MAGNUSON SUPERCHARGERS

Installation Instructions for:

INTERCOOLED SUPERCHARGER SYSTEM
2011-19 Dodge Challenger 5.7 Liter HEMI

Step-by-step instructions for installing the best in 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.

89-89-61-093 Rev B

Magnuson Superchargers
1990 Knoll Drive, Bldg A, Ventura, CA. 93003
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magnusonsuperchargers.com

INSTALLATION MANUAL

Magnuson Superchargers
Dodge 5.7L HEMI Engine
2011-2019 Dodge Challenger

Please take a few moments to review this manual thoroughly before you begin work: Make a quick parts check to make certain your kit is complete (see shipper parts list in this package). 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.
NOTE: **This supercharger system requires the use of only premium gasoline fuel, 91 octane or better. It is NOT compatible with E85, Ethanol, or Flex fuels.**

Magnuson Superchargers 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. **DO NOT add octane booster to your vehicle.**

Our Magnuson Supercharger kits are designed for engines in good mechanical condition only. Installation on high mileage or damaged engines is not recommended and may result in engine failure, for which we are not responsible. Magnuson Superchargers is not responsible for the engine or consequential damages.

Magnuson Superchargers kits are designed for use on stock vehicles. To that end, the alteration or modification of the fuel system, drive train, engine, and/or supercharger outside of stock parameters in any way can result in engine damage or failure for which Magnuson Superchargers is NOT responsible and will void Magnuson Superchargers warranty and CARB certification. Aftermarket engine recalibration devices that modify fuel and spark curve (including, but not limited to programmers) are not recommended and may cause engine damage or failure. Use of non-Magnuson Superchargers approved programming will void all warranties. If you have any questions, call us.

A new fuel filter is recommended at the time of supercharger installation
Stock spark plugs and stock plug gap is recommended
Drive belt = Gates # K060994

Tools Required:

- Metric wrench set
- ¼” - 3/8” and ½” drive metric socket set (Standard & Deep)
- 3/8”and ½” drive foot pound and inch pound torque wrenches
- Phillips and flat head screwdrivers
- Small or angled 3/8” drill motor
- Drain pan
- Hose cutters
- Hose clamp pliers
- Safety glasses
- Metric Allen socket set 3/8” drive
- Shop vacuum cleaner
- Blue Loctite 242
- Right Angle drill for pinning crank pulley
- Helpful Tool: Air or electric impact wrench.

Contact information:
Magnuson Superchargers
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Sales/Tech support 805-642-8833
Website: www.magnusonsuperchargers.com
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1. NOTE: 2015+ vehicles will need to have the ECM backdated.

If your kit has a provided handheld tuner follow the instructions in the provided pamphlet to install your tune. Your handheld tuner may not match the one shown.

2. Your Intercooler system is sensitive to corrosion. It's very important to use the OEM recommended coolant mixture in your supercharger system as well.

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

4. In the trunk of the vehicle, below the lift up panel is the vehicle battery. Disconnect the battery negative (-) cable at the terminal using a 10mm wrench and set it aside where it will not accidentally make connection with the battery post. You can use a rag to insulate the connection.

5. Slowly remove the gas cap to release fuel system pressure.

6. Remove the splash shields below and behind the nose fascia. There are two main components, with nine plastic push pin rivets, four 10mm headed bolts, and seven 7mm headed bolts holding these components to each other and the framework.

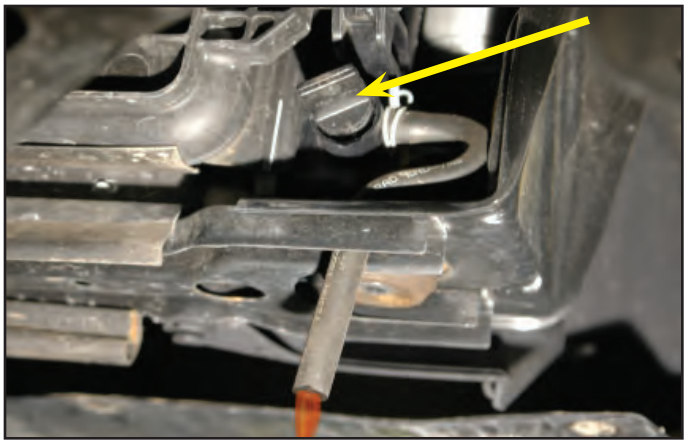
7. Start by removing the push pin rivets by prying out on the center spreader and then pull the rivets free. Three of these rivets are shown in the photo with arrows. Now remove the two 10mm headed bolts joining the two main components together. Next remove the two rear 10mm headed bolts from the back splash shield.

8. Pull the rear splash shield out of the vehicle and set aside for later re-installation.

9. Remove the seven 7mm bolts from the front of the splash shield where it joins the spoiler.

10. Pull the front splash shield from the vehicle. Set aside for re-installation at a later time.

11. Ensure that the engine has had time to cool before draining the coolant. Open the drain valve on the bottom passenger side of the radiator. Collect the drained fluid in a clean pan and set aside for later re-use.



12. Remove the radiator fill cap to relieve back pressure and facilitate drainage.

13. Pull up firmly on the engine cover and set aside. This will not be re-used but should you wish to return to stock condition you may want to save the parts removed.

14. Unplug the IAT from the intake air tube.

15. Remove the mounting bolt for the air box shown with the green arrow, and the hose clamp on the intake air tube at the yellow arrow location using an 8mm wrench. Remove the intake air tube and air box from the vehicle, set aside for some parts that will be reused later.

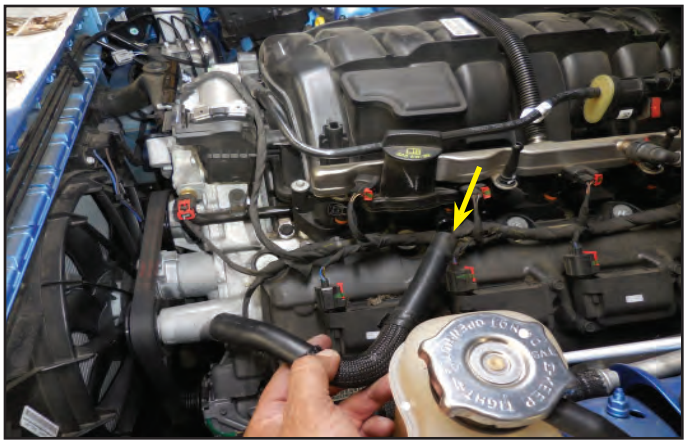
16. Unplug the Electronic Throttle Control (ETC) from the throttle body. Pull back on the white locking tab first before you unplug this connector.

17. Unplug the eight fuel injector connections. You will need to pull out on the red locking tab to disengage it first. Then you can push on the black side button as you pull it out.

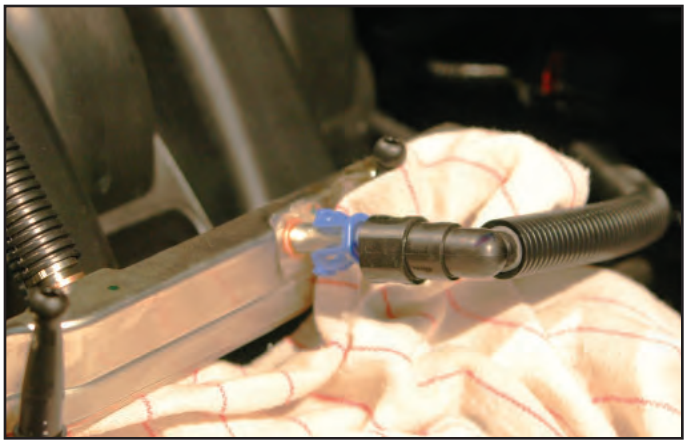
18. On the very back of the OEM intake manifold on the passenger side is the MAP sensor. Disconnect this plug and the mounting push pin clip as well.

19. Disconnect the EVAP hose from the front of the driver side of the intake manifold behind the throttle body. Pull the EVAP hose clips off from along the manifold.

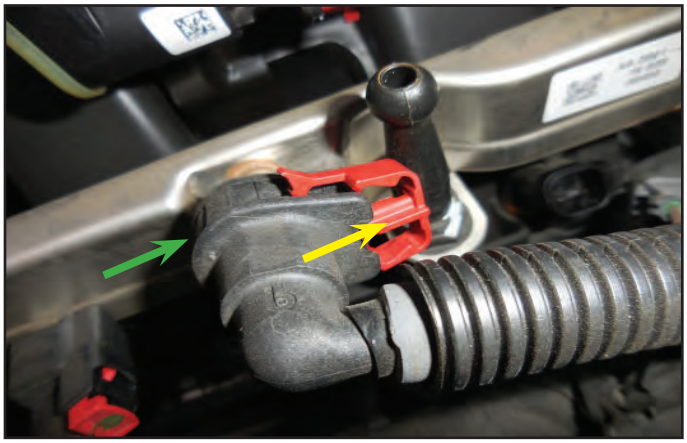
20. Disconnect the PCV vent hose from the air box and the oil fill spout extrusion.



21. CAUTION: Fuel line may hold residual pressure. Wear safety glasses to protect your eyes. Use shop towels to capture any residual fuel and dispose of it properly. Remove the fuel line from the fuel manifold on the driver side. For earlier models you will press on the blue tabs of the fuel line locking clip and then pull the line free. For late models see the step below.



22. For newer model Challengers pull on the red locking tab of the fuel line locking clip shown at the yellow arrow location and then push in the black button shown with the green arrow on the left side of the connector and pull the line free. Use shop towels to capture any residual fuel and dispose of them properly. It's a good idea to plug the end of the fuel line and cap the fuel line barb on the fuel rail.



23. Remove the ten bolts holding the intake manifold to the heads with an 8mm socket wrench.

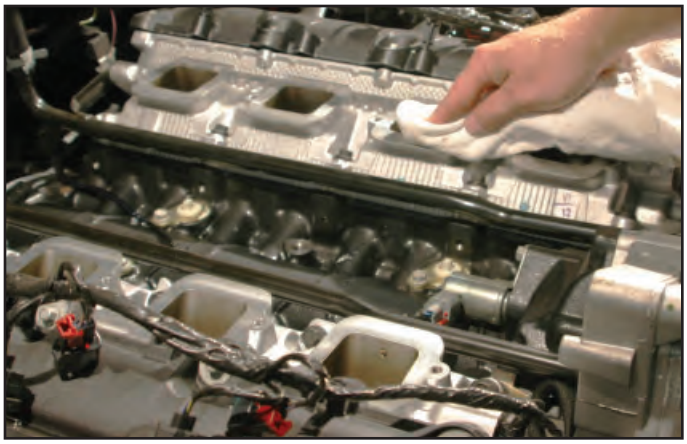
24. Pull the OEM intake manifold forward a bit to gain access to the brake booster hose plugged into the back of the manifold. Disconnect this hose from the rear of the intake manifold. There is also a wire loom clamp located at the back of the intake manifold that needs to be pulled free or cut off.

25. Carefully lift the OEM intake assembly from the vehicle.

26. Remove the foam dampening pad from the valley cover. This will not be reused.

27. Use a vacuum to remove any debris from the heads and adjacent surfaces. Be careful to not allow any debris into the open ports.

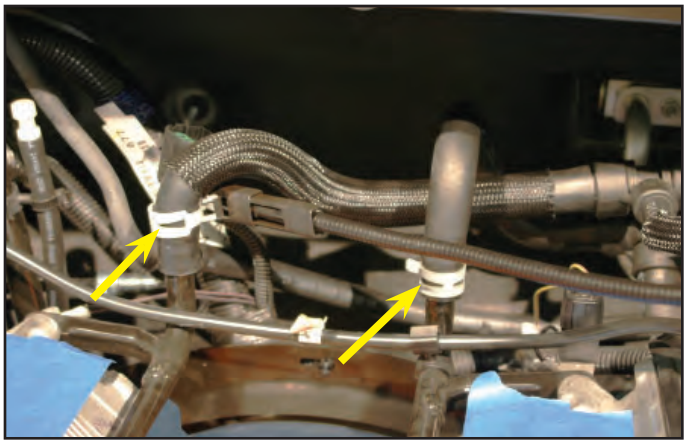
28. Wipe the port surfaces clean using a shop rag and alcohol (lacquer thinner, acetone or some other non-petroleum based solvent).



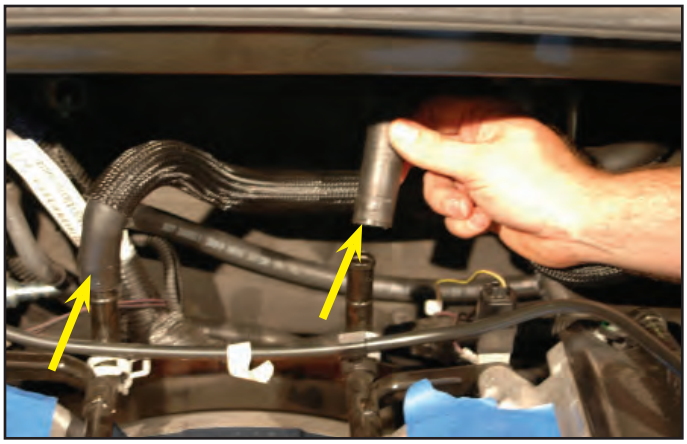
29. Use tape or shop rags to cover the exposed ports and prevent debris from entering the ports.

30. Use a 16mm wrench to remove the air box extension support bracket.

31. Remove the two heater hose clamps from the hard line tubes running forward to the water pump.

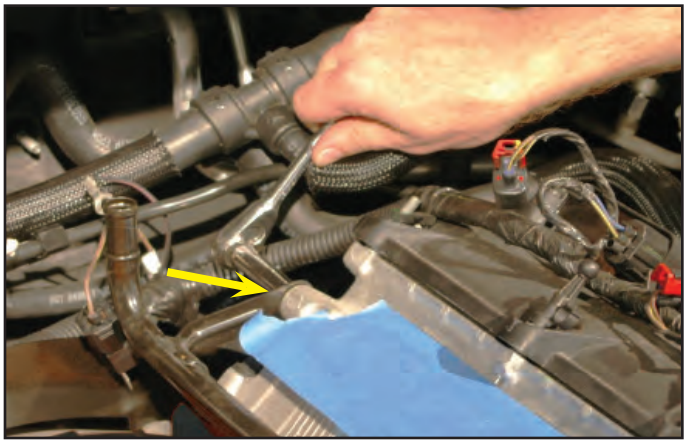


32. Disconnect the two heater hoses from the hard line connection at the rear of the engine by releasing the clamps and pulling the lines free from the hard line barbs.



33. Remove the 10mm nut holding the ground sensor to the driver side heater hard line mounting bracket stud at the rear of the head. This ground sensor may be on the opposite side of the vehicle depending on the model year. When the ground sensor is reinstalled later you will need to rotate it to the side to make more room for the supercharger.

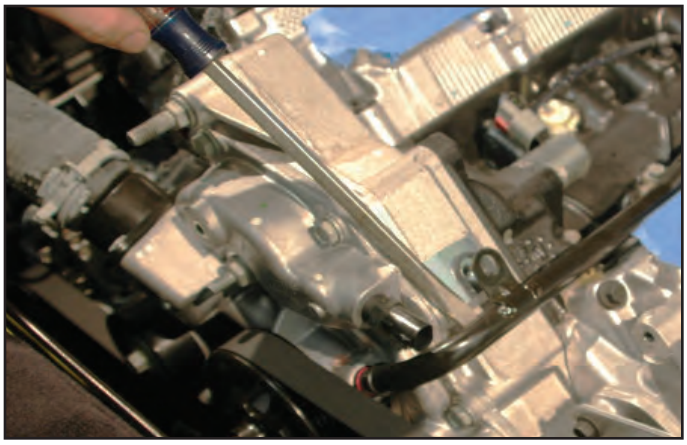
34. Remove the 10mm nut-stud extension mounting the driver side hard line bracket to the head.



