

MAGNUSON

SUPERCHARGERS

Installation Instructions for:
INTERCOOLED SUPERCHARGER SYSTEM
2008-2010 Challenger and
2006-2010 Charger 6.1 Liter HEMI



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

*** PREMIUM GASOLINE FUEL REQUIRED ***



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

Magnuson Superchargers
1990 Knoll Drive, Bldg A, Ventura, CA. 93003
(805) 642-8833
magnusonsuperchargers.com

INSTALLATION MANUAL

Magnuson Superchargers Dodge 6.1L HEMI Engine 2009+ Charger/Challenger

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

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

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

Magnuson Superchargers recommend that you run a minimum of one (1) tank of premium fuel through your vehicle prior to installation of the system to prevent any possible damage that may occur due to running the supercharged engine on lower octane fuel. **DO NOT add octane booster to your vehicle.**

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

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

A new fuel filter is recommended at the time of supercharger installation
Stock spark plugs and stock plug gap is recommended
Drive belt = Dayco# 5060990

Tools Required:

Metric wrench set
¼" - 3/8" and ½" drive metric socket set (Standard & Deep)
3/8" and ½" drive Foot pound and inch pound torque wrenches
Phillips and flat head screwdrivers
Fuel line quick disconnect tools (included in kit)
Small or angled 3/8" drill motor
Drain pan
Hose cutters
Hose clamp pliers
Safety glasses
Metric Allen socket set 3/8" drive
Shop vacuum cleaner
Blue Loctite 242
Right Angle drill for pinning crank pulley.

Helpful Tool: Air or electric impact wrench.

Contact information:

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Website: www.magnusonsuperchargers.com
Email: sales@magnusonsuperchargers.com

Dodge Charger/Challenger Hemi 6.1 Liter Instructions.

NOTE: These photos were taken on a Dodge Challenger. The Dodge Charger kit is identical to the Challenger kit. The only variance is in the body panels. We know this after doing an install on a 5.7L Dodge Charger. Take note if you're installing on a Charger that some body connections may not be the same as shown in these instructions. The intent is the same.

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 a minimum 91 Octane gasoline fuel. This system is **NOT** compatible with E85 fuel.



4. In the trunk of the vehicle, below the lift up panel is the vehicle battery. Disconnect the battery negative (-) cable at the terminal using a 10mm wrench and set it aside where it will not accidentally make connection with the battery post. Insulate the connections with a shop towel or electrical tape.



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



6. Remove the splash shields below and behind the nose fascia. There are two main components, with nine plastic push pin rivets, four 10mm bolts, and seven 7mm bolts holding these components to each other and the framework. Start by removing the push pin rivets by prying out on the center spreader and then pull the rivets free. Now remove the two 10mm bolts joining the two main components together. Next remove the two rear 10mm bolts from the back splash shield.



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



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



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



10. Open the drain valve on the bottom passenger side of the radiator. Collect the drained fluid in a clean pan and set aside for later re-use.



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



12. Remove the plastic HEMI coil covers by pulling up gently. Set them aside for future usage.



13. Unplug the IAT from the intake air tube.



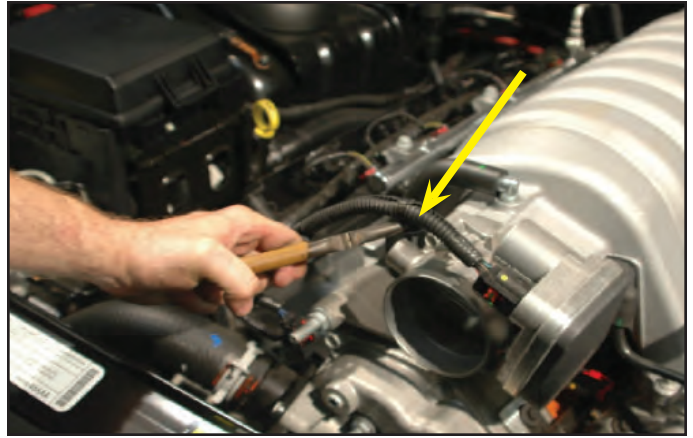
14. Remove the two clamps on the intake air tube using an 8mm wrench.



