MAGNUSON SUPERCHARGERS

Installation Instructions for:
CORVETTE SUPERCHARGER SYSTEM
2008-2013 C6 LS3 CORVETTE

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

*** PREMIUM FUEL REQUIRED ***

ATTENTION!
Your MAGNUSON SUPERCHARGER kit is sensitive to corrosion!
Take care of it by using 50/50 anti-freeze with de-ionized water.

SUPERCHARGER INSTALLATION MANUAL

Magnuson Products SuperCharger Kit
GM 6.2 Liter Engine
2008-2013 C6 Corvette LS3

Please take a few moments to review this manual thoroughly before you begin work:
A quick parts check to make certain your kit is complete (see shipper parts list in this manual). 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 fitting 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 fuel, 91 octane or better.

Magnuson Products SuperCharger systems are manufactured to produce about 20 RWHP per pound of boost at sea level. High altitudes will produce different numbers.

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, in which we are not responsible. Magnuson Products LLC is not responsible for the engine or consequential damages.

Magnuson Products supercharger 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 Products is NOT responsible and will void Magnuson Products 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 Products approved programming will void all warranties.

A new GM fuel filter is recommended at the time of supercharger installation.
Stock spark plugs and stock plug gap is recommended
Drives belt = Gates #K061045
Air Filter = TKO 1001-99T

Magnuson Products has joint ventured with RK Sports, Lingenfelter Performance Engineering, and Ken Grody Performance in the development of aftermarket hoods that will clear the supercharger system. It is our goal to add all new hood suppliers to the list as they become available.

Tools Required

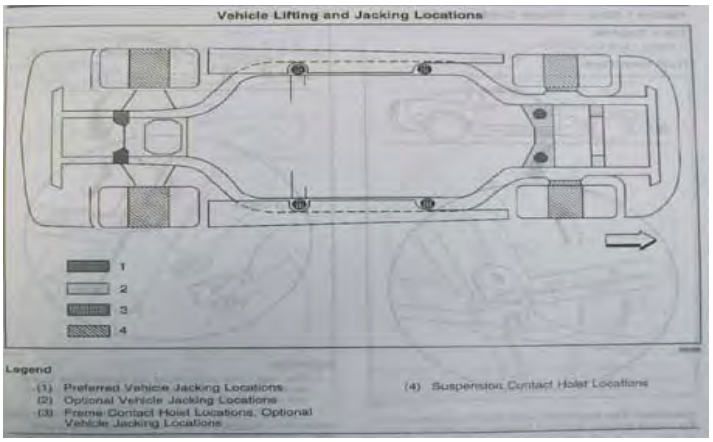
- **Metric wrench set**
- **1/4” - 3/8” and 1/2” drive metric socket set (standard & deep)**
- **3/8” and 1/2” drive Foot pound and inch pound torque wrenches**
- **Belt tensioner wrench**
- **Phillips and flat head screwdrivers**
- **1/2” breaker bar**
- **Fuel line quick disconnect tools (included in kit)**
- **Small or angles 3/8 drill motor**
- **Drain pan**
- **Hose cutters**
- **Hose clamp pliers**
- **Safety glasses**
- **Torque angle meter**
- **1/2” impact gun**
- **Small drift punch**
- **Hammer**
- **Harmonic balancer modification kit (included in kit)**
- **Compressed air**
- **Blow gun**
- **Metric Allen socket set 3/8 drive**
- **Metric Torque socket set 3/8 drive**
- **18mm metric line wrench**
- **Power steering oil suction tool or turkey baster.**

MAGNUSON
SUPERCHARGERS

1. The first step is to use the provided SCT hand-held tuner to setup the calibration for your new supercharger system. Follow the instructions in the supplied SCT tuner manual. Locate your EO sticker and follow the instructions for placing the sticker on the supercharger. If the Box-2 did not come with the SCT hand-held tuner inside, then skip to step#2 and proceed with the vehicle computer removal and packaging procedures.

2. With a 10mm wrench disconnect the (-) negative battery cable. Make sure the cable is far enough away from the battery that it does not accidentally touch the battery and make connection during the installation.

3. If your Box-2 did not come with a SCT tuner, you will need to send your computers in to Magnuson Products for calibration. Raise the vehicle on an automotive hoist using the factory recommended lift points. Refer to the owners' manual or shop guide for these locations.

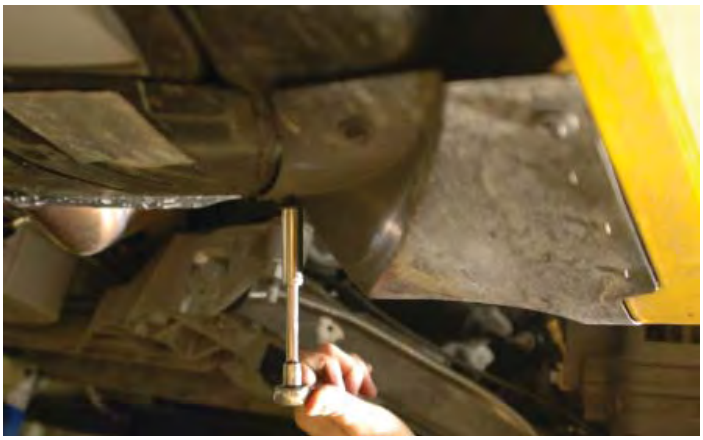


4. Remove the front right wheel with a 19mm wrench.

5. Remove the six push-lock fasteners securing the rear splash panel.

6. Remove the Push-lock fasteners by gently prying up on the center of the fastener and then removing the fastener completely.

7. Remove the three bolts that secure the bottom of the splash panel using a 10mm socket wrench for two bolts and a 7mm wrench for one bolt.



8. Removing the inner fender panel will expose the vehicles operating computer. This is high in the fender well. Remove the two 10mm bolts that anchor the computer to the fender mounting bracket. Pull the computer off the locating pins. The computer is now free to drop down.

9. There are two computer connectors. Remove the connectors by first pulling the Red locking key out, then pushing in on the Black cover button and pulling the connector down.

10. Remove the computer connectors carefully by pulling straight out.

11. Here are the shipping materials supplied to quickly return the vehicle computers to Magnuson Products Inc.

12. Place the computers into the plastic bag supplied and then wrap it in the packing sheet and seal the box.

13. Completely fill out the pre-paid shipping form supplied and then remove the adhesive label on the third page, placing it on the top of the box. Take the box to your nearest UPS office to be returned to Magnuson Products LLC. Magnuson will then re-program the computer and quickly return it to you via UPS.

14. Remove the pressure in the fuel tank by removing and then replacing the fuel filler cap.

15. Remove the stock hood by removing the four bolts with a 13mm socket wrench. Set the hood aside carefully for an EBAY auction.

16. With a cool engine, open the petcock drain on the passenger side of the radiator and release the coolant into a clean drain pan for reuse later. Remove the radiator cap to vent the system. (Be careful not to remove the radiator cap if the engine is still hot.)

17. Remove the engine oil filler cap.

18. Remove the engine/coil covers by pulling up firmly on them. The covers will not be reused.

19. Replace the engine oil filler cap.

20. Remove the Mass Air Flow meter (MAF) connector from the airbox by pulling up on the grey release trigger and squeezing the connector.

21. Remove the PCV inlet tube from the air filter bellows by pushing up on the release lever. The tube will not be reused.

22. Use an 8mm nut driver or flathead screwdriver to loosen the clamp on the bellows to the throttle body.

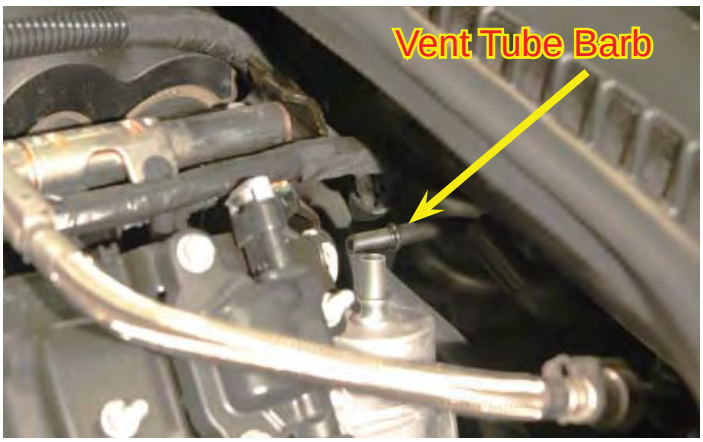
23. Pull up firmly on the air box assembly to separate from the three mounting grommet pins and remove from the vehicle.

24. Disconnect the EVAP intake tube on intake manifold by pushing in on the white release trigger and pulling the connector free.

25. Release the other end of the tube at the bottom of the EVAP solenoid by pushing in on the release trigger.

26. Release the vent tube at the top of the EVAP solenoid by pushing in on the release trigger.

27. Disconnect the other end of the vent tube at the fire wall connection and set it aside as it will be reused in a later step.



28. Disconnect the other end of the PCV tube that was removed from the air tube in step #21 which connects to the hose barb at the front of the passenger side valve cover. You may need to use a small screwdriver to release the clip lock which could be on the bottom.

29. Disconnect the EVAP solenoid electrical connection.

30. Disconnect the Electric Throttle Control (ETC) connector at the throttle body by squeezing the trigger connector and pulling to remove it.

31. Disconnect the Manifold Absolute Pressure (MAP) sensor connector.

32. Use a shop knife to cut the tape that secures the wiring harness to the fuel rails in four locations.

33. Disconnect the eight fuel injector connectors by pressing in on the release triggers and pulling the connectors free.

34. Use a 13mm socket wrench to remove the nut that secures the battery cable on the back of the alternator.

35. Pull up on the anchors that secure the battery cable to the intake manifold and fuel rail (three locations).

36. Free the battery cable from the intake manifold and lay it aside.

37. Remove the power brake check valve and hose from the brake booster grommet by pulling it out firmly.

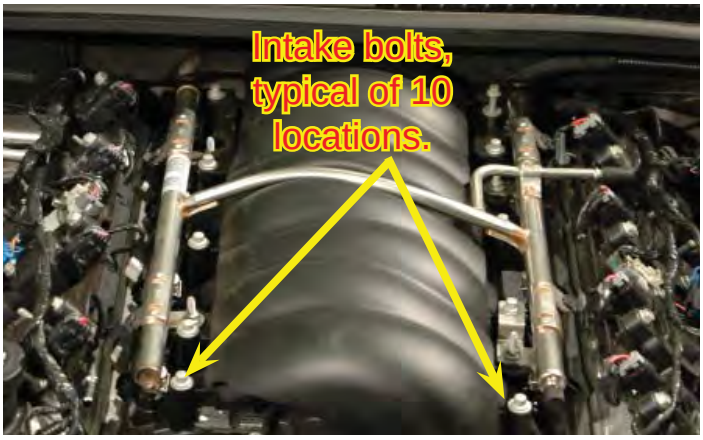
38. On the passenger side of the intake manifold behind the throttle body, remove the PCV hose by pressing the release clip and pulling free. Repeat on other end of the hose.

39. Release the fuel line safety clip. After removing the clip place some shop rags or towels under the fuel line in preparation for removal.

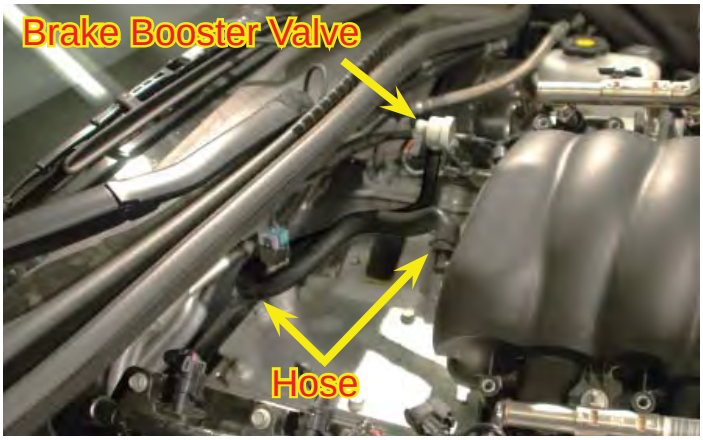
40. Use the fuel line removal tool to remove the fuel line from the fuel rail. To do this, first push the fuel line onto the barb firmly, hold in place while you insert the supplied fuel line removal tool into the fuel line. Push the tool into the fuel line releasing the spring clip and pull the fuel line off of the fuel line hose barb.

41. If you have, or can improvise, we recommend that you plug both the fuel line and the fuel line barb on the fuel rail to contain fuel seepage. Use shop towels to catch any dripping fuel and dispose of properly.

42. With an 8mm socket wrench remove the ten intake manifold bolts.



43. With the help of an assistant, feed the brake booster valve and hose as you carefully remove the intake manifold and set it aside.



44. Using a vacuum cleaner, remove any dirt or debris from the intake port area. (Be careful not to get any debris in the intake ports.)

45. Use alcohol or a suitable non-petroleum based solvent to wipe off the heads to remove any residue.

46. Cover the intake manifold ports with tape or clean rags to keep dirt and objects from entering the engine.

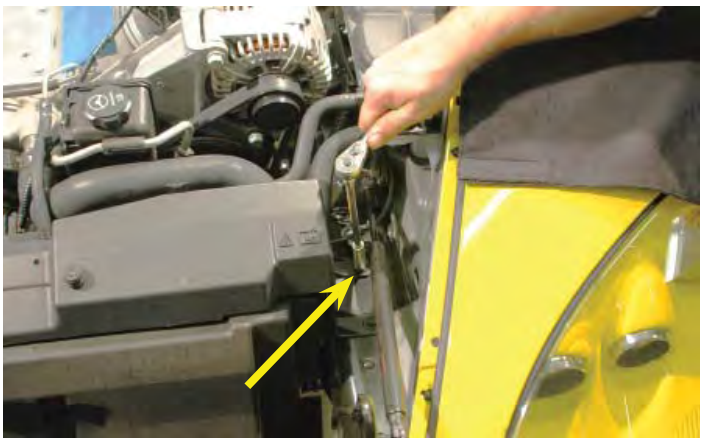
47. Remove the nuts that secure the sway bar end links to the lower A-arms on both sides of the vehicle. Use an 18mm socket on the outside and an 18mm open-end wrench on the inside.