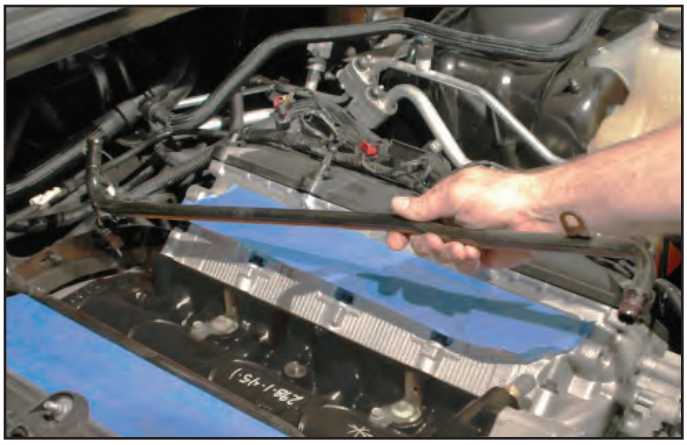
35. Temporarily unplug the temperature sensor plug near the water pump.

36. Use a 10mm wrench to remove the hard line mounting bolt from the water pump location.

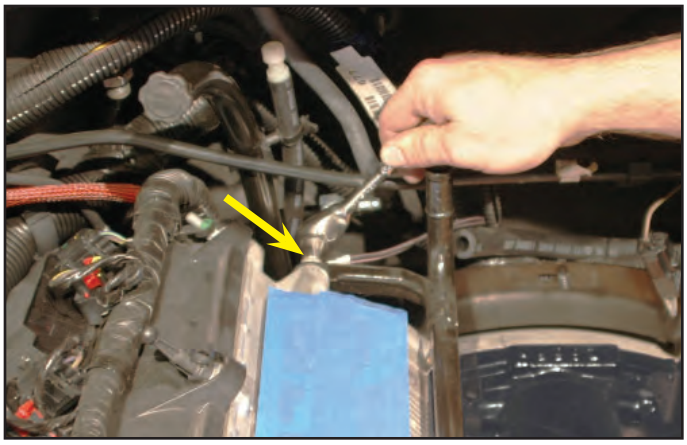
37. Use a large flathead screwdriver and carefully lever the driver side hard line from the water pump using the water pump as a fulcrum.



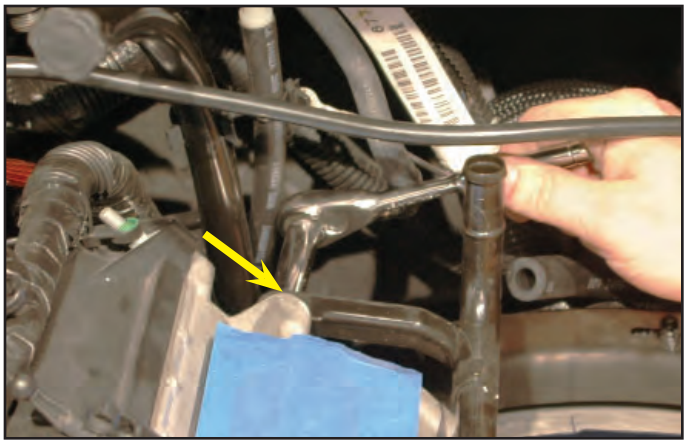
38. Remove the driver side heater hard line from the engine. There will likely be some fluid inside the tube, so use care to not throw the fluid around your work environment, this tube will not be re-used.



39. Use a 10mm wrench to unbolt the ground wire nut from the passenger side stud holding the other hard line to the back of the head. Pull the ground wires off the stud.

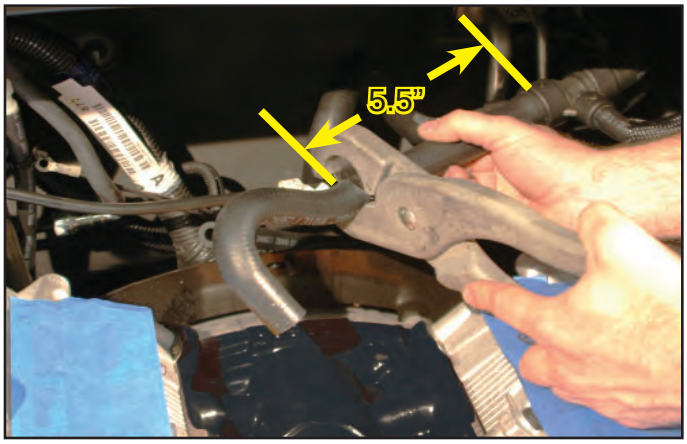


40. Use a 10mm wrench to remove the ground stud holding the hard line to the back of the passenger side head.



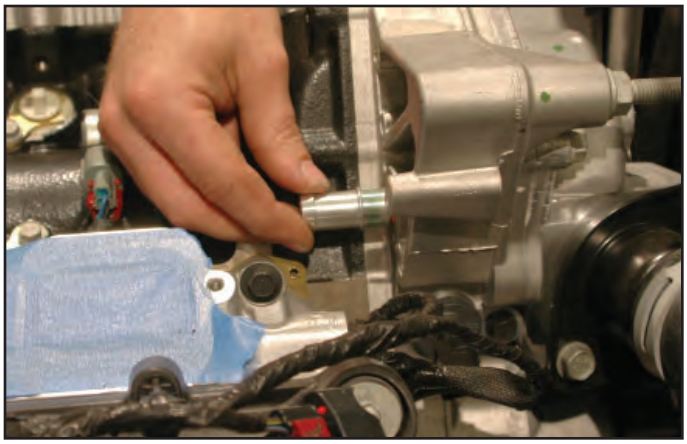
41. Remove the passenger side hard line by levering the hard line bracket against the back of the head to pull it free from the water pump. Remove the hard line from the vehicle, this will not be reused. Be aware of potential fluid inside.

42. Cut the existing hose that went to the passenger side hard line after the “T” fitting leaving about 5-1/2” of hose after the “T” fitting.

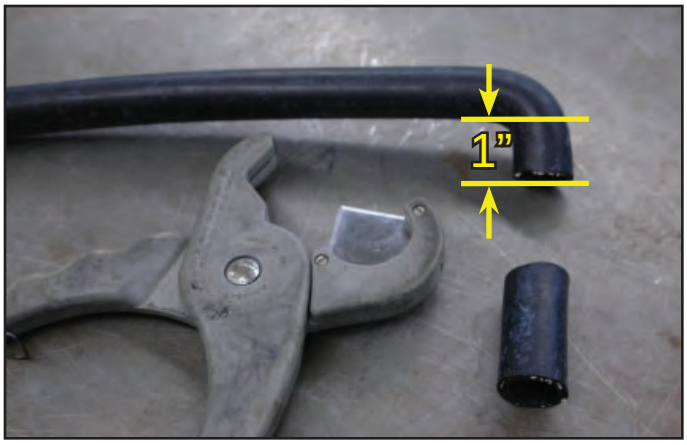


43. Put a generous amount of the supplied green Loctite 680 on the supplied short water heater barb.

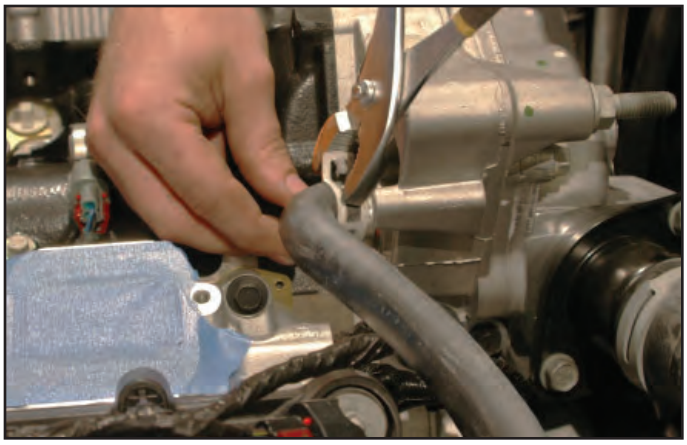
44. Use your fingers to press the prepared barb into the hole vacated by the passenger side hard line. **Do not use any grease or lubricant on the O-ring as this will compromise the effect of the green Loctite.** Allow the Loctite on the barb to cure before disturbing.



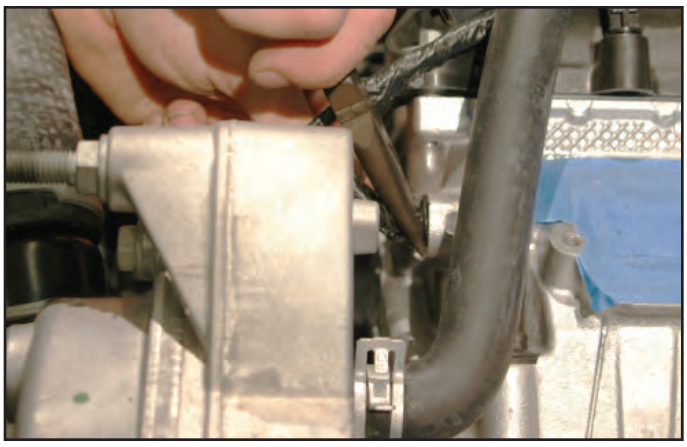
45. Cut the short end of the supplied 4” x 48” x 5/8” 90° elbow hose to 1” as measured from the inside edge as shown in this photo.



46. Attach the short end to the barb just installed using the supplied spring clamp.

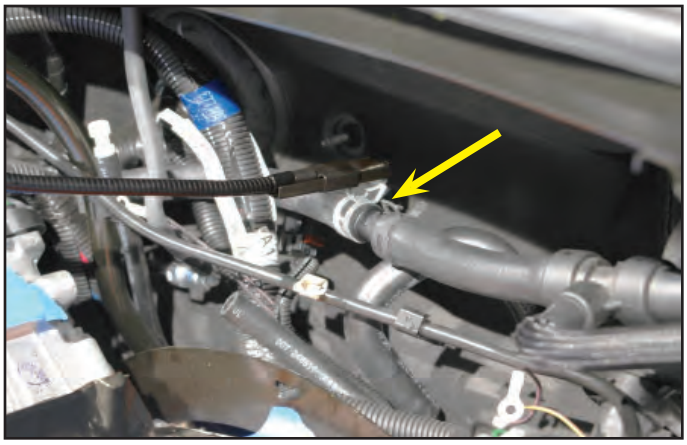


47. On the front of the passenger side head is a wire loom clamp holding the bundle to the head using a push pin connector. Use a pair of needle-nose pliers to pull this connecting clamp free.

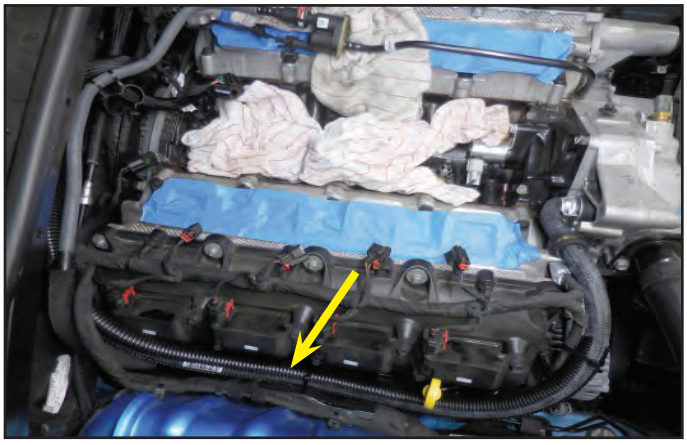


48. Use the supplied 7/8” spacer (red arrow location), Adel clamp, and M8x40mm bolt to mount the modified 4” x 48” x 5/8” 90° hose to the bolt hole at the front of the passenger side head from whence you removed the wire loom clamp as shown. The spacer goes between the head and the Adel clamp. The lobe of the clamp points up and toward the rear of the engine. Tighten the bolt securely with a 12mm wrench.

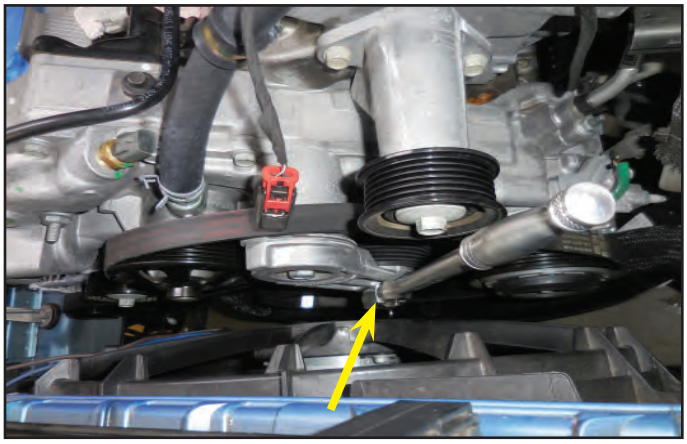
49. Route the hose from the last step back on the passenger side, around the oil dip-stick along and below the coil packs to the back of the engine compartment. This hose will join to the ¾" hose you altered that originally went to the hard line going to the passenger side of the water pump below the OEM intake manifold. Trim the new hose to fit and use the supplied 5/8" to ¾" coupling (hose mender), with the ¾" end on the OEM hose. Secure the hose with the supplied spring clamps.



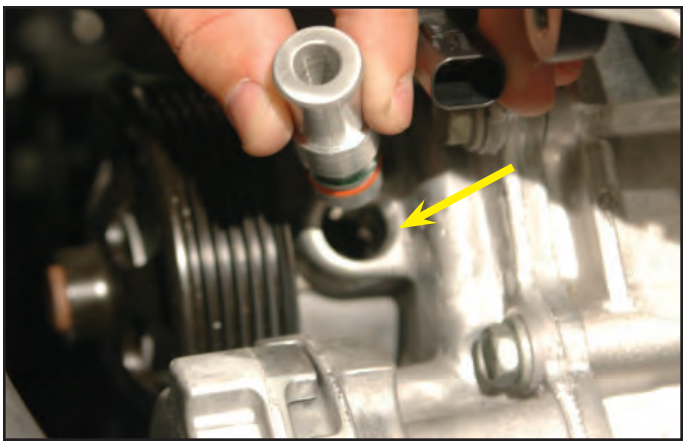
50. Use the provided 3/4" split loom to buffer the hose from potential chaffing on adjacent surfaces. Loosely zip tie the new heater hoses to available adjacent hoses



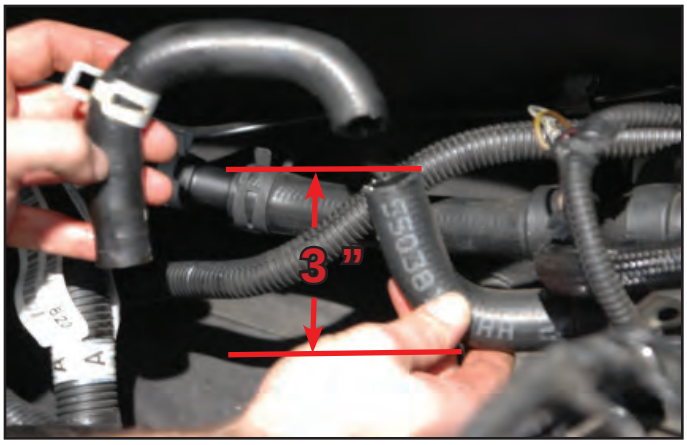
51. To facilitate the hose install, use a long 3/8" drive ratchet to spring the tensioner and remove the OEM fan belt. This belt will not be reused.



