then make a final pass at 106 in-lbs following the torque sequence.** Use an open end wrench to tighten the nut installed at the left rear of the supercharger.



112. Reinstall the charge air coolers (2 each). Ensure that the port holes match with holes in the housing. Make sure silicone seal does not roll upward. If needed apply some Lubriplate along the perimeter of the seal.



113. Apply Lubriplate grease to the spigots in the locations where they connect with the charge air coolers.



114. Reinstall the left side spigots in the location shown. These will be used to orient the charge air coolers. Lightly tighten the charge air cooler mounting bolts (2 per side) with a 3mm Allen wrench before installing the second spigot. Install the second spigot, and fully tighten the charge air cooler mounting bolts. Remove the spigots. Repeat charge air cooler mounting process on the right side.



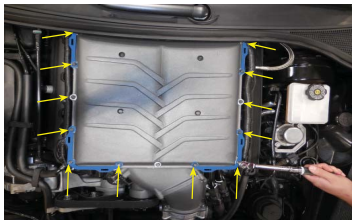
115. Fasteners shown for lid with 8 mm socket head. Apply a light coat of blue Loctite 242 to the bottom of each bolt as shown. From left to right we have M6 x 40 mm length (2 each), M6 x 35 mm length (2 each), and M6 x 20 mm length bolts (13 each).



116. Hand tighten the M6 x 35 mm length bolts (2 each) from step #115 into locations shown with yellow arrows. Lightly tighten M6 x 40 mm length bolts (2 each) from step #115 into rear locations shown with blue arrows.



117. Place beauty cover brackets in locations highlighted in blue, and install the M6 x 20 mm length bolts (13 each) from step #115 around lid perimeter. Pull up on cowl trim near the back of the supercharger lid to help locate the rear bolts.



**Torque all lid bolts to 106 in-lbs using the torque order diagram in Appendix C at the back of this instruction manual.**

118. Tighten the bolts at back of lid with open end wrench.



## Section 7: Wiring and Hose Installation

119. Gather the provided Mass Air Flow (MAF) breakout IAT harness shown. This will be installed in the next steps.



120. Remove 90 degree strain relief cover from factory MAF connector as shown. This connector was unplugged in step #12.





121. Install the 90 degree strain relief cover from the previous step to the connector on breakout harness shown in step #119.



122. Route the factory MAF harness to the side of the alternator as shown.



123. Connect the "MAF breakout IAT harness" to the factory MAF connection. The remaining MAF end will be routed later.



124. Install the connection for the IAT wire to the IAT sensor on the right front of the supercharger. Route the IAT breakout behind the alternator.



125. Your IAT sensor may be located on the right front of the supercharger as shown in this photo. In that case you will make the connection from the IAT wire in the last step to this location (shown with an arrow).



126. Cable tie the IAT connection to the adjacent harness where shown.



127. Charge air cooler crossover tubes shown for spigot connections. Apply Lubriplate grease to the ends of the tubes prior to install. Make sure mesh (highlighted in green) is roughly centered on tubes.



128. Route longer crossover tube from the previous step under the front of the supercharger. It should sit just under the sensor connections on the valley plate.





129. Press the crossover tube 1" into the spigot elbow shown. Make a mark on side of the tube at 1" to allow visual reference for full engagement. Install the spigot into the lower charge air cooler hole shown with arrow. Make sure cross over tube is bottomed out in spigot elbow.



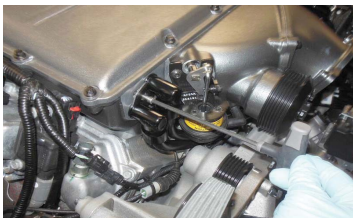
130. Route the shorter crossover tube above the long crossover tube where shown. This shorter tube should sit above the sensor connections on the valley plate. Install second spigot elbow 1" onto the tube end, then into the charge air cooler hole shown with the arrow.



131. On the left side front of the supercharger housing install the longer charge air cooler spigot 1" onto the shorter crossover tube end, then insert the spigot into the inner charge air cooler hole (shown with a red arrow). Install the shorter charge air cooler spigot 1" onto the longer crossover tube end, then insert the spigot into the outer charge air cooler hole.



132. On both sides install the retaining brackets, and cap head screws with a 4mm Allen tool. Make sure all screws are secure and tight.



133. Gather the following hoses provided in the kit.



134. Install one end of the 6.5 inch long hose onto the banjo fitting in the valley cover. It should route between the two charge air cooler crossover tubes as shown.



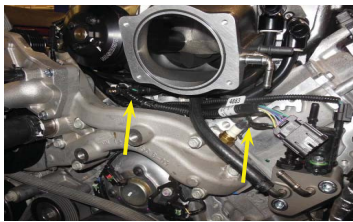
135. Install a black spring clamp over the banjo section. You may want to use needle nose pliers to install and position the clamp. Rotate the clamp ends as shown with the arrow for clearance.



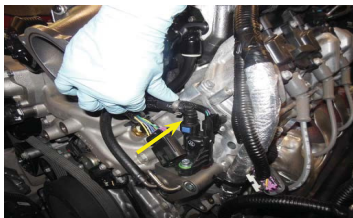
136. Install the opposite end of 6.5" hose onto the lower 90 degree air tube from the vacuum block with a provided black spring clamp.