48. From under the vehicle, remove the four bolts that secure the sway bar brackets to the chassis with a 13mm socket wrench

49. After removing the sway bolts, brackets and end link nuts, remove the sway bar and set it aside.

50. Remove the overflow hose from the clips on the radiator cowl.

51. Using a 10mm socket wrench, remove the two bolts on each side of the radiator cover.



52. Remove the radiator cover and set it aside for a modification in a later step.

53. Un-clip the coolant hoses from the three clips on the fan shroud.

54. Use a small straight blade screwdriver to open the three harness clamps and release the wiring harness on the fan shroud.

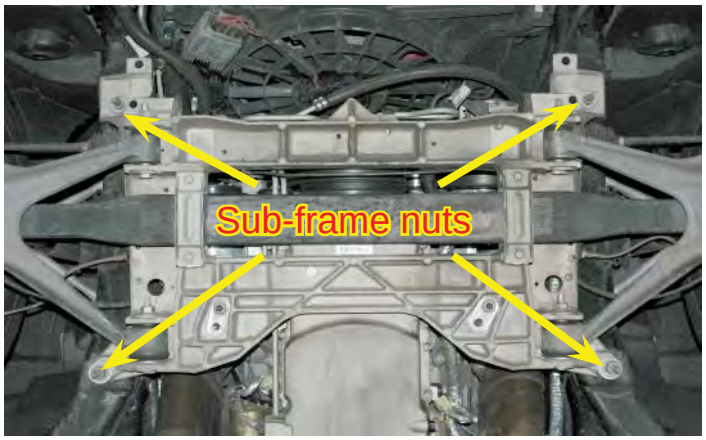
55. Locate the cooling fans electrical connector under the wiring harness located on the fan shroud. Squeeze the connector firmly and pull the connector free as shown.

56. The fan shroud is held to the radiator by two bolts. One is located near the bottom of the radiator on the driver side. The other is located high on the passenger side. Use a 10mm wrench and remove this bolt.

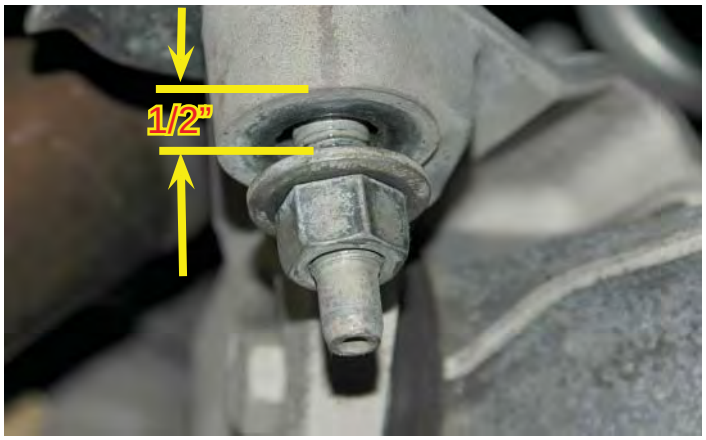
57. Remove the bolt near the bottom on the driver side with a 10mm socket wrench. The fan shroud should now be free to remove.

58. Remove the fan assembly by pushing up on the fan shroud to un-clip it from the radiator and then carefully pull the assembly out from the vehicle completely.

59. Using a 21mm socket wrench, loosen the four front sub-frame nuts shown.

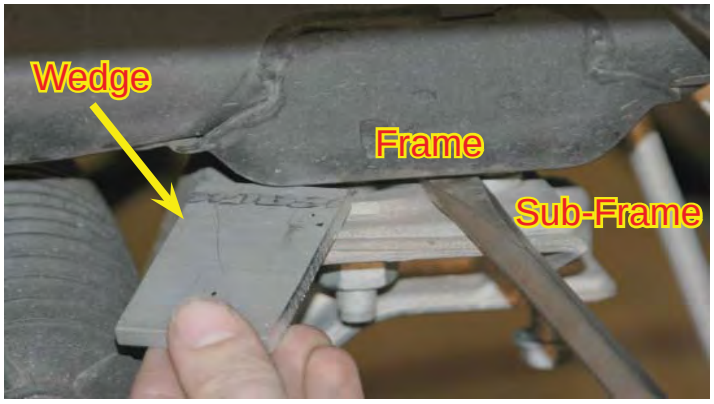


60. Loosen the four front sub-frame nuts until the bottom of the nut is even with the end of the threads on the bolt. The gap between the washer and the sub-frame should be approximately ½".



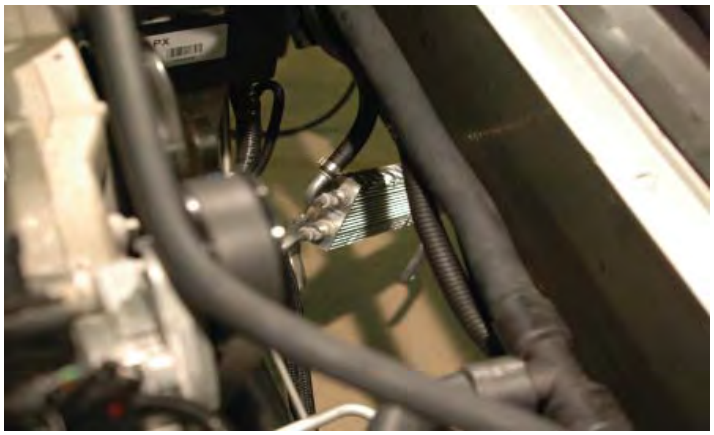
61. Remove the two motor mount nuts with an 18mm socket wrench.

62. Using a suitable pry bar, pry down the sub-frame at the front two mounting points. Temporally push a metal or wooden wedge approximately 3/8” thick between the frame and sub frame at these points.



63. Remove the two bolts mounting the power steering cooler to the frame using a 10mm wrench.

64. Swing the power steering cooler out and forward toward the driver side out of the way.



65. Using a 16mm wrench, remove the power steering line attached to the top of the steering rack. Use a shop towel to catch any fluid lost.

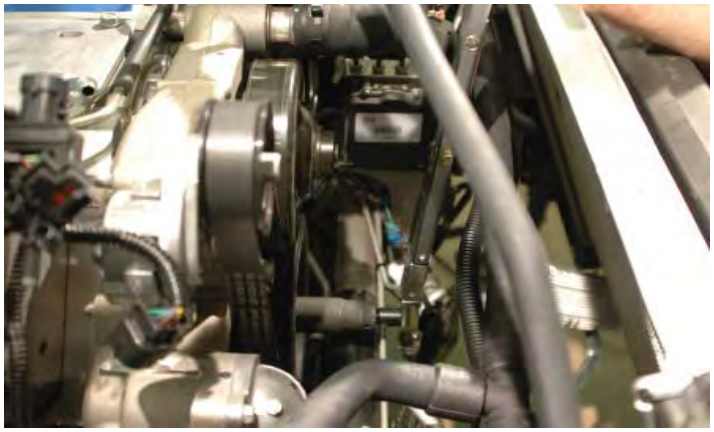
66. Unplug the oil pressure sensor electrical connection at the rear of the valley cover.

67. Using a floor jack and a sturdy piece of wood between the jack and the bottom of the oil pan, gently raise the engine.

68. When raising the engine with the floor jack, take care to watch the clearance between the back of the engine and the fire wall, so as not to damage any of the components on the fire wall.

69. The following steps may be performed from above or below on the vehicle. For clarity they are shown from below. Remove the front harmonic balancer bolt using a 24mm impact socket and a ½" impact wrench. **NOTE: We recommend safety glasses during all steps. Please be sure to wear them during these steps. You may need to use MAP gas to heat the pulley. Make sure to use caution whenever using a flame in the engine compartment and around combustible material.**

70. Install the drill guide using the supplied bolt and tighten to 30 ft-lbs with a 24mm socket and torque wrench. Orient the holes to give you access with your drill. We found 2:30 and 8:30 worked pretty well for us.



71. Using a small or angled 3/8" drill and the supplied drill bit, insert the drill into the guide holes and drill to the second step of the drill bit. (Make sure that you drill all the way to the second step.)

72. Using compressed air, blow the drill shavings out of the holes.

73. Install the supplied reamer into drill. Using a small amount of oil, ream holes until reamer bottoms out in the holes.

74. Using a 24mm socket, remove the large bolt and the drill guide from the engine.

75. Once again, use compressed air to blow out the holes.

76. Place beads of Green Loctite on the two supplied hardened roll pins, and then insert them into the drilled holes. The use of a small hammer and punch may be necessary to tap the pins in. (Make sure that the pins are in far enough that they do not touch the balancer bolt.)

77. Install the new supplied factory GM harmonic balancer bolt.

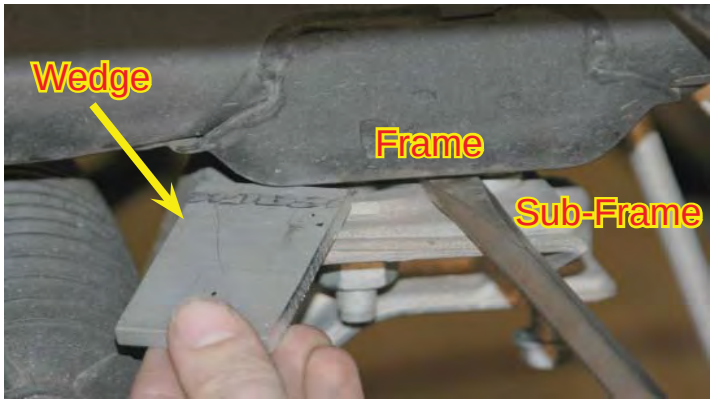
78. Using a 24mm socket tighten the new harmonic balancer bolt according to General Motors specifications. Tighten to 50 Nm (37 ft-lbs) then tighten an additional 140° using a torque angle meter.

79. With the crankshaft modifications complete, replace the power steering line previously removed and tighten the fitting securely using a 16mm wrench.

80. Remount the power steering cooler assembly to the original location and fasten using the original hardware. Torque the bolts to 106 in. lbs. Verify your torque wrench settings.

81. Reinstall the fan assembly. Use care to not damage the radiator core, and clip the fan assembly back into place. Install the two bolts that held it into place and reconnect the fan electrical connection. Clip the wiring harness and coolant lines back into their original locations on the fan shroud. (This is a reverse of steps 50-58)

82. Remove the wedges from between the frame and sub frame. Tighten the sub frame and motor mount nuts securely.



83. Replace the sway bar by installing it in its original position and replacing the sway bar brackets and reconnect the end links.

84. 84. Torque the sub-frame, the sway-bar connections and motor mounts to the torque values below. Torque Specifications:

Engine sub-frame nuts	80 ft-lbs
Motor mount nuts	60 ft-lbs
Sway bar to frame	45 ft-lbs
Sway bar link nuts	55 ft-lbs
Wheel lug nuts	110 ft-lbs

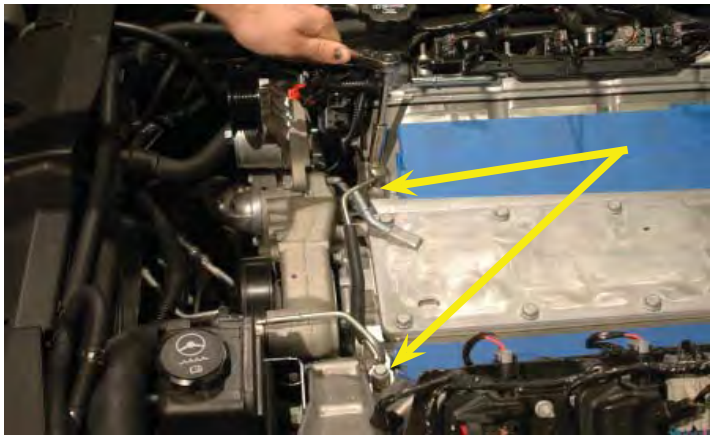
85. Remove the accessory serpentine belt by rotating the tensioner bolt with a 15mm wrench. Once the belt has become slack, pull the belt off an idler pulley and then remove the belt, this will not be reused.

86. Use a 15mm wrench to remove the pulley from the tensioner assembly. Set this pulley aside for later installation with the new tensioner.

87. Remove the stock tensioner assembly by removing the two mounting bolts with a 15mm wrench.

88. Remove the coolant hose from the vent pipe.

89. Remove the vent pipe with a 10mm socket wrench. Ensure that the O-ring gaskets under the vent pipe blocks do not stick to the cylinder heads. If so, remove them as new gaskets are supplied.



90. Install the new O-ring gaskets on the vent pipe blocks using some of the supplied Lubriplate lubricant to hold them in place.

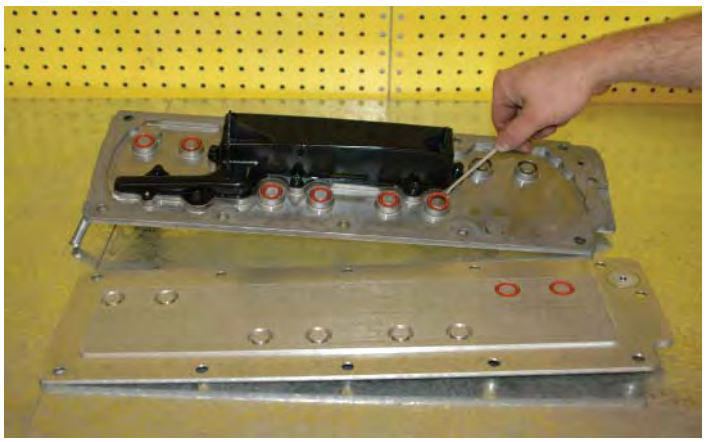
91. Install the new vent pipe with the original bolts and torque them with a torque wrench and 10mm socket to 106 in-lbs. Verify your torque wrench settings.

92. Use a 1-1/16” wrench to remove the oil pressure sensor from the engine valley cover.

93. Use a 13mm socket wrench to remove the ten bolts that secure the engine valley cover.

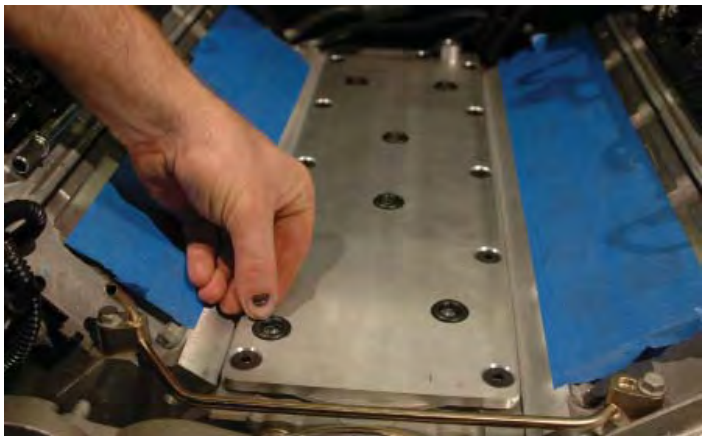
94. Remove the stock valley cover. The gasket will be reused, the original valley cover will not. Inspect the gasket for any damage and then re-install just the gasket, note that it will only fit correctly in one position.