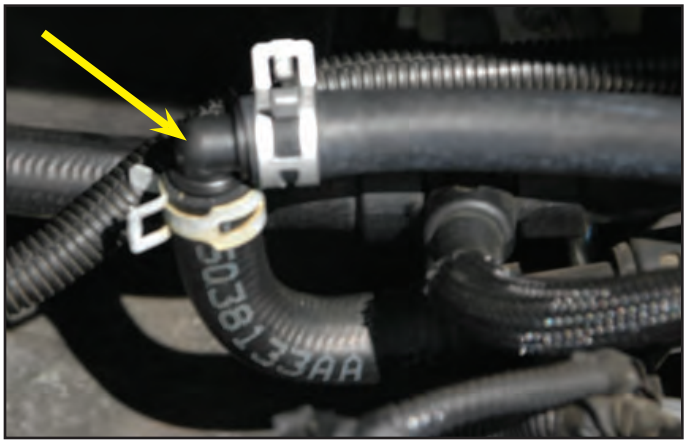
52. Put a generous bead of the supplied green Loctite 680 on the other supplied (longer) water pump hose barb and use your fingers to press it into the hole vacated by the driver side hard line earlier. **Again, do not use any lubricant on the O-ring which could compromise the set of the Loctite.** Allow the Loctite on the barb to cure before disturbing.



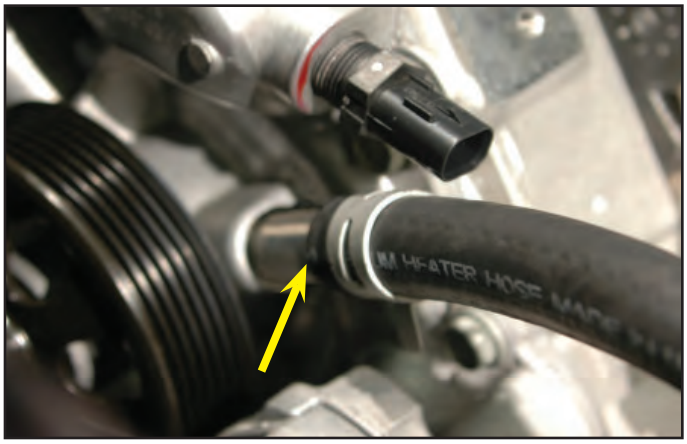
53. Cut the heater hose that went to the hard line on the driver side below the OEM manifold after the first 90° bend beyond the “T” fitting leaving about 3” of hose beyond the angle (as measured on the outside of the curve).



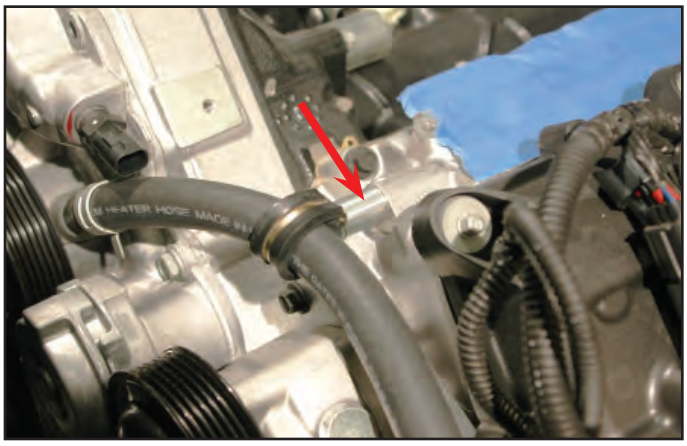
54. Use the supplied 5/8” x 5/8” 90° hose coupling and the supplied spring clamps to connect the OEM hose just modified to the 5/8” x 48” hose supplied. Point the hose angle to direct the hose toward the driver side fender creating a “U” shape.



55. Route the hose from the last step forward on the driver side along and below the coil packs, under the intake air filter box location and over to the driver side barb you installed on the water pump. If necessary, cut the hose to fit and secure to the hose barb using the supplied spring clamp.



56. Use the provided 5/8” spacer (at the arrow location), Adel clamp, and M8x40mm bolt to anchor the heater hose to the bolt hole on the front of the driver side head. Tighten the bolt securely with a 12mm wrench.



57. Use the provided 3/4” split loom and zip ties to protect the driver side heater hose from any potential chaffing points (as you did with the passenger side heater hose), and loosely zip tie the new heater hoses to available adjacent hoses or convenient locations to anchor their movement. Do not over tighten the zip ties crimping the hoses.

58. Use the stock studs and nuts that held the hard lines to the back of the heads to replace the OEM grounds in their original locations (without the hard line mounting brackets you removed earlier). The ground sensor needs to be rotated so it is pointing down or horizontally to not conflict with the supercharger installation later. Ensure that it is not making contact with any surfaces and tighten in the rotated position.

59. Reconnect the thermostat sensor connection at the water pump.

60. Disconnect the fan electrical power connection on the passenger side of the fan shroud assembly.

61. Use an 8mm wrench to remove the two fan shroud mounting bolts, there is one bolt on each side of the shroud.

62. Remove the fan shroud assembly from the vehicle by carefully pulling the unit up and out for reinstallation later. You can alternately pull the shroud from the bottom of the vehicle as shown here.

63. Place the two provided dowels in two of the existing crank pulley ring holes.

64. Use a pry-bar or long heavy duty screwdriver to anchor the pulley using alternate sides of the dowels you pushed in the pulley holes as shown. This will give you a lever to stop the pulley from turning. Now, use a 21mm wrench to remove the crank harmonic balancer pulley bolt. Set aside for later use along with the two provided dowels.

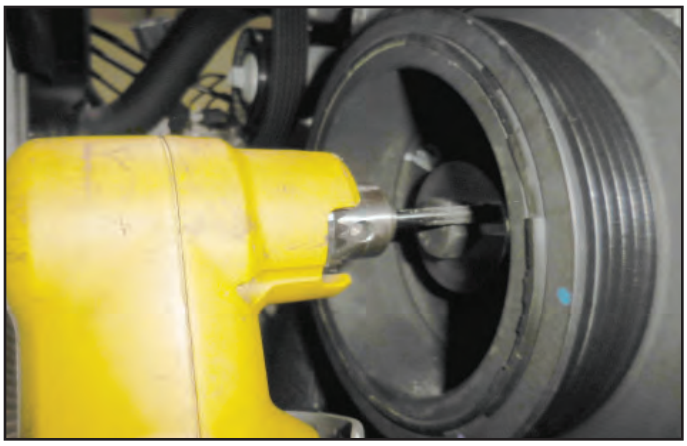
65. Install the crank pin drill guide with the provided bolt and a 22mm wrench. It's convenient to align the two holes for the crank pins in the drill guide horizontally for ease of access. Torque the temporary bolt holding the drill guide to 40 ft-lbs.

Wear safety glasses for the drilling, reaming and compressed air steps.

66. Use the provided drill bit to drill the two holes using the pin guide holes. Before beginning, inspect the drill bit: You will notice there are two small 'steps' in the diameter of the bit. The second step, closest to the shank is your stopping point at the drill guide. If you put a piece of tape around the high point of that step you will have a visible stopping point as it touches the drill guide. Be sure to drill the holes completely to the second step of the drill bit.

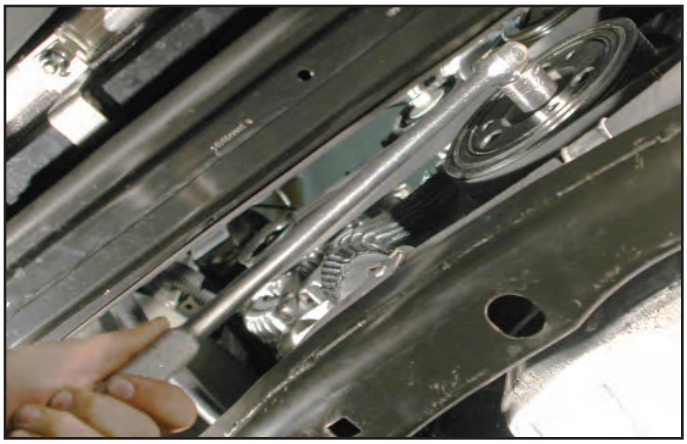
67. Blow out the holes using compressed air. Use safety glasses and be careful of your eyes!

68. Install the provided reaming bit into the drill motor and ream the holes you just made out.



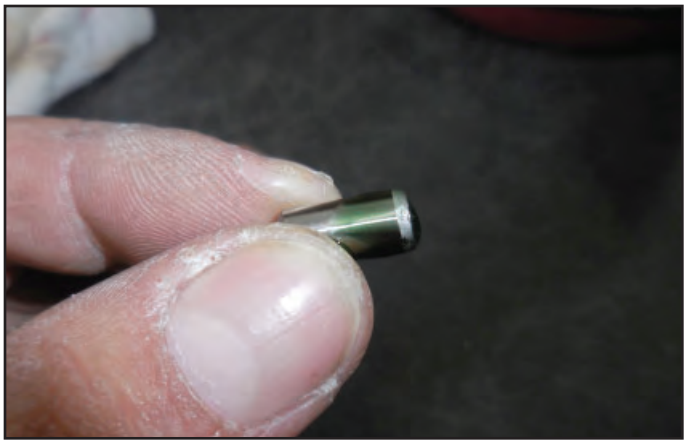
69. When you're finished with the ream bit, blow the holes out again with compressed air watching out for your eyes.

70. Remove the drill guide kit using a 22mm wrench.



71. Gather the two provided crank pins.

72. Put a generous bead of provided green Loctite 680 on the pins and press one into each of the two holes you just prepared.

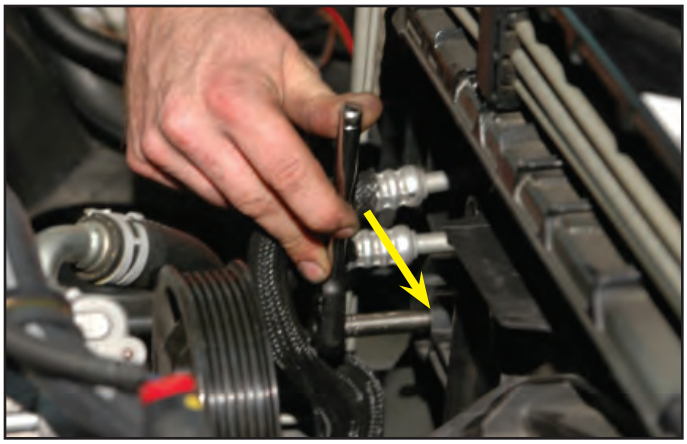


73. Use a hammer and drift-pin or nail-set to tap the crank pins in completely. Ensure that they are in completely, and will not touch the surface of the crank bolt directly when installed.

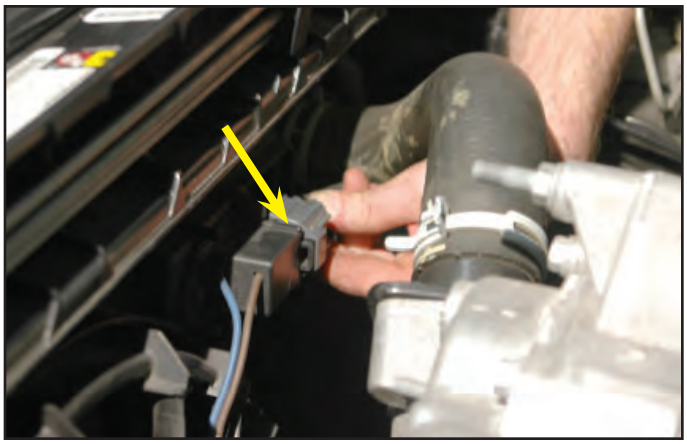
74. Re-install the removed OEM crank bolt and torque to 129 ft-lbs. Verify your torque wrench settings. Use the two supplied dowels in two of the pulley face holes again as an anchor, and a 22mm wrench to tighten the pulley bolt.

75. Re-install the OEM fan shroud assembly in the vehicle. We found this a little easier from below the vehicle.

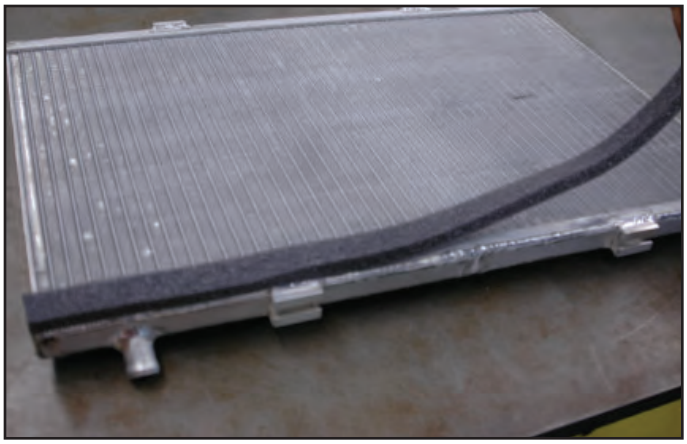
76. Anchor the fan shroud in place using an 8mm wrench for the two OEM mounting bolts.



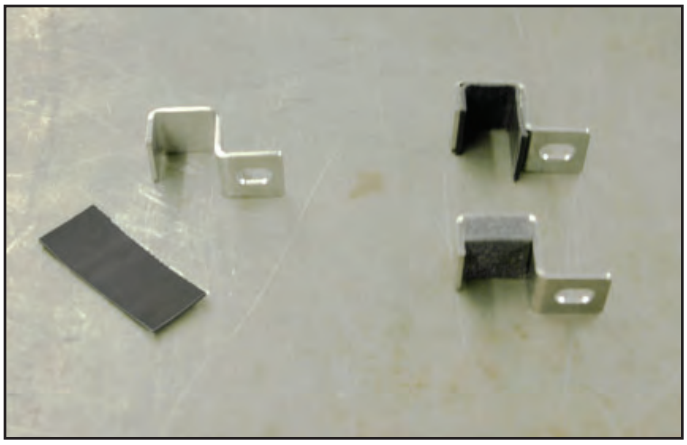
77. Re-connect the fan control plug.



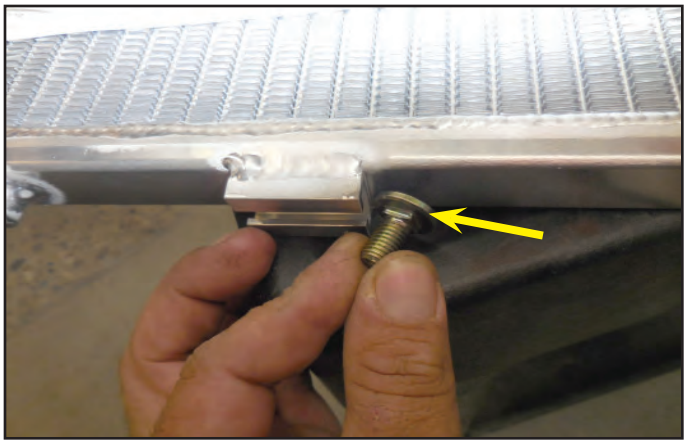
78. Clean up the end cap surfaces of the heat exchanger using acetone or lacquer thinner. Cut the supplied sticky backed foam strip to fit the length of the end caps and attach to the inside surface of the end cap as shown.



