MAGNUSON SUPERCHARGERS

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

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

*** PREMIUM GASOLINE FUEL REQUIRED ***

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

89-89-57-025 Rev H

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

INSTALLATION MANUAL

Magnuson Supercharger Kit GM 6.2 Liter Engine
Chevrolet Corvette 2008-2013 C6 LS3 HeartBeat

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.

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 use any Octane Booster.

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

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

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

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

- New spark plugs with the air gap set at the factory specifications OR new specifications if required by the installation manual.
- Coolant system pressure test and flush. NOTE: YOU MUST USE A GM SPECIFIED COOLANT MIXTURE.

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

Drives belt = Gates #K060980
Air Filter = TKO 1001-99T

Tools Required

Metric wrench set
1/4” - 3/8” and 1/2” drive metric socket set (standard & deep)
3/8” and 1/2” drive ft-lbs and in-lbs torque wrenches
Phillips and flat head screwdrivers
1/2” breaker bar
Fuel line quick disconnect tools (included in kit)
Small or angle 3/8 drill motor
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
Torx socket set 3/8 drive
Power steering oil suction tool or turkey baster.

Contact Information:

Magnuson Superchargers
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Ventura, CA 93003

Sales/Technical Support Line	**(805) 642-8833**
Websites	**www.magnusonsuperchargers.com**
Email	**sales@magnusonsuperchargers.com**

Table of Contents

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

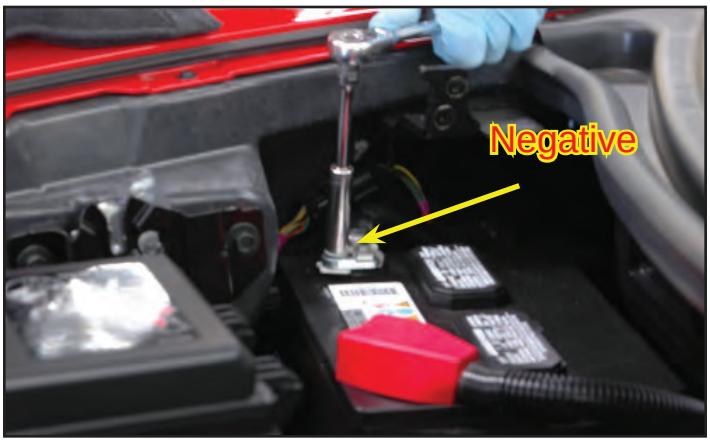
Section 1: Tuning Your Computer and Initial Steps

1. 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.

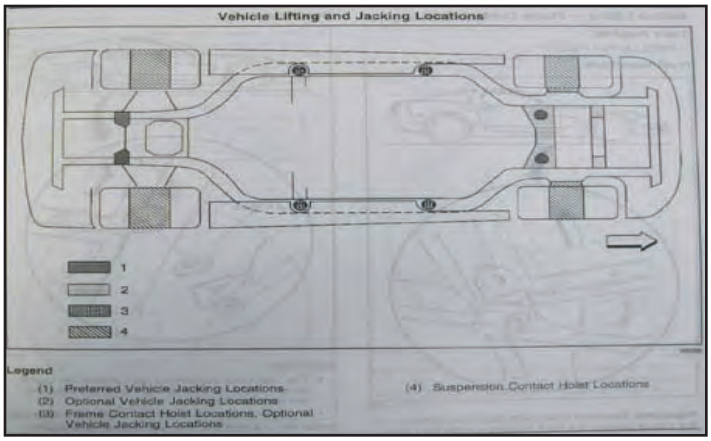
2. Your Intercooler system is sensitive to corrosion. It's very important to use the OEM recommended coolant mixture in your supercharger system as well.

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

4. 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. Insulate the connection with a rag or wrap with electrical tape. NOTE: Dry sump battery is over the rear passenger tire.



5. Raise the vehicle on an automotive hoist using the factory recommended lift points. Refer to the owners' manual or shop guide for these locations.



6. Remove the front right wheel (passenger side) with a 19mm wrench.

7. Relieve the pressure in the fuel tank by removing and then replacing the fuel filler cap.

8. NOTE: Due to vehicle manufacturing tolerances, condition of your motor mounts, age of your hood insulator, etc. we recommend removing your felt hood insulator. The insulator may contact the supercharger if left in place. Remove the stock hood by removing the four bolts with a 13mm socket wrench. Set the hood aside carefully where it won't be damaged for re-install at a later step.

Section 2: Removal of Factory Intake Manifold and Accessories

9. 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. Be careful if the engine is still hot.

10. To facilitate drainage, remove the radiator cap to vent the system.

11. Remove the engine oil filler cap. NOTE: Not necessary for dry sump systems.

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

13. Remove the engine oil filler cap, to be replaced with the low profile cap provided with your new supercharger system.

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

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

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

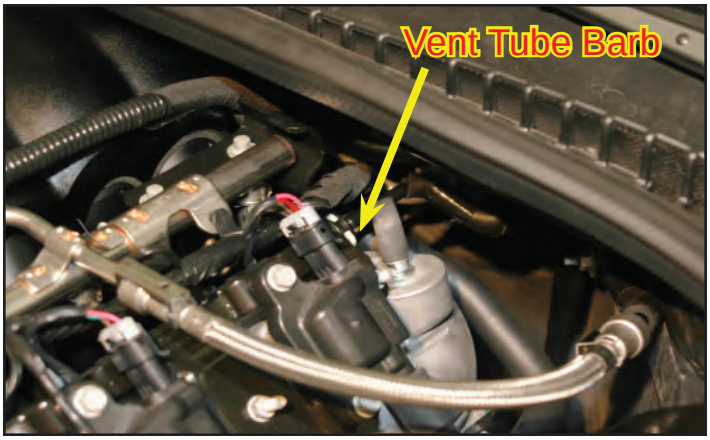
17. Pull up firmly on the air box assembly to separate from the three mounting grommet pins and remove from the vehicle.

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

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

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

21. Disconnect the other end of the vent tube at the driver side fire wall connection, this will not be reused.



22. Disconnect the other end of the PCV tube that was removed from the air tube in step #13 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.

23. Disconnect the EVAP solenoid electrical connection.

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

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

26. Squeeze the back side of the electrical harness “tree” anchors to release the clips that secure the wiring harness to the fuel rails in four locations. Pull the “tree” anchors from the mounting holes.

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

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

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

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

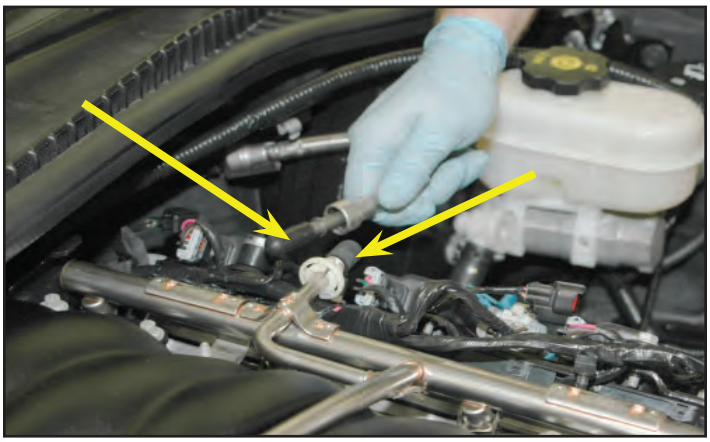
31. Remove the power brake check valve and hose from the brake booster grommet by pulling it out firmly. This will not be reused.

32. On the passenger side of the intake manifold behind the throttle body, remove the “U” shaped PCV hose by pressing the release clip and pulling free. Repeat on other end of the hose. Save the PCV hose for re-install at a later step.

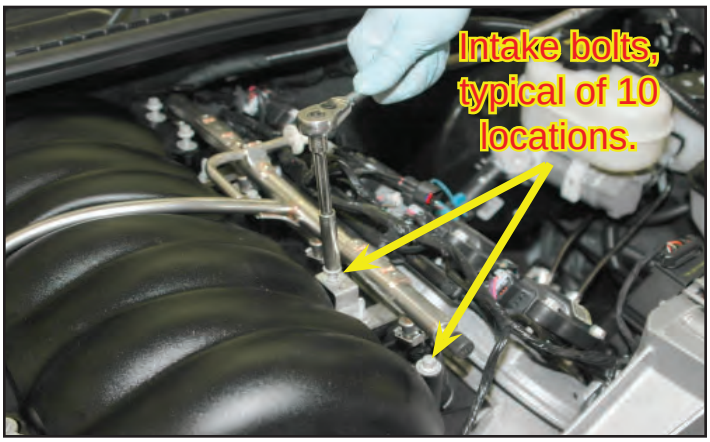
33. Release the fuel line safety clip by prying up on the braided side of the clip. After removing the clip place some shop rags or towels under the fuel line in preparation for removal.

34. Place a shop towel under the fuel line to catch and released fuel. Use the provided 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.

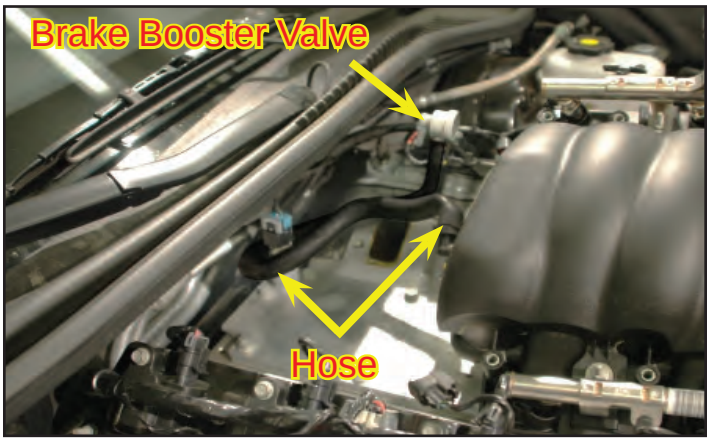
35. If you have, or can improvise, we recommend that you plug both the fuel line and the fuel line barb on the fuel rail to contain fuel seepage. Dispose of any fuel soaked shop towels properly.



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



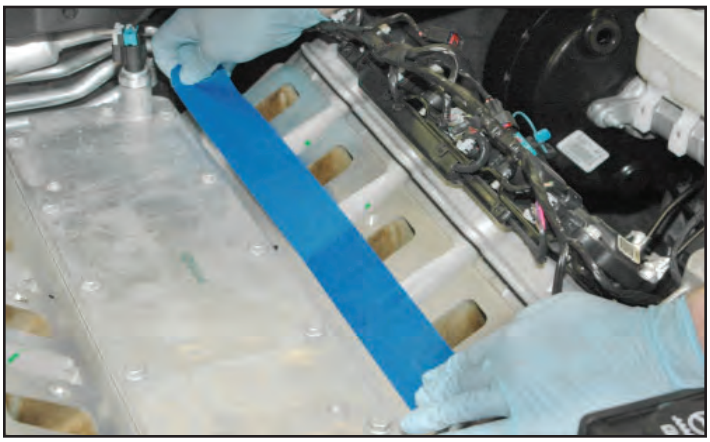
37. With the help of an assistant, feed the brake booster valve and hose clear of any obstacles as you carefully remove the intake manifold and set it aside. Be careful to not damage the Oil Pressure Sensor harness.



38. 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).

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

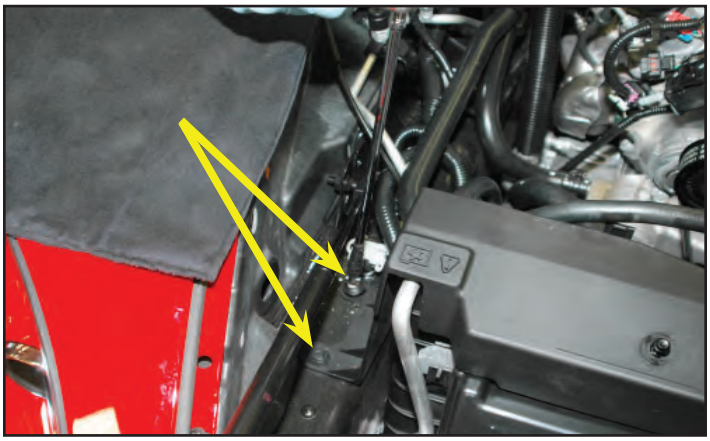
40. Cover the intake manifold ports with tape or clean rags to keep dirt and objects from entering the engine.



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

Section 3: Frame/Engine/Fan Acc. Preparation for Pinning the Crank

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



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

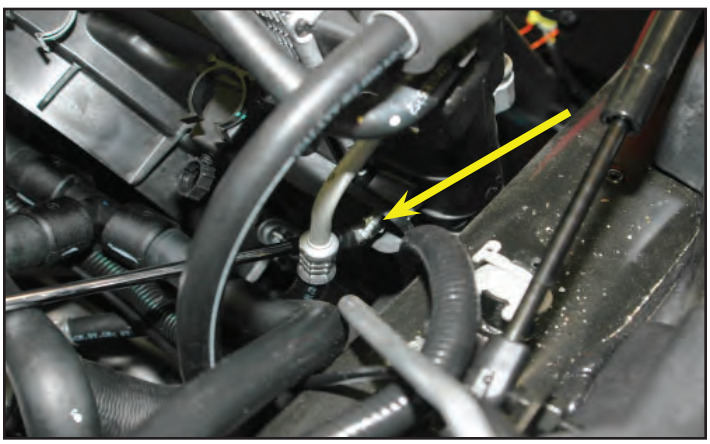
44. Remove the radiator cover and set it aside for a modification in a later step.

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

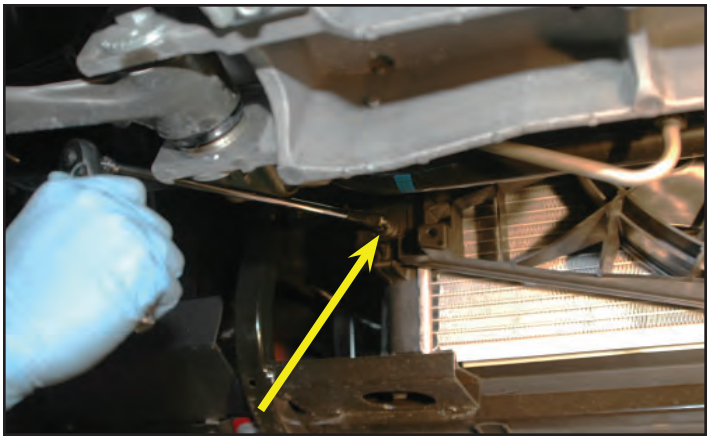
46. Use a small straight blade screwdriver to open the three harness clamps and release the wiring harness on the fan shroud.

47. 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.

48. The fan shroud is held to the radiator by two bolts. The passenger side bolt is located near the top of the fan shroud. Use a 10mm wrench to remove this bolt.



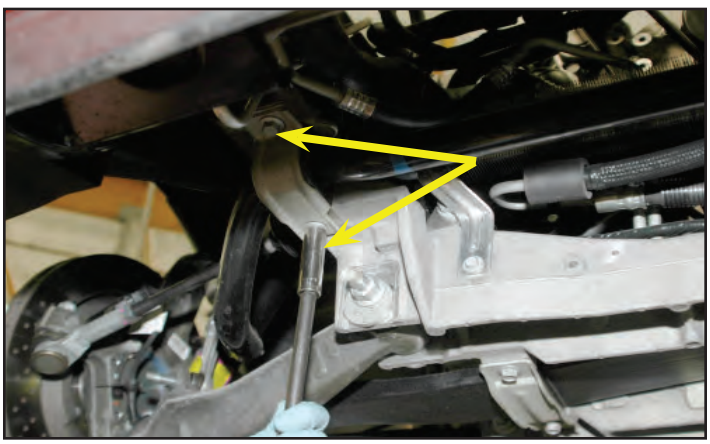
49. The driver side bolt is located low on the fan shroud. This is easiest to access from below the vehicle. If you haven't done so already, use the lift point guide diagram in step #3 to raise your vehicle for the next steps. Remove the driver side fan shroud mounting bolt with a 10mm socket wrench. The fan shroud should now be free to remove.



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

Section 4: Pinning the Crank

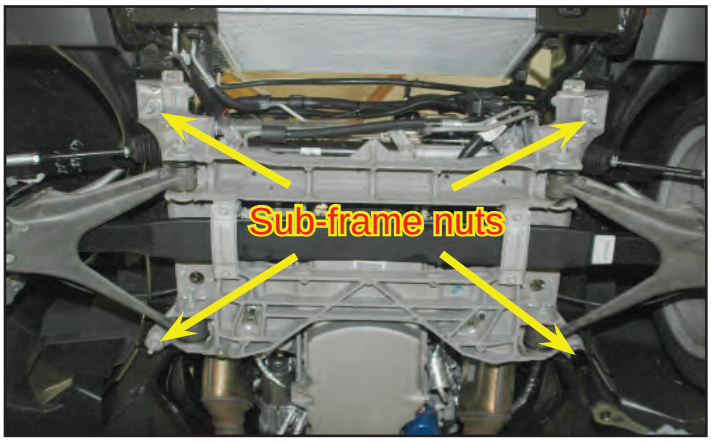
51. Remove the nuts that secure the sway bar end links to the lower A-arms on both sides of the vehicle. Use an 18mm socket on the outside and an 18mm open-end wrench on the inside. NOTE: When working with any suspension components, ensure the suspension is NOT loaded.