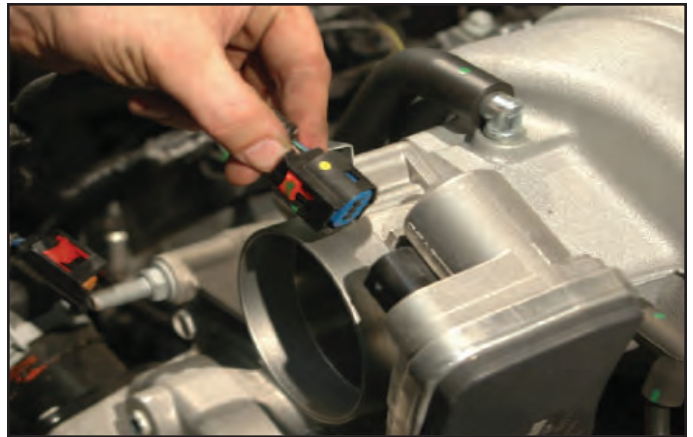
15. Remove the intake air tube from the vehicle, set aside for some parts that will be reused later.



16. Wiggle the push clamp from the throttle body mount carefully.



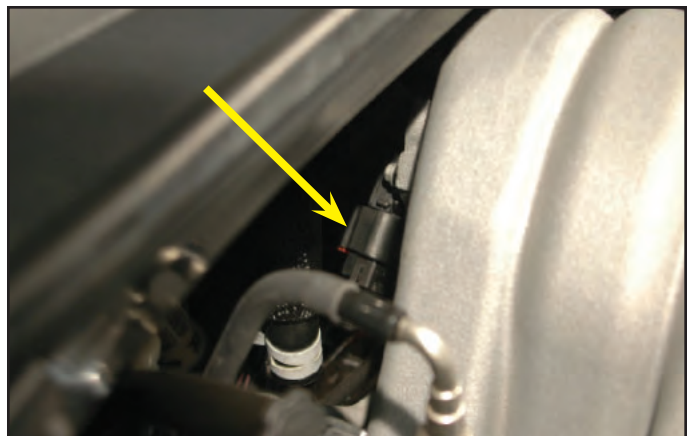
17. Unplug the Electronic Throttle Control (ETC) from the throttle body.



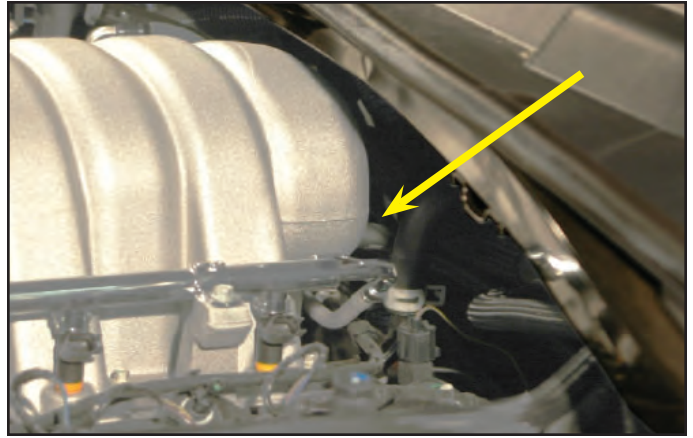
18. Unplug the eight fuel injector connections.



19. On the very back of the OEM intake manifold is the MAP sensor. Disconnect this plug.



20. Also on the back of the OEM intake manifold, below where the MAP sensor was plugged in is the brake booster hose. Pull this hose free from the intake manifold. This can alternately be disconnected from the brake booster and snaked out with the intake manifold, or you can cut the hose if you have difficulty. The hose will not be reused but we will be utilizing the valve.