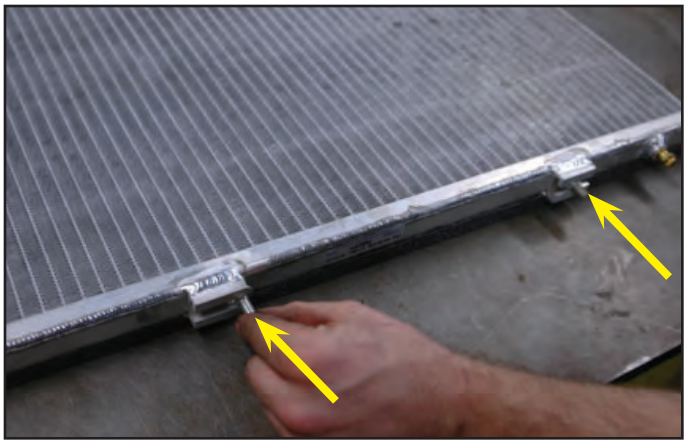
79. Cut the adhesive backed rubber strips and affix to the inside surface of two of the supplied heat exchanger mounting hooks. Apply a strip of the adhesive backed foam to the remaining heat exchanger mounting hook.



80. Insert two of the supplied carriage bolts in the slots on the top of the heat exchanger for attaching the mounting hooks. Here is a close-up of one location.



81. The two locations for the carriage bolts are shown here at the arrow locations.



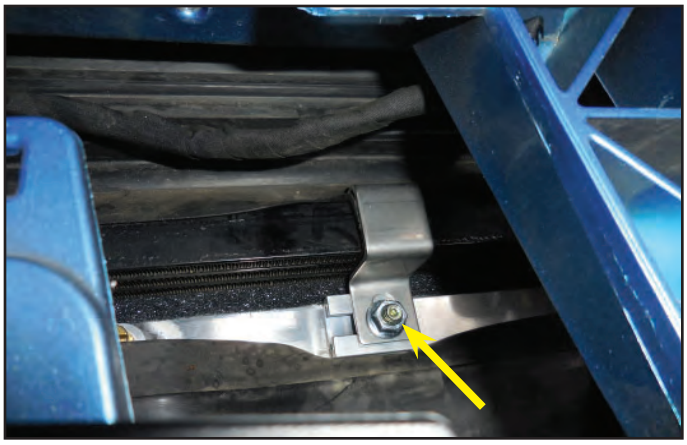
82. Pull up on the two halves of the radiator cover to unsnap them from their mounting holes and set aside for the moment.

83. Temporarily remove the two horns using a 10mm wrench.

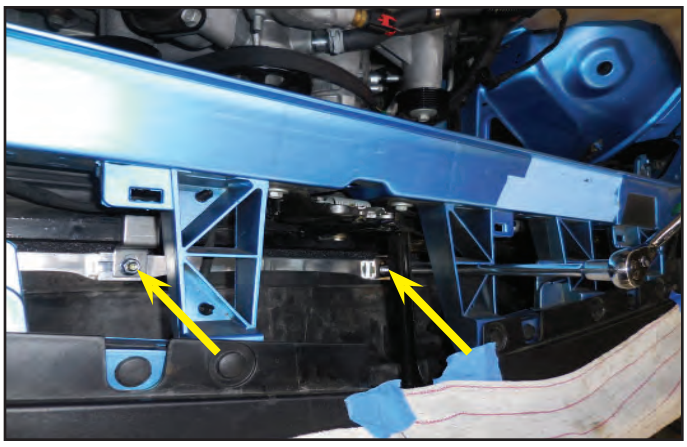
84. Unplug the electrical wires from the two horns. Set the horns aside for later installation.

85. Loosen the bolts holding the upper radiator mounts. This will allow you to move the radiator back slightly to make more room for the intercooler heat exchanger for the intercooler system.

86. Make sure that the air bleed valve is installed on the top of the heat exchanger. Have an assistant push the heat exchanger up from the bottom of the vehicle, in front of the existing air conditioner condenser. Have the assistant hold the heat exchanger in place while you attach the two rubber-backed hangers over the top of the air conditioning condenser, aligning the holes of the bracket with the carriage bolts installed on the heat exchanger. Use the 12mm headed nuts provided to secure the hangers in place.



87. Here are the two upper bracket locations shown with arrows for the attachment points.

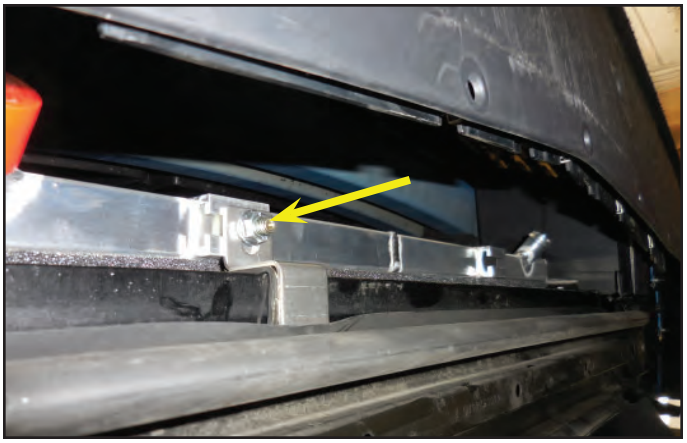


88. Tighten the two radiator mounts that were loosened earlier.

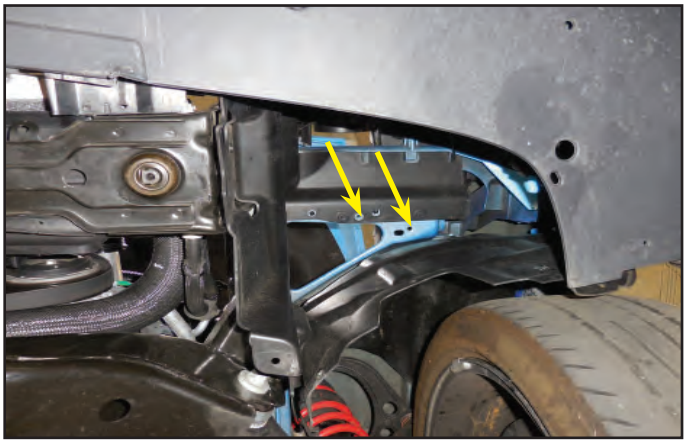
89. Plug in the electrical wires on both of the horns.

90. Re-install the two horns using the original hardware.

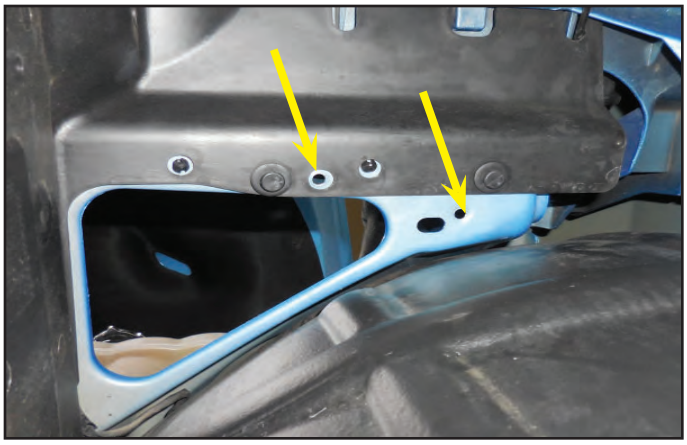
91. Attach the remaining carriage bolt to the passenger side mounting slot on the bottom of the heat exchanger. The remaining vibration damper foam backed bracket will clamp over the bottom of the air conditioning condenser and be secured to the carriage bolt just installed using the remaining 12mm headed nut.



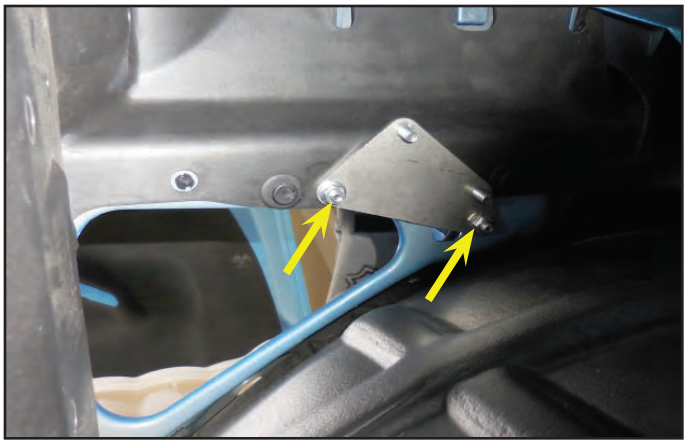
92. On the front driver side of the engine compartment, below the air box location there is a cross frame plate with the air box inlet hole and a large ground wire. This is where the intercooler pump will be located in the next few steps.



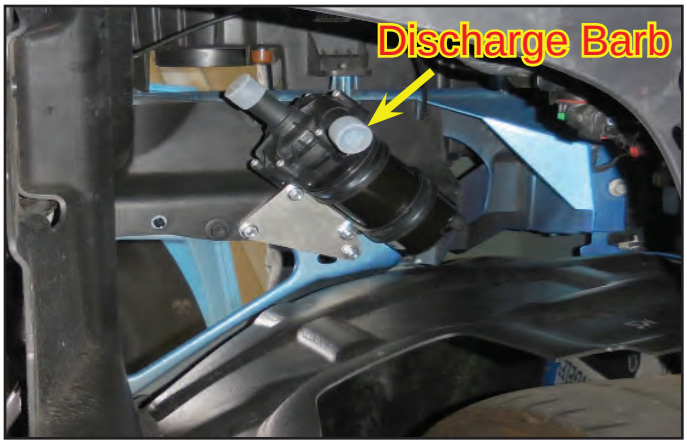
93. Open two existing holes to accommodate the intercooler pump using a ¼" drill bit. The image here is viewed from below. Test the holes with the provided bolts for the intercooler pump mounting bracket. It should look like this as viewed from below.



94. Push the provided bolts down from the top, and using the supplied hardware, attach the intercooler pump mounting bracket as shown.



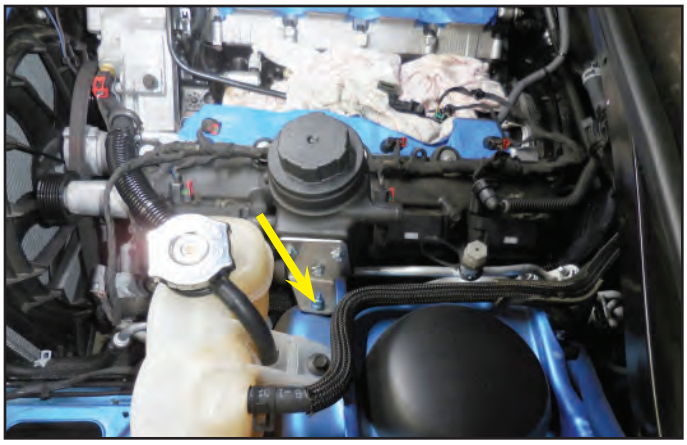
95. Attach the intercooler pump using the supplied Adel clamps and nuts as shown. The discharge barb should be pointing down, and the inlet forward angling slightly toward the center of the grille. Remove the plastic covers from the hose barbs.



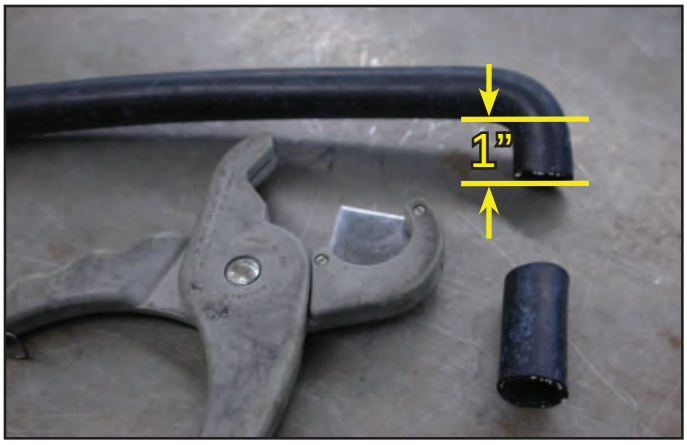
96. Use a 10mm wrench and the supplied bolts to secure the intercooler reservoir to the supplied mounting bracket.

97. Remove the nut from the front driver side shock tower adjacent to and behind the radiator reservoir using a 10mm wrench.

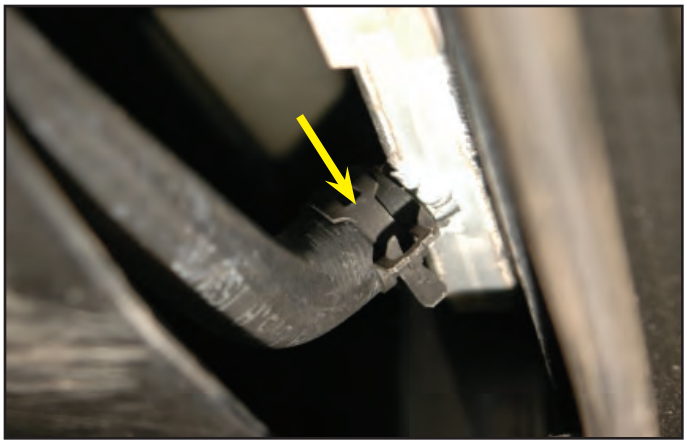
98. Install the intercooler reservoir mounting bracket assembly and secure using the removed nut with a 10mm wrench as shown.



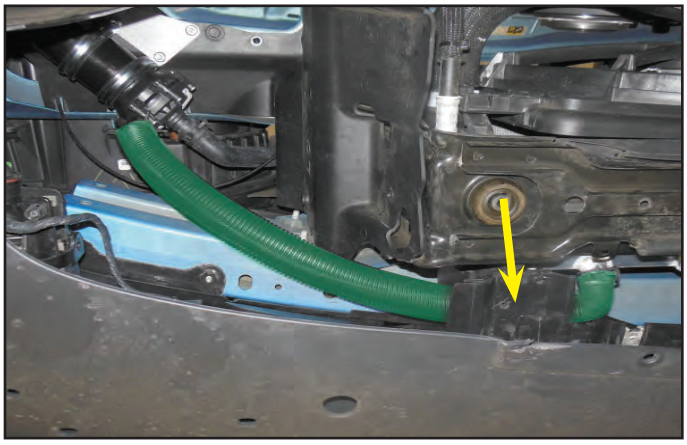
99. Cut off the short end of the provided 4” x 60” x ¾” elbow hose, and one of the provided 4” x 36” x 3/4” leaving a little more than 1” of the short end (as measured from the inside of the curve).



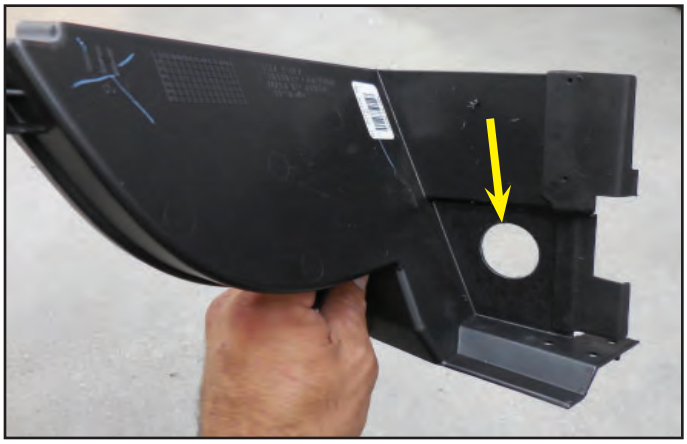
100. Attach the short end of the modified 4” x 60” x ¾” elbow hose to the passenger side hose barb on the front/bottom of the intercooler heat exchanger using one of the supplied spring clamps. The hose should be pointing toward the driver side of the vehicle. Route the long end of the hose along the fascia and up into the driver side of the engine compartment. Protect this hose from sharp objects such as sheet metal where necessary with the provided 1” slit loom.