137. Reinstall the wiring harness from step #58. If you had a 2014 vehicle the bulk connector will route to the right (toward the alternator) If you have a 2015 vehicles, as shown, route the bulk connector under the 6.5 inch hose just installed.



138. Install the 13.5" hose with fittings from step #132 onto the EVAP solenoid where shown.



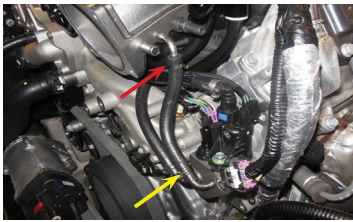
139. Route opposite end of 13.5" hose near right side spigots as shown.



140. Install cable tie around 13.5" hose and wiring harness where shown.



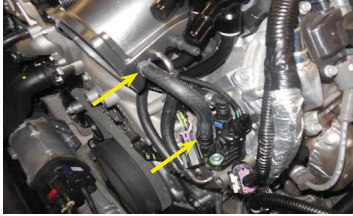
141. Install one end of 6" hose onto 90 degree air fitting on the throttle body adapter at the red arrow location. Install opposite end of 6" hose onto 90 degree air fitting on the vacuum block at the yellow arrow location. Secure both ends with black spring clamps.



142. Final 5.5" hose from step #132 along with the single grey spring clamp will be used in next step.



143. Install the 5.5" hose with the quick connect fitting to the PCV valve on vacuum block. The opposite end of the 5.5" hose connects to the straight air tube at the throttle body adaptor where shown. Secure with grey spring clamp.



144. Plug in the electrical bulk connector shown.



145. Remove the cable tie from the belt. Release the tensioner with a 15mm socket and a breaker bar while installing the belt onto the supercharger pulley.



146. Gather the following provided parts. The pump harness bracket with two nuts along with the pump harness are shown. This wiring will provide power to the supercharger's intercooler pump.



147. Remove the nut from the fuse box base just to the right and behind the alternator.



148. Place the pump harness bracket over the stud and re-install the nut securing the bracket in place.



149. Remove the cover for the fuse location of the pump harness from step #145, install the fuse provided, and reinstall the cover.



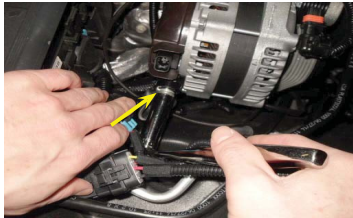
150. Remove the connector at the alternator. Remove the nut shown from the alternator.



151. Remove the rubber boot from ring connector on the alternator wire. Overlap the short wire from the pump harness fuse holder over the alternator ring terminal. Slightly offset the two so they sit flush at ring surface. Reinstall the rubber boot over both connectors.

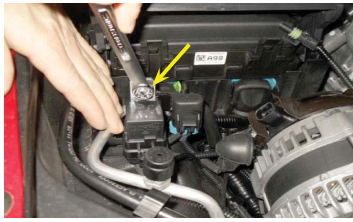


152. Install both ring connectors over the alternator terminal. Reinstall the nut over both ring connectors. Ensure that they both sit flush while tightening. The ring terminal from the pump harness should sit on top of the alternator harness. Cover connection with the boot.

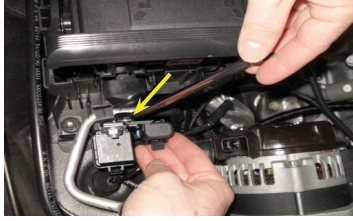




153. Install the relay, and the fuse holder on the pump harness bracket. Secure the relay with a nut using a 10 mm wrench.



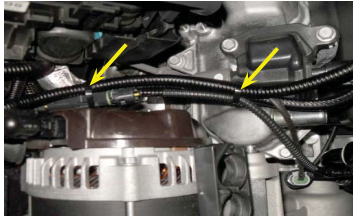
154. Install the nut for the fuse holder at the back side of the bracket as shown using a 10 mm wrench.



155. Connect the pump relay trigger to the break-out wire from the EVAP harness installed earlier. Re-connect the alternator wire removed in step #149.

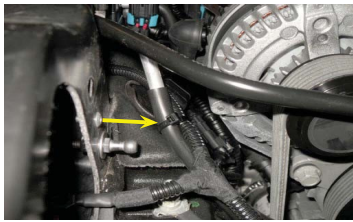


156. Install the cable ties (2 each) in the locations shown.





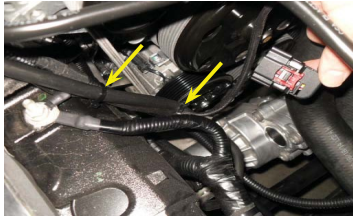
157. Route the pump and ground connection down and forward alongside the alternator. Secure with a cable tie to the A/C hardline.



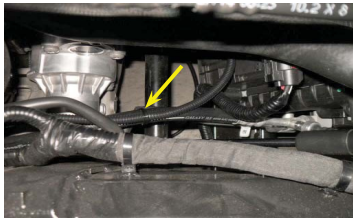
158. Remove the stud/bolt securing a factory ground point in front and right of the alternator. Place the pump harness ground terminal on top and re-install the stud/bolt.