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



22. Remove the EVAP line from the intake manifold behind the throttle body on the driver side.



23. **CAUTION: Fuel line may hold residual pressure. Wear protective glasses to protect your eyes. Use shop towels to capture any residual fuel and dispose of properly.** Remove the fuel line from the fuel manifold on the passenger side. Use the provided plastic fuel line removal tool. First push the fuel line further onto the fuel manifold barb, then press the tool into the fitting to spread the locking ring, pull the fuel line free.



24. Remove the ten 8mm bolts holding the intake manifold to the heads.



25. With the help of an assistant, carefully lift the OEM intake assembly from the vehicle.



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



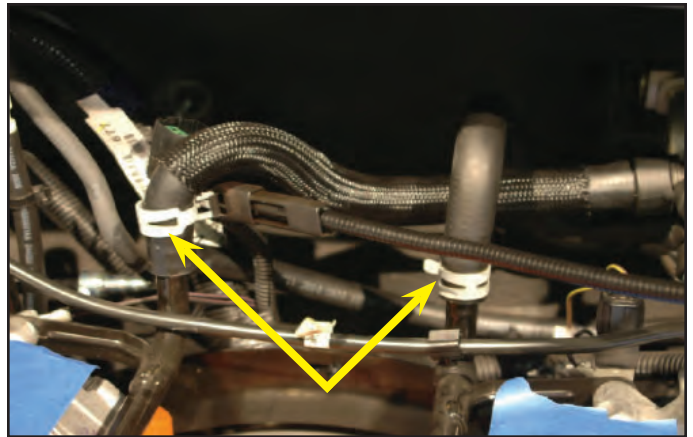
27. Wipe the port surfaces clean using a shop rag and alcohol (lacquer thinner, acetone or some other non-petroleum based solvent).



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



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



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



31. Unclip the EVAP line clip anchoring the EVAP tube to the hard line on the driver side.



32. Remove the 10mm nut holding the ground sensor to the driver side heater hard line mounting bracket stud at the rear of the head.



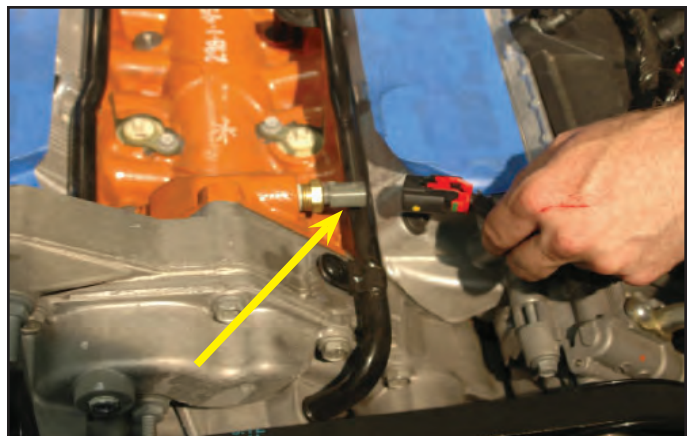
33. Remove the 10mm nut-stud extension mounting the driver side hard line bracket to the head.



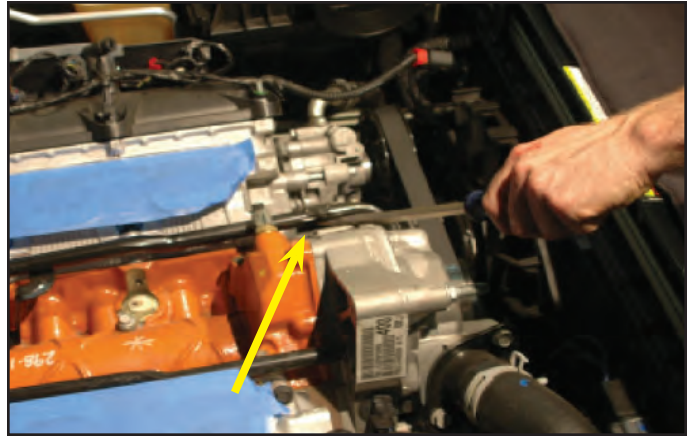
34. There are two additional 10mm bolts holding the driver side hard line to the block and the water pump. Remove these two bolts using a 10mm wrench.