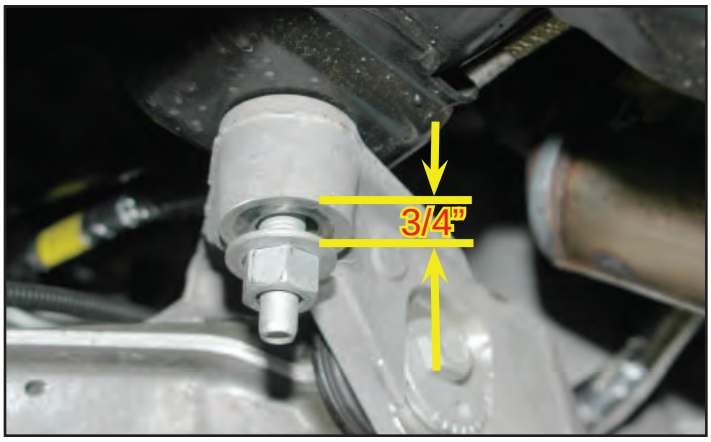
52. From under the vehicle, remove the four bolts that secure the sway bar brackets to the chassis with a 13mm socket wrench

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

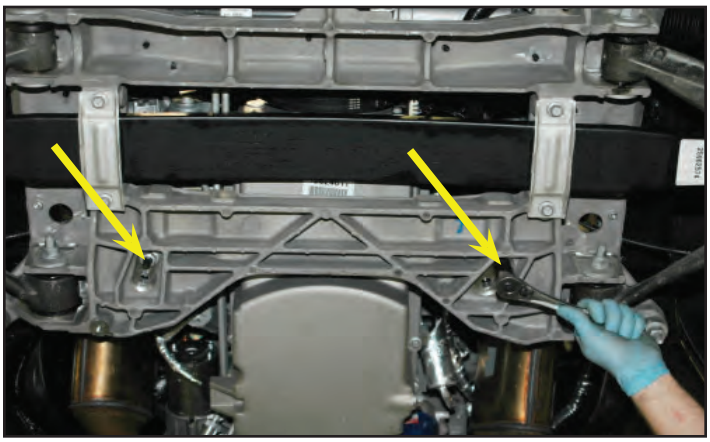
54. Using a 21mm socket wrench, loosen the four front sub-frame nuts shown. Follow the directions in the next step for proper loosening.



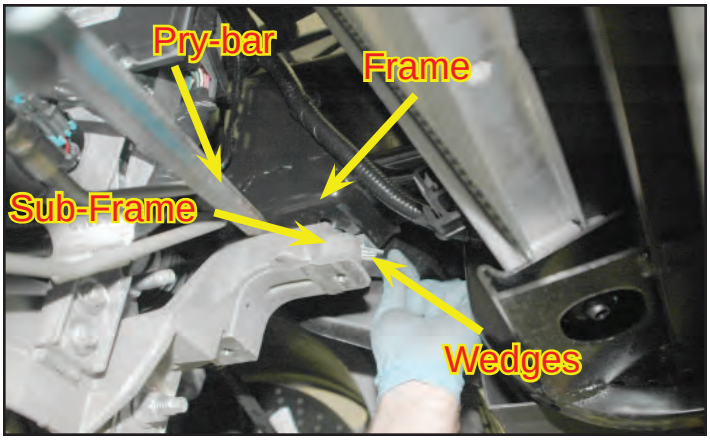
55. Loosen the four front sub-frame nuts until the bottom of the nut is even with the end of the threads on the bolt. The gap between the washer and the sub-frame should be approximately 3/4". NOTE: Loosen the nuts roughly 3/4", use a prybar and wedges to keep the sub-frame in a dropped position. The suspension will naturally pull the sub-frame upward.



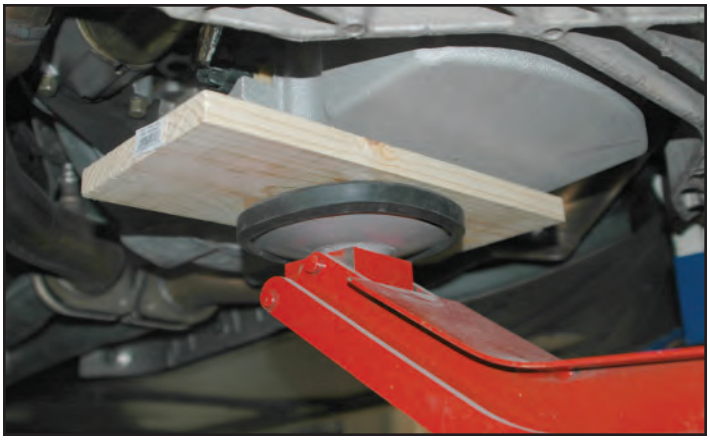
56. Remove the two motor mount nuts with an 18mm socket wrench.



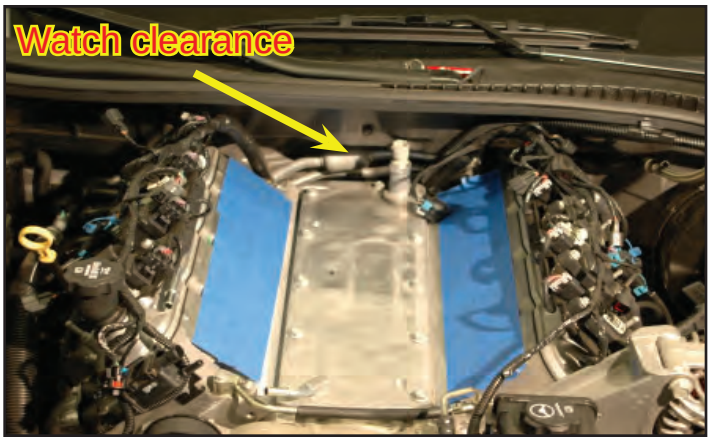
57. Using a suitable pry bar, pry down the sub-frame at the front two mounting points. Temporally push a metal or wooden wedge approximately 1/2” thick between the frame and sub frame at these points.



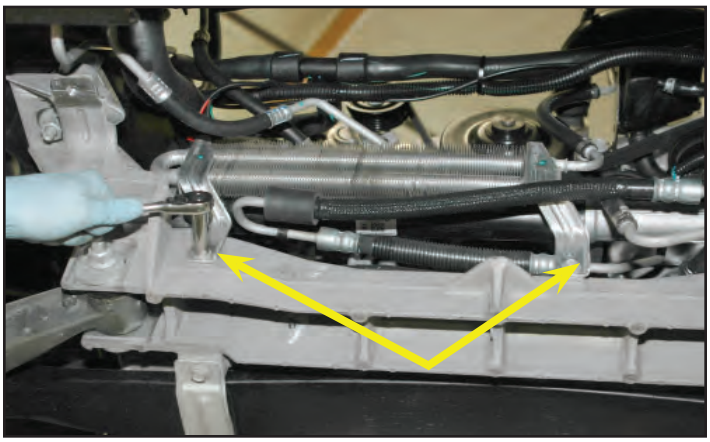
58. Using a floor jack (shown; we used a transmission jack with the car on the lift) and a sturdy piece of wood between the jack and the bottom of the oil pan, gently raise the engine. NOTE: Make sure the wood spans across the oil pan getting support from the edge bends. Also check the next step for clearance issues.



59. When raising the engine with the 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.

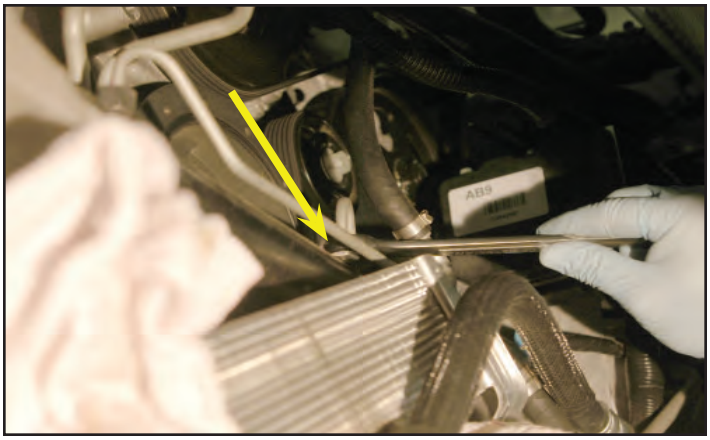


60. Remove the two bolts mounting the power steering cooler to the frame using a 10mm wrench.

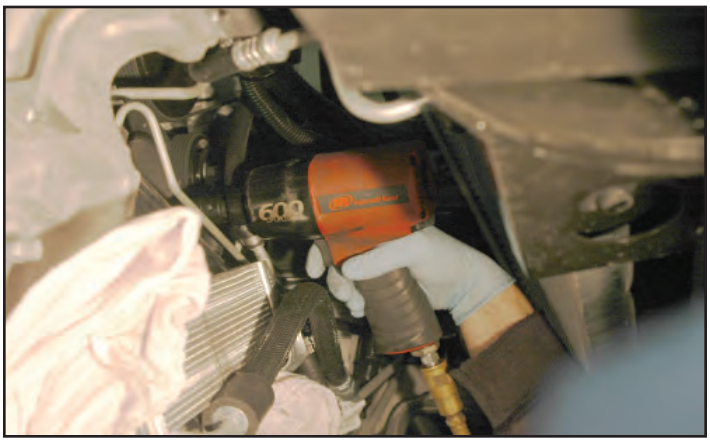


61. Swing the power steering cooler out of the way to gain access to the center of the crank pulley.

62. 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.

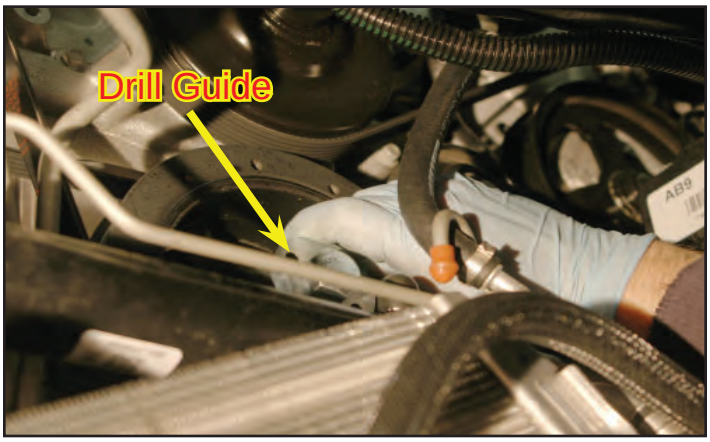


63. The following steps may be performed from above or below on the vehicle. For clarity some are shown from below. Remove the front harmonic balancer bolt using a 24mm impact socket and a ½" impact wrench. NOTE: We recommend safety glasses during all steps. Please be sure to wear them during these steps.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



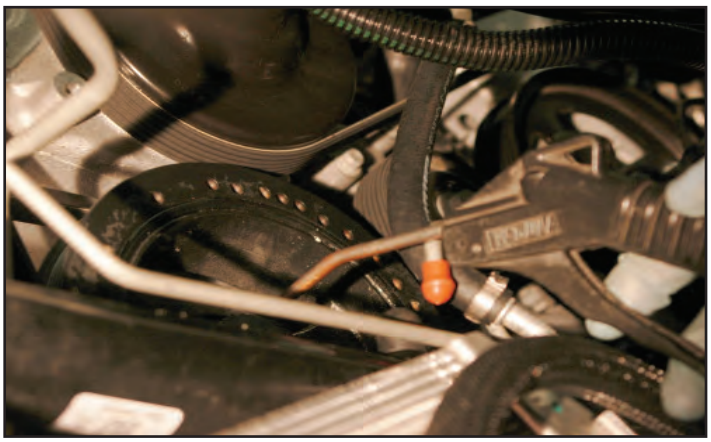
64. This is the pin drill guide and provided mounting bolt. The stepped side faces towards the crank to center with the pulley.

65. 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 the 2:30 and 8:30 clock positions worked pretty well for us.



66. 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).

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



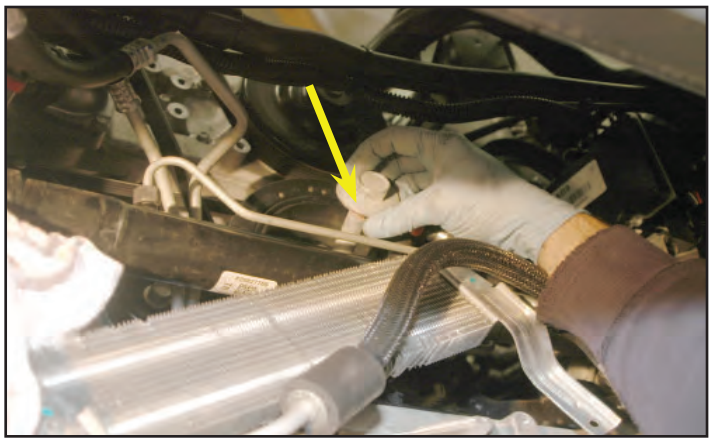
68. Install the supplied reamer into drill. Using a small amount of oil, ream holes until reamer bottoms out in the holes.

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

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

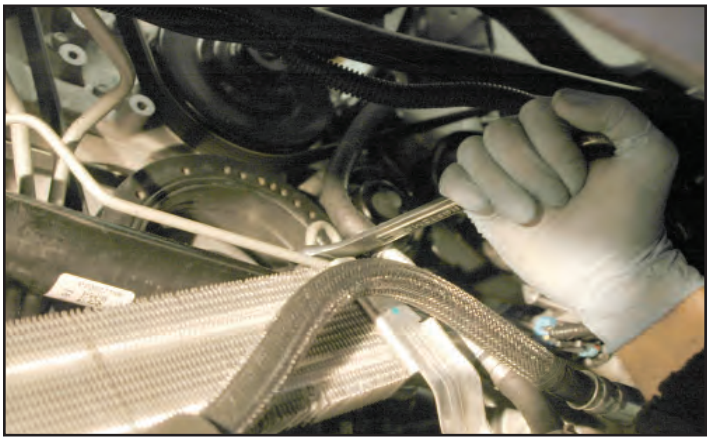
71. Place beads of Green Loctite on the two supplied hardened roll pins, and then insert them into the drilled holes. The use of a small hammer and punch may be necessary to tap the pins in. (Make sure that the pins are in far enough that they do not touch the balancer bolt.)

72. Install the new supplied factory GM harmonic balancer bolt. NOTE: DO NOT reuse the old bolt.

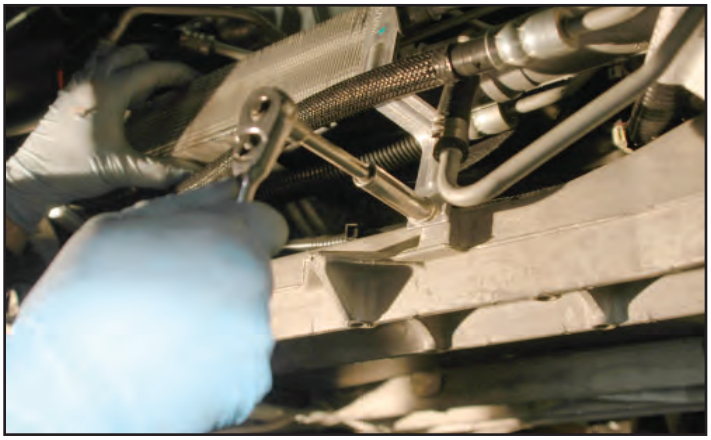


73. Using a 24mm socket tighten the new harmonic balancer bolt according to General Motors specifications. Tighten to 50 Nm (37 ft-lbs) then tighten an additional 140° using a torque angle meter. The engine can now be dropped back onto the sub frame for clearance issues later. Hand tighten the mounting bolts at this time, we will torque them down later.

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



75. Remount the power steering cooler assembly to the original location and fasten using the original hardware. Reconnect the line to the power steering piston using the original snap on clamp. Torque the bolts to 106 in-lbs.



76. 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.