159. Route the remaining breakout from the MAF harness, installed earlier, along the A/C hardline along with the pump harness. Secure with cable ties making sure that neither harness can contact the belt.

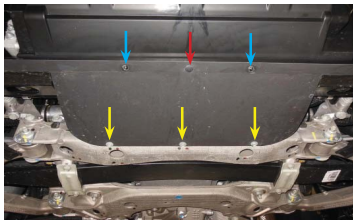


160. Continue routing pump connector forward. Install a cable tie where shown.

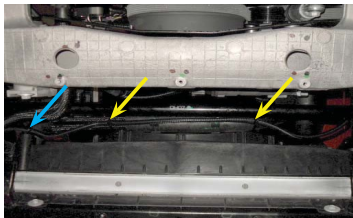


**Refer to owners manual for proper lifting of vehicle.**

161. This view is from the underside of the vehicle. Remove the two bolts (shown with blue arrows) using a 10 mm socket. Remove the bolts (3 each shown with yellow arrows) with a 10 mm socket. Also remove the button clip (shown with a red arrow). Now remove the cover held in place with the fasteners just removed.



162. View of underside of car with cable tie attachment points (3 each). Use a cable tie with a barbed anchor to attach at the mounting hole on the left side of the radiator fan shroud shown with blue arrow. Secure the harness along the radiator hose. This harness will connect to the supercharger cooling pump in a later step.



## **Section 8: Reinstall Airbox and Throttle Body**

163. Install the air box housing in the reverse order from steps #13-16.



164. Attach the MAF connection where indicated. Double check and make sure the MAF harness will never be able to move around and contact the belt during operation.



165. Reinstall the throttle body with the factory bolts (4 each). Torque the throttle body bolts (4 each) to 106 in-lbs.



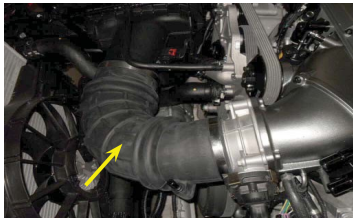
166. Plug factory harness into the electronic throttle control, and engage connector lock.



167. Install the cable tie in the location shown. Trim the excess cable tie. This will ensure the bulk connector does not bounce around during vehicle operation.



168. Install the provided air duct between the throttle body and air box lid. Secure both sides of the air hose with hose clamps.

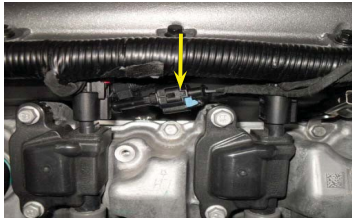


### Section 9: Coil Pack, Brake Booster Line, and EVAP Line Installation

169. Reinstall the rear coils on both sides. Torque to 106 in-lbs. Reinstall all electrical connections to the coils.



170. Connect MAP harness extension to the factory connector. Lock blue tab into place. Tuck the MAP connection behind the coils in the location shown.



171. Install the coil covers on both sides.



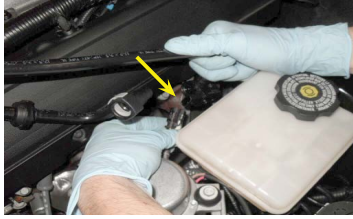
172. Tighten the T30 Torx bolts (2 each) for the coil covers on both sides.



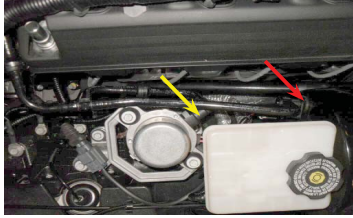
173. Apply a very small amount of Lubriplate grease to the brake booster check valve barb.



174. Plug the check valve sensor back into the factory harness. Route the "blue tabbed" connector towards the throttle body adapter. Do not connect yet.



175. Insert the check valve into the brake booster canister first (yellow arrow), then install the 90 degree connector on the vacuum pump barb (red arrow).



176. Make the final connection of the brake booster line assembly to the air tube on the throttle body adapter.



177. Reinstall the dry sump vent hoses where shown with arrows.

**\*Note: Dry sump plumbing shown. If you have a wet sump engine, install the vacuum hose between the right side valve cover and the right most air duct barb.**

**\*Be sure all connections lock in place.**



178. Secure the dry sump vent hose with a zip tie where shown. Also secure with the plastic guides for hoses near alternator.



179. Reinstall the EVAP line where shown.



#### Section 10: Front Fascia Removal

**Refer to owners manual for proper lifting of vehicle, and wheel removal under Vehicle Care, and Technical Data sections.**

180. Raise the car and remove the front wheels with a 19 mm socket and breaker bar. Remove bolts with a T-15 Torx driver, and the plastic rivets in the location shown.

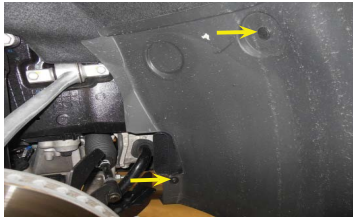




181. Remove the three bolts shown with a T-15 Torx driver.



182. Remove the bolt using a T-15 driver, and the plastic rivet indicated.



183. Use a plastic pry bar to remove the fastener shown, and all others like it. Pry the inner portion of the button out first to unlock, then pry on outer portion of button.