95. From the bottom of the original valley cover, remove the eight O-rings with a small straight blade screwdriver. Install the O-rings into the grooves in the bottom of the new valley cover.

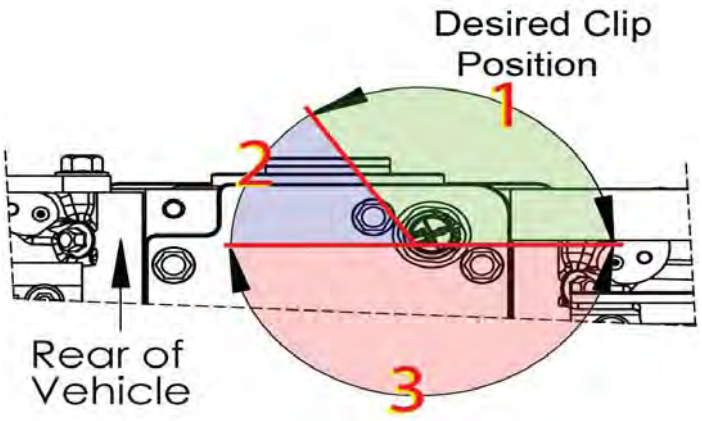


96. Install the new valley cover. Fasten with the supplied flathead bolts using a 5mm Allen socket and wrench. Torque the bolts to 18 ft-lbs. Verify your torque wrench settings.

97. Place a dab of black RTV Silicone in the six recesses of the new valley cover and insert the six O-rings supplied in the recesses, the silicone will hold them from moving when the supercharger is mounted.



98. Use a 1-1/16” wrench to install the oil pressure sensor. The secondary locking clip on your 2009 (+) oil pressure sensor connector may cause interference with the supercharger assembly, test the fit. If the secondary locking clip is not in position #1, you will need to re-clock it (rotate). If the secondary locking clip lands in position #2, you may increase the installation torque to rotate into position #1. You should not have to exceed 24 ft-lbs.

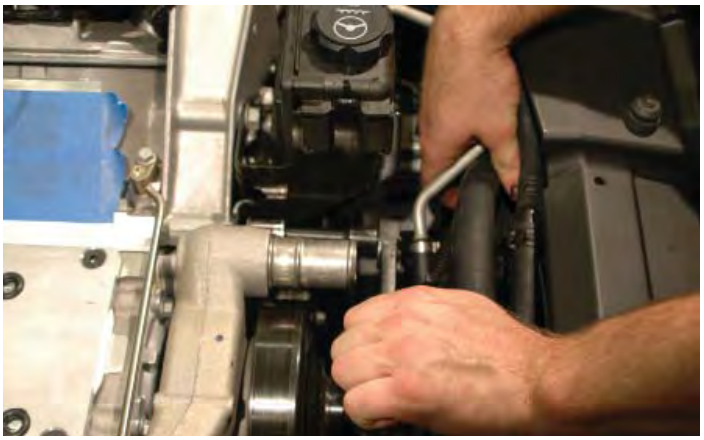


99. If the secondary locking clip lands in position #3, you will need to remove the sensor and re-clock it using the supplied copper shim. Before reinstalling, wrap the sensor’s threads with Teflon tape or Teflon paste. Reinstall the sensor and shim into position #1 using a torque wrench to 15 ft-lbs minimum to 24 ft-lbs maximum.

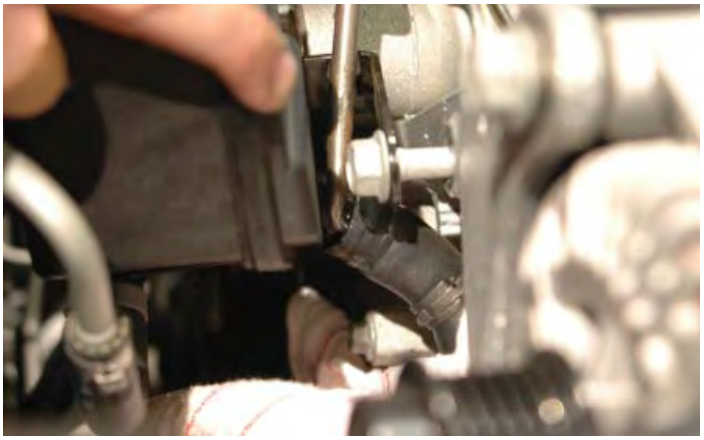
100. Remove the upper radiator hose from the water pump housing by squeezing the spring clamp then pulling the hose free. Tuck this hose out of the way over beside the alternator.

101. Using a power steering oil suction tool, turkey baste bulb, hand soap pump, or whatever you can improvise with to remove the fluid from the power steering reservoir and put into a disposable container. (Old fluid can be disposed of at an oil recycling center.)

102. Using a 15mm wrench, remove the two bolts that secure the power steering fluid reservoir to the alternator bracket.

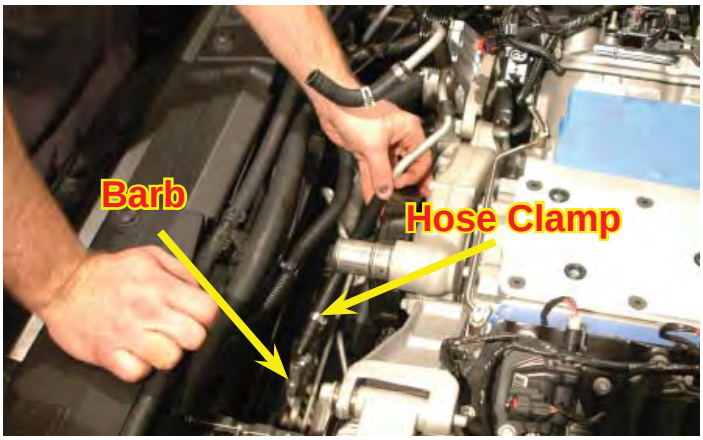


103. Remove the mounting bracket from the reservoir then remove the large hose from the bottom of the power steering reservoir by squeezing the clamp with a pair of pliers. Use a shop towel to catch any residual fluid. You may need to use a hook point to separate the hose from the barb as it may stick firmly in place.

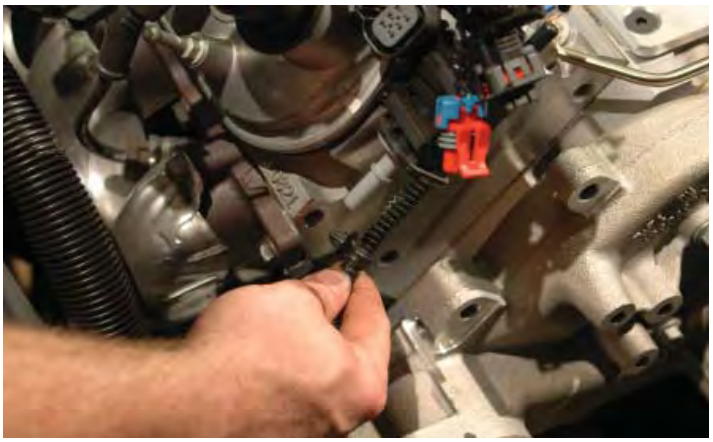


104. Remove the small hose from the bottom of the reservoir. Be careful of dripping fluid, use a shop towel and dispose of properly.

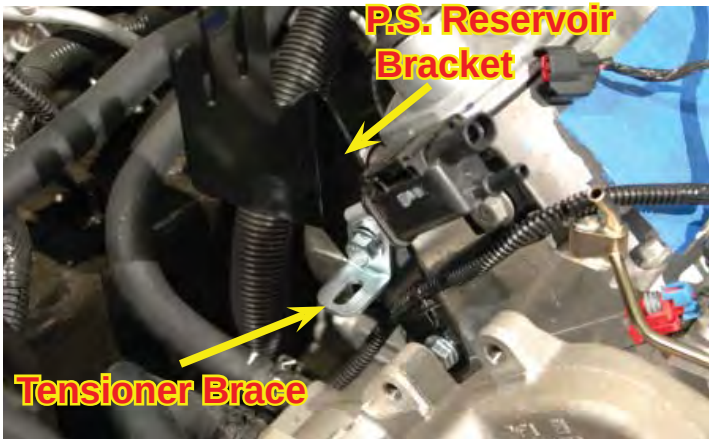
105. Cut or open the factory pinch clamp from the top barb on the power steering cooler. Pull the hose off the barb quickly placing your thumb or finger over the end of the hose to minimize the mess. Use shop towels to catch any residual fluid. This entire section of hose and hardline will not be reused.



106. Remove the wiring harness anchor from the front of the right (passenger side) cylinder head. This hole will be used to mount the relocated power steering reservoir mounting bracket.

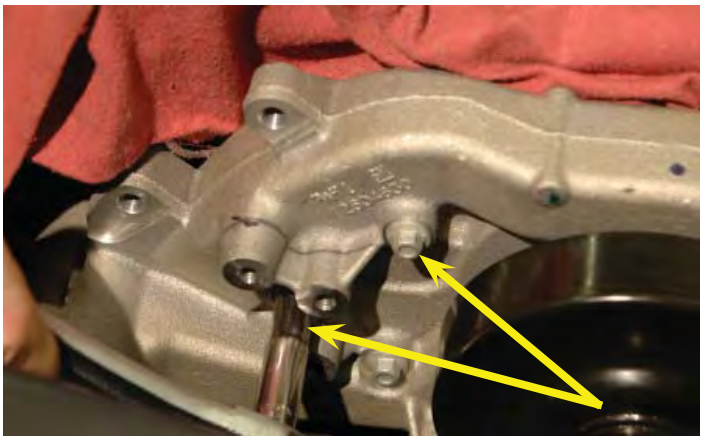


107. Install the new power steering reservoir mounting bracket using the new bolts supplied. Incorporate one of the supplied tensioner brace brackets angles on the upper bolt. The long slot will be at the bottom. Push up on the bottom of the bracket so that the bolt is contacting the bottom edge of the short slot. Torque the bolts to 40 ft-lbs using a 15mm wrench. The angle bracket will have a tendency to rotate, so start with a counterclockwise bias so that it ends up flat as shown in this picture.



108. Cover your engine well, as we will need to do some sawing and grinding for clearance with the new tensioner assembly.

109. Remove these two 10mm bolts from the existing stock water pump.



110. Use a die grinder, reciprocating saw, hack-saw, or what have you to cut off the two bosses shown level with the face of the surface of the boss from the removed bolts.

111. Test fit the new tensioner bracket and assembly to check for full travel. You will need to adjust the cut at the passenger side boss as necessary. Roughly, you will be grinding from the bolt hole at an angle back toward the water pump casting on the side nearest the passenger side fender. Test your cut using the new tensioner assembly and adjust as necessary.

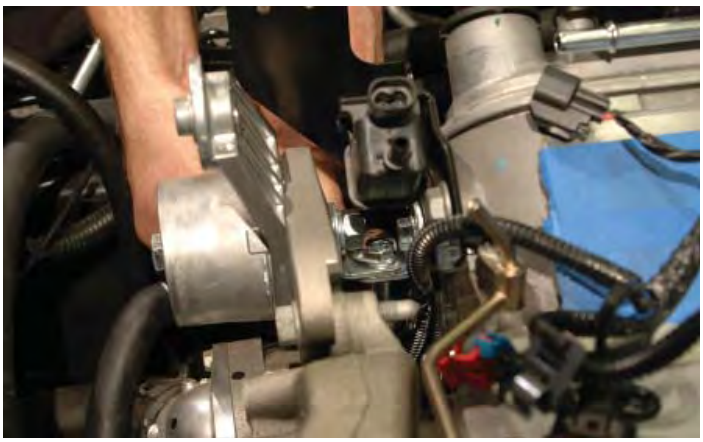
112. File the bottom of the upper radiator hose barb casting by the water pump pulley for additional belt clearance. This will be about 1/10” (100/1000) at the outside edge and parallel back toward the face of the casting.

113. The intent is to create a little more clearance for the new belt line. Your final modification should look something like this.

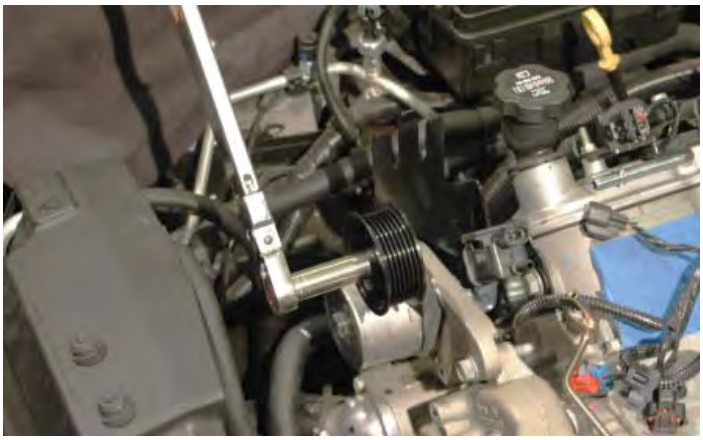
114. Install the new tensioner mounting bracket in the original location of the OEM unit with one original bolts and one countersunk Allen bolt. Torque the bolts to 40 ft-lbs; be sure to verify your torque wrench settings.

115. Install the tensioner with the provided long 19mm bolt in the tensioner package. Torque the bolt to 50 ft-lbs. Again, verify your torque wrench settings.

116. Place the other angle from the tensioner brace bracket package on the back of the long bolt you just tightened. The Long slot should align with the long slot on the angle mounted earlier on the power steering reservoir bracket. Tighten in place aligning the two angles together. Use the provided nut and bolt to tie the two angles together, anchoring the tensioner assembly.