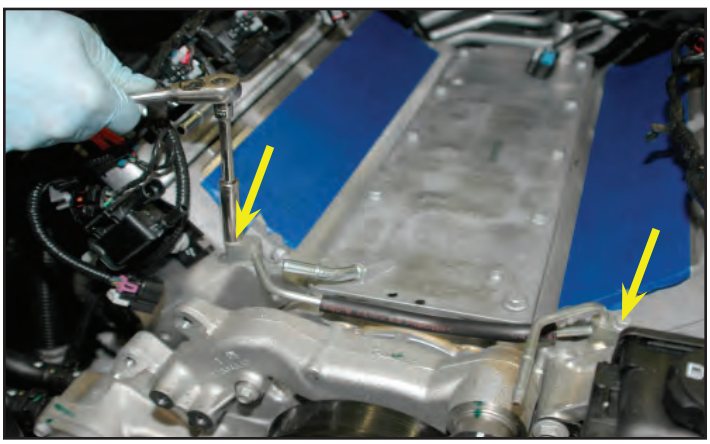
Section 5: Vent Pipe Replace, Evap, Tensioner and Steering Pump Modification

77. 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.

78. Remove the stock tensioner assembly by removing the two mounting bolts with a 15mm wrench. Save the tensioner for reinstallation at a later step.

79. Remove the coolant hose from the vent pipe.

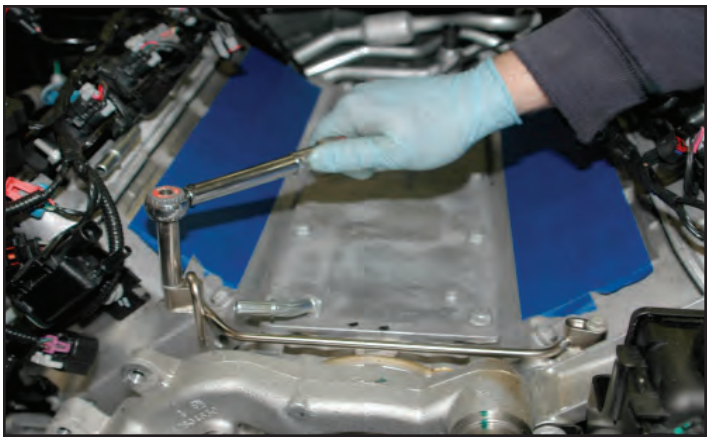
80. Remove the vent pipe with a 10mm socket wrench. Ensure that the O-ring gaskets under the vent pipe blocks do not stick to the cylinder heads. If so, remove them as new gaskets are supplied.



81. Rotate the barb on the front of the valley cover down by using a Phillips head screwdriver inserted into the pipe, and gently bend downward approximately ¼". Ensure the screwdriver is snug in the pipe so that the screwdriver does not damage the tube.

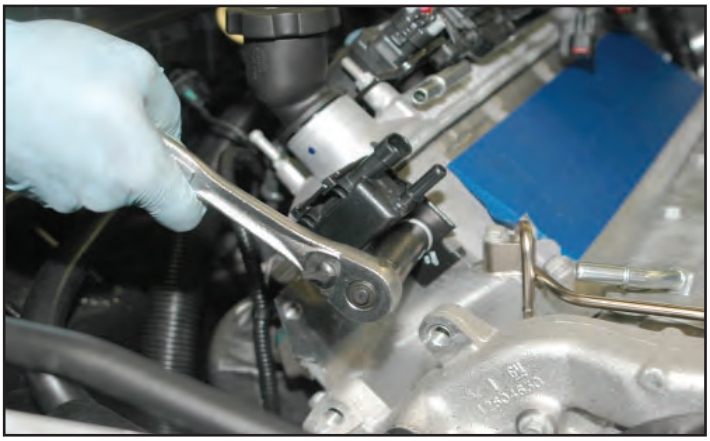
82. If not installed in the factory, install the new O-ring gaskets on the provided vent pipe blocks using some of the supplied Lubriplate lubricant to hold them in place.

83. 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.



84. Connect the oil pressure sensor plug back on the oil pressure sensor.

85. Remove the factory EVAP Solenoid and bracket on the front of the passenger side head using a 15mm socket.



86. Remove the “T” fitting from the coolant hose that ran to the steam pipe.

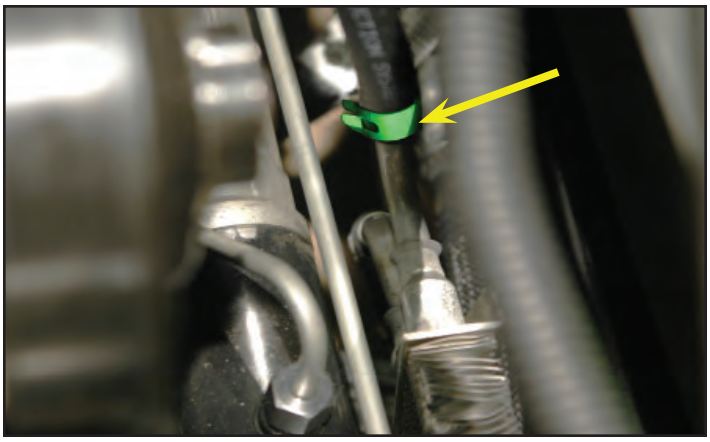
87. Replace the removed fitting with the provided hose mender (coupling) and secure in place with the OEM clamps.

88. Move the “T” fitting so that it is in line with the passenger side coolant hose below, to the right (passenger side) of the factory tensioner mount. Be careful not to place too close to the clip on the shroud. Secure the “T” fitting with the supplied red hose clamps.

89. Connect the hose from “T” fitting to the barb on the coolant vent pipe. Secure the hose with the provided red spring clamps. Zip-tie the new coolant hose to the larger OEM hose.

90. 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. Allow the fluid to completely drain into a suitable receptacle and dispose of properly. Use shop towels to clean up any residual fluid. This entire section of hose and hardline will not be reused. Temporarily cap the barb if possible. Be careful not to turn the power steering pump pulley by accident, it will pump fluid out of the barb!

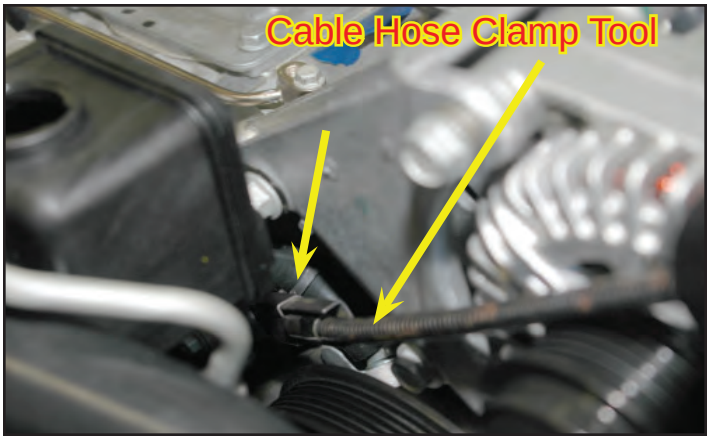
91. Use the provided green clamp to attach the provided 3/8” power steering hose to the vacated barb on the power steering cooler. Route this hose up and over to the passenger side toward the belt tensioner location.



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

93. Using a 15mm wrench, remove the two bolts that secure the power steering fluid reservoir to the alternator bracket. These bolts will be reinstalled in a later step.

94. Remove the mounting bracket from the reservoir then remove the large hose from the hose barb on the driver side of the block by squeezing the clamp with a pair of pliers. We found a remote cable hose clamp plier worked best, along with a long flathead screwdriver to pry the hose off the barb. 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.



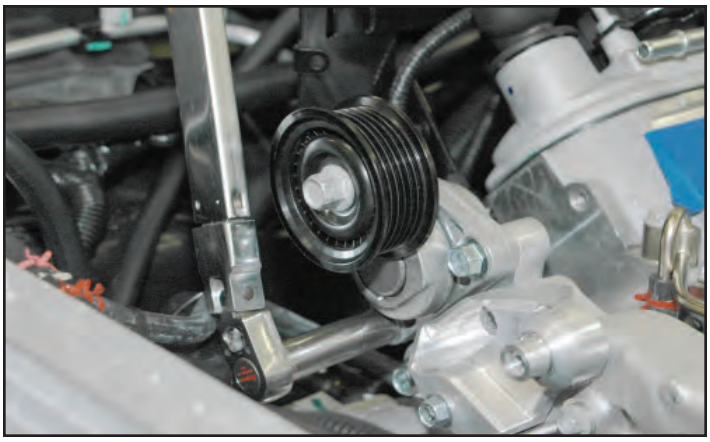
95. Remove both hoses from the bottom of the reservoir. Be careful of dripping fluid, use a shop towel and dispose of properly. It's a good idea to cover the pulleys below to avoid fluid contamination.

96. 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 bracket. Be careful to not damage the clip, as it will be reused.

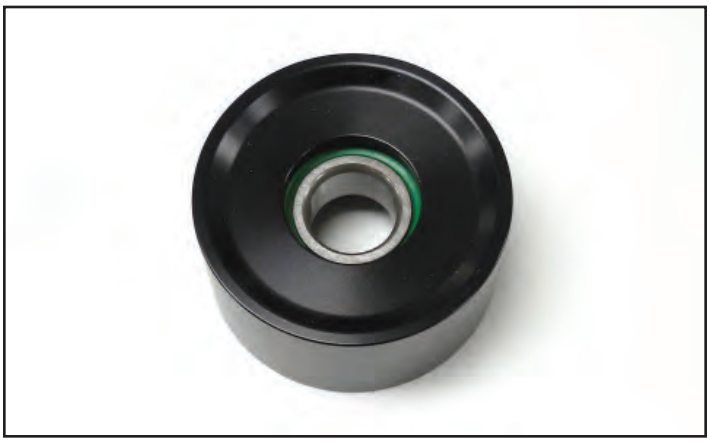
97. Install the provided power steering reservoir bracket using the new bolts supplied. Torque the bolts to 35 ft-lbs using a 15mm wrench. Ensure that the wiring harness just removed is inside the angle of the mounting bracket, not behind the bracket. Press the wiring harness anchor removed previously into the hole of the power steering mounting bracket. You may need to slide the anchor up the harness slightly to reach the hole.

98. Install the new tensioner mounting bracket in the original location of the OEM unit with the supplied M8 and M10 hardware. The socket head cap screw goes in the pocketed hole. Torque the M10 bolts to 35 ft-lbs, and the M8 bolts to 18 ft-lbs. Be sure to verify your torque wrench settings.

99. Install the OEM tensioner with the two provided long M10 bolts in the tensioner package. Torque the bolt to 35 ft-lbs. Again, verify your torque wrench settings.



100. Mount the provided Idler pulley with the side showing in the photo facing outwards away from the engine using the provided bolt to the boss between the crank pulley and the tensioner pulley.

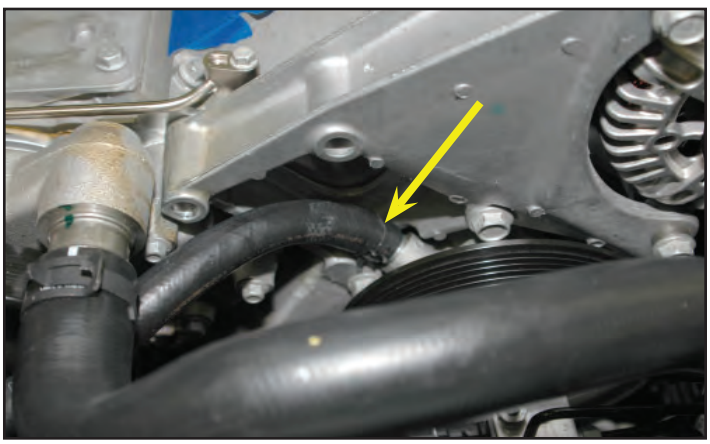


101. Install the provided idler from the last step with the provided bolt. Torque the bolt to 25 ft-lbs. Verify your torque wrench settings.

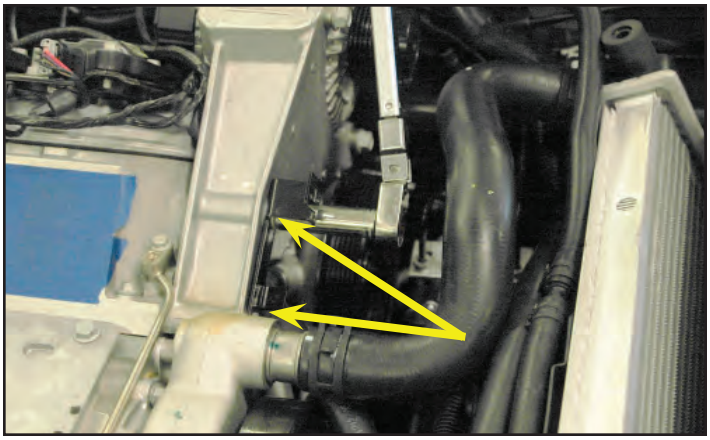
102. Connect the length of 3/8” power steering hose from the power steering cooler from step #91 to the smaller barb on the bottom of the power steering reservoir. Secure the hose with the supplied green spring clamp.

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

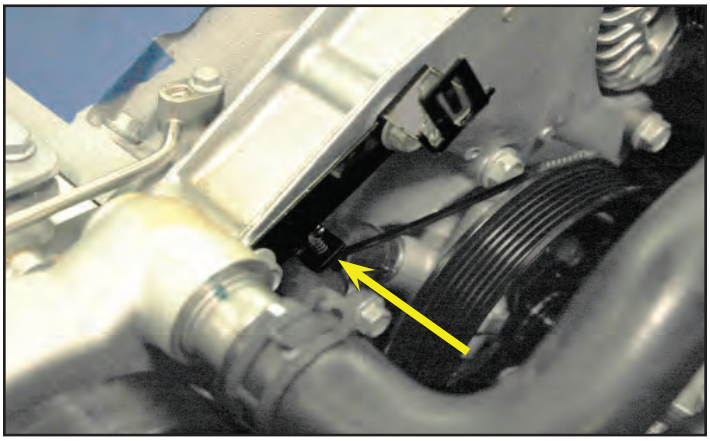
104. Install the provided 5/8” hose onto the large barb on the top of the power steering pump by the upper radiator hose on the engine. Secure the hose with the original spring clamp.



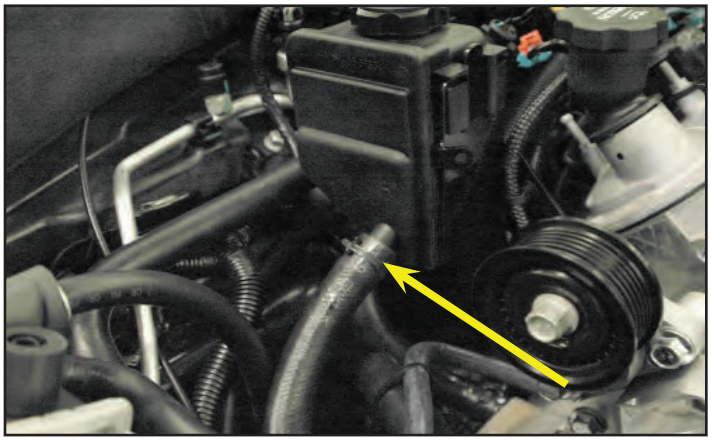
105. Install the new EVAP Solenoid mounting bracket at the OEM power steering bracket location. Use the OEM power steering bracket bolts to secure the mounting bracket in position, torque to 35 ft-lbs. Verify your torque wrench settings.



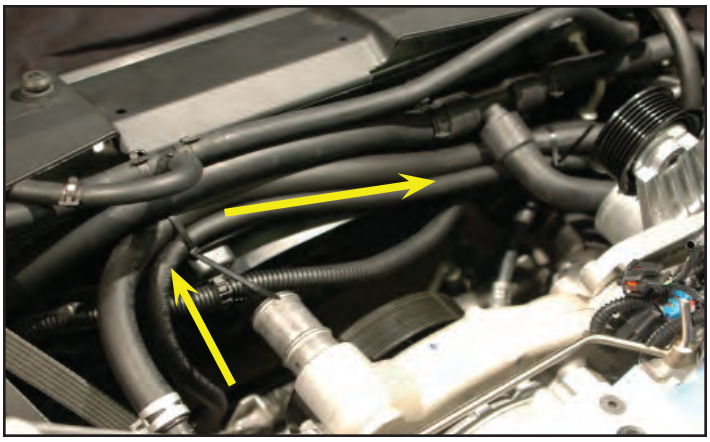
106. Use the provided “tree” zip-tie to loosely secure the 5/8” hose to the hole in the EVAP Solenoid mounting bracket just installed.



107. 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 if needed, and connect to the large barb on the power steering reservoir using the provided clamp.