184. Remove the 2 bolts shown at the top of the photo with a 7 mm socket. Also remove the bolt shown at the bottom with a 10 mm socket.





185. Remove the button fasteners shown.



186. Remove bolts (4 each) shown at the top with a 7 mm socket. Also remove the silver bolt shown to the left with a 10 mm socket.



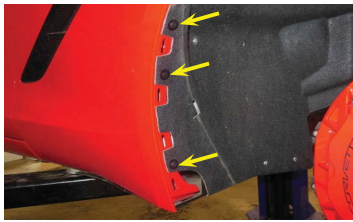
187. Remove bolt shown with a 10 mm socket.



188. Pull the trim piece out at the back of the wheel well.



189. Remove the fasteners shown.



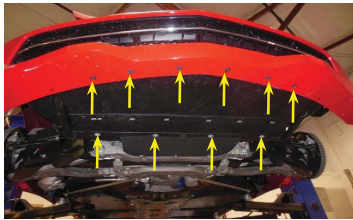
190. Pull around all edges of wheel well cover to remove it.



191. Wheel well cover shown being removed.



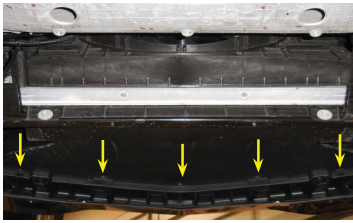
192. Remove black bolts (6 each) with a 7 mm socket and silver bolts (4 each) with a 10 mm socket where indicated. Once the last bolt is removed the lower panel will drop. Make sure to be supporting it during the process.



193. Cover from last step being removed.



194. Remove radiator duct fasteners (5 each) located under the cover just removed with a 7 mm socket.



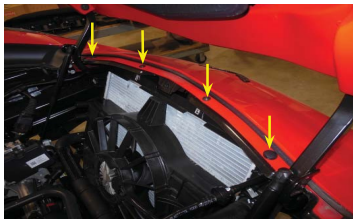
195. Remove the side marker connection. Pull the grey tab and then pull the connector.



196. Pull the side of the front fascia near the headlight to disengage. The left side is shown. Place tape over area shown to protect paint.



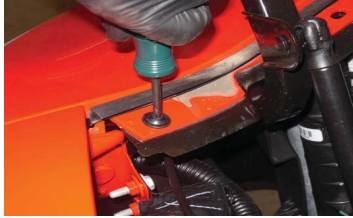
197. Remove the bolts (2 each) with a T-30 bit, and button rivets (2 each) where indicated.



198. Remove the covers near the hood hinges (1 per side).



199. Remove the fasteners (1 per side) that are under the covers from the previous step with a T30 driver.



200. Use a plastic pry tool if necessary to start pulling up on the fascia near the hood hinges. Work your way along the seam to the headlight. Pull firmly to disengage the fascia but be careful not to damage the paint. If this does not work move on to the next step.



201. Have someone else help by pulling up slightly on the fascia away from the vehicle to allow access for a  $\frac{1}{4}$ " drive extension with a 7 mm swivel socket to loosen the two bolts on the bracket near the headlight. Apply blue tape to the body panels near the connection to prevent scratching.



202. This view shows one of the two bolts being loosened. Once the bracket is loose it should be easier to pull and disengage the fascia.



203. The front fascia is shown with the connections disengaged. Remove fascia carefully and store in a safe location.



204. The retainer bracket near the headlight is shown that may have been loosened in step #200-201. This is shown for reference to understand where the bolts are that need to be loosened.

**Ensure that the top of the bracket lines up level and even with the bottom of the body panel as shown before re-tightening if these bolts had to be loosened in step #200. Torque the bolts to 35 in-lbs.**



## Section 11: Low Temperature Radiator (LTR) Installation

205. Use the paper template provided to locate the center for the hole at center radiator support near the front of the car. Align template along the edge of the ribs as shown. Use a center punch to transfer the center location to the plastic below.



206. Drill the support area to the size indicated on the template. Ease up pressure before breaking through. Use a hole saw to drill the hole.



**The A/C condensor is right behind this location. Be VERY careful when breaking through. Debur edge once done.**

207. Take next template shown and install it near the VIN number location at the front of the radiator support closest to the left fastener (show with arrow). Center punch at the center line.



208. Drill the hole out to the size shown on the template. Ease up pressure before breaking through. A Rotabroach tool is shown which can help limit the depth of tool after break through. This can help avoid damaging anything that is below the plastic.



**Again, the A/C condensor is directly behind this location. Be VERY careful when breaking through. For this hole, if using a Rotabroach, you will need to remove the center pin prior to breaking through. Debur edge once done.**

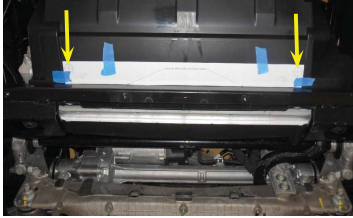
209. Place the template shown on the left side of radiator duct. Line up the edges of the template with the front and bottom edges of the plastic molding. Center punch both hole centers. You may have to remove some items like the brake air duct to gain better access to this area. The template is designed to nest within the radiator duct's pocket. Make sure the "UP" marking is legible.