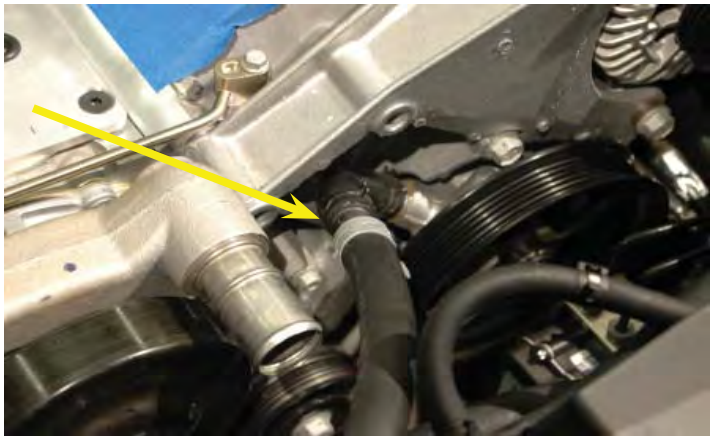
117. Install the pulley removed onto the new tensioner and torque the bolt to 40 ft-lbs. **Verify your torque wrench settings.**



118. Slide the power steering reservoir into place on the new mounting bracket.

119. Using the length of 5/8” hose supplied, install the hose connector in one end and secure with the provided clamp.

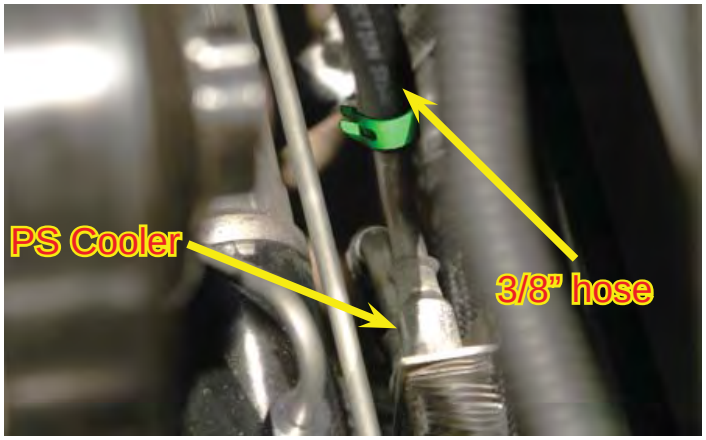
120. Install the 5/8” hose with the connector into the end of the large power steering hose to the pump. Secure the connector with the original spring clamp.



121. Pass the 5/8” hose through the center of the new serpentine drive belt.

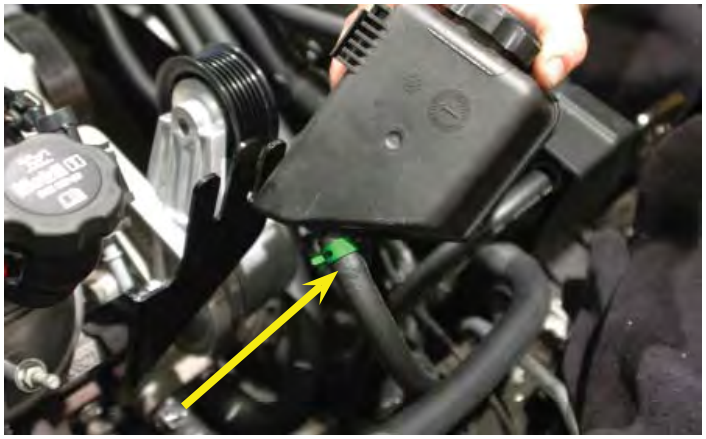
122. Route the 5/8” power steering hose forward along the fan shroud, following the same path as the coolant lines toward the passenger side of the vehicle, cut to fit and connect to the large barb on the power steering reservoir using the provided clamp.

123. Connect the length of 3/8” hose to the barb on the bottom of the power steering cooler. Secure the hose with the green clamp supplied.

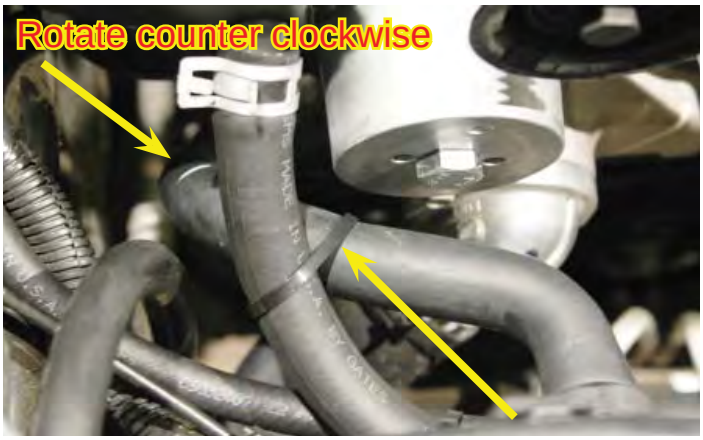


124. Route the new hose up to the parallel the 5/8” hose you just ran, loosely zip tie the lines together.

125. Connect the end of the 3/8” hose to the small barb on the power steering reservoir using the supplied green clamp (the reservoir is shown lifted for clarity).

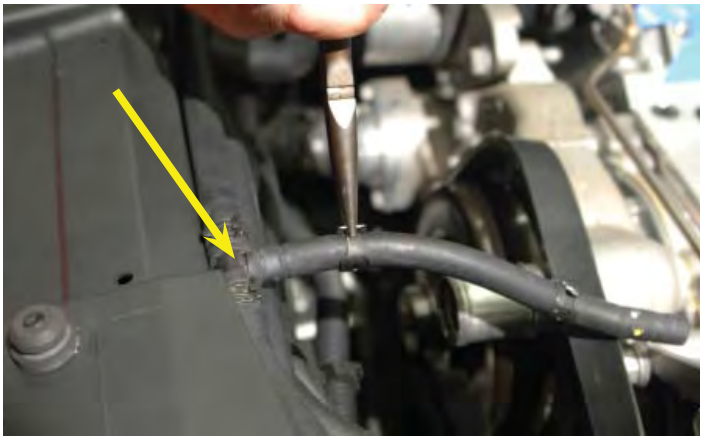


126. Using a pair of pliers to squeeze the stock spring clamp, rotate the coolant line shown where it meets the water pump housing. Rotate the hose so that it will not contact the tensioner mounting bolt and release the clamp to hold it the new position. Alternately you can loosely zip tie the hose together with the large power steering hose you just ran.



127. Use a 15mm wrench to replace the bolts removed from the original power steering reservoir mounting bracket location. Use a torque wrench to torque to 40 ft-lbs. Verify your torque wrench settings.

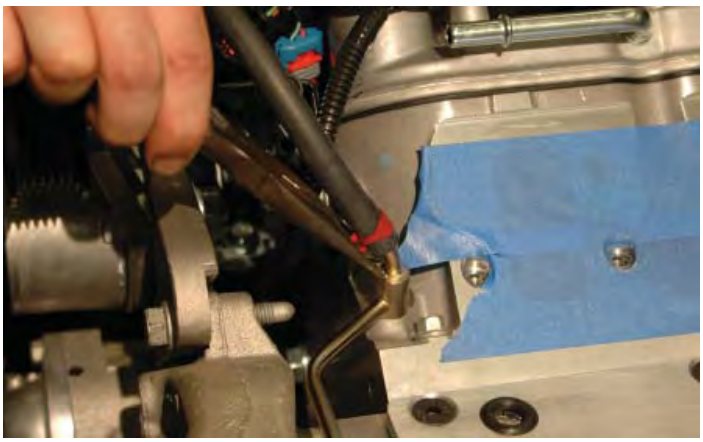
128. Remove the hose and clamp from the coolant vent “T” fitting.



129. Connect the new 1/4” coolant hose to the coolant vent “T” fitting with a provided red clamp. Route the hose along the same path as the PS hoses to the barb on the coolant vent pipe.

130. Loosely zip tie the hoses together, pass below the power steering reservoir and up toward the coolant vent pipe.

131. Connect the hose from “T” fitting to the barb on the coolant vent pipe. Secure the hose with a red clamp provided.

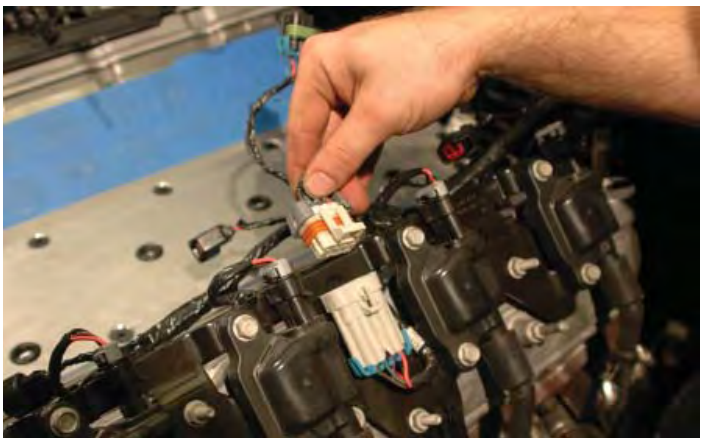


132. Connect the oil pressure sensor plug to the oil pressure sensor on the new valley cover.

133. Unplug the oxygen sensor plug from the connection on the coil bracket.

134. Unclip the receiving end of the oxygen sensor plug from the mounting slot on the coil bracket.

135. Disconnect the coil plug control connections from both sides of the engine.



136. Disconnect the spark plug wires from the coils.

137. Unbolt the five bolts holding the coil brackets to the valve covers using a 10mm wrench.

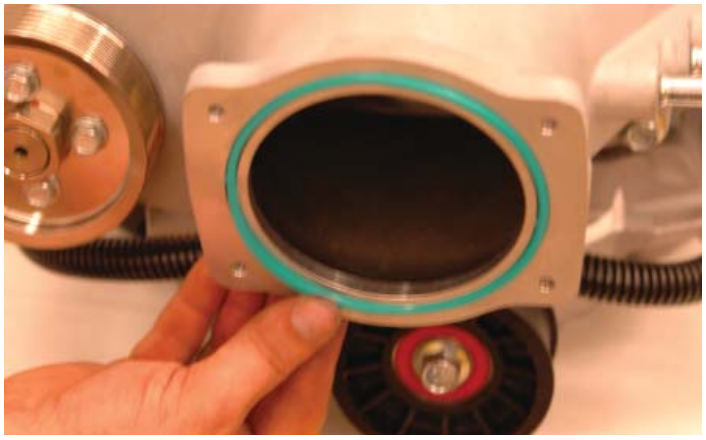
138. Remove the coil brackets for modification.

139. Use a small flathead screwdriver to unsnap the plastic wire covers and remove the covers from the coil brackets.

140. Remove the throttle body from the plastic intake manifold with a 10mm socket wrench.

141. Carefully remove the throttle body gasket from the intake manifold.

142. Install the throttle body gasket into the groove on the supercharger inlet manifold.

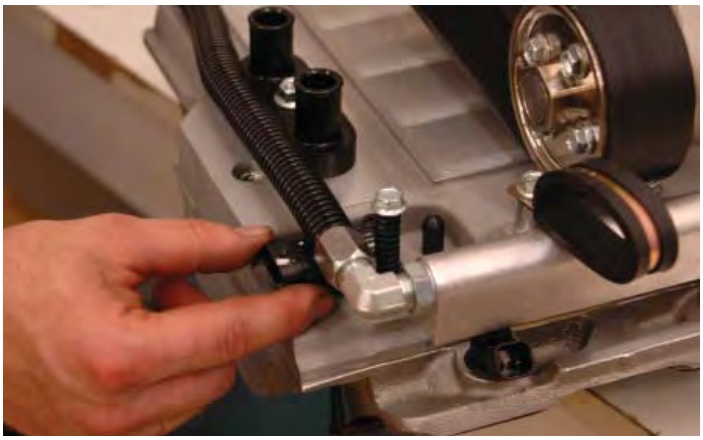


143. Install the throttle body onto the inlet manifold using the original bolts. Tighten the bolts with a 10mm socket and torque to 106 In-Lbs (12Nm). Verify your torque wrench settings.

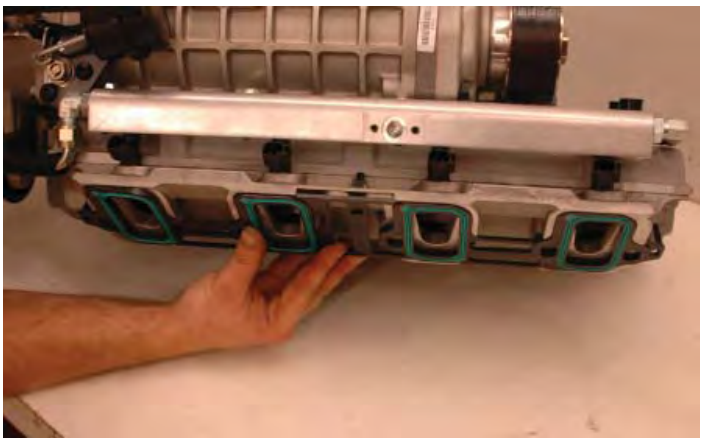
144. Remove the Manifold Absolute Pressure (MAP) sensor from the stock intake manifold using a Torx t-25 inverted socket. Ensure that the rubber seal is not missing or damaged as it and the sensor will be re-used.

145. Apply a small amount of the grease supplied to the MAP sensor seal.

146. Install the sensor in its new location at the passenger side rear of the supercharger manifold and drop the split-loom spaced bolt into the mounting hole.

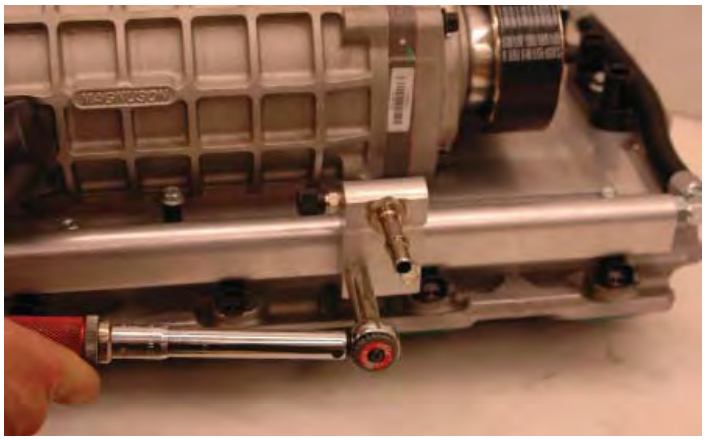


147. Install the two intake manifold gaskets supplied onto the recesses in the manifold face.

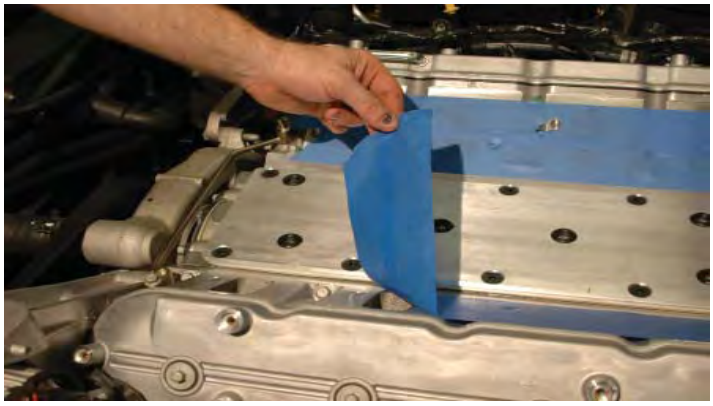


148. Install the fuel manifold O-ring into the recess on the fuel rail, use some of the Lubriplate lubricant supplied.

149. Next install the fuel manifold to the fuel rail using the supplied bolts. Tighten and torque the bolts with a 10mm socket and torque to 106 in lbs. Verify your torque wrench settings.