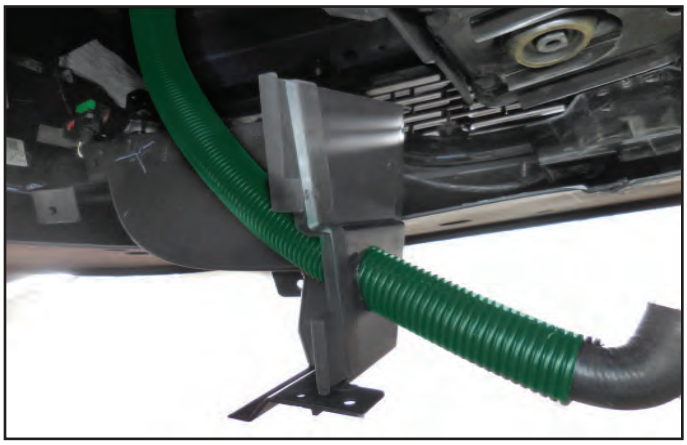
101. The 4”x 36”x¾” 90° hose that was modified earlier will be routed from the driver’s side intercooler heat exchanger spigot to the output side of the intercooler pump during the next few steps. This hose is highlighted in green here and the panel that will be modified is indicated with an arrow.



102. Here is the removed panel from the last photo. Cut a 1.5” hole in the location shown with an arrow.

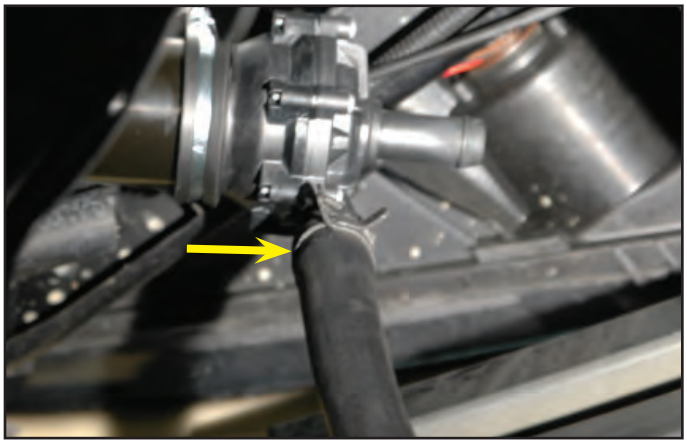


103. Wrap the 4”x 36”x¾” 90° hose that was modified earlier with a 24” long section of 1” diameter split loom and route it through the hole that was cut in the last step. Reinstall the plastic panel.

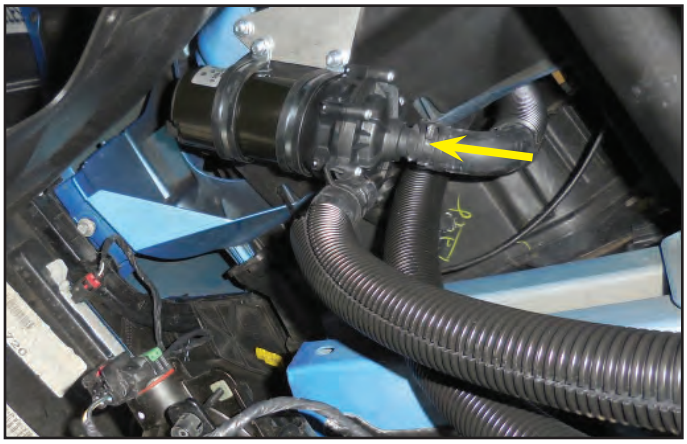


104. Attach the short end of the 4” x 36” x ¾” 90° hose from the last step to the driver side hose barb of the intercooler heat exchanger using another of the supplied spring clamps.

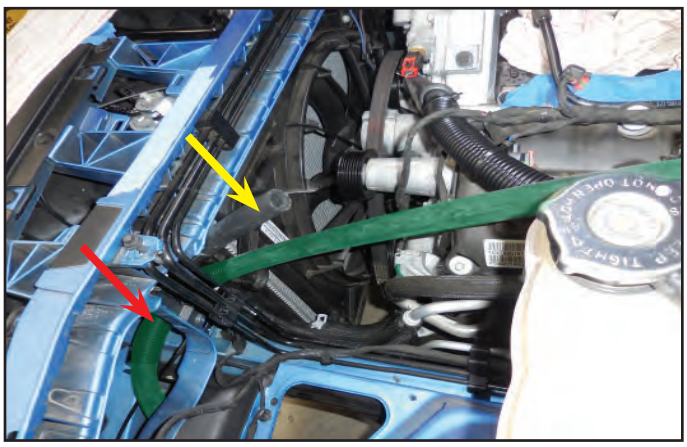
105. Route the other end of the hose from the last step over and up to the intercooler pump you installed earlier, cut to fit and attach to the discharge barb of the pump using one of the supplied spring clamps.



106. Connect one end of provided uncut 4”x 36” x ¾” 90° hose to the inlet barb on the intercooler pump using one of the supplied spring clamps, and route the other end up into the engine compartment as shown.



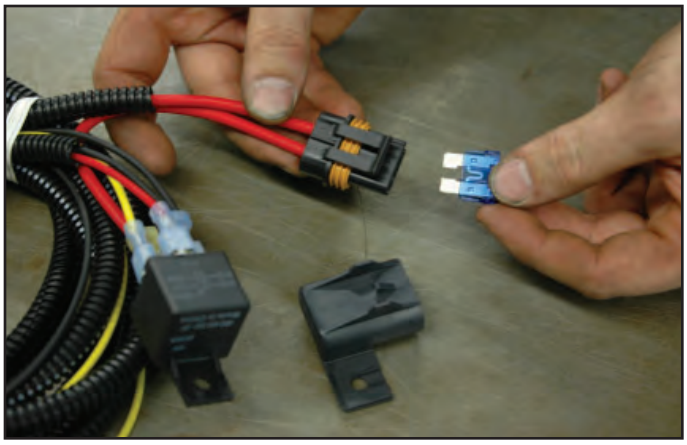
107. Route the hose from the last step (highlighted here in green) into the engine compartment as shown and protect it from the sharp sheet metal at the area shown with the red arrow using the 1” split loom. The yellow arrow location shows the end of the hose from the passenger side intercooler heat exchanger.



108. Use a supplied worm gear clamp to attach the end of the hose from the intercooler pump inlet barb to the lower discharge barb on the forward end of the intercooler reservoir. It’s important to use worm gear clamps on the reservoir.

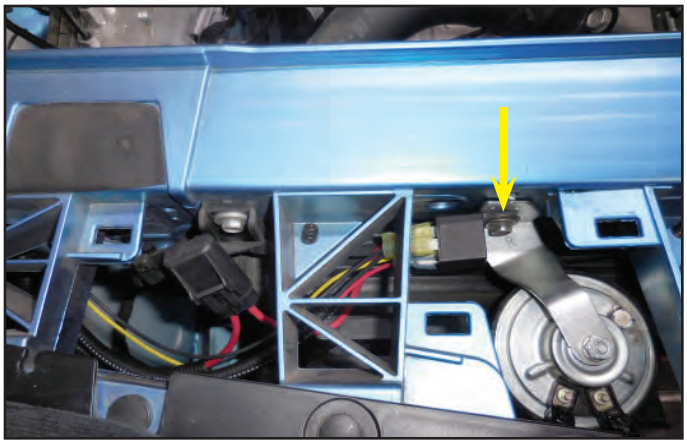
109. Gather the following wire assembly for the intercooler pump. This will be installed over the next few steps.

110. Insert the 15 amp fuse in the fuse holder of the intercooler pump relay.

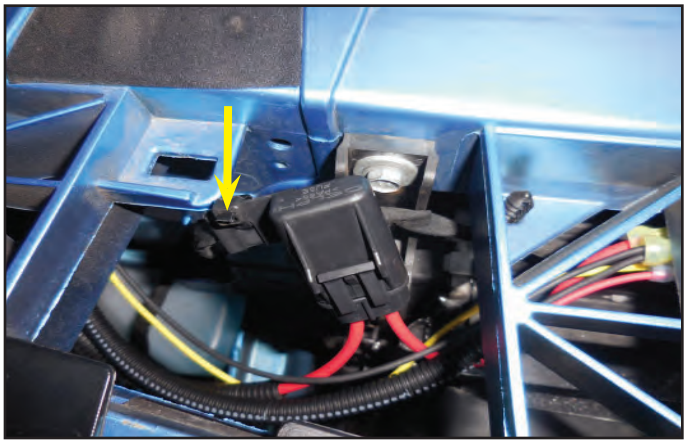


111. Use a 10mm wrench to remove the bolt from the passenger side horn mount. Open up the hole of the intercooler relay to accommodate the removed horn bolt. You may wish to use a vice, be careful if drilling by hand that the relay does not break free and rotate.

112. Replace the passenger side horn mounting bolt incorporating the intercooler pump relay.

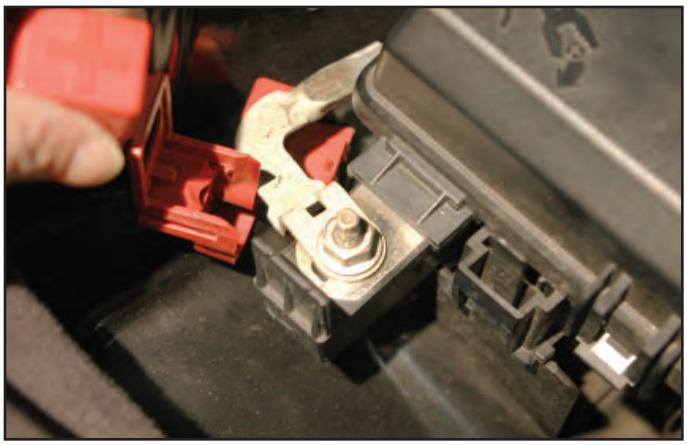


113. Zip-tie the fuse holder to the existing wire loom on the passenger side of the radiator as shown.

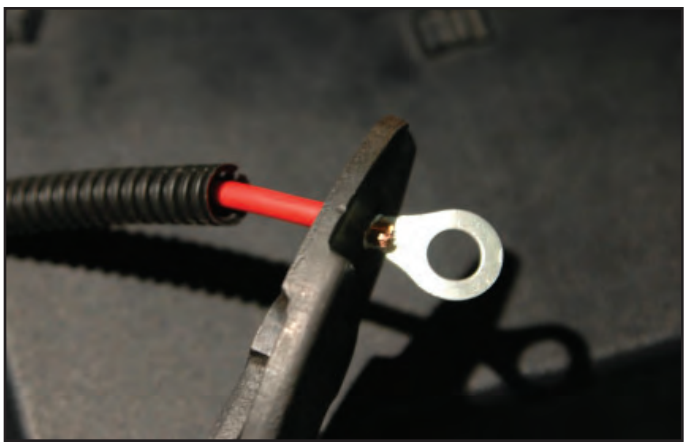


114. Route the black wire with the eyelet terminal down to the existing ground wire stud at the front, base flare of the wheel well near the windshield washer reservoir. Remove the nut with a 10mm wrench and replace incorporating the black ground wire.

115. Remove the red wire cover from the positive (+) terminal on the outside of the fuse center box by unsnapping the clips and set aside for reinstall.

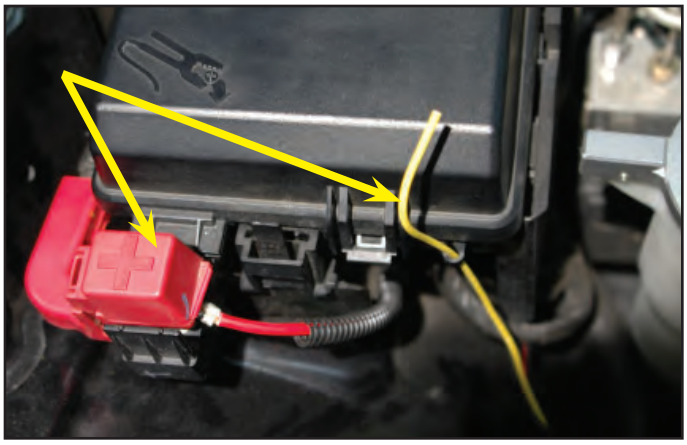


116. Cut the supplied existing eyelet terminal from the end of the red wire and replace with the larger supplied eyelet terminal. Trim the length of wire as needed for tidy routing to the positive terminal shown in the next photo. Crimp the larger eyelet terminal on securely. Add the yellow wire to the split loom with the red wire, and route the split loom with the red and yellow wires over to the fuse center.

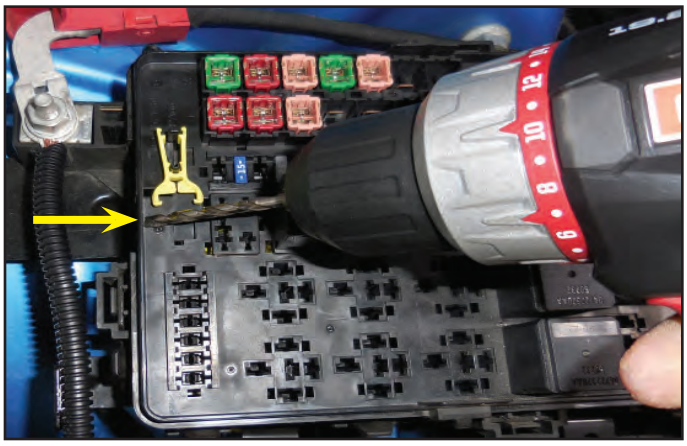


117. Remove the existing nut from the positive (+) stud exposed when you removed the red wire cover. Replace the nut incorporating the new red wire terminal on the post. Tighten securely.

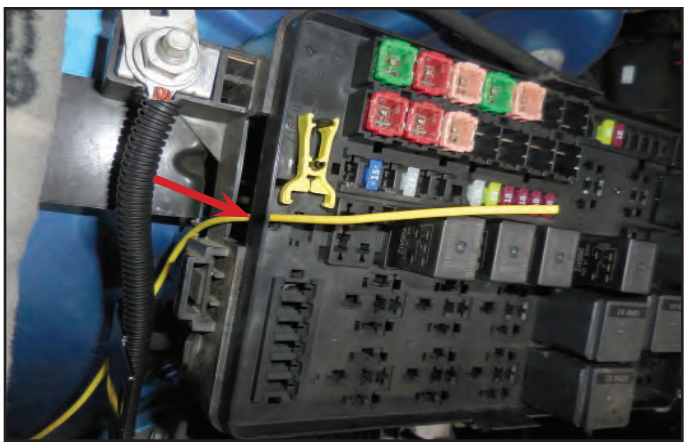
118. Pull the yellow wire out of the split loom near the base of the fuse center box. Replace the red wire cover on the positive (+) terminal exposed earlier.



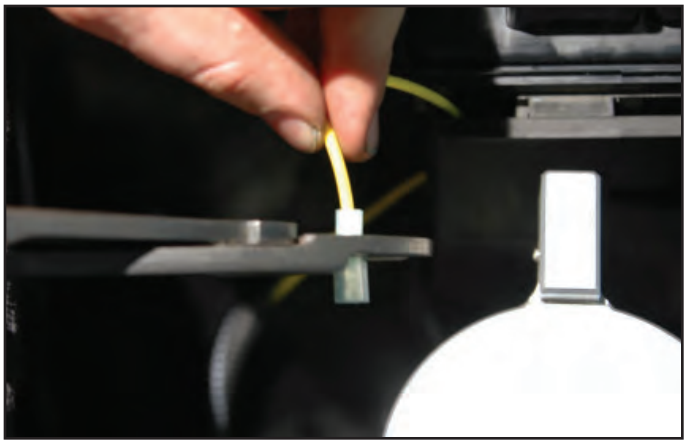
119. Open the fuse center cover and drill an 1/8” diameter hole in the location shown on the fusebox to route the yellow trigger wire through.