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



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



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



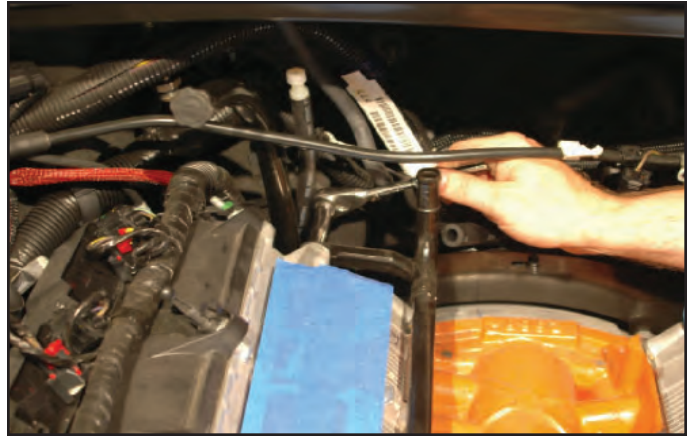
38. Reconnect the temperature sensor plug removed earlier.



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



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



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



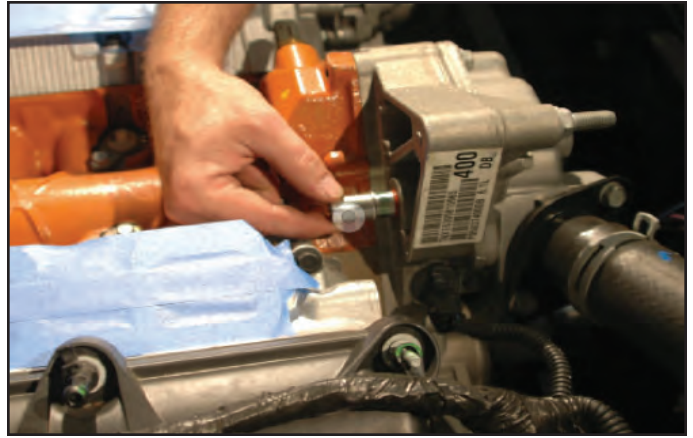
42. Cut the existing hose that went to the passenger side hard line after the "T" fitting leaving about 5-1/2" of hose after the fitting.



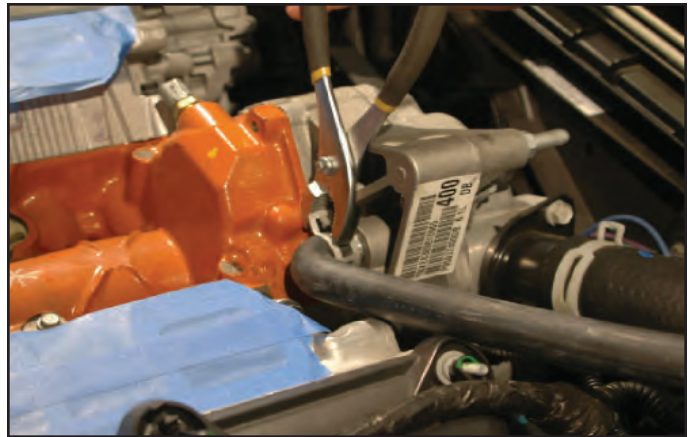
43. Put a generous amount of the supplied green Loctite 680 on the supplied water heater barb.