150. Remove the tape you placed over the intake ports on the heads.



151. Spray silicone or some mild soap and water solution on the cylinder head surface to lubricate. This makes the intake manifold slide around a little to help line up the holes. (Do not use anything that will damage the intake gaskets, petroleum based products, etc.)

152. Carefully, set the supercharger assembly on the engine, line up the bolt holes with the holes in the cylinder heads. (Be careful of the one bolt located under the rear supercharger pulley on the passenger side as it protrudes and must be aligned first.)

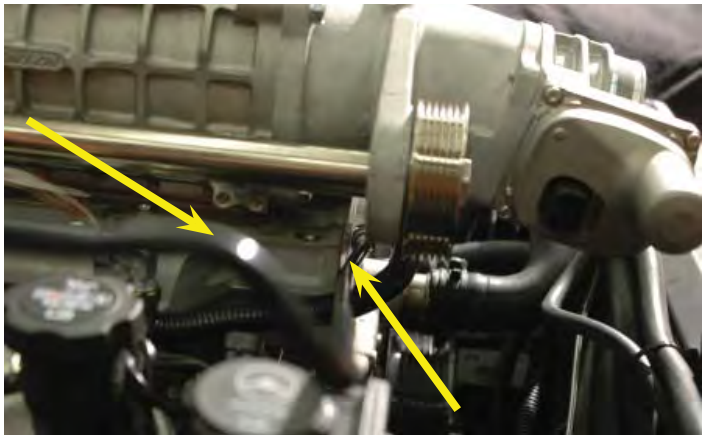
153. Remove the black plastic sleeves that hold some of the intake bolts up and start all ten intake bolts by hand. Do not tighten until all the bolts are started. (Be careful not to cross thread the bolts.)

154. Torque the supercharger manifold bolts, working from the center out in a crisscross pattern to 106 In-Lbs. (10 Nm) using a 10mm socket and an inch pound torque wrench. Verify your torque wrench settings.

155. Use a 14mm wrench to remove the idler pulley directly below the supercharger inlet.

156. Temporarily pull the front fuel crossover line (encased in split loom) out in front of the pulley mounting flange as shown.

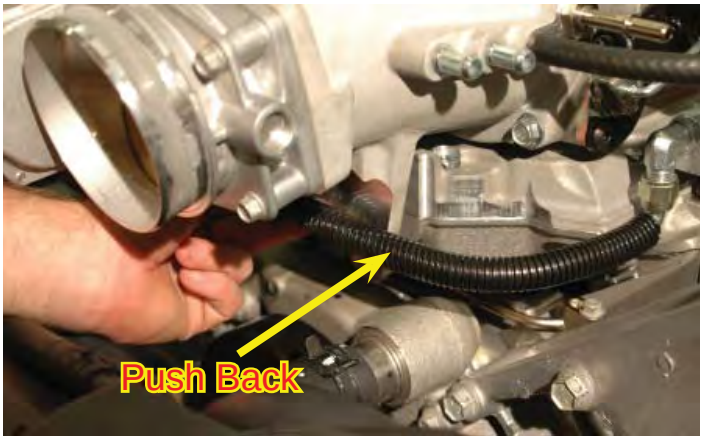
157. Route the stock EVAP tube under the supercharger inlet where the fuel crossover was located as shown, and then route the long straight shaft back on the driver side of the engine between the fuel injectors and valve cover.



158. Plug the EVAP sensor connection onto the EVAP solenoid upper barb.

159. Plug the other end of the EVAP tube onto the barb at the rear of the driver side valve cover.

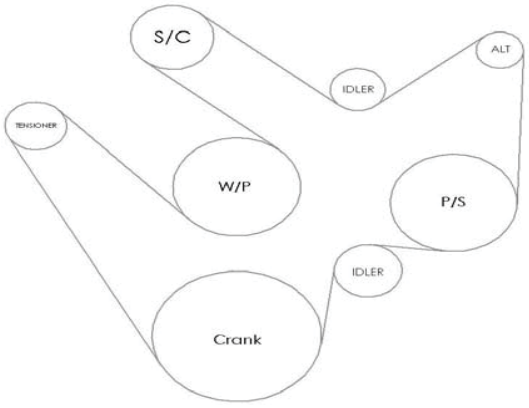
160. Relocate the fuel crossover line back behind the idler pulley mounting flange from where you removed it in step #156.



161. Replace the idler pulley and torque the original bolt to 40 ft-lbs. **Verify your torque wrench settings.**

162. Install the new supplied supercharger and accessory fan belt with a 15mm tensioner wrench, using the new supplied belt routing diagram below.

163. Belt Routing Diagram

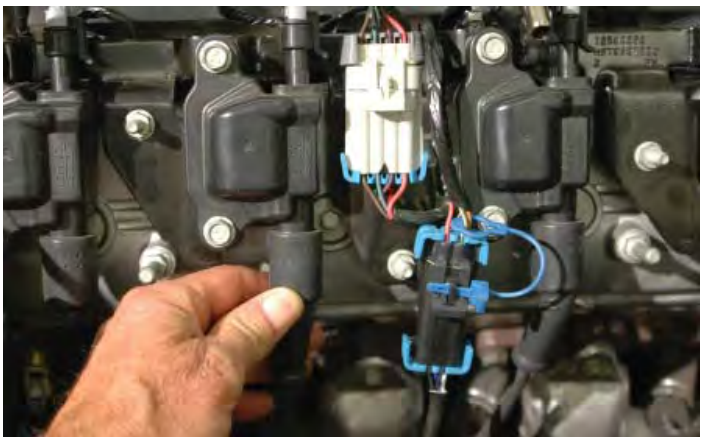


164. Connect the eight fuel injector plugs.

165. Mount the modified coil packs using the stock hardware, and torque the mounting bolts to 106 in-lbs. Verify your torque wrench settings.

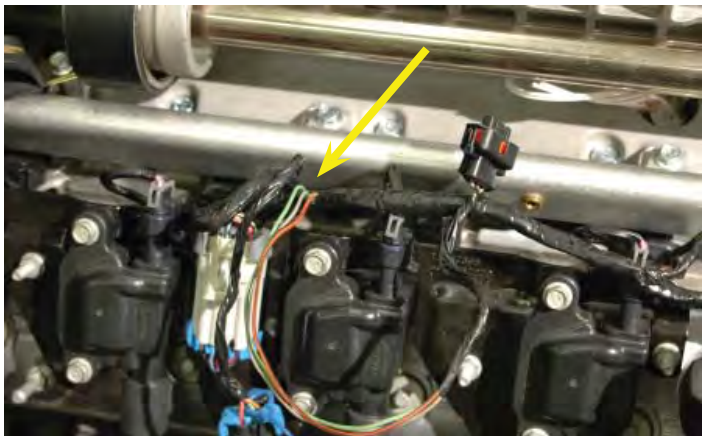
166. Connect the oxygen sensor coil pack plugs in their original location. Engage the mounting clip in place at the bottom center of the coil pack.

167. Connect the plug wires to the coils.



168. Before you tuck the wires of the injectors harness below the coil packs, remove the tape off the passenger side harness to about the center bolt of the coil pack. This is to free the MAP sensor plug from the harness where it will change direction and go to the rear of the supercharger.

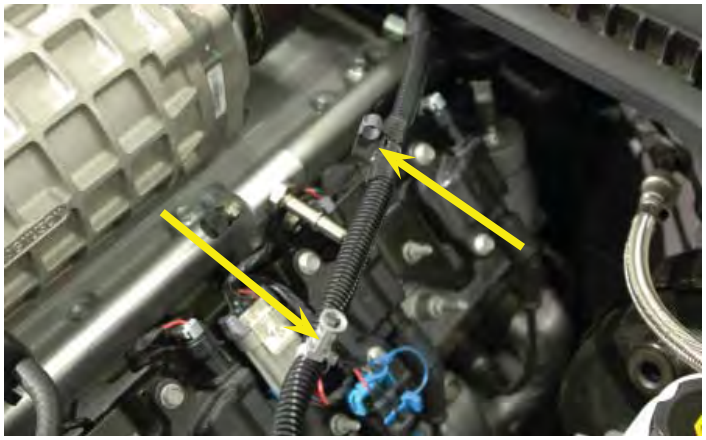
169. Re-tape the harness with the MAP sensor plug and wires removed to the junction of the wires near the center of the coil pack. After taping the remaining wires back up, tape the wires running to the MAP sensor plug as well.



170. Route and tuck the MAP sensor wires back along the fuel rail and plug into the map sensor at the rear, passenger side of the supercharger lid.

171. Connect the EVAP sensor plug to the EVAP solenoid.

172. Remove these two alternator cable mounting clamps from the wire loom. The front clamp will remain in place and be utilized.



173. Route the split-loom covered cable between the coil packs and fuel rail. Attach the final mounting post to the stock location at the front of the driver side valve cover. Attach the eye terminal to the alternator using a 13mm wrench. Replace the cover on the terminal.

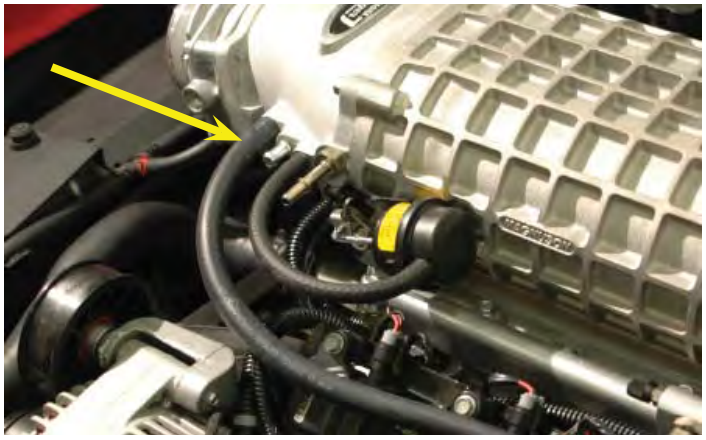
174. Connect the fuel line to the supercharger fuel rail manifold barb. Test the line by pulling firmly; you should not be able to remove the fuel line without using the fuel line removal tool.

175. Install the fuel line safety clip.

176. Remove the OEM brake booster valve on the stock hose from the OEM intake manifold removed earlier. Install the brake booster valve just removed on one end of the supplied 11/32” hose. Use some lubrication to help with the tight fit.

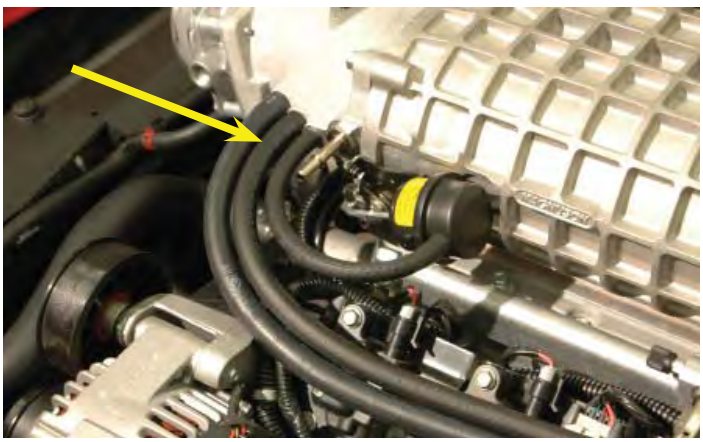
177. Plug the brake booster valve into the stock location on the brake booster canister.

178. Route the hose forward along the coil pack, cut to fit and connect to the forward barb on the supercharger inlet.

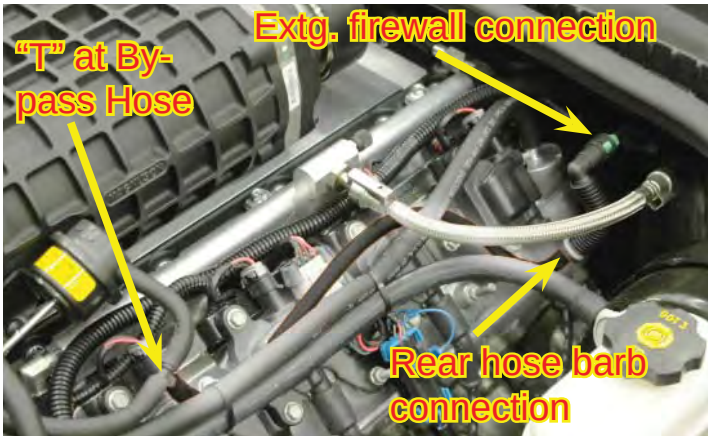


179. Cut a section of the supplied 3/8” hose to 26-1/2” in length. Connect one end of the hose to the driver side PCV barb at the back of the driver side valve cover. This barb is covered with a rubber cap that must be removed first.

180. Route the hose forward below the fuel line, parallel to the brake booster hose. Connect to the barb adjacent to the brake booster hose you just installed.



181. If your vehicle is equipped with a Vacuum Controlled Exhaust Baffle, attach one end of a cut-to-fit 3/8” hose on the firewall barb. Cut the existing bypass hose as shown, insert the provided “T” in the cut ends and connect the other end of the 3/8” hose to the remaining “T” connection as shown. No clamps are necessary.



182. Remove the two fittings from the disconnected EVAP hose removed earlier using a sharp blade to split the plastic. **Be careful to not cut the fittings.**

183. Connect the 90° elbow to one end of the supplied 5/16” hose. Use the supplied black spring clamp to secure the connection.