210. Drill the pilot hole for the hole saw at the center locations from the last step. Example: Drill a 1/4" hole at each location first. This will help to locate the hole-saw for final drilling. Drill the holes to the size indicated on template with hole-saw. Ease up pressure on the drill prior to breaking through. Debur holes after drilling.



211. Tape the template shown in the location under car near the steel radiator support. Follow the instructions of the template to properly line it up with the cross support. Center punch the holes (2 each) at the center lines. The locations of the holes are shown with arrows.



212. Drill the holes to the size given on the template. Ease up pressure on the drill prior to breaking through. The condenser is located near this area so extra care is needed. Debur the edges of the holes.





213. Remove the bolts (2 each) shown with a 10 mm socket. They are located on the opposite side of the cross support where you just drilled the two holes.



214. Gather the following parts. These are the lower supports for the Low Temperature Radiator (LTR).



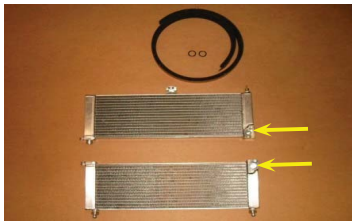
215. Install the two LTR support brackets from the previous step on the opposite side from the two bolts removed in step #212. Push up on the plastic radiator duct above the steel cross support. Start the bracket in place and rotate as you push in. It will be easier to "hook" them over the cross support a few inches inward from the holes. You will be able to push up higher on the duct there. Slide the LTR brackets over to line up with the holes (2 each) made in step #211.



216. Secure the brackets in place by re-installing the fasteners removed from the cross support. The brackets are slotted. Adjust their position so the grommets line up with holes drilled.



217. Gather the following parts. These are the upper and lower Low Temperature Radiators (LTR) along with foam tape, and O-rings. Both LTRs are shown from the front side as identified by the ports located where indicated.



218. Install the O-rings from previous step into lower LTR. There are two grooves in the female port.



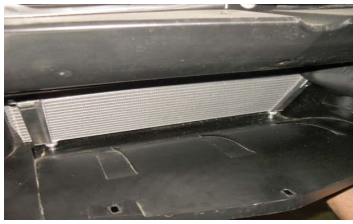
219. Wipe down the LTRs with denatured alcohol to prepare them for foam tape in the areas where foam tape is shown. Install foam in locations shown of upper and lower LTRs. These are the back sides of both LTRs.



220. Apply Lubriplate grease to the mounting lugs (2 each) on lower LTR.



221. Install the lower LTR through front opening in the radiator duct. The foam faces towards the back side. Push the mounting lugs through holes in plastic, and into the LTR brackets installed in step #215. When pushing the LTR through the grommets it will help to support the underside of the grommet with one hand.



222. Close up of the mounting lug inserted through the rubber grommet in the mounting bracket. Make sure the lug is fully installed in the grommet, and that the grommet is secured in the bracket.



223. Front view of the lower LTR installed.



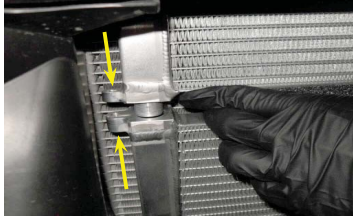
224. Apply Lubriplate grease to the male connection on the upper LTR.



225. Install the upper LTR with the male connection facing towards you. Then rotate the top of tank upwards as you move the LTR inwards as shown. Foam is facing away once installed. The center bracket will slip into the "pocket" created by the center duct mounting location (where you drilled the first hole).



226. Install the male connection from the upper LTR into the female connection of lower LTR. Line the spigot up as shown, then squeeze together at the mounting tabs as indicated by the arrows.



227. Gather the hardware shown. These are the socket head bolts (4 each, M6 x 20mm long), and a flange bolt (1 each, M6 x 20mm long). Apply blue Loctite 242 to the bolts prior to installation.



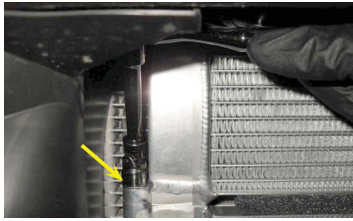
228. Apply Lubriplate grease to the O-rings on the LTR spigot. Coat the O-rings evenly and lightly with grease.



229. Install the LTR spigot at the right side of the LTRs where the holes were drilled from step #209. Install the socket head bolts (4 each, 20mm long) from step #226 in the locations shown. Use a 5 mm Allen wrench.



230. Install the flange bolt from step #226 into location near connection made in step #225. Use a 1/4" drive 10 mm swivel socket to speed up the tightening.



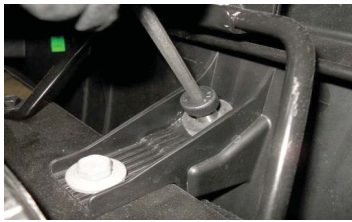
231. Gather the shoulder bolt, and the grommet shown. Apply blue Loctite 242 to the bolt prior to installation.



232. Install the grommet in the hole drilled during step #205.



233. Install the shoulder bolt into the rubber grommet installed in last step. You will need to push the LTR assembly toward the A/C condenser to compress the foam backing and allow the shoulder bolt to line up with the LTR bracket.