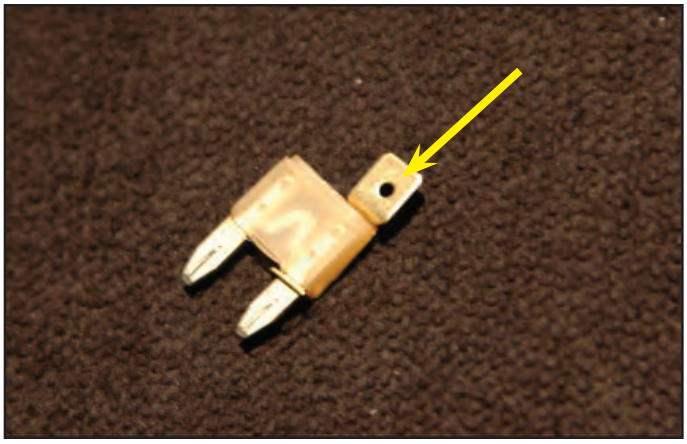
120. Open the fuse center cover and route the yellow wire up inside the front outside corner of the fuse center box.



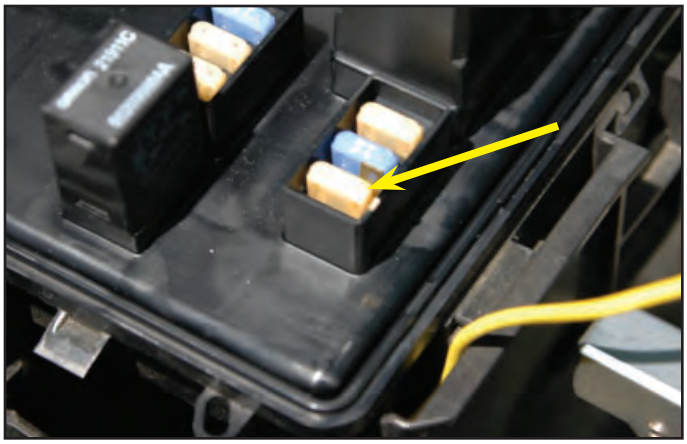
121. Crimp on the supplied spade connector end securely.



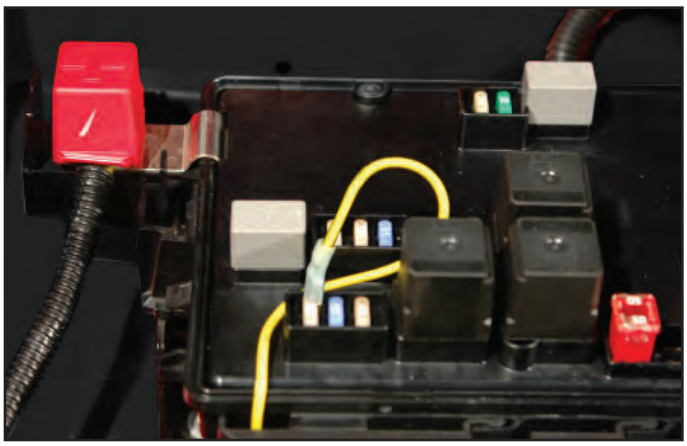
122. For the earlier model Challengers you will remove fuse #6 (25 Amp-injectors, coils, SRV) from the slot, and add the fuse tap to one leg of the fuse. For newer models follow the instructions shown later.



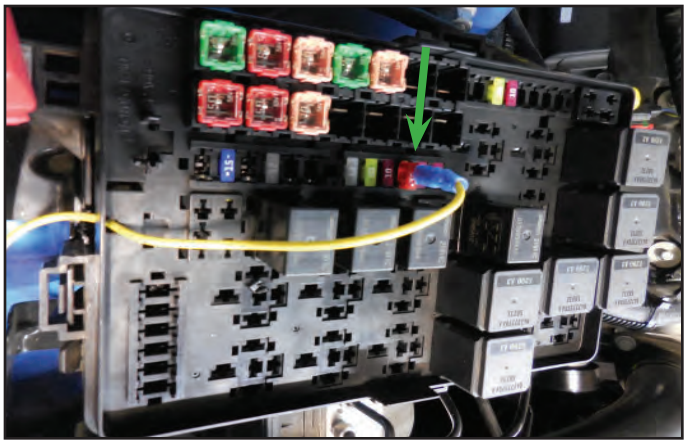
123. Replace the 25 Amp fuse #6 back into its designated slot.



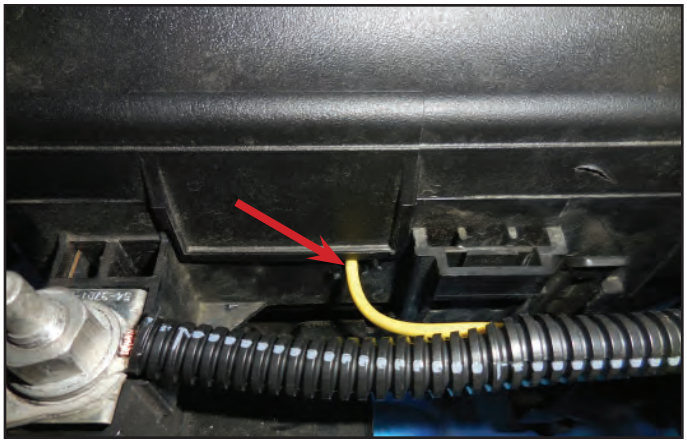
124. Plug the yellow wire spade connector onto the fuse tap you just installed.



125. For newer model Challengers you will need to remove fuse #37 (10 Amp Engine Controller), and replace this with the provided 10 Amp mini fuse and the supplied fuse tap that was shown three steps ago and reinstall it in fuse location #37. Then plug the yellow spade connector onto the fuse tap. The location is shown here with a green arrow.



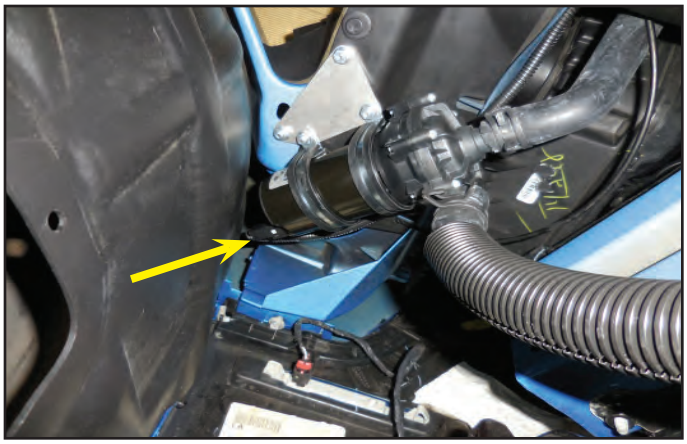
126. Make a small notch in the fuse box at the red arrow location to allow clearance for the yellow trigger wire. Replace the fuse center cover ensuring that the yellow wire does not get crimped.



127. Route the wire end shown to the driver's side of the car towards the intercooler pump.

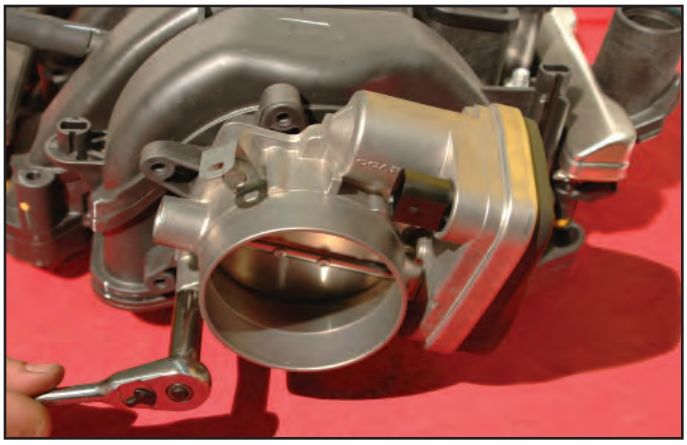
128. Continue to route the wire end down towards the back of the intercooler pump.

129. Plug the electrical wire from the last step into the back of the intercooler pump shown at the arrow location.



130. Remove the oil fill cap from the OEM manifold. This will be installed on the supercharger later.

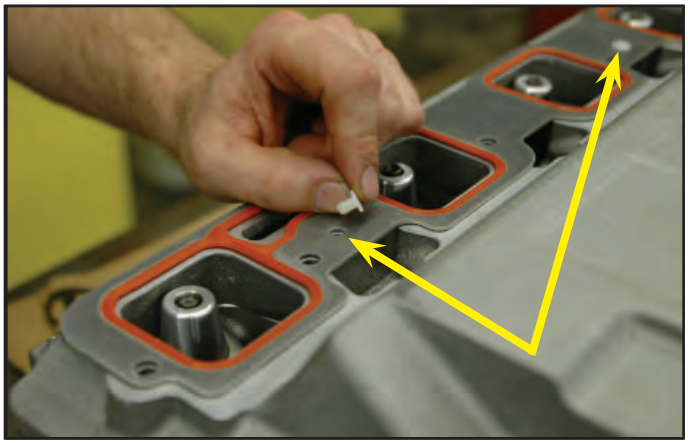
131. Remove the throttle body from the OEM manifold using a 10mm wrench.



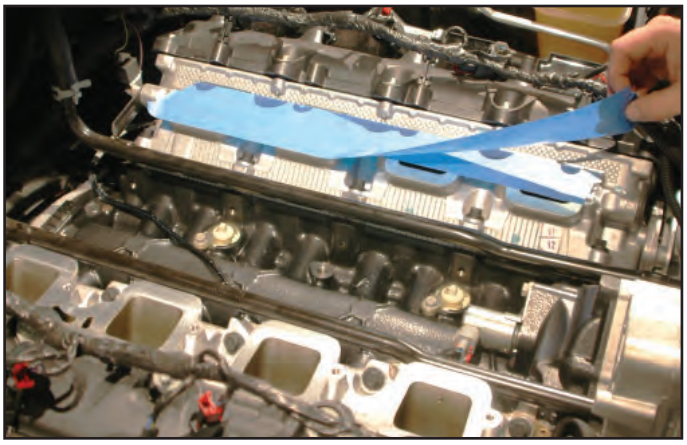
132. Ensure the throttle body O-ring is in place.

133. Apply blue Loctite 242 to the four provided M6x40mm bolts and use them to attach the throttle body to the supercharger inlet. Orient the throttle body with the motor facing up as shown. Tighten the bolts using a 10mm socket and torque wrench to 108 in-lbs.

134. Align the provided intake manifold gaskets with the ports on the bottom of the supercharger intake and secure them in place using two of the provided nylon push pins in each gasket anchoring them to the mounting holes as shown.



135. Remove the tape or rags you placed over the ports of the head.

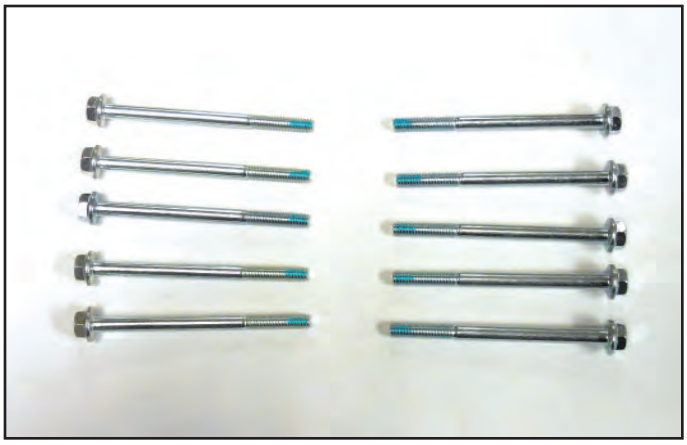


136. Wipe the surfaces clean again using lacquer thinner, alcohol or some other non-petroleum based product.

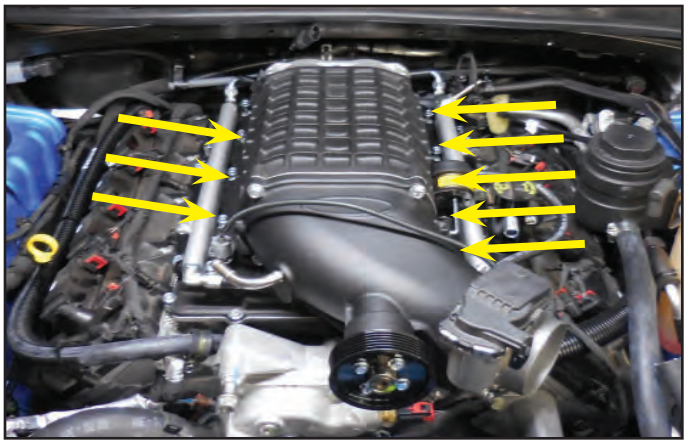
137. Spray a mist of silicone lubricant, mild soapy water, or some other non-petroleum based lubricant on the ports of the head to allow easy alignment of the supercharger assembly to the heads.

138. With the help of an assistant, carefully place the supercharger assembly over the intake gaskets on the heads, verify your bolt alignment and that the gaskets haven't shifted.

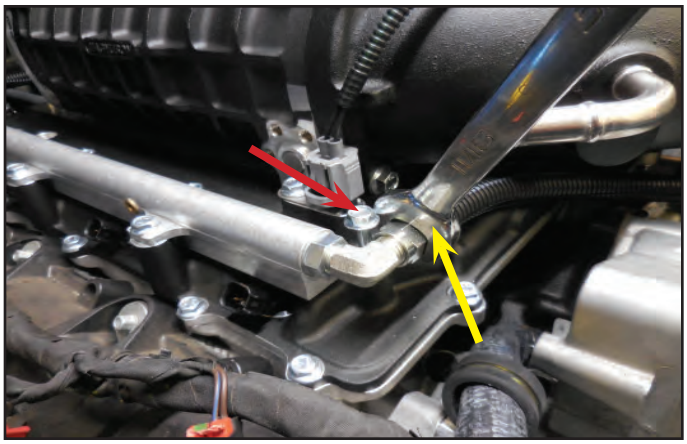
139. Gather the ten provided M6x70mm bolts and apply Loctite 242 to the threads. These bolts will be used to secure the supercharger to the heads.



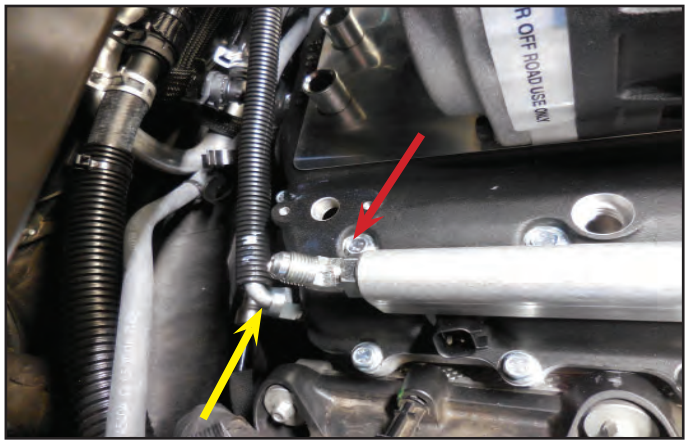
140. Install five of the M6x70mm supercharger mounting bolts on the driver's side of the supercharger, and the three middle bolts on the passengers side. Lightly tighten these eight bolts for now. You will install the front and back bolts for the passenger side after loosening some fuel lines in the next two steps.



141. Use and 11/16” wrench to remove the fuel line shown at the yellow arrow location. Then install an M6x70mm bolt on the passenger side front red arrow location.



142. Use an 11/16” wrench to remove the fuel line shown at the yellow arrow location at the passenger side rear corner of the supercharger. Then install the last M6x70mm bolt on the passenger side rear red arrow location.