184. Connect the 90° elbow to the bottom barb of the EVAP sensor, and route the free end of the hose under the EVAP sensor, below the supercharger inlet to the driver side of the engine.

185. Connect the other fitting removed from the OEM hose to the free end using the supplied black spring clamp and connect to the remaining EVAP barb on the driver side of the supercharger inlet as shown.

186. NOTE: If your vehicle has the brake cooling duct exiting and then terminating pointing toward the rear of the vehicle just after passing through the front splash panel (as shown in this picture), follow the next three steps. If your brake cooling duct flattens and turns toward the inside of the wheel well where it is bolted, and points out toward the brake disk, skip to step #189. Use a small flathead screwdriver to pry out the center pin and remove the eight Push-lock fasteners that secure the front splash panel as shown.

187. Remove the two 7mm bolts and one 10mm bolt that secure the passenger side end of the spoiler to the splash panel and frame with a socket wrench.

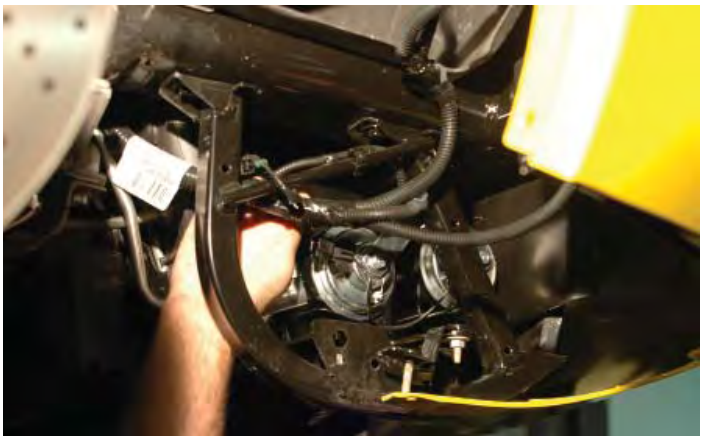
188. Remove the front driver side splash panel assembly from the vehicle. You will need to separate the pieces for re-assembly later.

189. NOTE: For vehicles with brake cooling duct bolted to the inside of the fender well (as shown in this picture) follow the next two steps. To remove the fender well splash panel, there are three 7mm bolts on the bottom surface, five T-15 Torx screws on the vertical edge to the body connection, and three push rivets at the top of the splash panel that all need to be removed.

190. Use a 10mm wrench to remove the bolt at the inside surface of the fender well by the duct exiting port. Remove the push pin rivet on the front surface of the duct that connects the duct to the air inlet, and pull the brake cooling duct from the vehicle, set aside for later reinstallation.

191. Squeeze the electrical connector to unplug the electrical connection from the horn assembly on the passenger side forward of the wheel well.

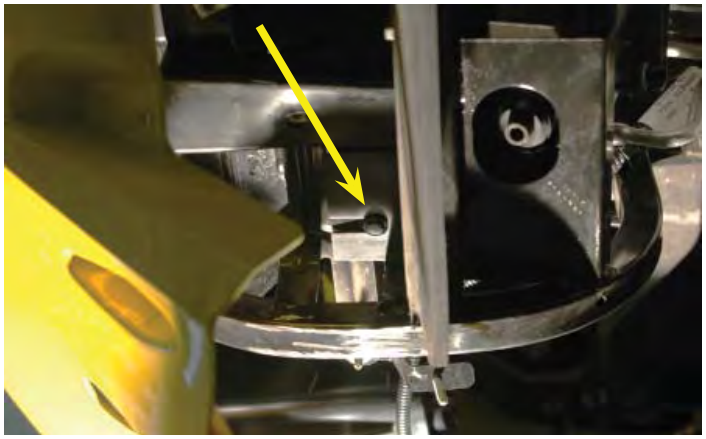
192. Use a 10mm wrench to remove the horn assembly from the diagonal fascia sub-frame mounting location.



193. Remove the five 7mm bolts at the tail end of the nose cover and set aside for later re-installation.

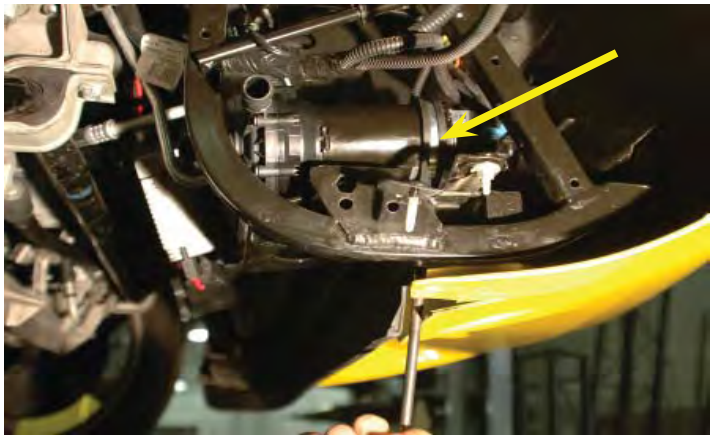
194. NOTE: If your vehicle has the soft rubber air deflector between the nose fascia (as shown in this picture) and the front frame cross member; there will be three 10mm bolts attaching the rear edge of the air deflector to the frame cross member that need to be removed as well. Temporarily remove the soft rubber air deflector from the vehicle and set aside for later reinstallation.

195. Remove this push rivet from the inside of the nose cover sub frame. This rivet is adjacent to the bolt removed at the recess on the passenger side of the nose cover.



196. This is the intercooler coolant pump and its mounting clamp. Note: The plastic caps on the inlet and out should be removed before the hose connections are made.

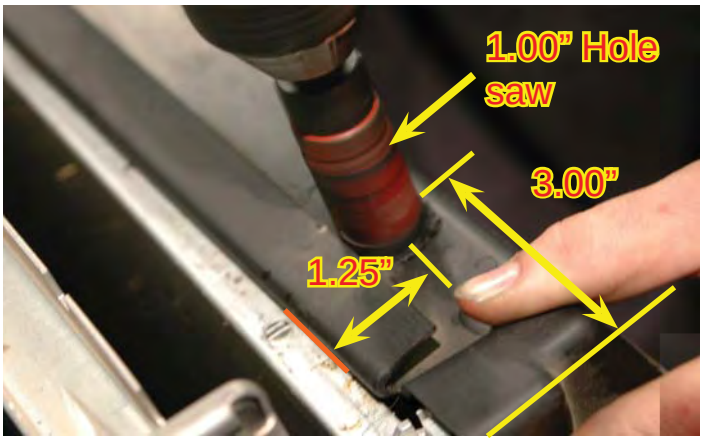
197. The pump will mount to the hole vacated by the push rivet you just removed. The discharge barb points to the passenger side fender, and the inlet toward the rear. The Adel clamp is at the end of the pump near the plug connection with the loop facing up and toward the passenger side fender. Tighten the supplied bolt and nut firmly.



198. Start the Heat exchanger installation by applying the adhesive backed foam strip to the back side of the heat exchanger top and bottom tanks. The back side of the heat exchanger is the side without the two hose connections.

199. Apply a small piece of the foam strip to the Heat Exchanger Retaining Bracket.

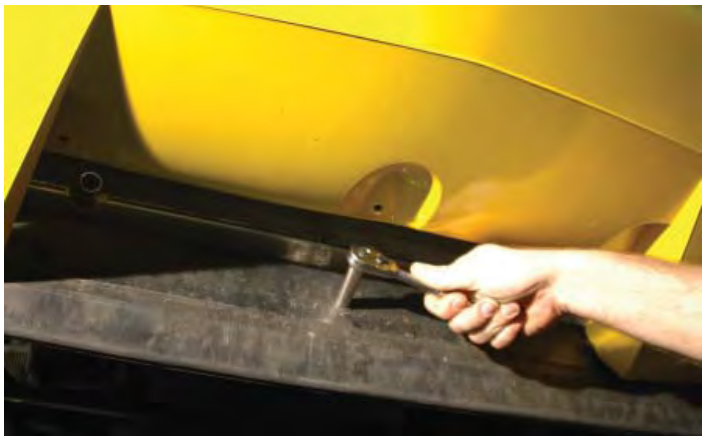
200. Using a 1” hole saw, make a hole in the top of the radiator shroud on the passenger (right) side. This will create an access hole for the coolant air-bleed valve. The radiator cowl is removed in this picture for clarity.



201. Install the heat exchanger by sliding it in front of the radiator. The heat exchanger will sit on the flat area immediately in front of radiator.

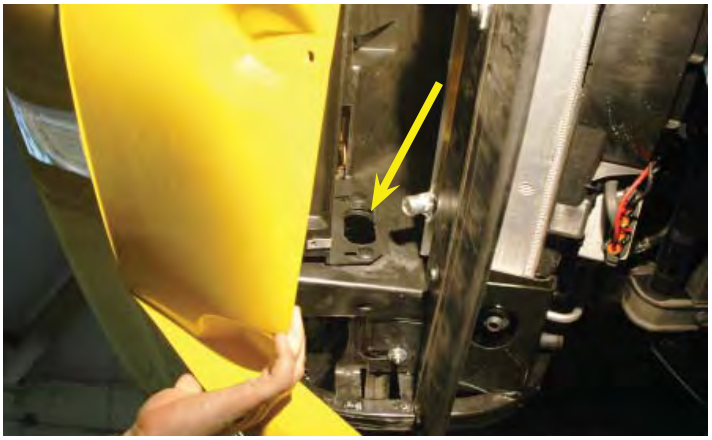
202. Move the heat exchanger around until the air-bleed valve appears in the newly created hole in the radiator shroud.

203. NOTE: If your vehicle had the soft rubber air deflector removed in step #194, this will already be done. If not, then now remove just the center bolt in the spoiler with a 10mm socket wrench as shown.



204. NOTE: If your vehicle had the soft rubber air deflector removed in step #194, this will be done at a later moment. If not, install the Heat Exchanger retaining bracket with the bolt removed in the previous step. Ensure that the foam pad is contacting the lower tank of the heat exchanger and tighten the bolt securely.

205. Using the 1” hole saw again, create two holes in the passenger side splash panel below the radiator one above the other. Use a sharp knife or saw (what-have-you) to connect the holes as shown and clean up the edges to avoid sharp surfaces. There are two large plastic rivets between which works perfectly for the location of the holes. This is where the coolant lines will pass through to the heat exchanger.



206. Assemble the intercooler reservoir and mounting bracket using the supplied 10mm bolts, tighten firmly.

207. Remove the valve cover mounting stud at the rear passenger side of the valve cover using a 10mm wrench.

208. Install the supplied spacer between the valve cover and the rear bracket mounting hole of the intercooler reservoir assembly and replace the bolt back onto the valve cover from whence it came.

209. Add the supplied nut to mount the front of the reservoir bracket to the existing stud just behind the center of the coil bracket oxygen sensor plugs. Tighten using a 10mm wrench.

210. Cut 2” off the short end of one of the supplied ¾” x 4” x 18” elbow hose and 12” off of the long end.

211. Install the supplied hose coupling (mender) in the long end of the remaining hose.

212. Install the short end of the hose you just modified to the passenger side barb of the supercharger intercooler. The hose coupling (mender) should be facing the passenger side of the vehicle.

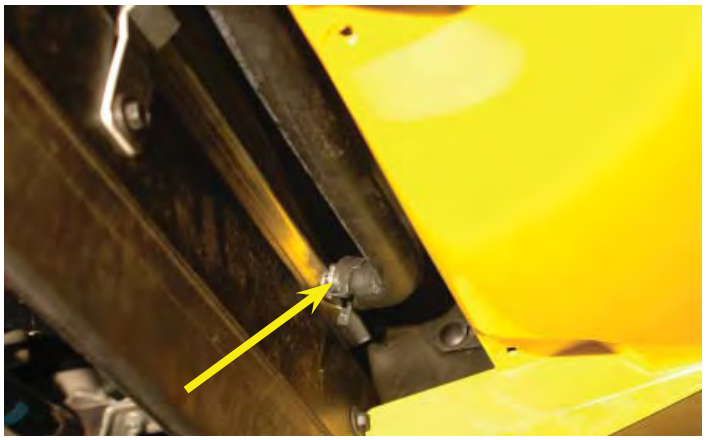
213. Cut 2” off of the short end of the other supplied ¾” x 4” x 18” elbow hose. Cut the long end off to fit where it will join the hose you just installed on the supercharger intercooler. Use the supplied spring clamps on the coupling end and worm gear clamps on the reservoir end and supercharger inlet end. Tighten firmly.

214. Cut 2” off the short end of one of the supplied ¾” x 4” x 36” elbow hoses. Install this short end onto the driver side barb of the supercharger intercooler using one of the supplied worm gear clamps. Route this hose over to the passenger side and forward between the reservoir and the coil brackets.

215. Remove the Adel clamp at the rear passenger side of the supercharger using a 10mm wrench.

216. Place the clamp around the two hoses from the supercharger intercooler and tighten in place. The spacer remains between the clamp and the supercharger lid. Tighten the bolt to 106 in-lbs; be sure to verify your torque wrench settings.

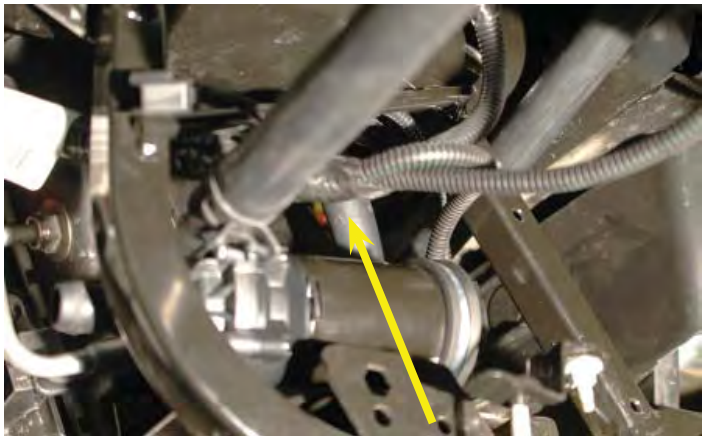
217. Cut 2” off of the short end of the supplied ¾” x 4” x 60” elbow hose. Use the supplied spring clamp to attach to the driver side barb of the heat exchanger. Mount the hose with the long end pointing toward the passenger side of the vehicle.