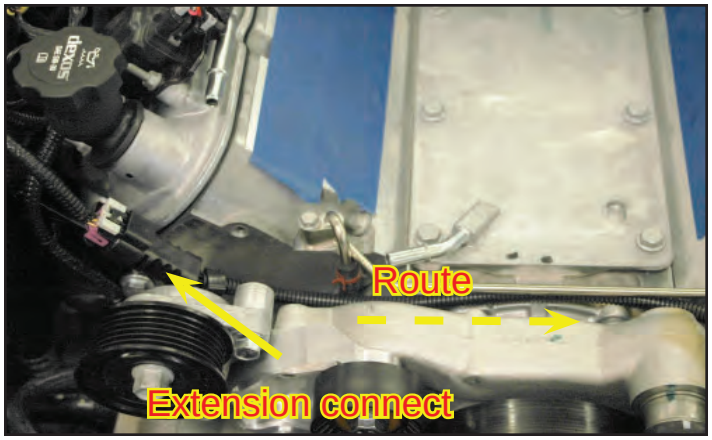


108. Route the 3/8” power steering hose below and parallel to the 5/8” hose you just ran, secure hoses with available mounting clamps and/or zip ties.

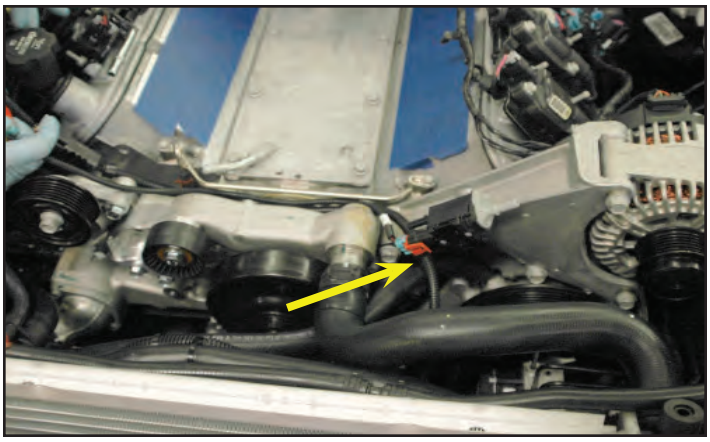


109. Slide the EVAP Solenoid onto the bracket you installed earlier. Ensure that the bracket “clips” into place.

110. Connect the throttle body extension harness to the throttle body plug. Route this extension harness under the steam pipe and over toward the driver side of the vehicle.



111. Connect the EVAP Solenoid extension harness to the existing EVAP plug. Route the EVAP Solenoid harness along the steam pipe and throttle body extension harness and secure both in place with zip ties. Harness should sit along-side or below the steam pipe, not above. Connect the EVAP Solenoid plug to the new Solenoid location. NOTE: The additional single wire (yellow) should be left on the passenger side for connection at a later time.

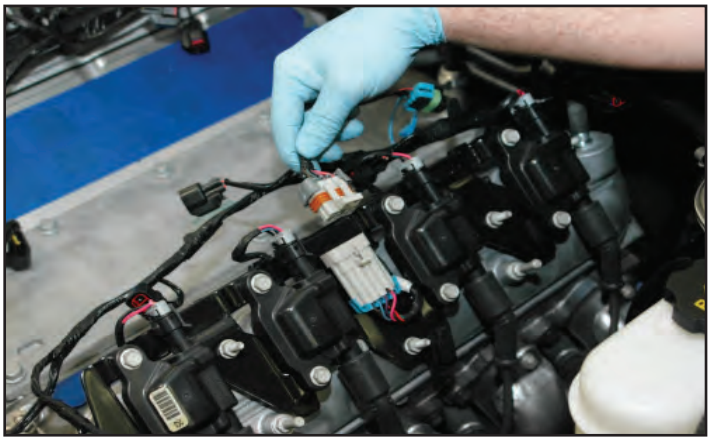


Section 6: Coil Pack Removal And Preparation

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

113. Unclip the receiving (female) end of the oxygen sensor plug from the mounting slot on the coil bracket.

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

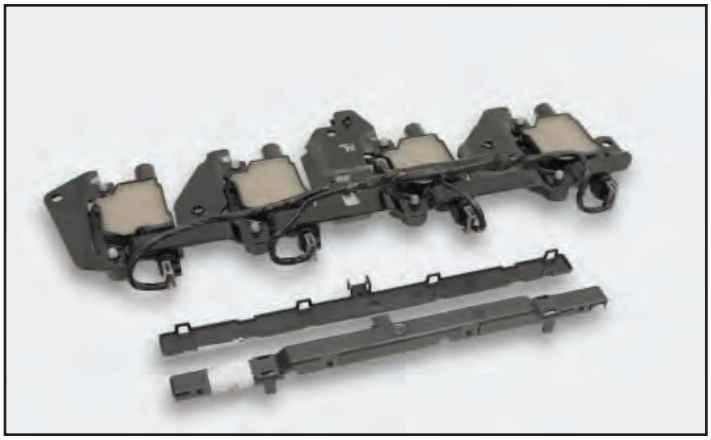


115. Disconnect the spark plug wires from the coils.

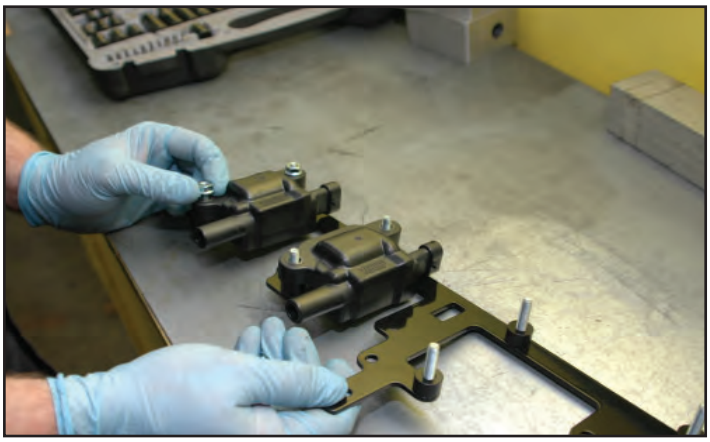
116. Unbolt the five bolts holding the coil brackets to the valve covers using a 10mm wrench.

117. Remove the coil brackets for replacement.

118. Use a small flathead screwdriver to unsnap the plastic wire covers and remove the covers from the coil brackets. Remove the coils and wiring from the OEM mounting brackets.



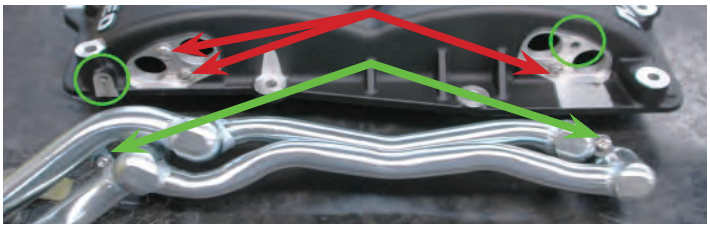
119. Install the coils on the new provided mounting brackets using the provided spacers and hardware. Set aside for install after the supercharger is installed on the system.



Section 7: Prepare and Install the Supercharger

120. The supercharger “Lid” is attached to the “Base (or Tub)” at delivery, we need to separate the two for installation. Remove the five 10mm fuel rail bolts, and pull the fuel rails carefully up and out. The injectors may come out with the fuel rails, if not, remove them as well.

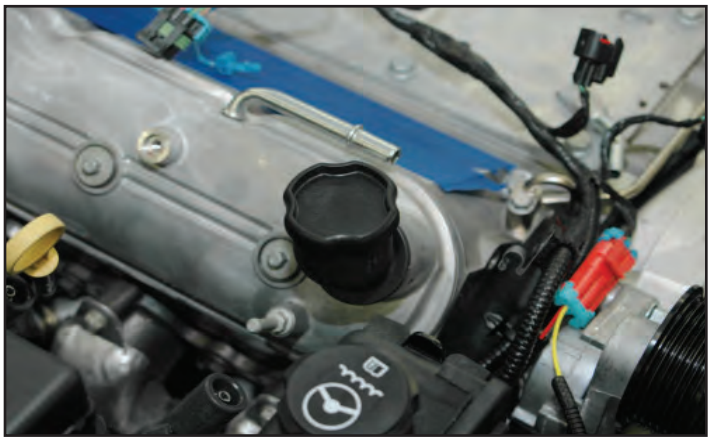
121. Remove the two 3mm Allen bolts holding the two coolant manifold to the supercharger lid. Set all the parts aside for re-assembly later. NOTE: Be careful to NOT remove the three bolts anchoring the intercooler itself to the lid of the supercharger. See arrows in second photo with coolant manifold removed: Red= Do NOT Remove, Green= Remove. Green circles show the mounting location of the bolts to remove on the lid.



122. Remove the 10mm bolts holding the supercharger lid to the housing and pull the lid off the supercharger. The intercoolers will be attached directly to the lid. Set aside carefully for reinstall in a later step. Take note of the locations of the different lengths of the bolts so they may be replaced in the same position.

123. Flip the supercharger “Base (or Tub)” upside down and install the two intake manifold gaskets supplied onto the “Base (or Tub”). They should “snap” into place inside the stand-offs.

124. Replace the factory oil fill cap with the provided cap.



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

126. Spray silicone or some mild soap and water solution on the cylinder head surface to lubricate. This makes the “Base (or Tub)” section of the 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.).

127. Ensure that the engine has been dropped back down on the sub frame and carefully, making sure you don’t hit the gaskets while placing the “Base (or Tub)”, set the Base (Tub) on the engine. Line up the bolt holes with the holes in the cylinder heads.

128. Secure the “Base (or Tub)” section in place using the provided 40mm long bolts and gradually torque down to 106 in-lbs using a criss-cross, inside-out pattern using a 10mm wrench. IMPORTANT: Use Loctite 242 liberally to ensure bolts don’t back out in operation! Verify your torque wrench settings.

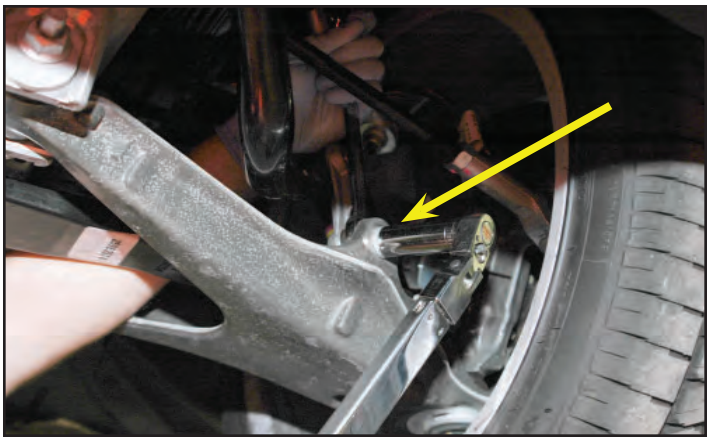
129. Inspect the O-ring gasket from between the “Base (or Tub)” and the “Lid” for damage. Carefully place the upper “Lid” section onto the “Base (or Tub)” that you just installed. Replace the bolts you removed from the assembly earlier and finger tighten. Ensure that you have replaced the bolts in their original location.

130. Gradually torque down using a criss-cross, center-out pattern until you reach 106 in-lbs. Verify your torque wrench settings. IMPORTANT: Use Loctite 242 liberally to ensure bolts don’t back out in operation! Remember that the two rear lid bolts are bolted “UP”, not “DOWN” like the remaining bolts. It is easiest to access these two bolts from the rear-passenger side of the vehicle. The two bagged fasteners that were attached to the coolant cross overs should be installed in the front two holes.

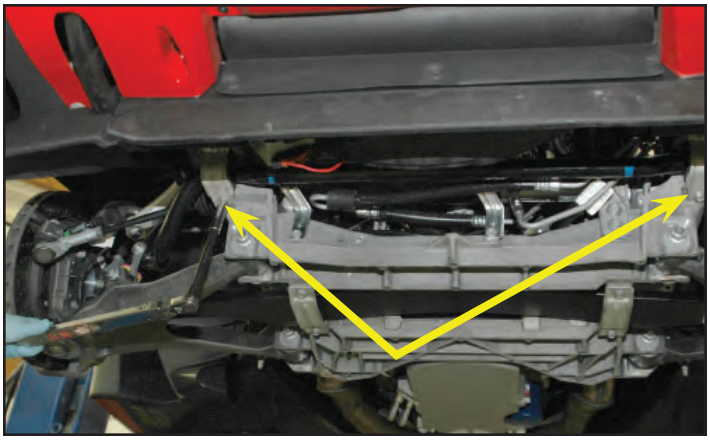
Section 8: Frame - Sub Frame Re-Assembly and Sway Bar Remount

131. Remove the wedges from between the frame and sub frame. Tighten the sub frame and motor mount nuts securely. See torque specs three steps from now.

132. Replace the sway bar by installing it in its original position and reconnect the end links. See torque specs two steps from now.



133. Replace the sway bar brackets and torque to specs in the following step. NOTE: To prevent any new squeaks, you can add some chassis/ suspension lube to the rubber isolators.



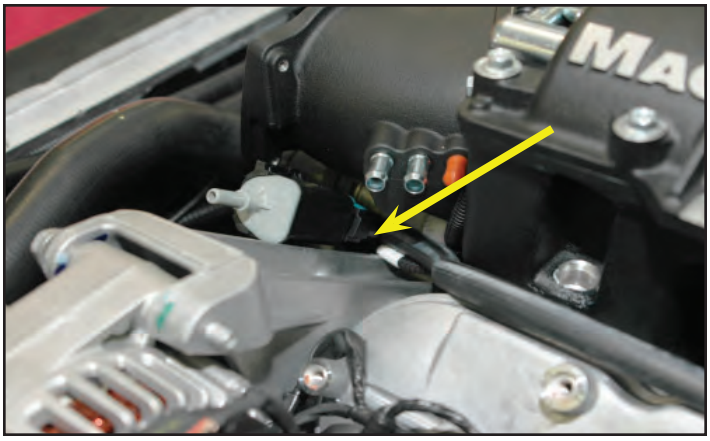
134. Torque the sub-frame, the sway-bar connections and motor mounts to the torque values below. Torque Specifications:

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

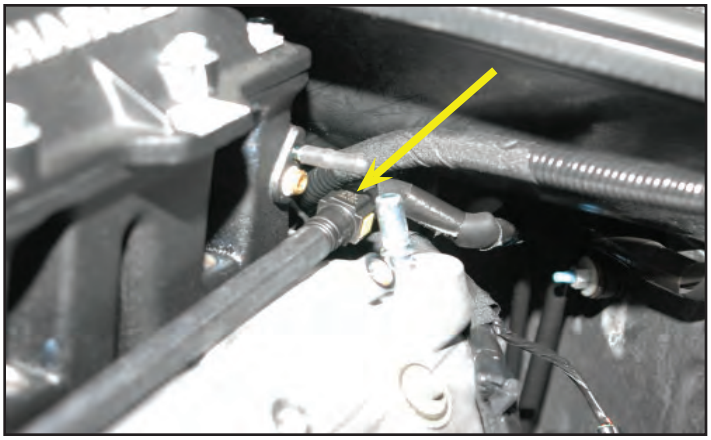
Section 9: Evap Hoses, Accessory Belt and Throttle Body Install

135. Re-install the coolant manifold hard lines, ensure the tabs are lined up so that the spigots will sit flush. The upper tube tab should be the one to sit against the lid. Use the removed hardware to install. NOTE: Use some of the supplied Lubriplate lubricant on the spigots of the hard lines before assembly.

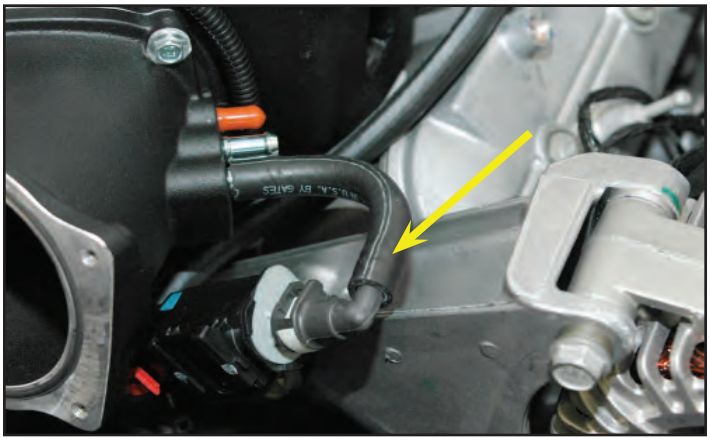
136. Connect the blue EVAP connector to the lower barb remaining on the EVAP solenoid. NOTE: Ensure the hose runs along-side the supercharger by the injector cups.



137. Connect the yellow connector end of the provided EVAP hose to the barb on the driver side of the engine compartment by the fire wall.



138. Connect the provided upper EVAP hose onto the gray EVAP solenoid barb and route the remaining end to the forward supercharger inlet hose barb, no clamp is necessary.



139. Install the new supplied supercharger accessory belt with a 15mm tensioner wrench, using the new supplied belt routing diagram located at the end of this manual.

140. Place a piece of the provided split loom over the upper radiator hose where it will pass under the throttle body to prevent chaffing of the hose as shown. Secure with two provided 14” zip ties. Do NOT overtighten pinching the hose.