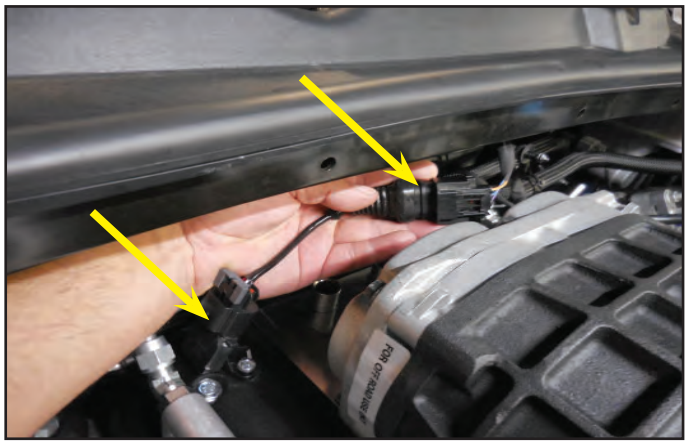
143. Torque the ten provided M6x70mm long bolts to 108 in-lbs using a center-out, criss-cross pattern. Verify your torque wrench settings.

144. Gather the provided 2-Bar MAP sensor.

145. Use the provided Lubriplate lubricant on the O-ring of the MAP sensor and press into the hole at the rear passenger side of the supercharger lid, behind the supercharger. Secure the MAP sensor fastener using a Phillips head screwdriver and the two provided M5x16mm panhead screws.

146. Now re-install the fuel cross-over lines on the front and rear of the passenger side fuel rail that were removed earlier ensuring that they are securely tightened with an 11/16" wrench.

147. Plug the provided extended MAP sensor connection into the passenger side MAP sensor that was installed two steps earlier and the OEM MAP sensor wire at the two yellow arrow locations.

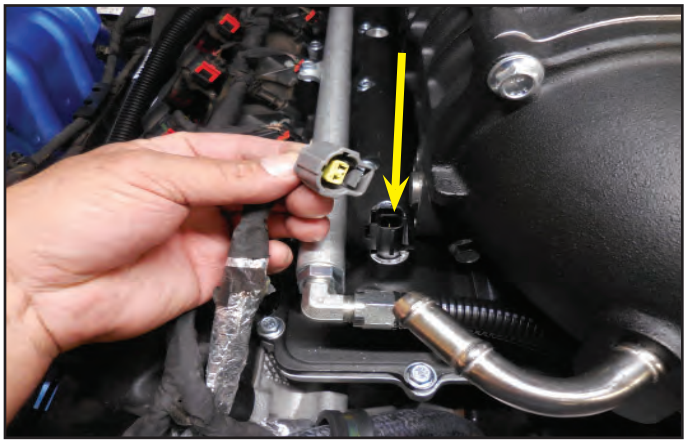


148. Lube the O-ring of the provided PCV valve with the provided Lubriplate lubricant, and thread into the passenger side mounting hole between the fuel rails and near the rear of the supercharger.

149. Snug down the PCV valve using a 15/16” wrench

150. Plug in the eight fuel injectors and ensure that the locking tabs are engaged.

151. Plug in the IAT sensor with the OEM connection at the arrow location.

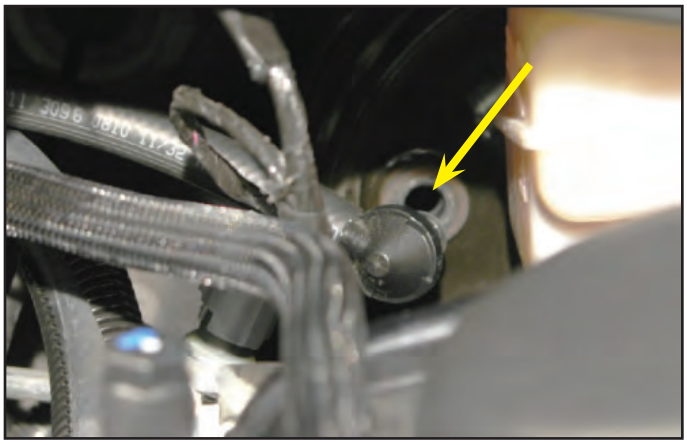


152. Connect the throttle body plug to the throttle body connection and ensure that you engage the locking tap. Zip-tie the wires to maintain clean and secure runs.

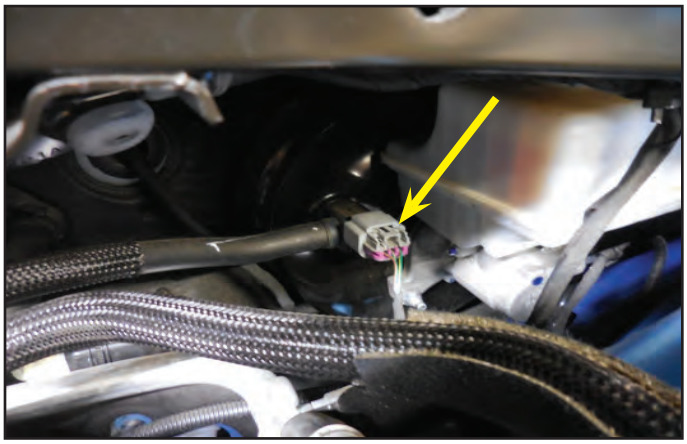
153. Attach the oil fill cap removed from the OEM intake manifold at the supercharger location shown.

154. Connect the fuel line to the supercharger fuel line barb at the rear driver side of the supercharger assembly. Also push the red locking tab back in place. Test the connection by pulling on it. You should not be able to remove the fitting without removing the locking tab and pushing the release button.

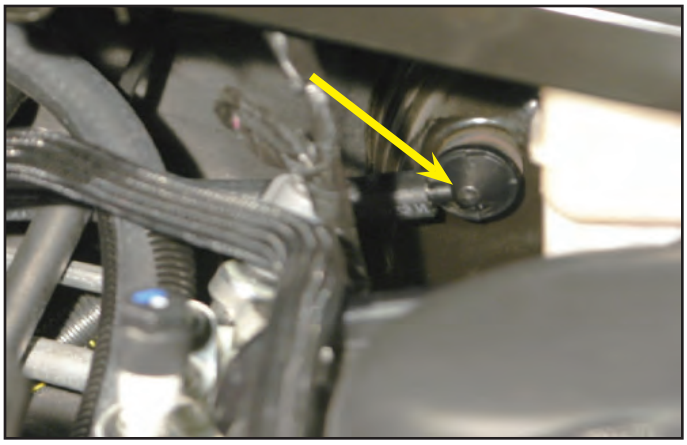
155. Remove the OEM brake booster valve and hose from the brake booster canister. Separate the hose and the valve being careful to not damage the fitting.



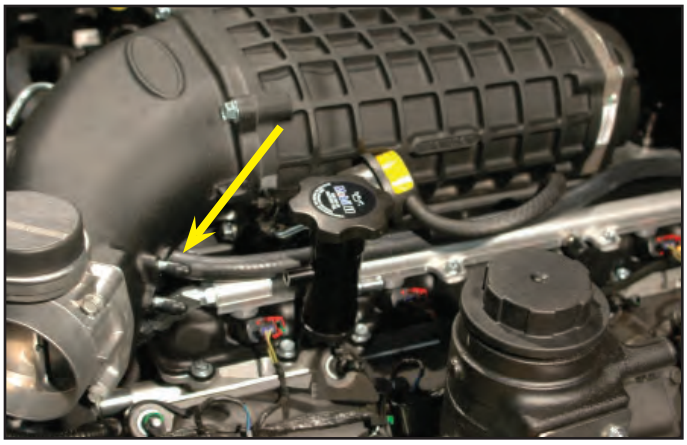
156. Newer model Challengers will have a wire sensor connection at the brake booster valve that must be disconnected before you can separate the valve from the hose.



157. Use the supplied 11/32” hose and attach one end to the brake booster valve. No clamps are necessary. Plug the valve back into the brake booster canister.



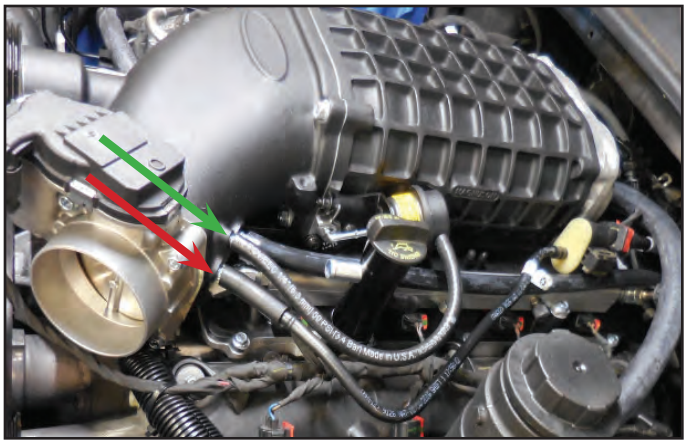
158. Route the brake booster hose from the last step behind the rear of the fuel rail, forward along the fuel rail on the driver side, cut to fit and plug into the supercharger inlet barb as shown. No clamps are necessary. Make sure this hose does not interfere with the bypass actuator linkage. The bypass actuator hose is shown disconnected at this point.



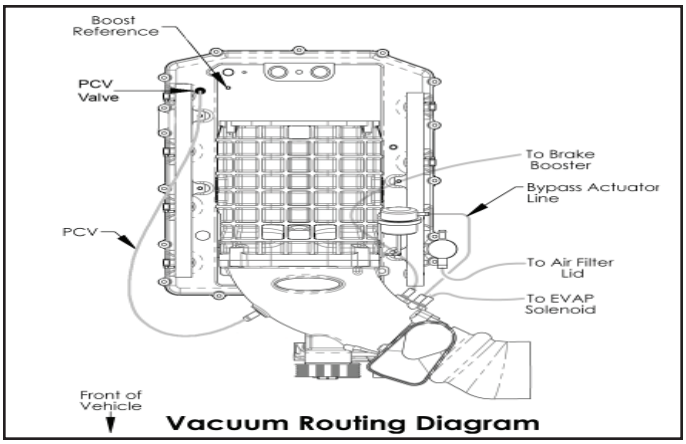
159. Gather the following bracket.

160. Remove the bolt holding the fuel rail at the arrow location and use this bolt location to secure the bracket from the previous step. Torque this bolt to 108 in-lbs. Install the EVAP solenoid onto the bracket as shown, and reinstall the hoses and electrical connection. Ensure that the red locking tab is engaged on the hose.

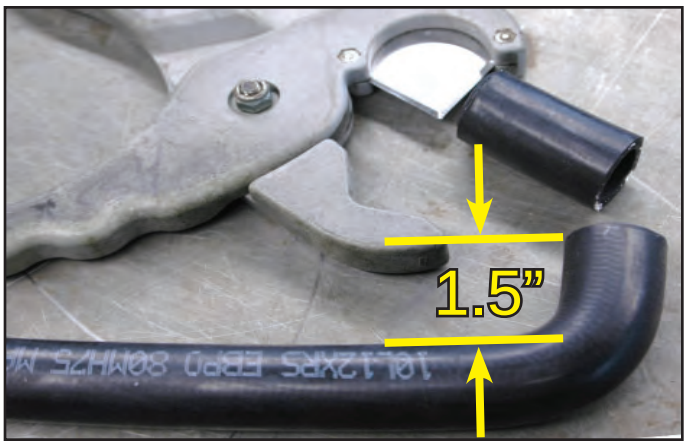
161. Route the hose from the front of the EVAP solenoid to the front hose barb on the supercharger inlet shown with the red arrow. Also at this time reconnect the bypass actuator hose to the center barb shown with the green arrow.



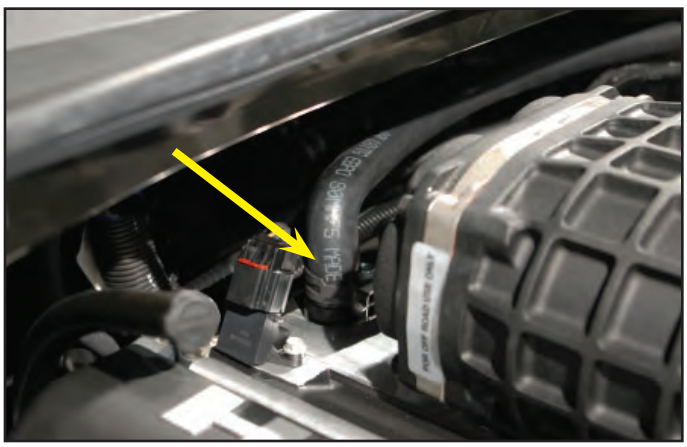
162. This is a PCV Hose Routing diagram to show you the general positions and connections. A larger version of this diagram is shown at the back of this manual.



163. Gather two provided 4” x 36” x ¾” 90° angle hoses and cut each of the shorter legs to 1.5” long measured from the inside edge.

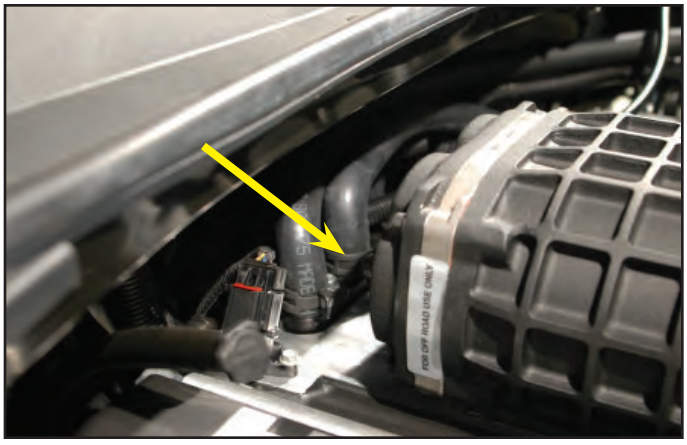


164. Use one of the provided spring clamps to attach the short leg of one of the two hoses you just cut to the passenger side intercooler barb on the new intake manifold lid behind the supercharger. The free end of this hose will be routed toward the driver side fender.



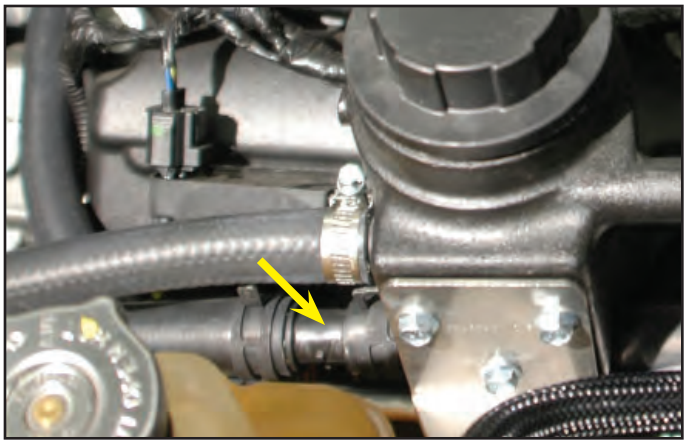
165. Route the passenger side intercooler hose you just installed over to the intercooler reservoir. Cut to fit and secure to the intercooler reservoir using one of the provided worm gear clamps.

166. Use another of the provided spring clamps to attach the short leg of the other hose you just prepared to the driver side hose barb on the new intake manifold lid behind the supercharger. The free end of this hose will also be routed toward the driver side fender.