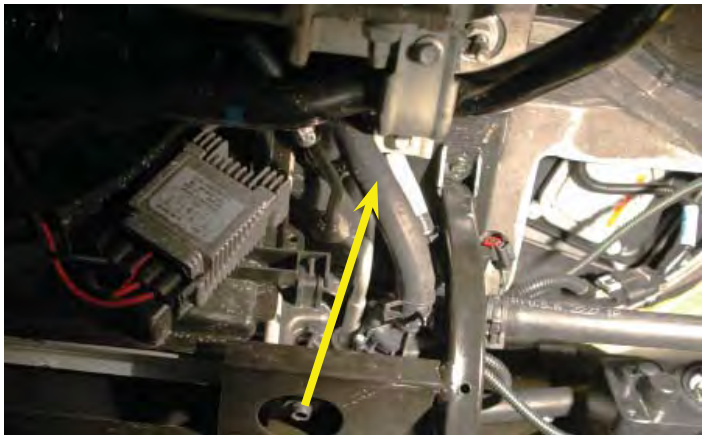
218. Route the hose through the holes you created in step #205, run over the turn signal enclosure and curve back to connect to the discharge barb on the intercooler pump as shown. Secure the hose with one of the supplied spring clamps.

219. Cut 2” off the short end of the other supplied ¾” x 4” x 36” elbow hose and connect to the passenger side barb on the heat exchanger using a supplied spring clamp. Route the long end of the hose through the same hole the driver side hose you just installed used.

220. After passing through the hole in the splash panel, route the hose up and into the engine compartment prior to reaching the intercooler pump.



221. Connect one end of the provided straight ¾" hose to the inlet barb on the intercooler pump using a supplied spring clamp. Route the other end up and into the engine compartment as shown.

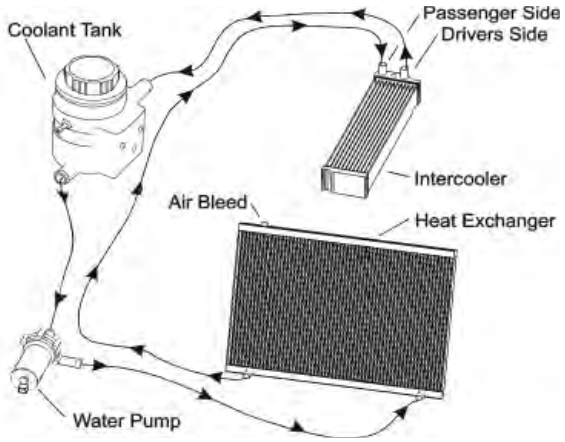


222. Cut the remaining end of the hose from the intercooler pump inlet barb to fit to the discharge barb on the intercooler reservoir. Clamp onto the barb using one of the supplied worm gear clamps.

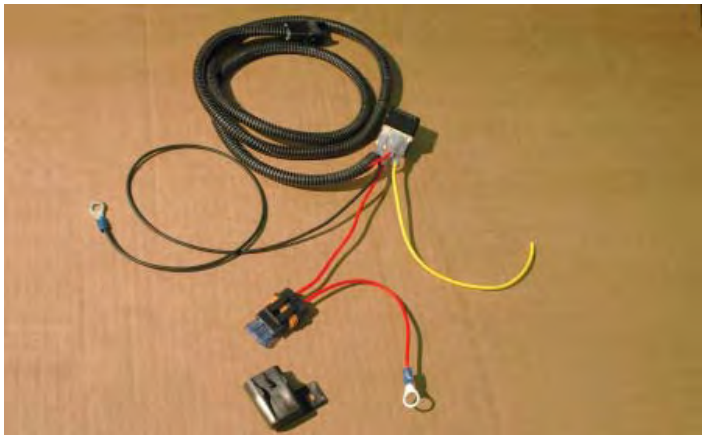
223. Route the two ¾" x 2" x 36" elbow hoses (one from the driver side of the supercharger intercooler and one from the heat exchanger passenger side barb) to meet at or near the power steering reservoir. Cut the hoses to fit and join using one of the supplied hose couplings (mender) and supplied spring clamps.

224. Loosely tie your hoses together using the supplied zip ties.

225. This is a plumbing diagram for the intercooler system.



226. Here is the intercooler pump wiring harness components. Install the supplied fuse into the fuse holder and replace the cover.

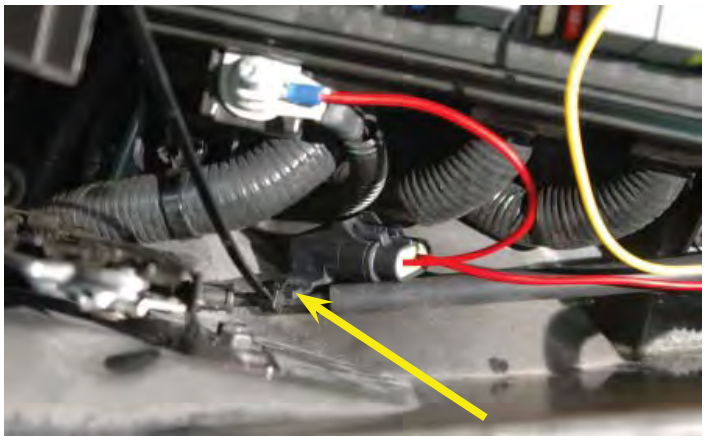


227. Open the fuse center cover on the passenger side of the engine compartment.

228. Use a 13mm wrench to remove the nut on the positive terminal.

229. Replace the nut incorporating the large “eye” terminal of the red wire from the fuse holder of the intercooler wiring harness and secure using the 13mm wrench.

230. Zip tie the fuse holder to the hood release cable below the positive terminal of the fuse center as shown.



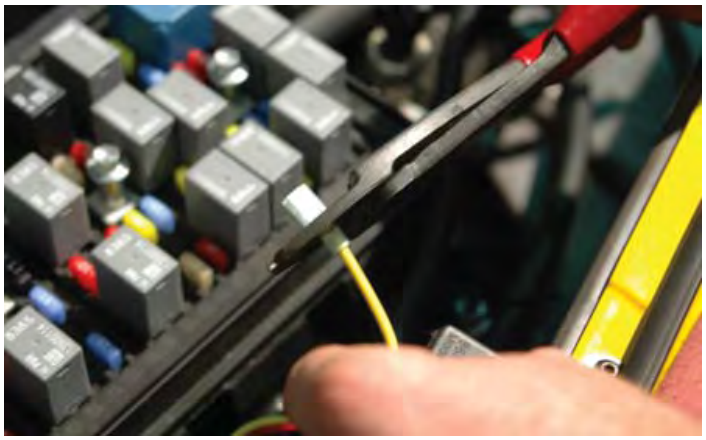
231. Remove the nut from the ground post by the passenger side hood shock mount near the radiator using a 10mm wrench.

232. Route the black ground wire from the intercooler pump harness to the stud you just exposed and add the “eye” terminal to the ground, replace the nut and tighten with a 10mm wrench.

233. Use the legend on the inside of the fuse center lid to locate and remove the 10amp TCM-Trans fuse. Install the provided fuse-tap onto one leg as shown.

234. Re-install the fuse with the fuse-tap back in the original location.

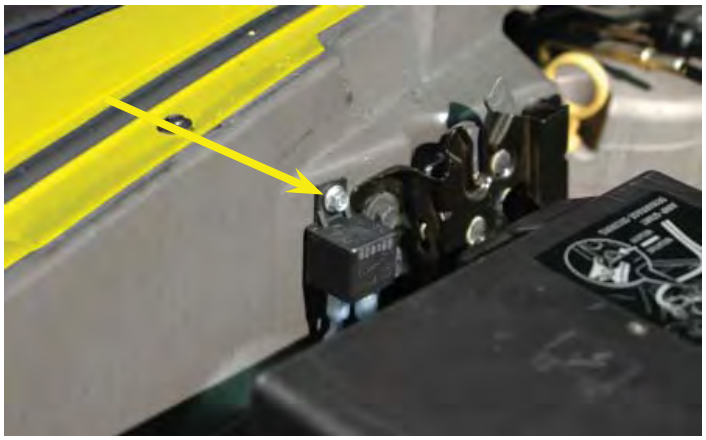
235. Strip off ¼" of the insulation from the yellow wire from the intercooler pump wiring harness and crimp on the supplied "spade" connector.



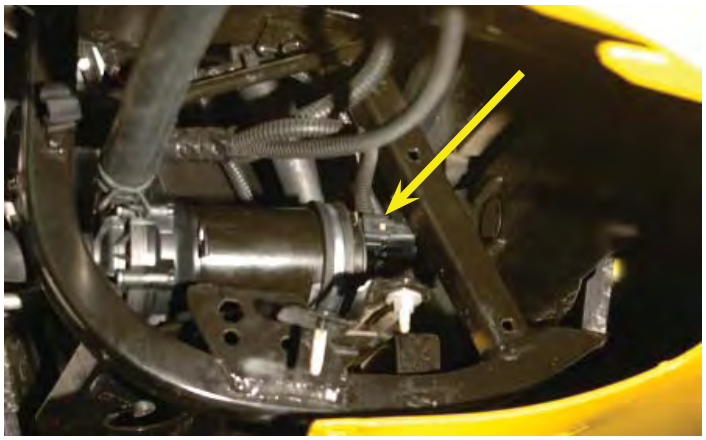
236. Plug the "spade" connector onto the fuse tap of the TCM-Trans fuse.

237. Note where the wire lays over the fuse center edges and cut notches in both the base and the cover so as to not have the wire get pinched with the lid opening and closing which could compromise the insulation.

238. Use the provided self-tapping bolt to mount the relay of the harness to the sidewall by the existing fuse center as shown.



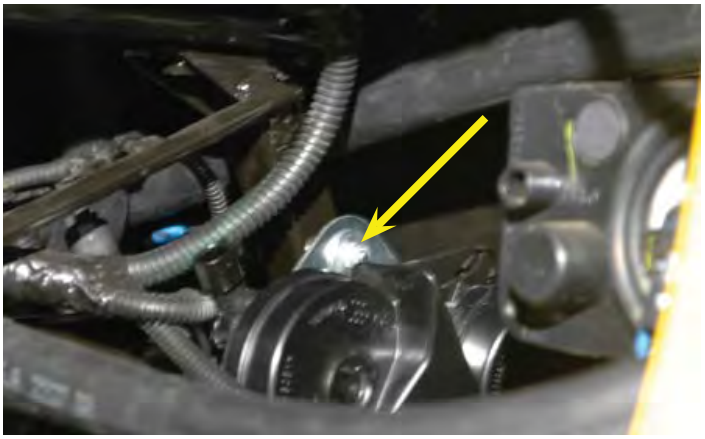
239. Route the plug end of the intercooler pump harness forward and down to the intercooler pump and connect to the terminal near the clamp on the forward end of the pump as shown.



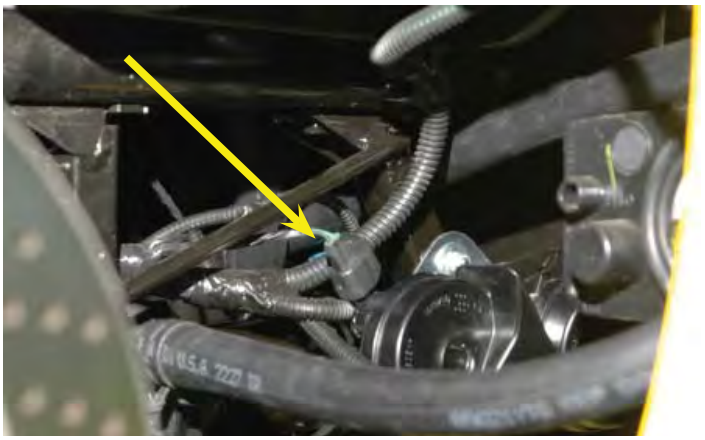
240. This is the existing position/location of the horn assembly on the mounting bracket.

241. Remove both horns from the bracket using a 10mm wrench. And remount to the bracket as shown in this picture. The horns will now be facing forward instead of down and on the opposite side of the bracket. The horn plug will now be toward the rear and facing up.

242. The mounting hole in the bracket will need to be opened slightly to fit the new bolt. Push the provided bolt through the existing upper angled sub-frame brace hole with the threads pointing toward the fender and the bolt head toward the center of the vehicle. Add the spacer on the bolt, then the horn mounting bracket, then the nut and tighten using 10mm wrenches.

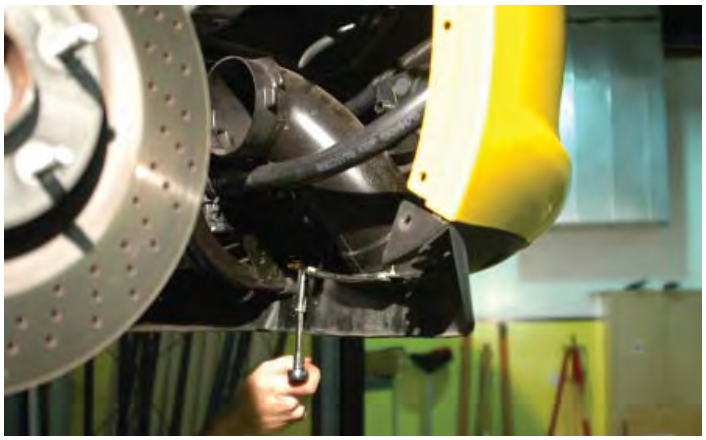


243. Reconnect the horn plug to the horn assembly.



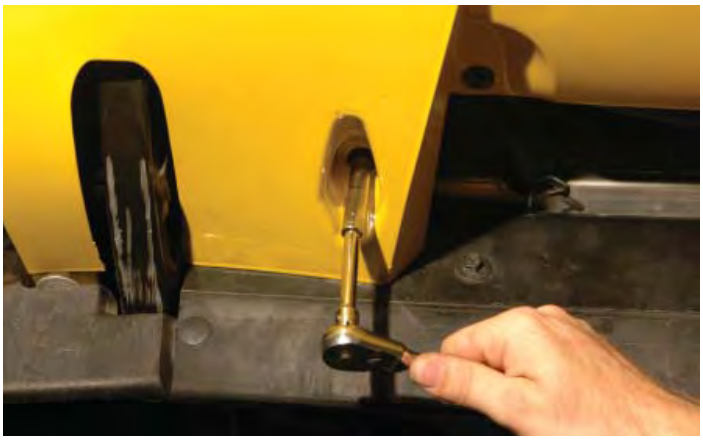
244. Inspect your coolant hoses carefully and add sections of the provided split loom to protect the hoses from any chaffing and rubbing on hard or sharp edges.