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

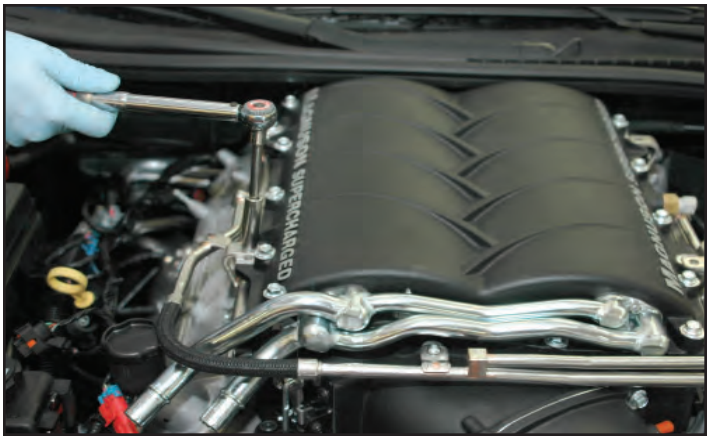
142. Install the provided throttle body gasket into the groove on the supercharger inlet manifold (if not already installed), and install the throttle body onto the inlet manifold using the original bolts. Tighten the bolts with a 10mm socket and torque to 106 in-lbs (12Nm). Verify your torque wrench settings.

143. Connect the remaining end of the throttle body extension harness to the throttle body control plug.

Section 10: Injectors, Fuel Rail, Coil Packs, Fuel Line, Brake Booster Install

144. Remove fuel injector clips from the OEM fuel rails. The fuel injectors will be installed on the provided fuel rails. Clean and lubricate the O-rings with the provided Lubriplate grease prior to installation.

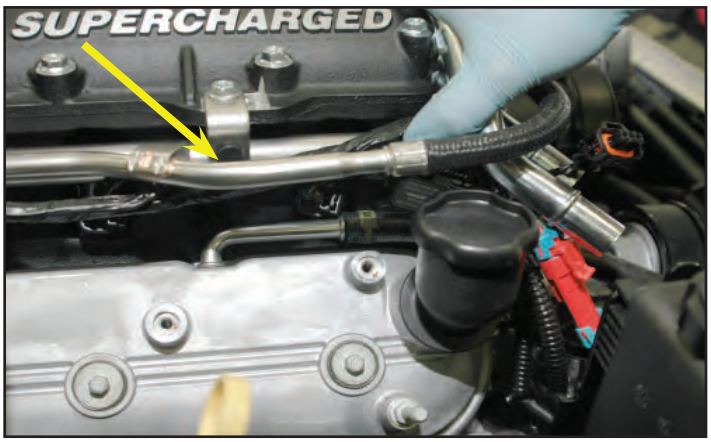
145. Install the fuel rails and injectors onto the supercharger manifold. Ensure that the O-rings of the injectors have been lubricated with Lubriplate lubricant. Start with the driver side and install the passenger side starting with the front injector and “rock” backwards to seat all injectors.



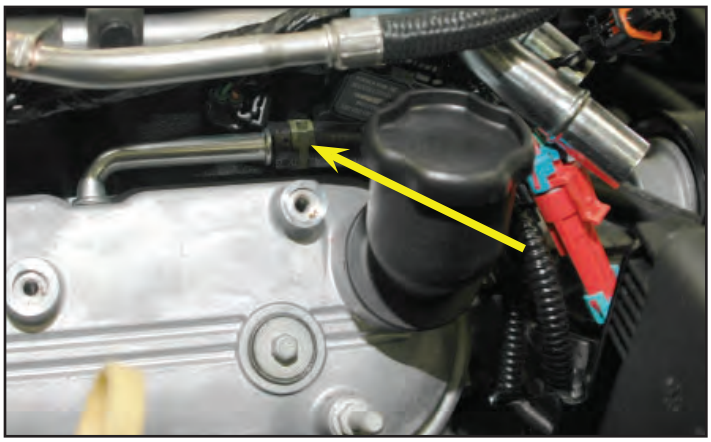
146. Start with the single front “button head” bolt loosely installed, and then install the remaining four fuel rail bolts. Torque to 106 in-lbs, verify your torque wrench settings.

147. Connect the eight fuel injector plugs.

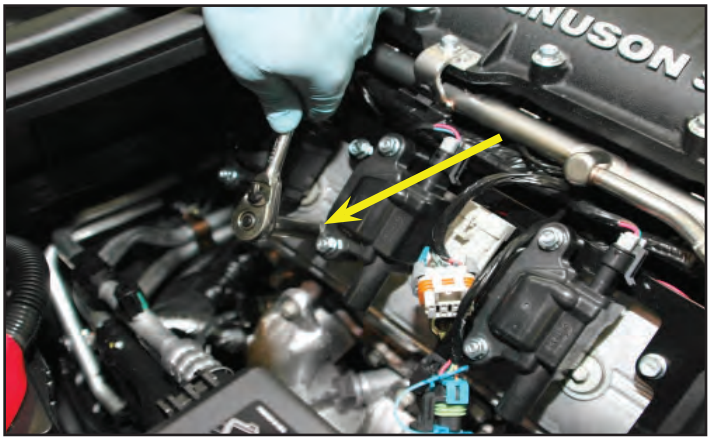
148. Press the OEM injector harness mounting “tree” anchors into the holes of the new fuel rail mounting bracket.



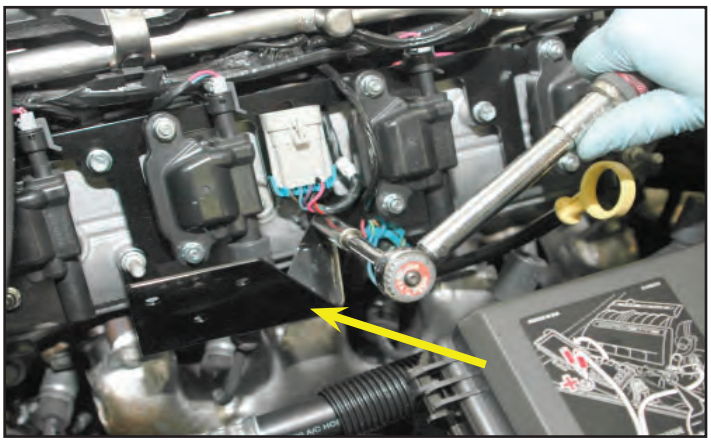
149. Connect the supplied 3/8” bare fuel vapor hose to the front barb of the passenger side of the valve cover, secure with provided green spring clamp.



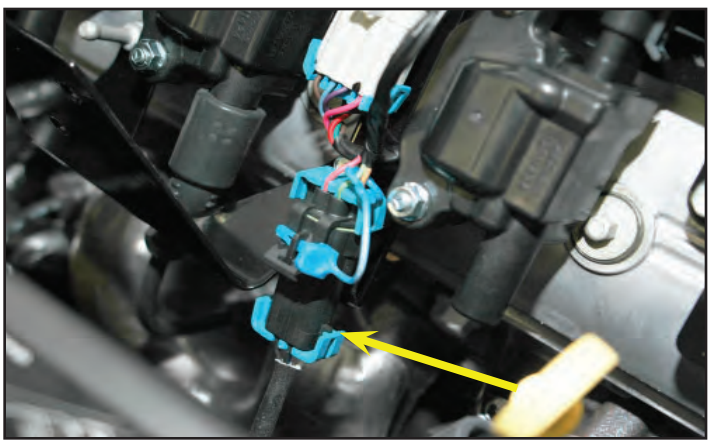
150. Remove the rear coil cover stud on the passenger side of the engine.



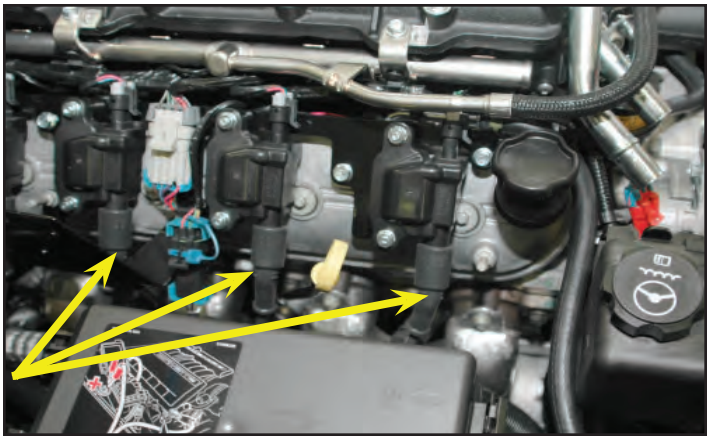
151. Mount the modified coil pack assemblies with the supplied hardware back on the engine. Reuse one of the OEM coil pack bolts with the mounting stud on the front most driver side fastener location. Mount the passenger side coil pack mounting bracket incorporating the intercooler reservoir mounting bracket. Torque the mounting bolts down to 106 in-lbs. Verify your torque wrench settings.



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



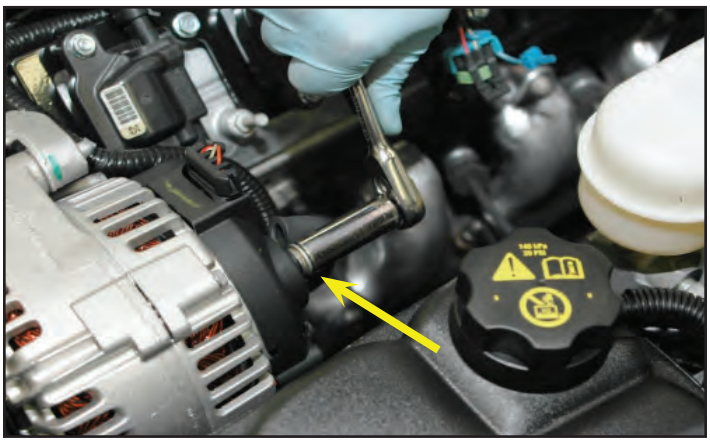
153. Connect the spark plug wires to the coils.



154. Connect the OEM MAP sensor harness to the MAP sensor located on the passenger side of the supercharger, behind the bypass actuator.

155. On the alternator cable, remove the two rear most harness anchors. There should be one anchor remaining toward the front of the harness.

156. Route the split-loom covered alternator harness back forward toward the alternator. Attach the eyelet terminal to the alternator using a 13mm wrench. Replace the cover on the terminal. Secure the harness to the sides of the fuel rail, right below the two mounting points with the provided zip-tie “trees”. Attach the remaining alternator harness anchor to the front most coil pack bolt.



157. Ensure your alternator cable is running below the fuel line. 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.

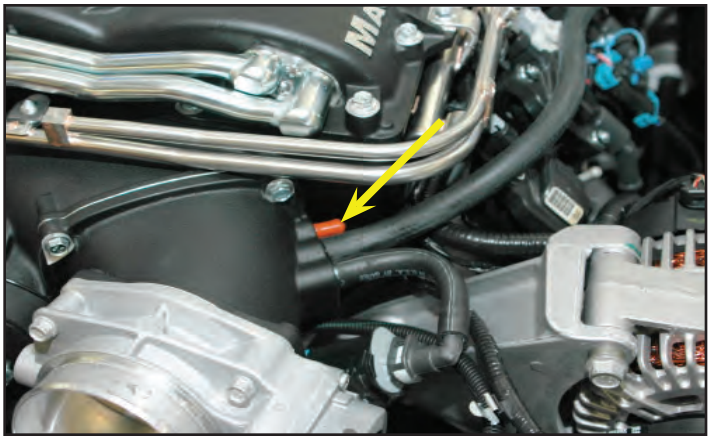
158. Install the OEM fuel line safety clip.

159. Remove the fuel line pressure test cap from the OEM fuel lines and install on the driver side fuel rail test port.

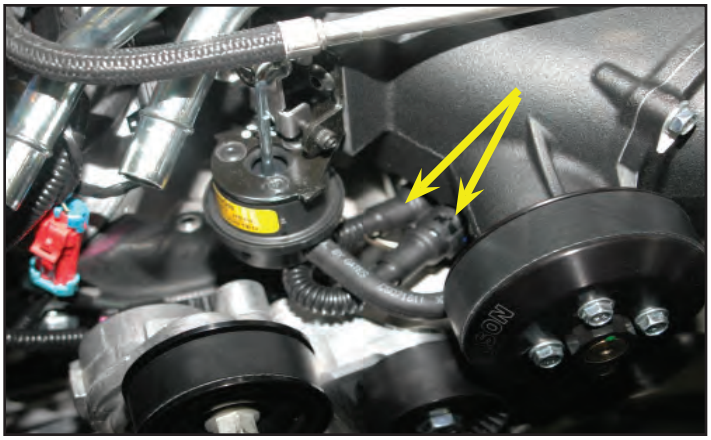
160. Plug the provided brake booster check valve into the stock location on the brake booster canister.

161. Route the hose forward along the coil pack, connect to the middle barb on the supercharger inlet.

162. NOTE: If your vehicle is equipped with a Vacuum Controlled Exhaust Baffle, connect the free end of the hose to the capped-off hose barb on the driver side of the supercharger.



163. Install the short OEM PCV loop hose between the valley cover barb and the adjacent passenger side lower barb on the supercharger inlet. Ensure both connectors “click” and engage.



164. Use the provided clip to secure the brake booster hose to the fuel line as shown.

165. Loosen the upper radiator hose clamp and twist the hose (clock) to rotate the hose a bit downward toward the center to gain necessary clearance between the throttle body and the radiator hose.

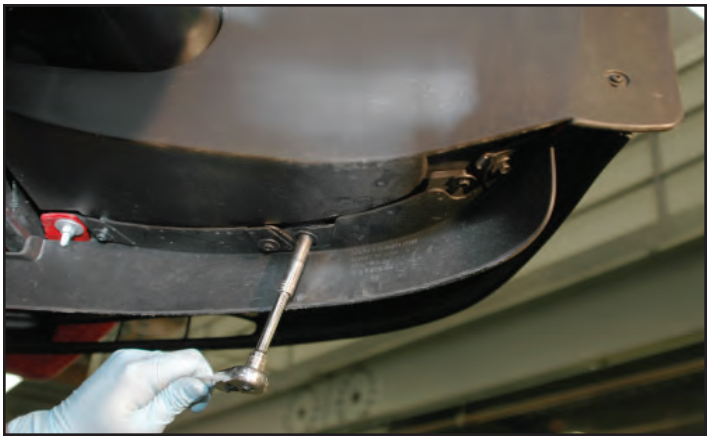
Section 11: Body Panel Removal

166. NOTE: If your vehicle has the brake cooling duct exiting toward the rear of the vehicle just after passing through the front splash panel (as shown in this picture), follow this and the next two 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 ahead three steps. Remove the eight Push-lock fasteners that secure the front splash panel as shown.

167. 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.

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

169. NOTE: For vehicles with brake cooling ducts bolted to the inside of the fender well (as shown in this picture) follow the next two steps. 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.



170. To remove the fender well splash panel, there are three 7mm bolts on the bottom surface, five T15 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.

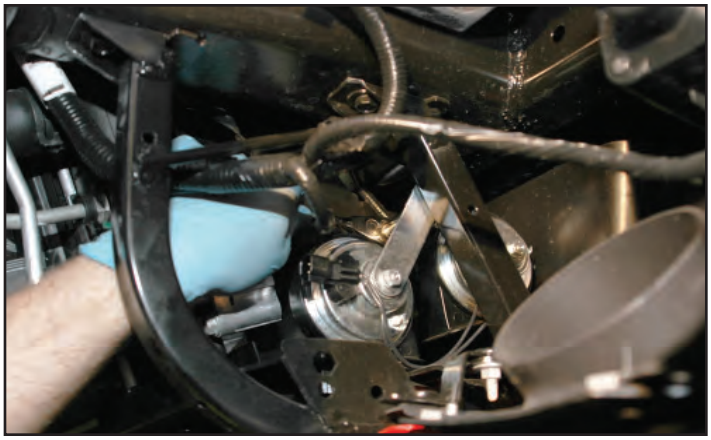
171. Remove the front wheel well splash panel from the vehicle and set aside to reinstall in a later step.

172. 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.

Section 12: Preparation and Install of Pump and Intercooler Plumbing

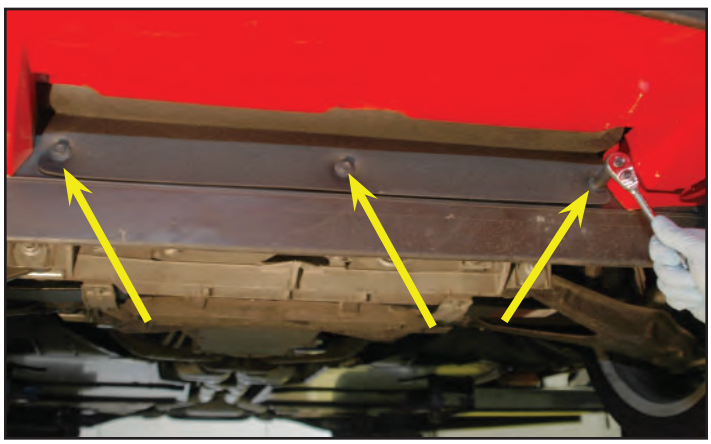
173. NOTE: All vehicles continue from here. Squeeze the electrical connector to unplug the horn assembly on the passenger side forward of the wheel well.