## Section 12: Cooling Pump, Reservoir and Hose Installation

234. Gather the provided coolant pump, rubber mount, steel coolant pump bracket, and flange bolts (2 each, M6 x 16mm long).



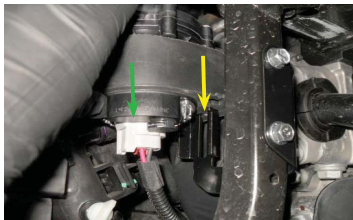
235. Mount the metal bracket with the provided bolts from the last step in the location shown on left side of radiator support. Torque bolts to 106 in-lbs.



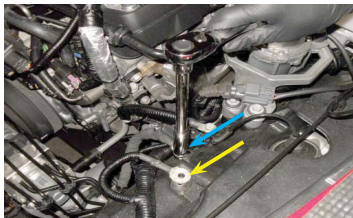
236. Install the rubber mount to the coolant pump both from step #233 in orientation shown.



237. Insert the electrical connection to the water pump at the location shown with the green arrow. Slide the rubber mount on the steel mount where shown with the yellow arrow.



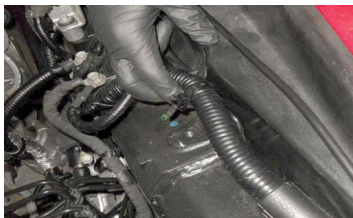
238. On left side frame rail, just in front of the vacuum pump, remove the fastener at the ground wire shown with the yellow arrow. Also remove the fastener shown with the blue arrow. Use a 13 mm socket.



239. Move the ground wire from the yellow arrow location and combine it with the second ground wire at the blue arrow location. Reinstall the fastener and tighten.

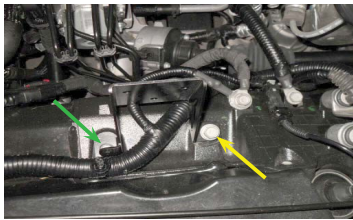


240. Remove the cable tie fastener from the left side fender area just forward of the vacant grounding location. This location will be used for the mounting bracket.





241. Install the reservoir bracket in locations made from step #238 and #239. Use bolt removed in step #237 shown with yellow arrow, and the flange bolt (M6 x 16mm long) provided in the kit shown with the green arrow. Torque bolts to 106 in-lbs. Take note of how the wire harness passes through the underside of the bracket.



242. Install the reservoir to the bracket. The bolts (3 each) are shipped already attached to the reservoir. Tighten the bolts by hand most of the way prior to using a wrench. Install cable tie removed in step #239 into the location on the bracket shown with an arrow.



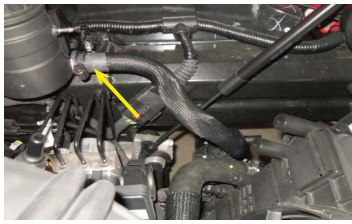
243. Gather the following hose. The shorter side shown at the left will attach to the pump. The longer right side will attach to the reservoir.



244. Install the shorter side of the hose from the last step on top of the pump where shown. Secure the connection with a supplied spring clamp.



245. Connect the longer side of the hose from pump to the reservoir as shown using a provided worm gear clamp.



246. Apply Lubriplate grease to the left side spigots on the supercharger. Connect the provided shorter hose with the quick connect fitting (highlighted in red) to the upper spigot on the left side of the supercharger ensuring it clicks in place, and connect the other side to the back of the reservoir securing it with a worm gear clamp.



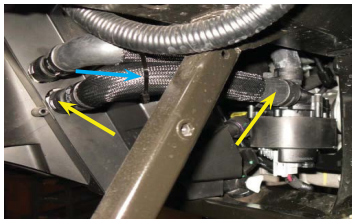
247. Connect the provided longer hose with the quick connect fitting (highlighted in yellow) to the lower left spigot ensuring it clicks in place and route the hose as shown. Secure the long hose with a provided anchored cable tie in the location shown with a yellow arrow. Also use cable ties in the areas shown with red arrows to secure the intercooler hoses.



248. Apply Lubriplate grease to both LTR spigots shown. Make the connection on the opposite side of the hose from the previous step to the upper LTR spigot.



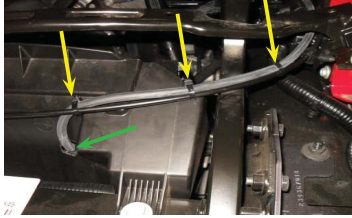
249. Install the small 90 degree hose at the pump location shown. Install a cable tie (shown with blue arrow) to connect both the upper and lower hoses together near the midpoint of the small 90 degree hose.



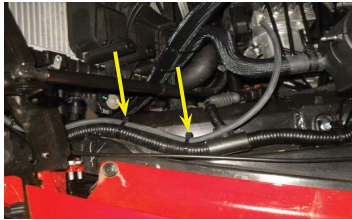
250. Install cable ties (2 each) in locations shown.