245. NOTE: If your brake cooling duct flattens and turns toward the inside of the wheel well where it is bolted, and points out toward the brake disk, skip to step #248. For other vehicles, if you haven't done so yet, separate the wheel well splash shield and the brake cooling duct/spoiler from each other. Route the brake cooling duct over the intercooler pump discharge barb, engage all slots of the spoiler and reattach to body panels using all the stock hardware.



246. Attach the fender well splash shield, twisting to lock the brake cooling duct back into position and fasten using all the original hardware and locations. This includes push pin rivets and bolts.

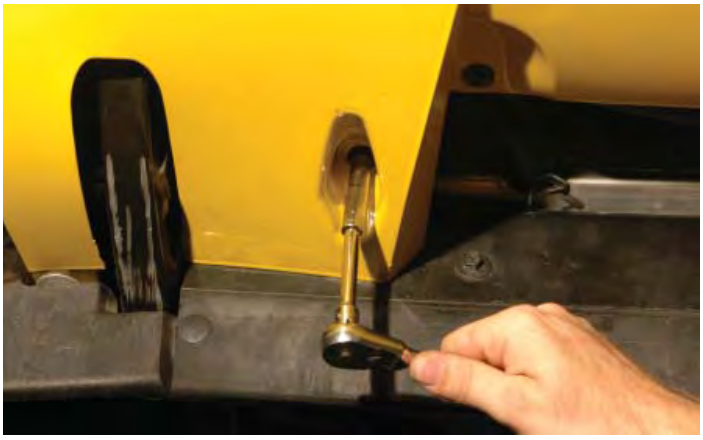
247. Re-attach the nose fascia at the bottom using all the stock fasteners, tighten securely.



248. Bolt the brake cooling duct back to the original location in the wheel well using the stock hardware, and insert the push pin rivet back in the front to cowl splash shield location.

249. Install the fender well splash shield using all the stock fasteners (this is a reversal of steps 207-208).

250. NOTE: For vehicles with the soft rubber air deflector follow the next four steps. If your nose fascia was attached in step #247, skip to step #254. Re-attach the underside ends of the nose fascia as shown using the two outside 7mm bolts, tighten securely.



251. Use the three stock 7mm bolts to secure the remaining (center) nose fascia locations, incorporating the soft rubber air deflector removed in step #194 as shown.

252. This shows the center spoiler mounting hole which will be the location of the heat exchanger mounting bracket. We will incorporate this bracket with the re-attaching of the back edge of the soft rubber air deflector.

253. Use the remaining three 10mm bolts to attach the frame end of the soft rubber air deflector incorporating the heat exchanger mounting bracket in the center hole. Ensure that the foam pad of the bracket is contacting the lower tank of the heat exchanger and tighten the bolt securely.

254. Place a strip of light colored tape on the driver side of the upper grooves in the splash shield/air deflector in front of the radiator/heat exchanger as shown.

255. Assemble the new airbox using the stock “bellows” on the throttle body end, and the provided screws and spacers with the stock air filter on the intake end. The spacers go between the stock air filter and the air box. Remove the MAF sensor from the OEM airbox and attach to the new airbox location. This is the completed air box assembly. Note the spacers between the airbox and the OEM air filter.

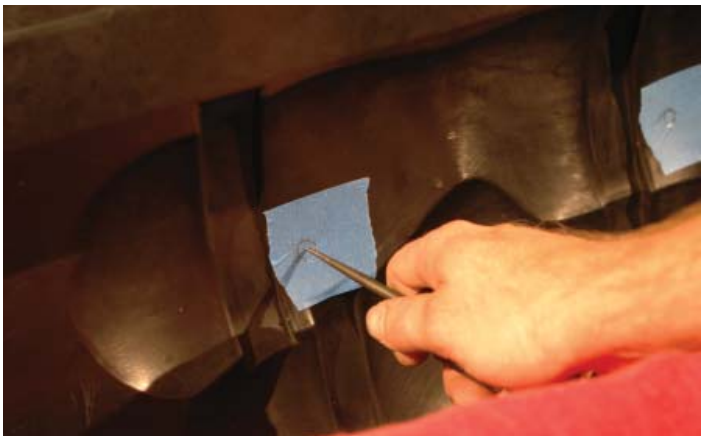
256. Remove the three grommet-post-push pin rivets from the radiator cover by prying the center “nail” up after pulling the grommets off. Then remove the rivets by pulling them out.

257. Insert two of the push pin rivets into the existing ¼" holes in the bottom of the new air-box standoff mounts. Push the "nails" back in locking the rivets in place.

258. Push the bellows end of the air box onto the throttle body and loosely tighten the clamp.

259. Use a sharp pencil or pen to mark around the strike of the push pin rivet mounting posts onto the light tape (you placed on the splash shield/air deflector earlier). Be careful to not move the air box between marking each side of the air box push-pin mounting posts or installation will be difficult.

260. Remove the bellows and airbox, use an awl or center punch to mark through the tape onto the splash shield/air deflector.



261. Use a 5/8” bit with an assistant holding a backing board behind the splash shield/air deflector to drill the two holes you just marked. You need to be careful, because a standard bit will bite through the plastic and pull the drill motor and bit into the heat exchanger close behind the splash shield. A Forstner bit or hole saw may work, but in any case, use extreme care to not damage the heat exchanger and radiator.

262. Insert two of the grommets you removed from the radiator cover into the 5/8” holes you just drilled.

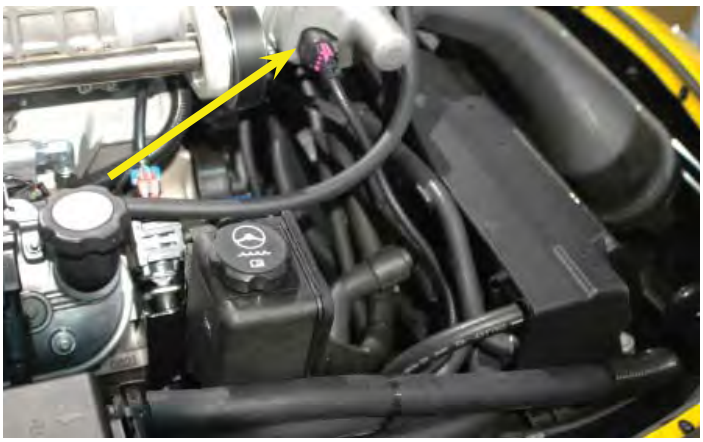
263. Attach the air bellows of the air box assembly back onto the throttle body and tighten using a flathead screwdriver or 8mm nut driver. Tighten firmly in position.

264. Press the push pin rivets of the air box assembly into the grommets you just installed. They should pop right in and lock the airbox in position. Removal just requires a firm tug on the airbox when you need to change the filter.

265. Cut a section of the provided 3/8” hose to 18” in length. Connect one end of the hose to the PCV hose barb at the front passenger side of the valve cover by the oil filler spout. Connect the other end to the barb on the supercharger inlet as shown.

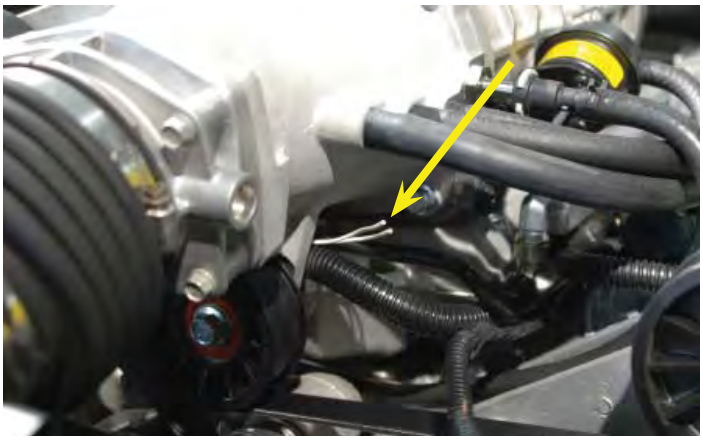
266. Connect the supplied throttle body cable extension to the OEM throttle body harness plug.

267. Route the other end of the harness extension under the power steering reservoir along the radiator and connect to the throttle body.

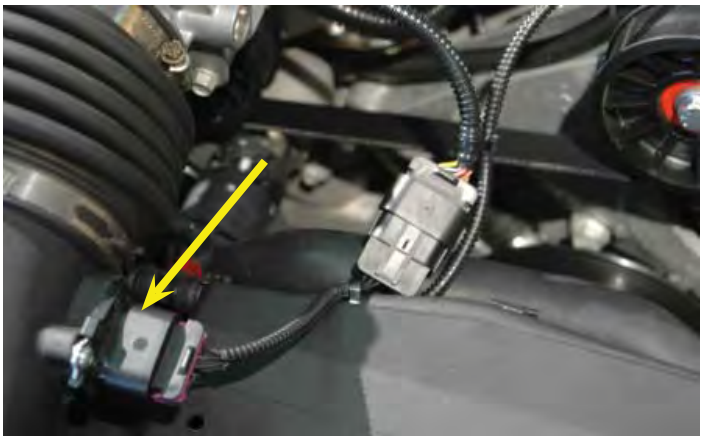


268. Zip-tie the wire extension to the existing hoses to keep the wiring free from the belt line.

269. Route the two white IAT wires on the driver side of the supercharger lid forward just above the fuel crossover line to the driver side of the engine.



270. Connect the MAF plug extension to the MAF plug you installed earlier in the new air tube.



271. There are two black wires pulled off from the extension. Strip ¼" off the ends of these two wires and the two white wires from the IAT sensor exiting the supercharger lid. Using the supplied crimp connectors, crimp the black wires to the white wires. It doesn't matter which wire goes to which.

272. Use a heat gun or a hair dryer set on high to shrink the connectors onto the wire insulation. Shrink the plastic covering of the connector until the plastic covering has shrunk tightly around the wires. Crimping the connector alone is not enough to insure a permanent connection; you must shrink the plastic covering!

273. Cover the black and white wires using the provided split loom all the way back to the point where the white wires enter the supercharger lid. Zip tie your wires to ensure that they cannot be damaged by the supercharger serpentine belt, allow for lateral torque movement of the engine with the air box. Tape the junctions of your split loom.

274. Replace the computer connectors in their original positions, making sure to lock them in place by pushing the grey levers towards the harness. Secure the connectors by inserting the red lock keys in position.

275. Re-install the computer on the mounting bracket using the original fastener and a 10mm socket wrench. Note: If your vehicle has an automatic transmission, you will also need to re-install the transmission control computer located on the back side of the mounting bracket.

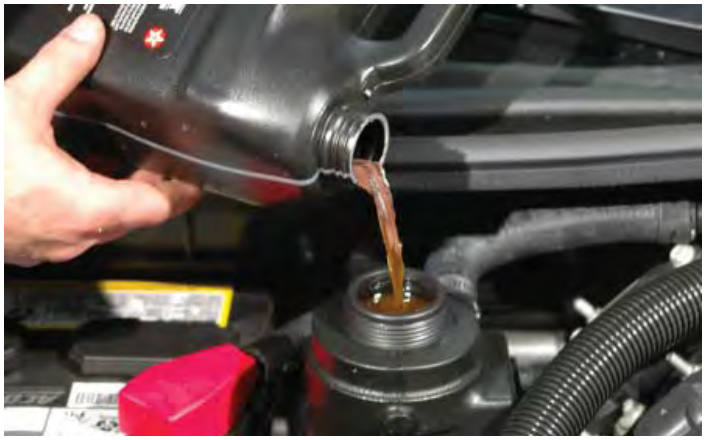
276. Reverse the steps, and re-install the plastic panel covering the ECM and TCM. This was removed in steps 5-7.

277. Re-install the road wheel and torque the lug nuts to 110 Ft-Lbs.

278. Use the fluid removed from the power steering reservoir, or new fluid to re-fill your power steering system and reservoir.

279. Fill the radiator reservoir with a 50:50 mixture of purified water and GM approved engine coolant only. After the initial start-up and the engine has come to operating temperature, recheck the fluid level in the reservoir and all the hose connections.

280. Fill the intercooler reservoir with a 50:50 mixture of purified water and GM approved engine coolant only. The intercooler system will hold approximately 6 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.



281. Using a straight blade screwdriver. Open the bleed valve to let any trapped air escape form the intercooler system. Some coolant will be lost when bleeding the system. Add coolant as necessary to the reservoir and continue to bleed the system until you can get a steady stream of coolant from the valve for over one minute. Check the intercooler reservoir level and re-open the bleed valve as needed.

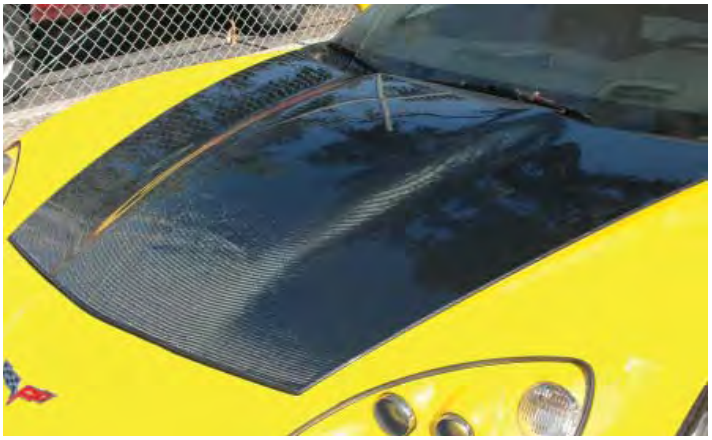
282. Affix the Premium Fuel Only decal on the inside of the fuel fill door.

283. Affix the belt routing diagram to the radiator cover.

284. Affix the OBDII port cover on the OBDII port at the driver side below the dash. Clip the cover ring on an adjacent wire to keep it local.

285. Start the vehicle for 5 seconds and shut off, once again check for fuel leaks and supercharger belt alignment. Check radiator and intercooler reservoir levels. Test drive vehicle for the first few miles under normal driving conditions, listen for any noises, vibrations, engine miss fire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal. After the initial start-up and the engine has come to operating temperature, recheck the coolant level in the intercooler reservoir and open the valve again to bleed any residual air trapped in the system. Check all the hose connections.

286. Install your new hood on the vehicle, and 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 gasoline still in the tank. Premium fuel 91 octane or better must be used.



MAGNUSON SUPERCHARGERS

*** PREMIUM FUEL REQUIRED ***

Please enjoy your “Magna Charged” performance responsibly.