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

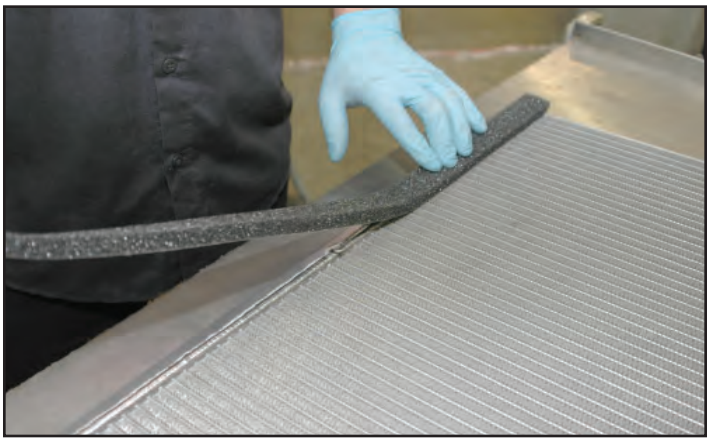


175. Remove the five 7mm bolts at the tail end of the nose fascia and set aside for later re-installation.

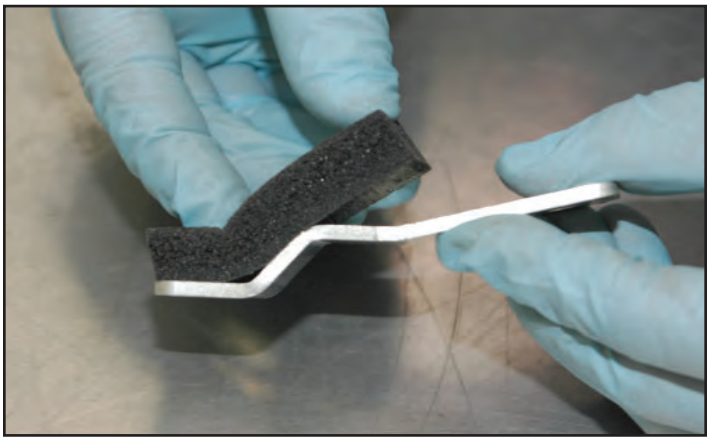
176. NOTE: If your vehicle has the soft rubber air deflector between the nose fascia and the front frame cross member; there will be three 10mm bolts attaching the rear edge of the air deflector to the frame cross member that need to be removed as well (as shown in this picture). Temporarily remove the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



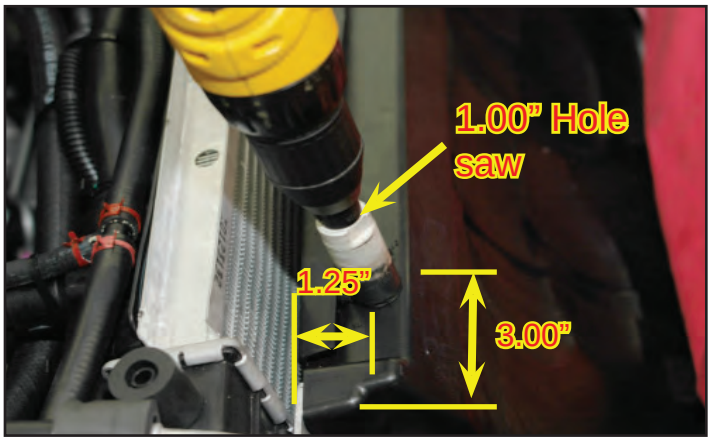
177. Start the Heat exchanger installation by applying the adhesive backed foam strip to the back side of the heat exchanger top and bottom tanks. The back side of the heat exchanger is the side without the two hose connections.



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



179. 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 cover is removed in this picture for clarity. Dimensions are to the hole centerline.

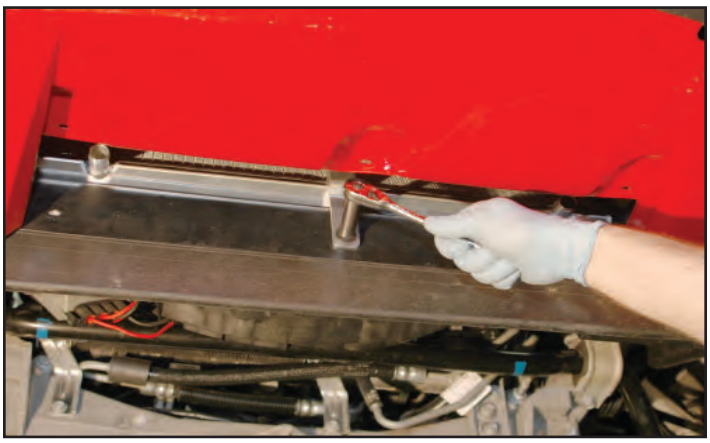


180. Install the heat exchanger by sliding it in front of the radiator. The heat exchanger will sit on the flat area immediately in front of radiator. The foam strips will be on the back side with the hose barbs on the bottom pointing forward.

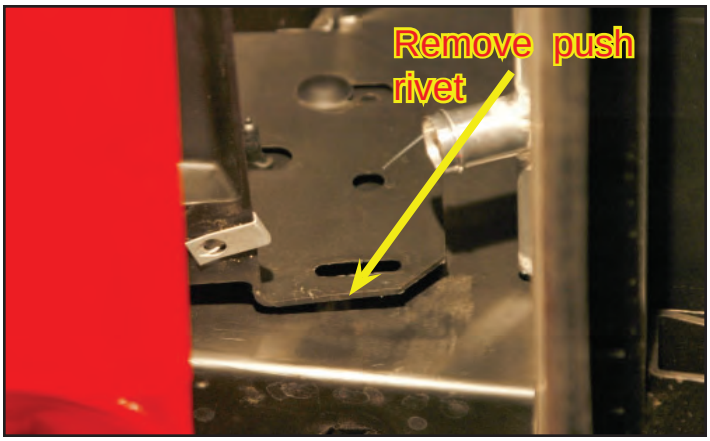
181. Move the heat exchanger around until the air-bleed valve appears in the newly created hole in the radiator shroud.

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

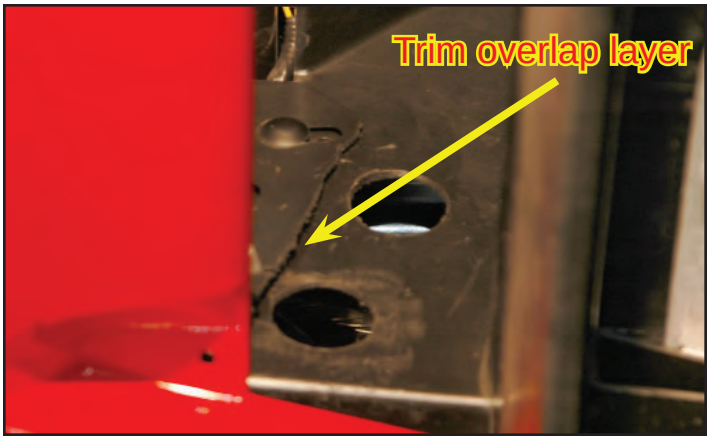
183. NOTE: If your vehicle had the soft rubber air deflector removed earlier, this will be done at a later moment. If not, install the Heat Exchanger retaining bracket with the bolt removed in the previous step. Ensure that the foam pad is contacting the lower tank of the heat exchanger and tighten the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



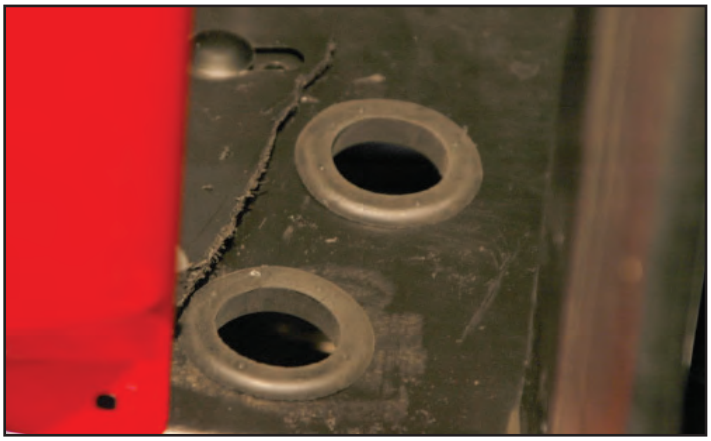
184. Using a 1-1/2” hole saw, create two holes in the passenger side splash panel one above the other. The lower hole will use the lower push rivet hole. Remove the rivet and create the first 1-1/2” hole. Place the second hole 1” above the first hole, and 1” away from the heat exchanger. Clean up the edges to avoid sharp surfaces.



185. Use some sheet metal shears or sharp blade (carefully) to remove the flap of the deflector without disturbing the upper push pin mount. We need some clearance for the next step.

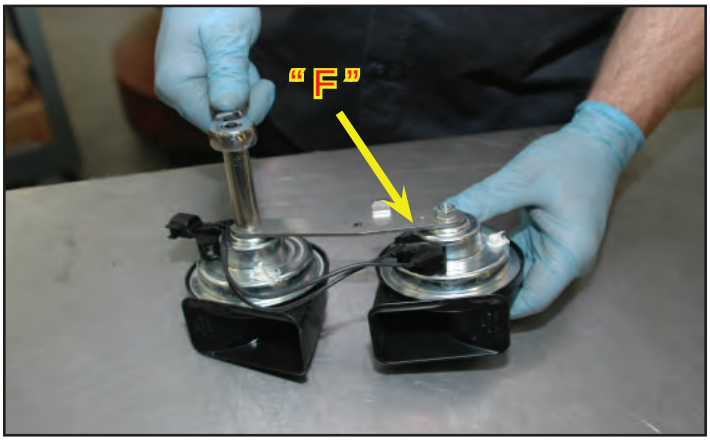


186. Insert the provided grommets into the two holes just created as a buffer between the deflectors and hoses to be installed later.

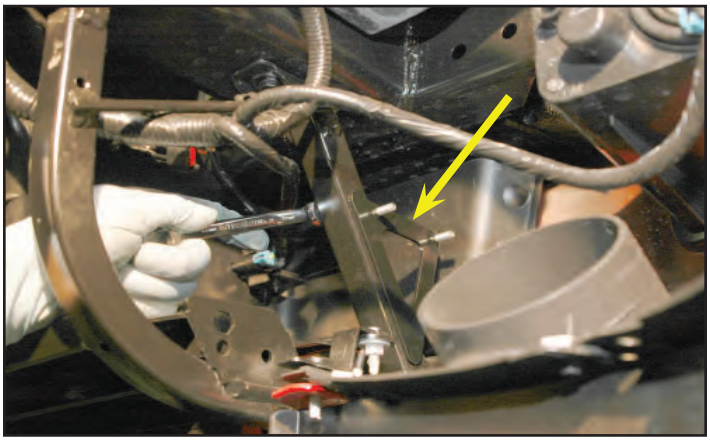


187. Remove the horns from the OEM mounting bracket using a 10mm wrench.

188. Mount the OEM horns to the provided horn mounting bracket using the stock orientation. NOTE: There is an “F” stamped in the new bracket indicating the “Front” horn.

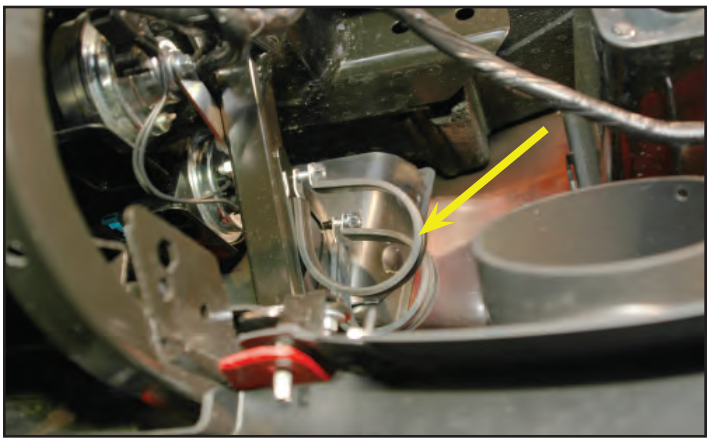


189. Slide the provided intercooler pump mounting bracket studs through the lower fascia frame bracing. Secure with the provided nuts on the back-side.

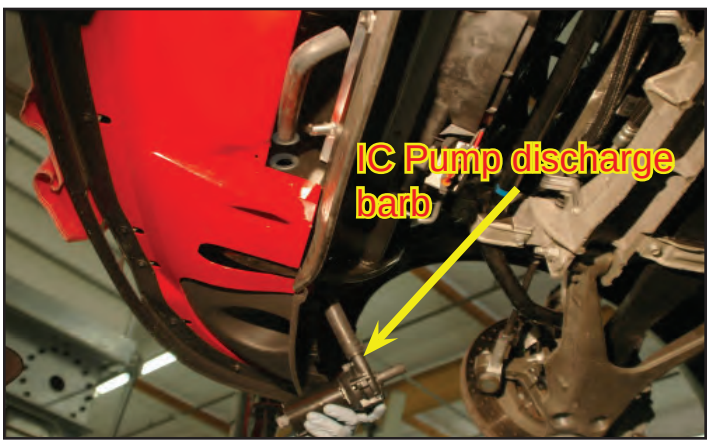


190. Reinstall the horn assembly in the OEM mounting location using the OEM hardware. Tighten firmly. Reconnect the harness wiring to the horns.

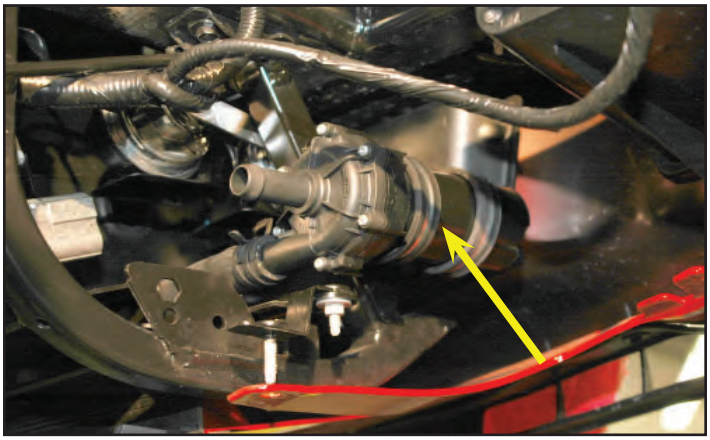
191. Mount the two provided Adel clamps to the mounting bracket studs very loosely just to start the nuts.



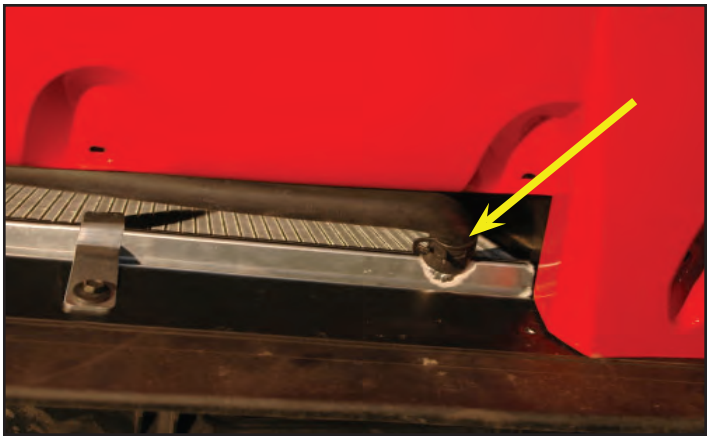
192. Prior to sliding the intercooler pump into the Adel clamps, push the long end of the bare provided 3” x 26-3/4”x 90° elbow hose through the upper hole you created six steps ago starting from the center and push toward the fender. Connect the straight end to the discharge hose barb on the pump. Secure in place with the provided spring clamp.



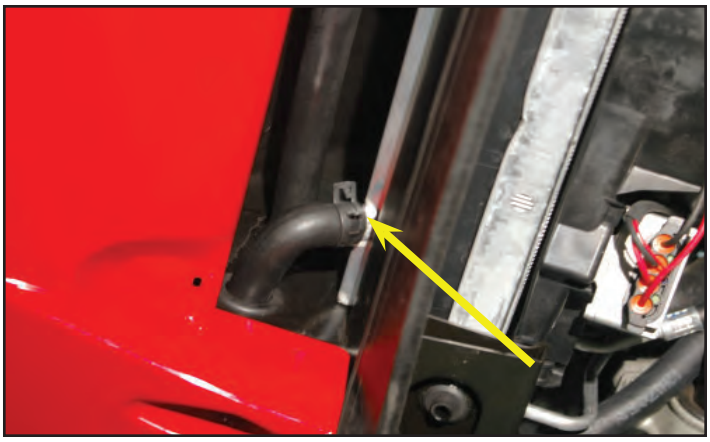
193. Now slide the pump into the Adel clamps, feeding the hose back through the hole in the passenger side splash panel. Tighten the Adel clamps.