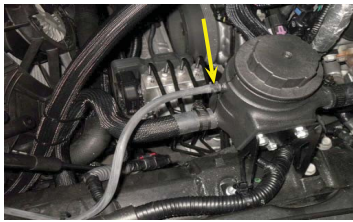
251. Route the vent hose near the hood release. Connect the vent hose at the top of the upper LTR where shown with a green arrow and secure with a spring clamp. It will be necessary to use needle nose pliers to slip the clamp over the barb. Install cable ties (3 each) in the locations shown.



252. Install cable ties (2 each) in the locations shown.



253. Install the opposite end of the vent hose at the reservoir connection shown and secure with a spring clamp. If required, trim the hose so there are no kinks.



254. Install the PCV line shown to the left side valve cover and the air inlet near the throttle body shown. If your vehicle was not equipped with this hose you will have to cap the air tube at the red arrow location.

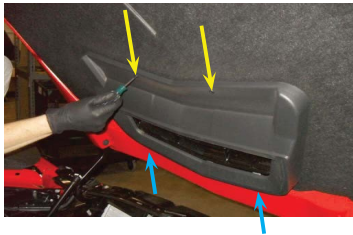


255. Here is a 2017 Corvette without the PCV line shown in the last step. The air tube is capped at the red arrow location. The line that is highlighted in green goes to the forward air tube on the air inlet. This location is obscured by the radiator duct in this photo.

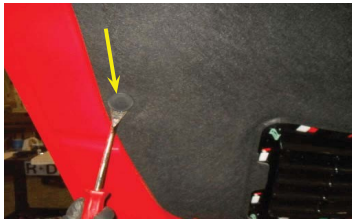


### Section 13: Hood Liner Stand-off Installation

256. Remove the T-15 bolts securing the air duct shroud under the hood. On the bottom side, pull the shroud away from the hood to disengage the bottom clips. With gaps on the side pull away from the top to fully remove.



257. Remove the plastic rivets (6 each) securing the hood liner.



258. Remove the hood liner by pulling it up out of the slots. It is best to have a helper to pull liner out evenly on both sides to prevent tearing.



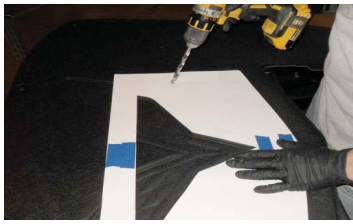
259. Clean the area highlighted in blue with denatured alcohol.



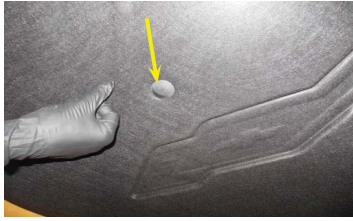
260. Gather the hood liner templates. Cut and tape the templates together as shown. Locate the template on the hood liner as shown.



261. Drill out the holes (2 each) shown on the template to the sizes given on the template.



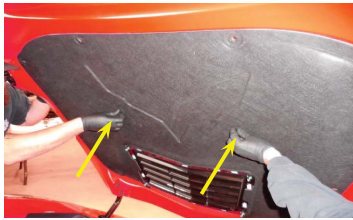
262. Install the plastic button clips (2 each) provided with the kit in the locations drilled out during the previous step.



263. Gently install the aluminum stand-offs (2 each) to back sides of the plastic buttons installed in the previous step. Do not fully push the rivet into the standoff yet, only one "click" is required at the moment. Remove the cover for the adhesive on both standoffs.

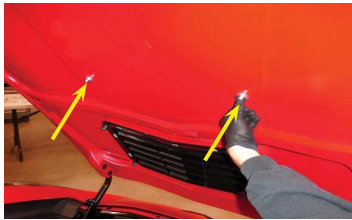


264. First we will locate the stand-offs. With a helper slide the liner tabs into place and up top line up the perimeter rivet holes (do not install rivets yet). Gently push both standoff pads to the hood. Twist the rivets counter clockwise until they spin out of the stand-off. Now remove the liner.





265. Apply even pressure to the standoffs. Then let set for 10-15 minutes. Now re-install liner with all rivets.



266. Re-install the shroud.



#### Section 14: Coolant Fill and Reinstall Body Panels

267. Connect the battery and tighten with 10 mm wrench.



**Make sure that you have followed step #1 in this manual to load the proper supercharger calibration to your vehicle's ECM.**

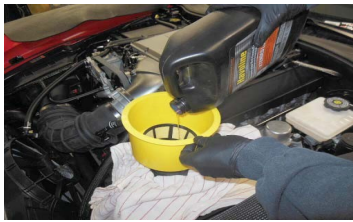


268. Ensure the petcock is closed prior to refilling the engine coolant. Place rags around the filler opening. Filter factory coolant from step #66 and pour into the reservoir tank if it is re-usable. Otherwise pour the new coolant mixture according to the vehicle's specifications. Squeeze the upper radiator hose to help relieve air in system. Install the cap once the coolant reservoir has been filled. You may need to top it off after the engine has run for the first time.





269. Place rags around the intercooler reservoir. Use the GM approved engine coolant mixture to fill your intercooler reservoir to capacity. You can temporarily leave the cap off the reservoir to monitor coolant level. Clear tools and other items from engine area. Press down and hold in the Engine Start/Stop button for 5 seconds **without** touching the brake pedal. All dash lights will come on, and the intercooler pump will begin to circulate coolant. While the pump is running check for circulation in the reservoir, and coolant leaks. Press the Engine Start/Stop button a second time to shut off the coolant pump. Check the coolant level of the intercooler reservoir. Fill the reservoir to the base of the neck on the housing. Do not let the pump run dry.