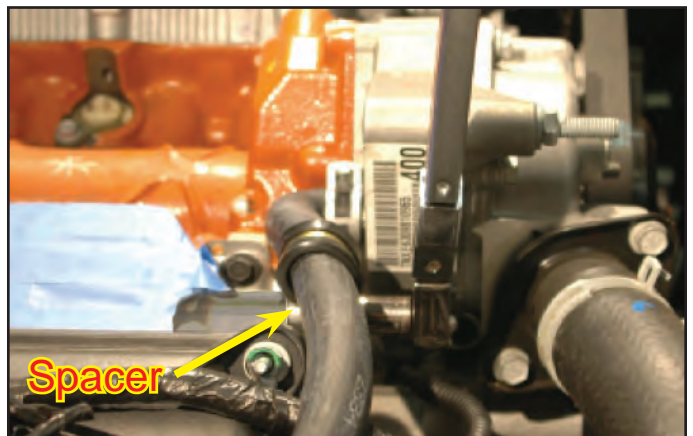
44. Press one prepared barb into the hole vacated by the passenger side hard line. Do not use any grease or lubricant on the O-ring as this will compromise the effect of the green Loctite 680. Allow the Loctite on the barb to cure before disturbing.



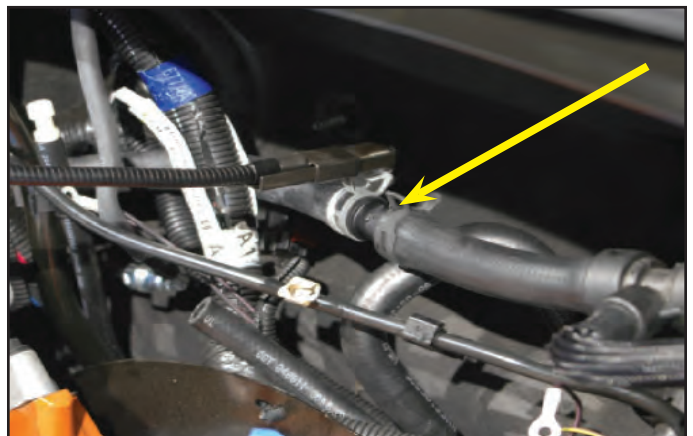
45. Cut 3" off the short end of the supplied 4" x 48" x 5/8" 90° elbow hose and attach the short end to the barb just installed using the supplied spring clamp.



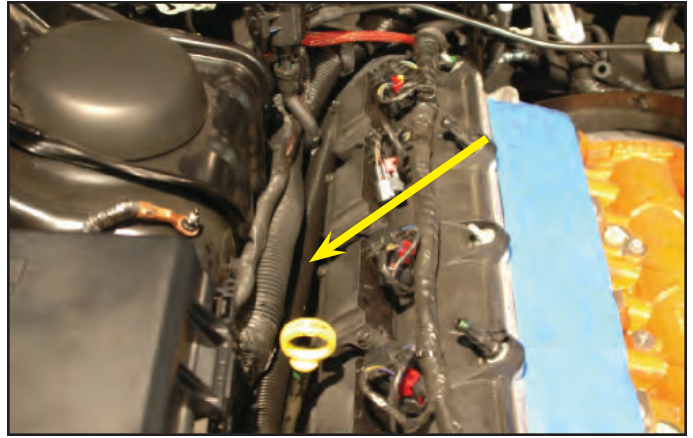
46. Use the supplied spacer, Adel clamp, and 12mm bolt to mount the hose to the bolt hole at the front of the passenger side head as shown. Torque the bolt to 20 ft-lbs.