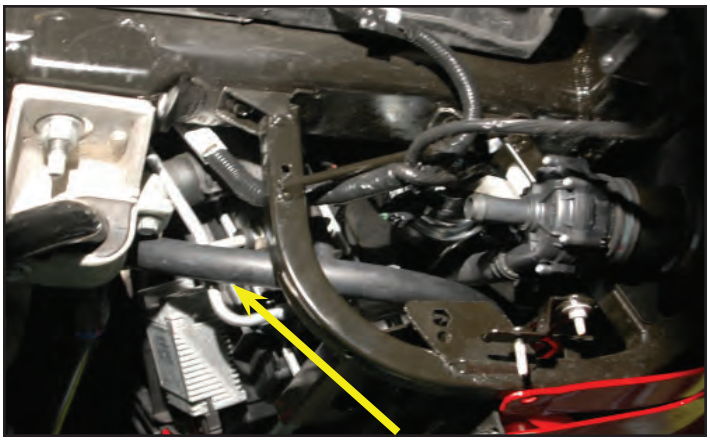
194. Connect the short end of the hose you just installed to the driver side hose barb on the heat exchanger, secure with a provided spring clamp.



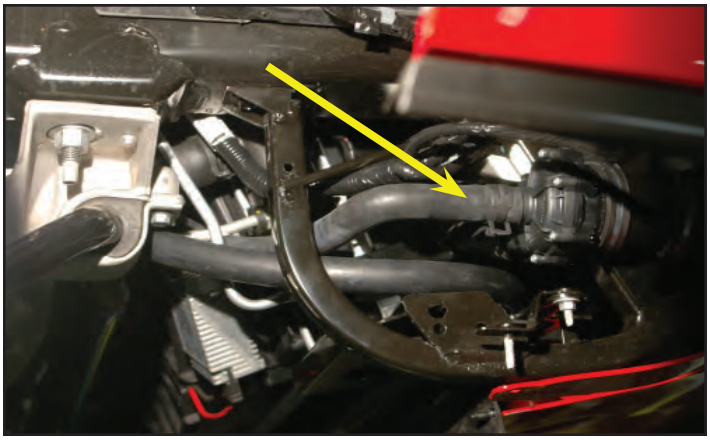
195. Push the short leg of the provided 3” x 60”x ¾” 90° elbow hose with the quick disconnect end through the remaining (lower) grommet hole by the pump. Lubricate the outside of this hose a bit to make it easier, and feed it from the horn side toward the heat exchanger in the front of the vehicle. Connect the short leg to the passenger side hose barb on the heat exchanger with a provided clamp.



196. Route this hose below the pump, behind the radiator and into the engine compartment.



197. Route the “Y” hose up (with the two hose split going up) and into the engine compartment as shown. Connect the single free end with the 90° elbow to the intercooler pump inlet hose barb with a provided clamp.

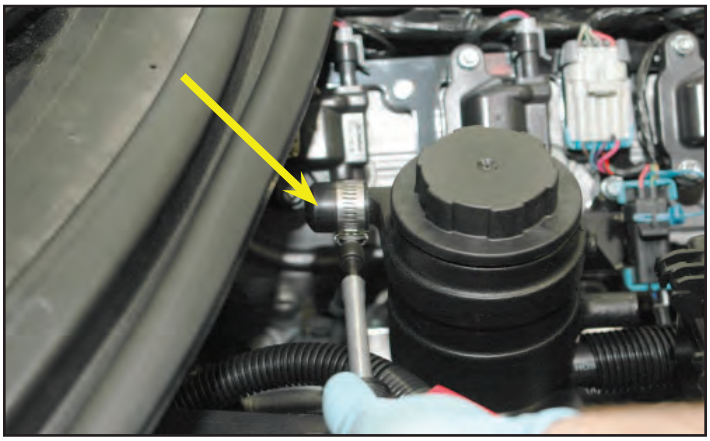


198. Connect the quick disconnect section of the “Y” hose just installed to the passenger side intercooler hard line hose barb. It will “click” into place.

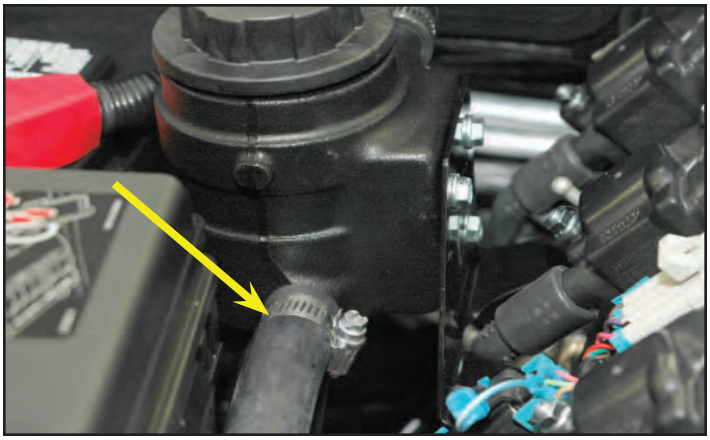
199. Connect the passenger side heat exchanger hose barb quick disconnect to the inside barb of the intercooler hard line. It will “click” into place.

200. Attach the intercooler reservoir to the mounted bracket using the supplied 10mm bolts, tighten firmly.

201. Install the supplied “cap” on the upper spigot with a provided worm gear clamp.



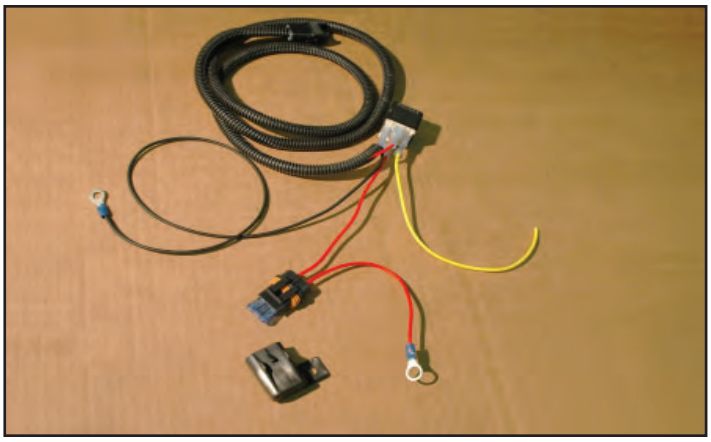
202. Connect the free end of the “Y” hose to the lower hose barb on the intercooler reservoir with a worm gear clamp. It’s important to use only worm gear clamps on the intercooler reservoir.



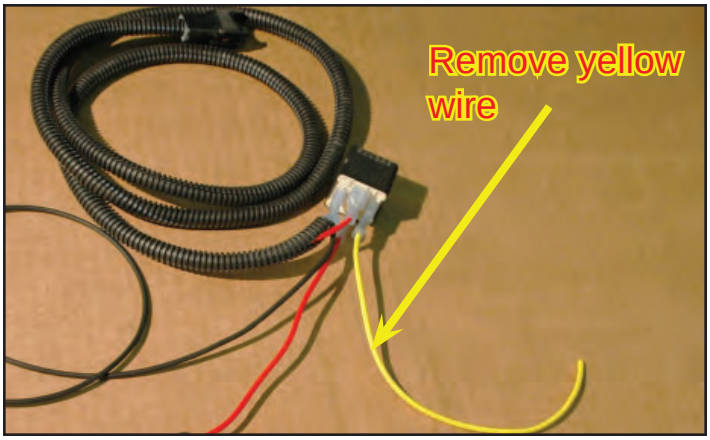
Section 13: Intercooler Wiring

203. Remove the forward upper hood latch bracket bolt on the passenger side adjacent to the fuse center. Replace the bolt incorporating the supplied intercooler relay mounting bracket.

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

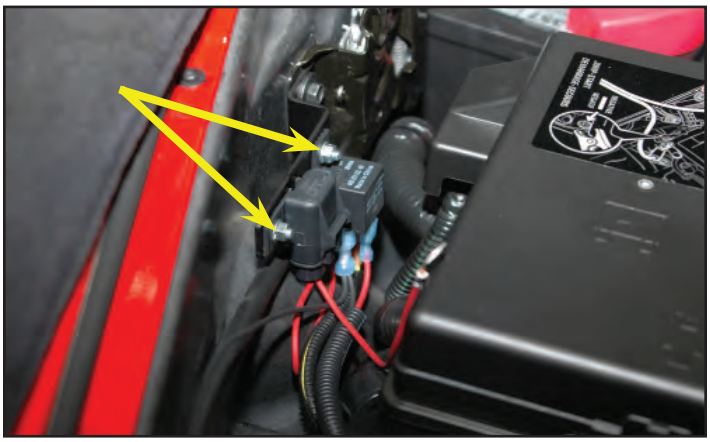


205. Remove the yellow wire from the relay of the intercooler pump harness.



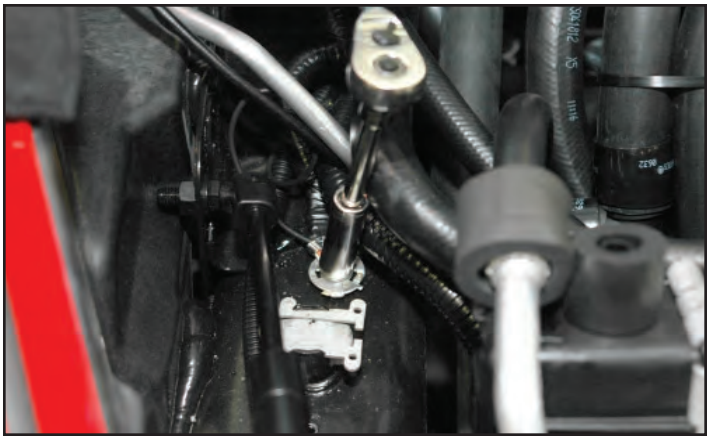
206. Route the remaining wire from the EVAP Solenoid harness installed at the end of section 6, under the fuse box over and up to connect to the post of the relay vacated by the yellow wire.

207. Mount the relay to the rear mounting stud of the relay bracket using the supplied nut. Mount the fuse holder to the remaining stud on the relay bracket with the provided nut.

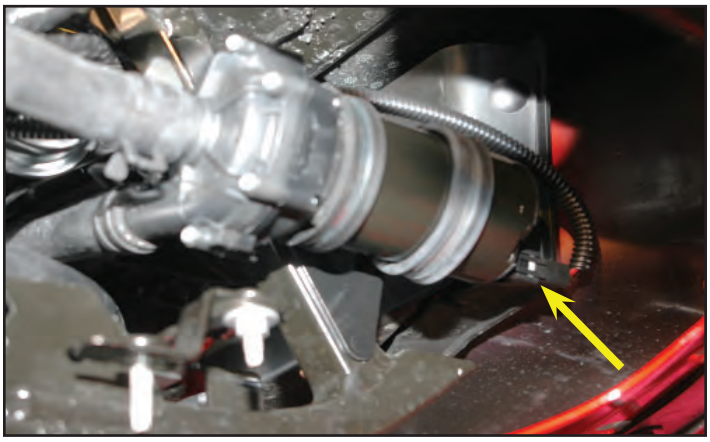


208. Use a 13mm wrench to remove the nut on the positive terminal and replace the nut incorporating the large “eye” terminal of the red wire from the fuse holder of the intercooler wiring harness and secure using the 13mm wrench. Cover the wire with the supplied split loom.

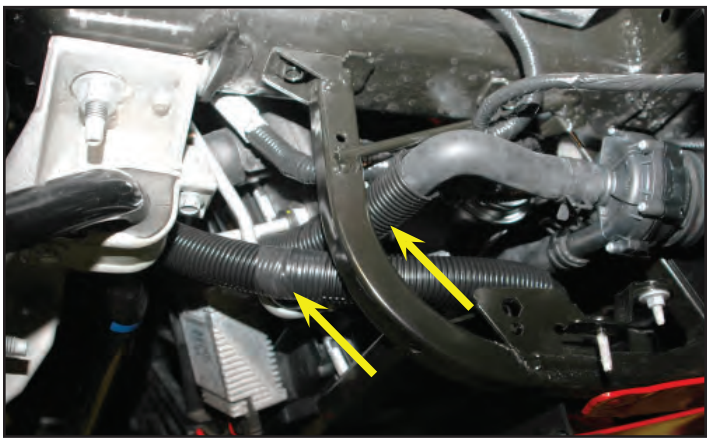
209. Route the black ground wire from the intercooler pump harness forward along the frame rail. Remove the nut from the ground post by the passenger side hood shock mount near the radiator using a 10mm wrench, replace the nut incorporating the black ground wire and tighten with a 10mm wrench.



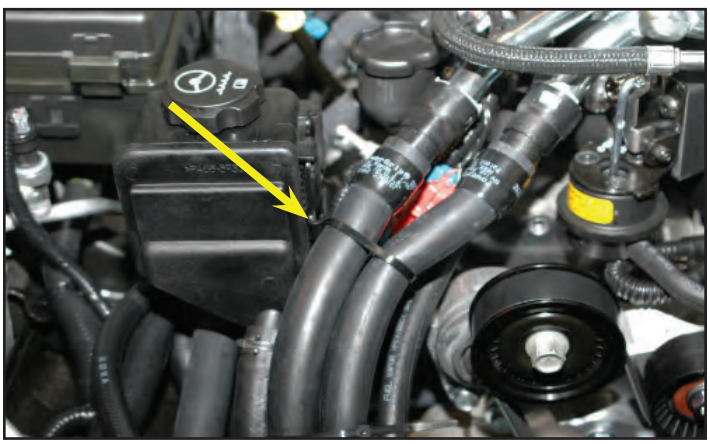
210. Route the plug end of the intercooler pump harness forward and down to the intercooler pump and connect to the terminal near the clamp on the forward end of the pump as shown. Secure the harness with provided zip ties along the way.



211. 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.

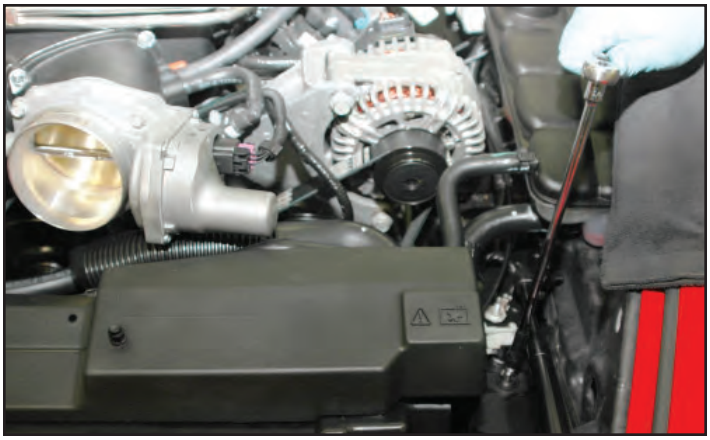


212. Use a provided zip-tie “tree” and insert in the power steering bracket tab. Loop around both intercooler hoses. Do not over-tighten, you do NOT want to pinch the hoses, just secure them from movement.

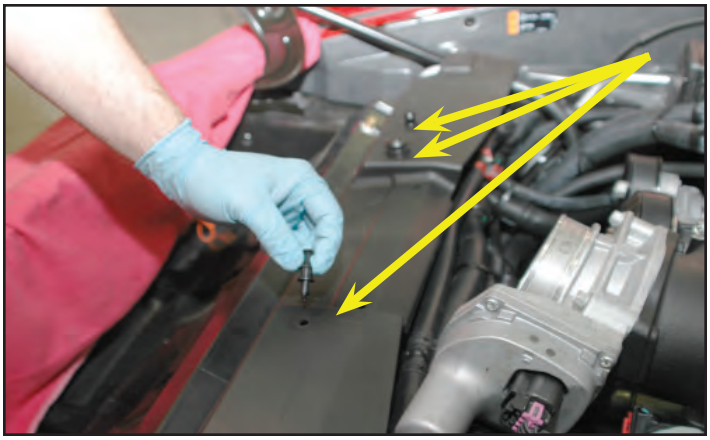


Section 14: Air Box Installation

213. Replace the radiator cover using the OEM hardware.

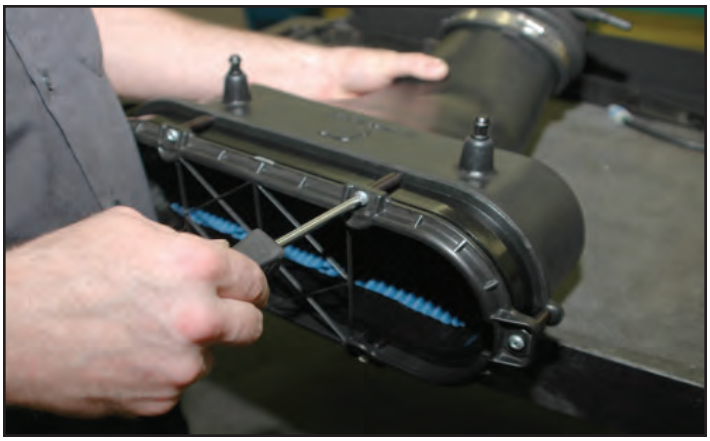


214. Remove the three grommet-post-push pin rivets from the radiator cover by prying the center “nail” up after pulling the grommets off.