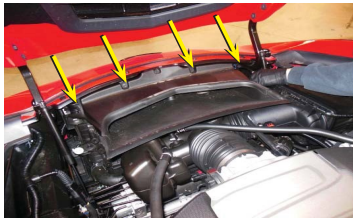


270. Double check bracket shown to ensure it is aligned and tightened properly if it was loosened in step #200. The top of the bracket lines up level and even with the bottom of the body panel as shown. Torque the bolts to 35 in-lbs.

271. Reinstall all fasteners and panels taken off in previous steps for front fascia. These are shown in steps #179-203 and are performed in reverse order.



272. Reinstall the radiator duct using the OEM bolts (4 each) and a 7 mm nut driver.



273. Torque wheels after installation

**Refer to owners manual for proper torque order and specifications under Vehicle Care, and Technical Data sections.**



274. The supercharger is shown fully installed. Start the engine and check for coolant, and fuel leaks. Also check supercharger belt alignment. Test drive vehicle for the first few miles under normal driving conditions. **Do not attempt any wide open throttle runs.** Check for any unusual sounds, vibrations, or engine misfires. The supercharger does have a slight whining noise under boost conditions, which is normal. After the initial test let the engine cool down, and recheck coolant levels.

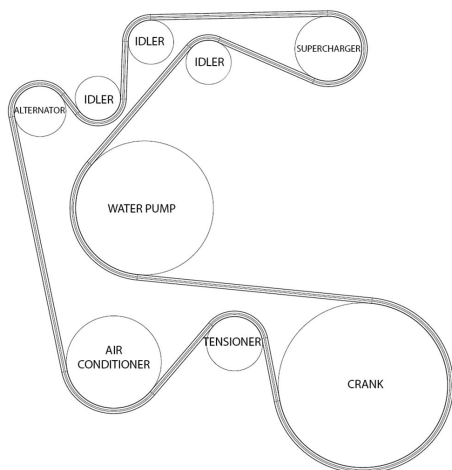


275. After the initial test drive gradually work the vehicle to wide open throttle runs. Listen for any engine detonation (pinging). If engine detonation is detected let up on the throttle immediately. Most detonation is caused by low octane gasoline still in the tank. Premium 91 octane fuel is required. Place the "Supercharged" sticker on the beauty cover trim, and press the cover onto the brackets installed earlier as shown in this photo. Enjoy your new supercharger!



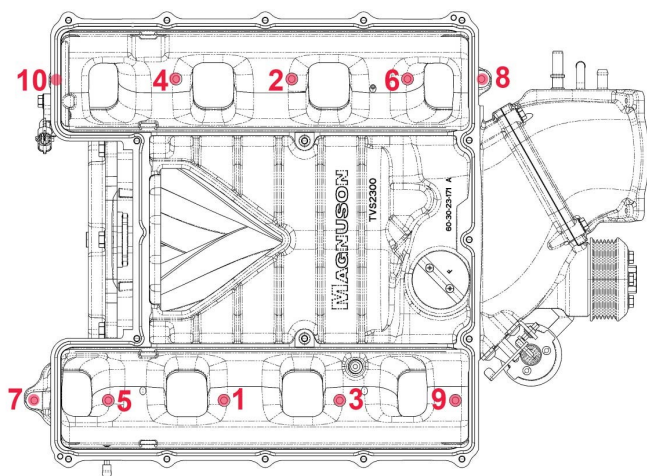
If you have questions about your vehicles performance, please check with your installation facility.

## Appendix



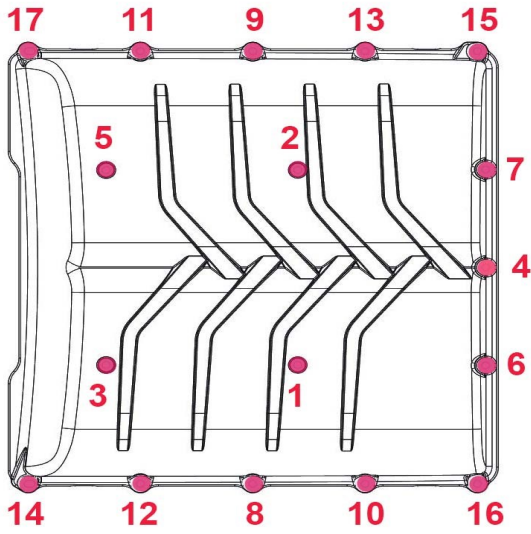
**Belt Diagram**

## Appendix



**Supercharger Housing  
Torque Order Diagram**

## Appendix



**Supercharger Lid  
Torque Order Diagram**

**Fastener Length: Location**

35 mm (with O-ring): 5, 6

35 mm (without O-ring): 7, 8

50 mm (with O-ring): 1, 2, 3, 4, 9

Stud/Nut: 10

## Notes

## Notes



## Notes



Please enjoy your "Magnuson Super-Charged" performance responsibly.

Use only premium gasoline fuel, 91 octane or better.

**MAGNUSON**  
*SUPERCHARGERS*