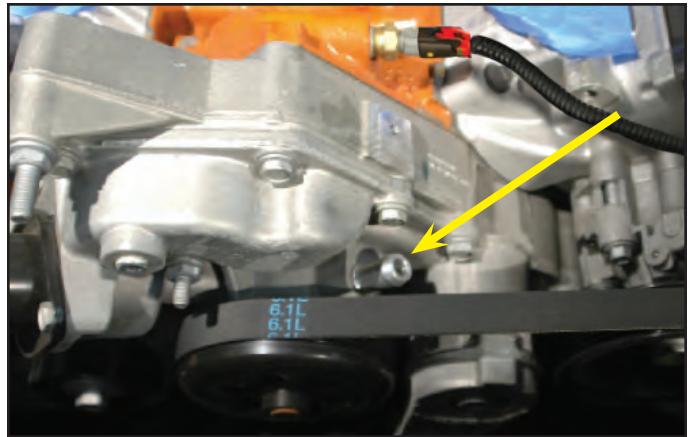
47. Route the hose back on the passenger side, around the oil dip-stick along and below the coil packs to the back of the engine compartment. This hose will join to the 3/4" hose you altered that originally went to the hard line going to the passenger side of the water pump below the OEM intake manifold. Trim the new hose to fit and use the supplied 5/8" to 3/4" coupling (hose mender), with the 3/4" end on the OEM hose, secure the hose with the supplied spring clamps.



48. Use the provided split loom to buffer the hose from potential chaffing on adjacent surfaces.



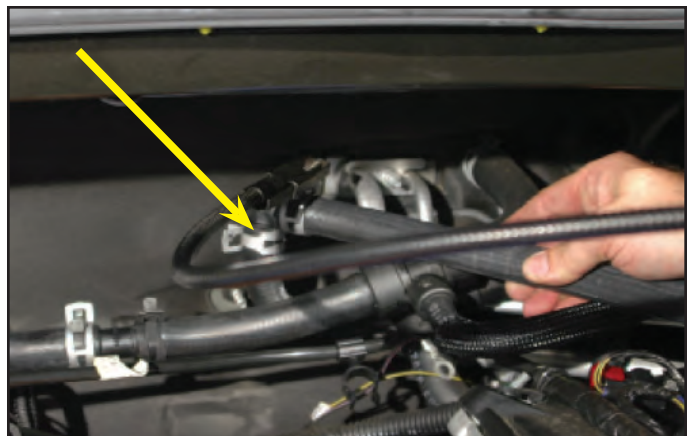
49. Put a generous bead of the supplied green Loctite 680 on the other water pump hose barb and press it into the hole vacated by the driver side hard line earlier. Again, do not use any lubricant on the O-ring which could compromise the set of the Loctite. Allow the Loctite on the barb to cure before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



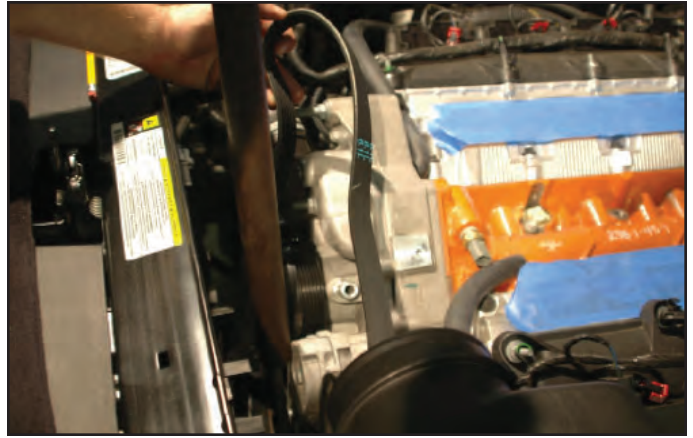
50. Cut the heater hose that went to the hard line on the driver side below the OEM manifold after the first 90° bend beyond the "T" fitting leaving about 3" of hose beyond the angle (as measured on the outside of the curve).