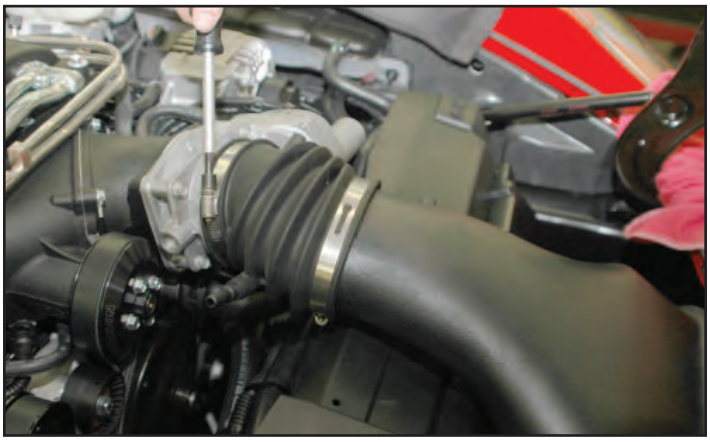
215. Place a strip of light colored tape on the driver side of the upper grooves in the splash shield/air deflector in front of the radiator/heat exchanger as shown.

216. Assemble the new air box using the provided “bellows” on the throttle body end, and the provided screws and spacers with the provided air filter on the intake end. The spacers go between the plastic air filter retainer and the air box. Where the bellows attaches to the air box, rotate the clamp so the screw is on the bottom. Tighten the clamp securing the bellows to the air box. NOTE: Trim off the un-necessary tab of the bellows with a sharp knife or pair of dykes.



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

218. Push the bellows and air box assembly onto the throttle body and loosely tighten the clamp.



219. 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.

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

221. Use a 5/8” drill with an assistant holding a backing board behind the splash shield/air deflector to drill the two holes you just marked. NOTE: 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.

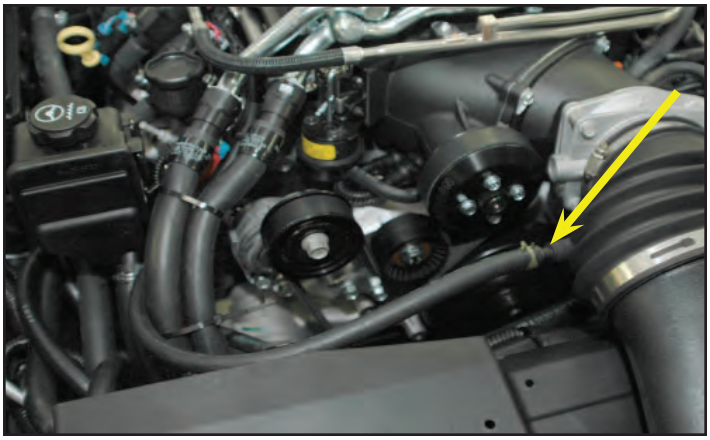
222. Insert two of the grommets you removed from the OE air box into the 5/8” holes you just drilled. NOTE: Sometimes the grommets will stick to the pin when you pull the air box up.

223. Attach the 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. Align the pins on the bottom of the air box with the grommets and press the air box down into the grommets anchoring the assembly in position.

Section 15: Finishing up Installation

224. Remove the MAF sensor from the OEM airbox and install in the driver side slot of the new airbox. Use the two provided black washers to space the MAF Sensor away from the air box.

225. Connect the remaining end of the fresh air hose from the passenger side valve cover to the hose barb on the passenger side of the bellows of the intake air box. Secure with the provided green spring clamp.

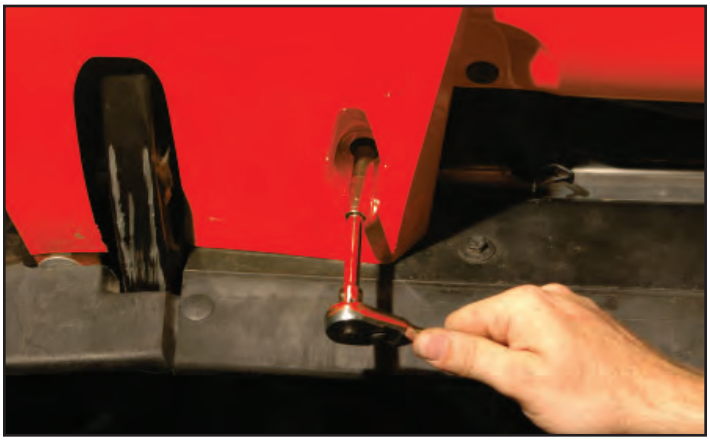


226. Connect the IAT/MAF extension harness to the factory harness connector. Route the IAT plug over to and connect to the IAT Sensor on the driver side of the supercharger assembly.

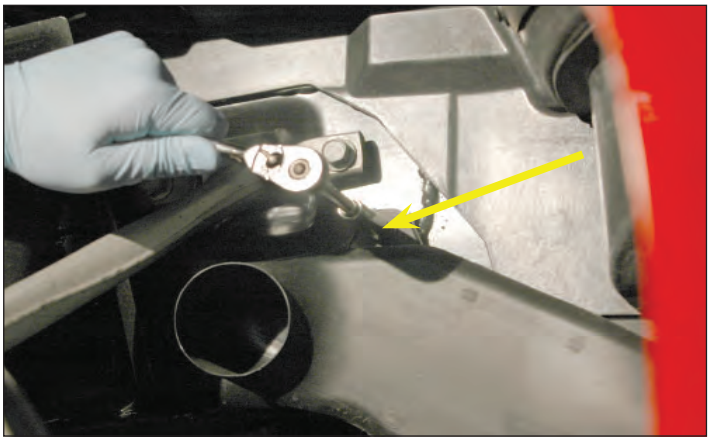
227. Connect the MAF plug extension to the MAF plug you installed earlier in the new air tube.

228. 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 this and the next step. For other vehicles, replace the brake duct and splash shield using all the stock hardware.

229. Reattach the spoiler and nose fascia sections using all the original hardware and locations. This includes push pin rivets and bolts.

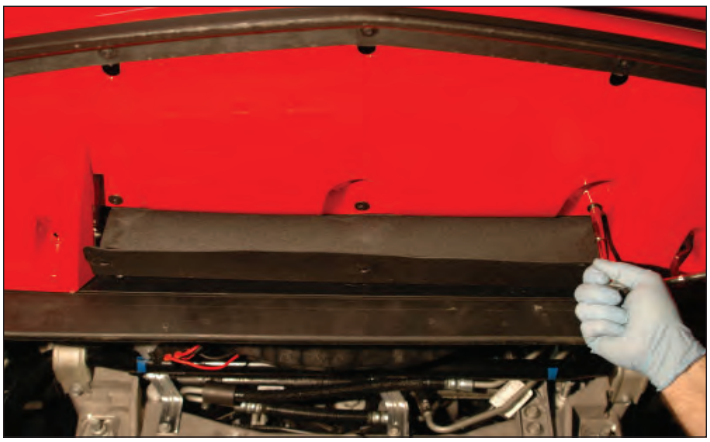


230. NOTE: If your brake cooling duct flattens and turns toward the inside of the wheel well, re-attach the inlet end using the OEM push rivet, and re-attach the discharge end back in its stock location with the OEM bolt.



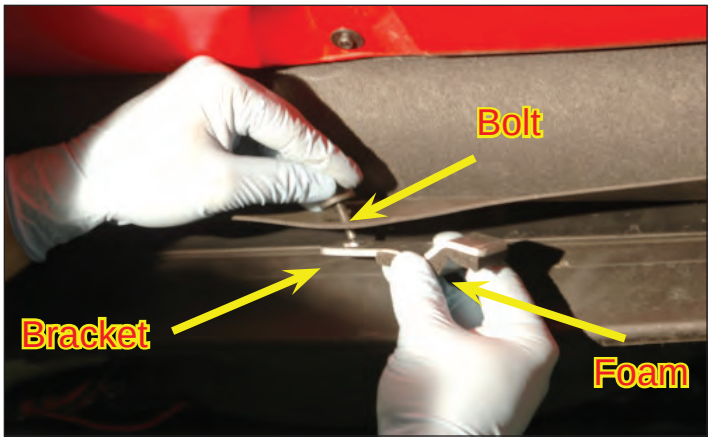
231. Re-attach the nose fascia and spoiler at the bottom using all the stock fasteners, tighten securely.

232. NOTE: For vehicles with the soft rubber air deflector follow the next four steps. If your nose fascia was attached earlier, skip these steps. Use the three stock 7mm bolts to secure the center nose fascia up to the sub-frame mounting locations, incorporating the soft rubber air deflector removed earlier as shown.

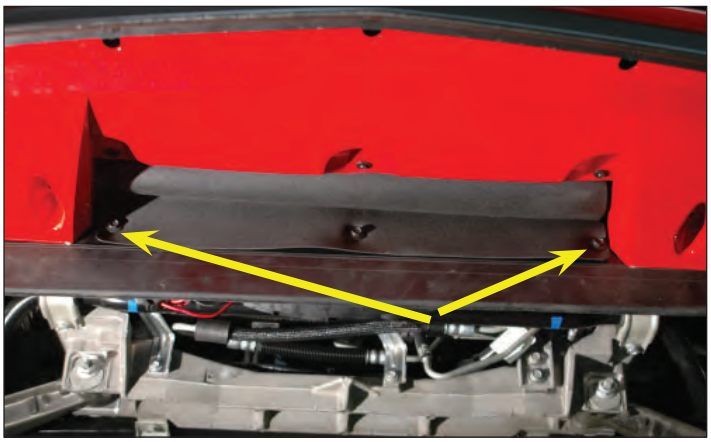


233. Re-attach the underside ends of the nose fascia as shown using the two outside 7mm bolts, tighten securely.

234. This shows the center spoiler mounting hole which will be the location of the heat exchanger mounting bracket. We will incorporate this bracket behind of the back side of the soft rubber air deflector. The foam is designed to press against the heat exchanger tank. Rotate the bracket up to the vertical position behind the soft rubber air deflector. Ensure that it remains vertical and engages the bottom of the heat exchanger and then tighten in place with one of the 10mm bolts removed earlier.



235. Use the remaining two 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.



236. Reinstall wheels and torque to manufacture's specifications.

237. Fill the radiator reservoir with the vehicle manufacturer recommended coolant mixture.

238. Fill the Intercooler System with the vehicle manufacturer recommended coolant mixture. Fill the reservoir until the fluid level comes to about one and a quarter inch from the top edge of the filler neck.

239. Fill the power steering reservoir with approved power steering fluid.

240. Using a straight blade screwdriver. Open the bleed valve to let any trapped air escape from 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 from the bleed valve by cracking open the valve for 5-10 seconds.

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

242. 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.

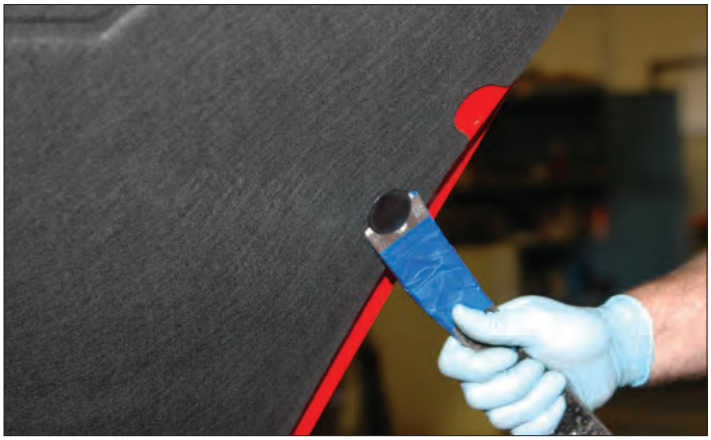
243. Reconnect the battery negative (-) terminal, tighten with 10mm wrench.

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

244. Have an assistant temporarily key the vehicle on to turn the pump on. **Do not start the engine!** Key vehicle off after 5 seconds. Fill reservoir full again and continue this process until fluid is circulating. Fill the reservoir to the top of the upper barb. At this time check engine and supercharger for any leaks.

245. Re-install the OEM hood using the original hardware and tighten securely in place. NOTE: You will most likely need to adjust the alignment. To aid in alignment, try to align the washers with their original wear marks on the hood.

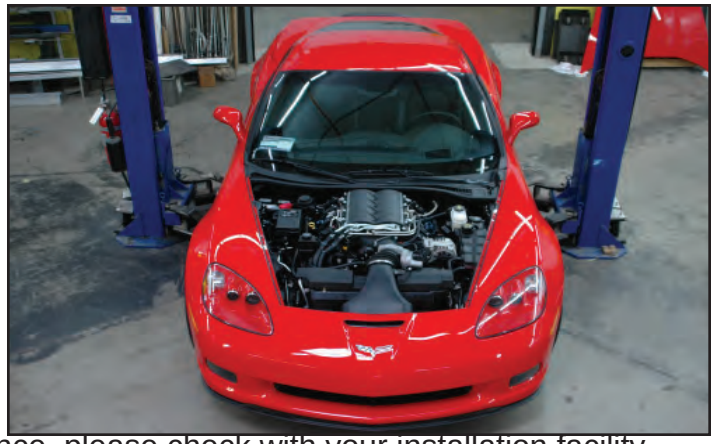
246. Carefully remove the factory hood insulation mat using flatbar or flathead screwdriver to pry the push pins out.



247. 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. Continue to bleed air from the intercooler using the bleed screw, and refill the reservoir as needed.

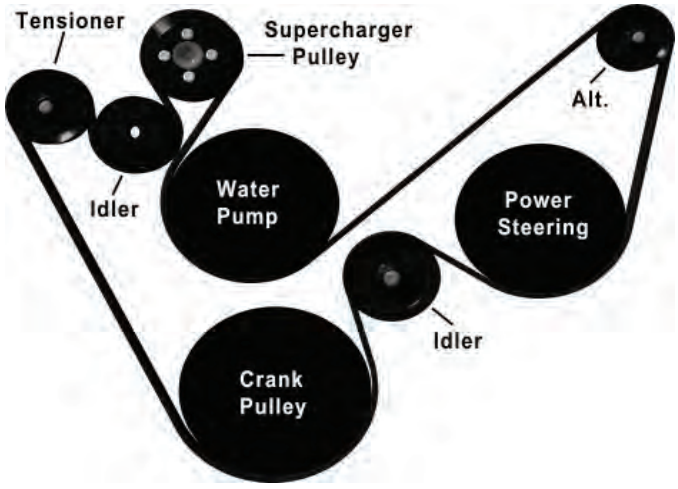
248. Test drive vehicle for the first few miles under normal driving conditions (Do not perform any wide open throttle runs), listen for any noises, vibrations, engine misfire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal. 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.

249. 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 gasoline fuel (91 octane or better) must be used! It is NOT compatible with E85.**

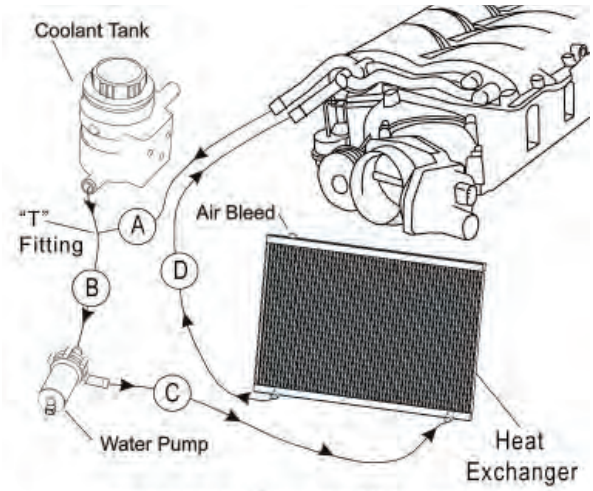


After you finish your installation and road test your vehicle, please fill out the warranty registration. This can be found on our website.

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



Drive Belt Routing Diagram



Intercooler Routing Diagram
C6 Corvette Heartbeat

NOTE: YOU MUST USE GM A SPECIFIED COOLANT MIXTURE.

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, or Flex Fuels.

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

Please enjoy your “Magna Charged”
performance responsibly!

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SUPERCHARGERS