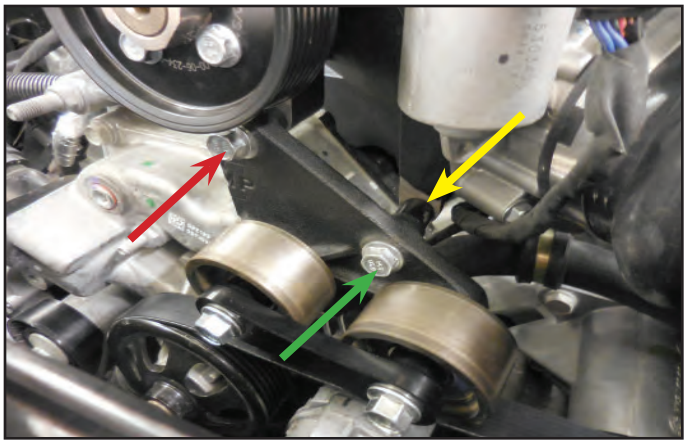
167. Use the provided ¾" x ¾" hose coupling (mender) and two of the provided spring clamps to join the driver side hose you just installed to the hose you ran up into the engine compartment from the passenger side heat exchanger barb.

168. The hose with the 3/4" coupling from the last step should be routed just below the intercooler reservoir.



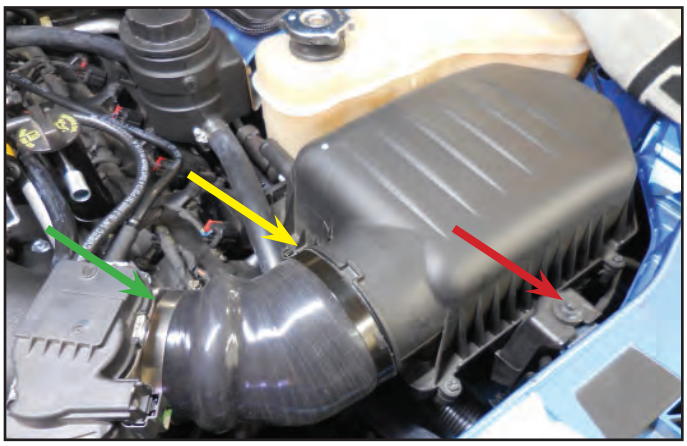
169. Cover the intercooler hoses at the back of the supercharger with some of the provided 1” split loom and hold it in place with the provided cable ties to protect it from the sharp objects located here. Loosely zip tie the split loom in place. Do not compress the hose.

170. Mount the provided Idler bracket to the supercharger assembly with the provided M8x35mm (red arrow location) and M8x50mm bolts (green arrow location). Install the 0.65” spacer behind the bracket where shown with the yellow arrow. Torque the mounting bolts to 20 ft-lbs with a 12mm socket.



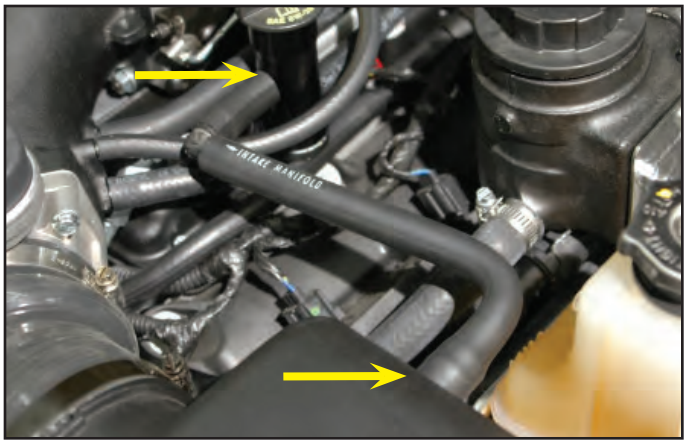
171. Using a 3/8” drive ratchet or breaker bar, spring the tensioner and install the provided serpentine belt using the belt routing diagram provided in the back of this instruction manual.

172. Press on the supplied hump hose to the airbox cover at the green arrow location before installing the air box assembly with the OEM hose clamps pre-installed. Then press the other side of the hump hose onto the throttle body at the green arrow location as you replace the air box. Secure the hose connections using the OEM hose clamps from the factory air tube. Lock the airbox assembly in place with the OEM 10mm headed bolt at the red arrow location

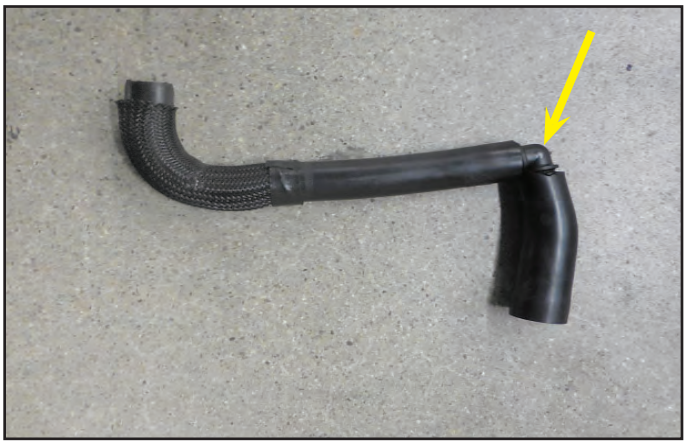


173. For the earlier model Challengers cut 2-1/2" off the flared end of the OEM air box to intake breather hose. Attach the supplied 90° angle coupling and a 2" section of ½" hose to the opposite end.

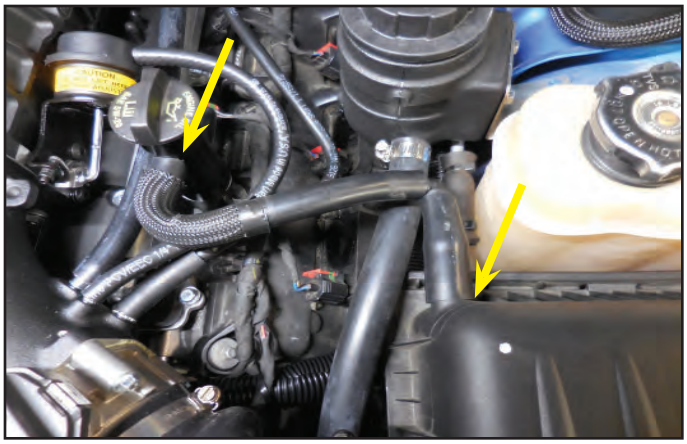
174. Re-install the factory PCV vent hose between the air box and the oil fill barb.



175. On newer model Challengers cut 2-1/2" off the flared end of the OEM air box to intake breather hose, and take that flared portion and attach it to the opposite side using the supplied 90° angle coupling as shown in this photo.



176. On newer model Challengers orient the modified intake breather hose as shown in the photo and attach it at the arrow locations.



177. Connect the 18” long 1/2” diameter hose from the PCV valve to the 90° hose barb. These connections are shown with arrows in this photo.

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

178. Re-attach the battery negative (-) connection in the trunk using a 10mm wrench.

179. Close the drain valve on the bottom passenger side of the radiator. Refill the radiator using the drained strained fluid removed earlier and top off as necessary after verifying that the drain valve is closed.

180. Fill the intercooler system with the same coolant mixture that is recommended by Mopar for your engine coolant system. Use the bleed valve at the front passenger side of the heat exchanger to help eliminate air from the system. The intercooler system will hold approximately six quarts of liquid. Fill the reservoir until the fluid level comes to about one and a quarter inch from the top edge of the filler neck.

181. Have someone turn the ignition switch to the accessory mode to trigger the pump on for 5 -10 seconds. Do not start the vehicle. This will circulate the fluid. Check for fuel leaks at this time too. Fill the intercooler reservoir while the pump circulates. Repeat this process until the system is full. Check for coolant leaks throughout the system. Affix your MagnaCharger button sticker to the recess on the supercharger inlet.

182. Replace the forward splash shield using the OEM fasteners.

183. Replace the rear splash shield utilizing the OEM fasteners.

184. Start the vehicle for five seconds and shut off. Check for fuel, coolant leaks and supercharger belt alignment. Check radiator and intercooler reservoir levels and top off as necessary.

185. After the initial start-up, and the engine has come to operating temperature, recheck the coolant level in the engine and intercooler reservoir. Open the bleed valve again to allow any residual air trapped to escape the system. Check all hose connections.

186. Replace the factory radiator covers utilizing the OEM fasteners, and affix the Premium Fuel Only sticker to a conspicuous location under the hood.

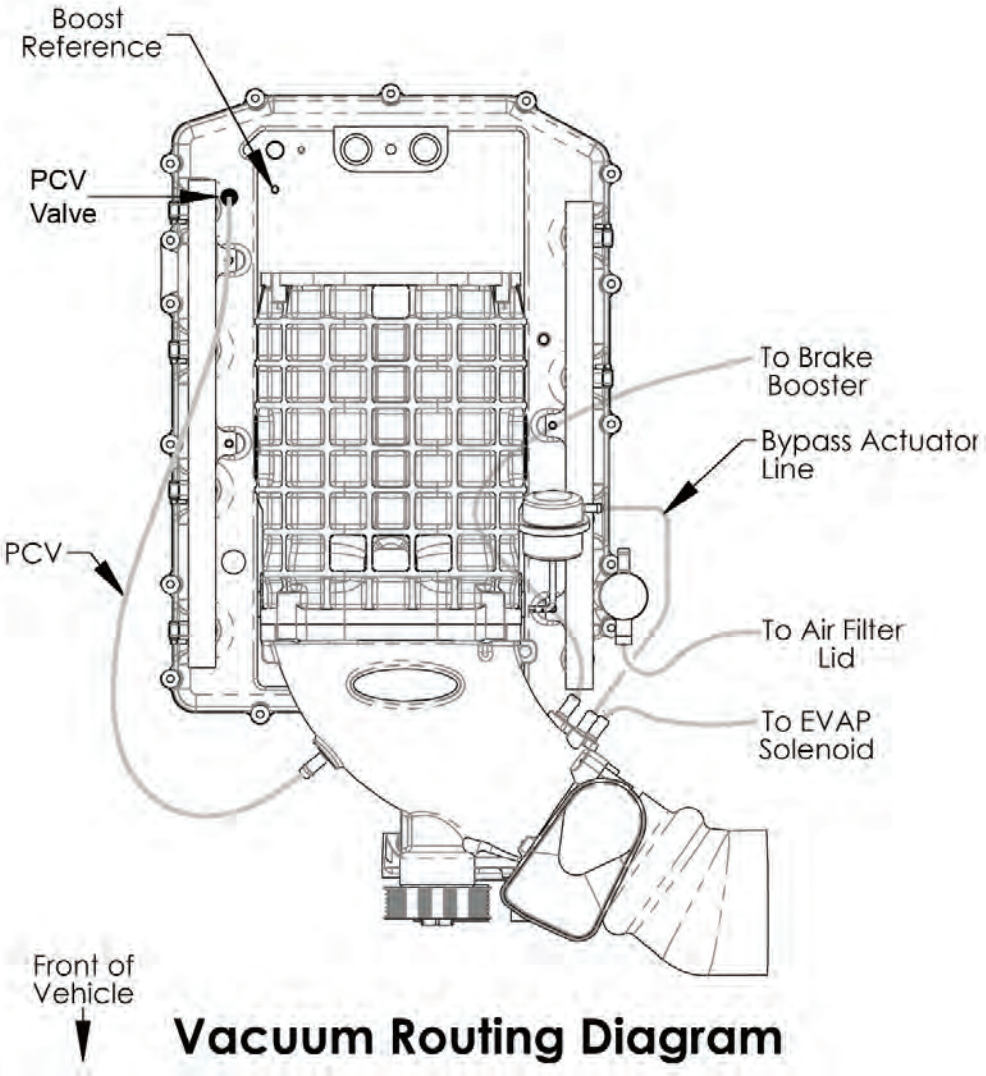
187. Affix the Premium Fuel Only sticker to the door of your gas fill cap at the arrow location. Ensure that the gas cap is tightly secured.

188. Test drive your vehicle for a while taking care to not get into boost immediately. Do not perform any wide open throttle tests at this time. Pay close attention to the sounds of your engine, if you notice detonation (pinging) back off immediately and contact your installation facility. The supercharger does have a whining sound while under boost. When you are through with the initial test drive check again for any leaks, and top off with coolant if necessary.

189. After the initial test drive, gradually work the vehicle to wide open throttle runs. Listen for any engine detonation (pinging). If engine detonation is present, let up on the throttle immediately. Most detonation is caused by low octane fuel still in the tank. **NOTE: PREMIUM GASOLINE FUEL MUST BE USED, 91 Octane or better.** If you have questions about your vehicles performance, please check with your installation facility.

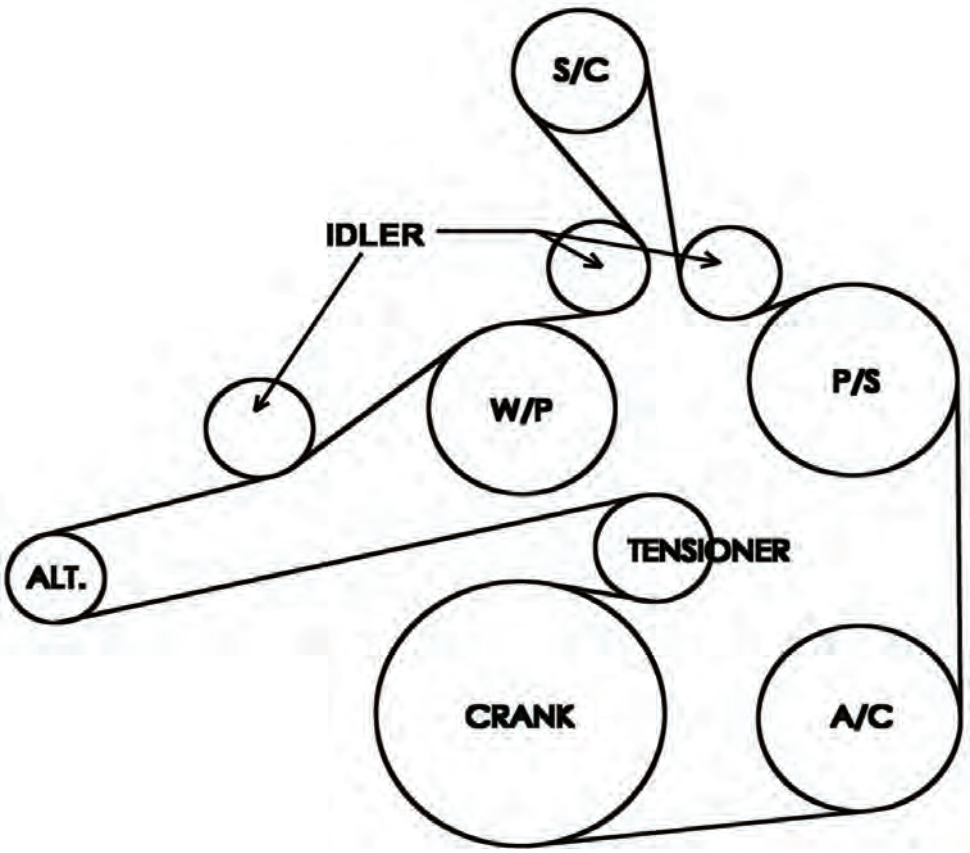
After you finish your installation and road test your vehicle, please fill out the warranty registration. This can be found on our website.

Appendix



Vacuum Routing Diagram

Appendix



5.7L Challenger HEMI Belt Routing Diagram

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

This supercharger system requires the use of only premium gasoline fuel, 91 octane or better. It is NOT compatible with E85, Ethanol, Flex Fuels.

NOTE: Your supercharger system is sensitive to corrosion. You must use the vehicle manufacturer specified coolant mixture in the intercooler system as well as your radiator.

Please enjoy your “Magna Charged”
performance responsibly!

MAGNUSON
SUPERCHARGERS