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



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



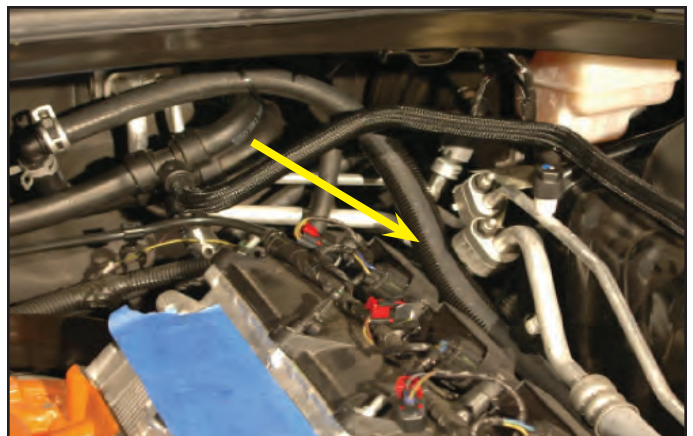
53. Route the hose forward on the driver side along and below the coil packs, under the intake air filter box and over to the driver side barb you installed on the water pump. If necessary, cut the hose to fit and secure to the hose barb using the supplied spring clamp.



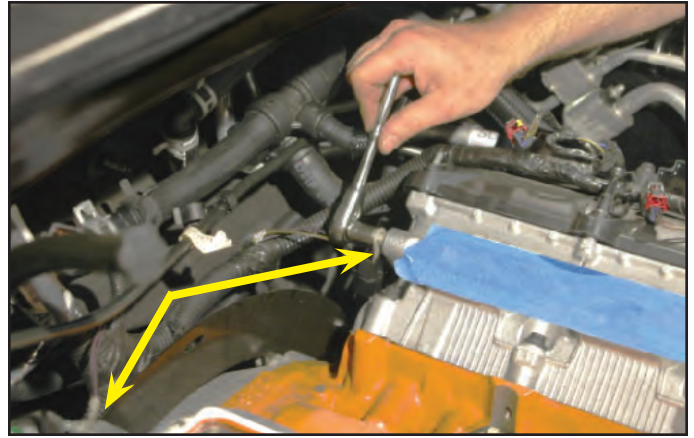
54. Use the provided spacer, Adel clamp, and bolt to anchor the heater hose to the bolt hole on the front of the driver side head. Torque the bolt to 20 ft-lbs.



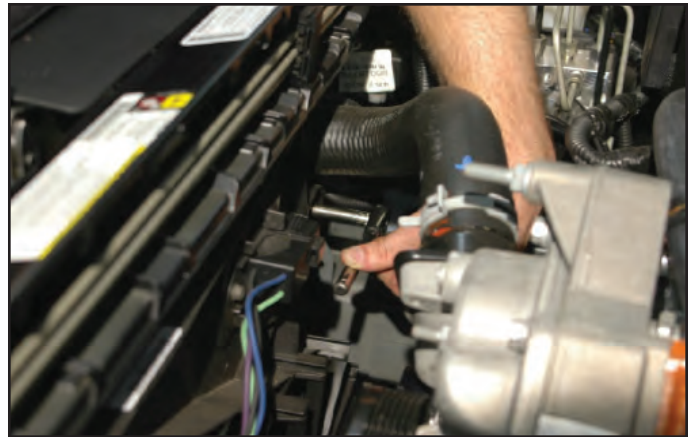
55. Use the provided split loom and zip ties to protect the driver side heater hose from any potential chaffing points (as you did with the passenger side heater hose), and loosely zip tie the new heater hoses to available adjacent hoses or convenient locations to anchor their movement. Do not over tighten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



56. Use the stock studs and nuts that held the hard lines to the back of the heads to replace the OEM grounds in their original locations (sans the hard line mounting brackets you removed earlier). The driver side Ground sensor needs to be rotated so it is pointing down or horizontally to not conflict with the supercharger installation later. Ensure that it is not making contact with any surfaces and tighten in the rotated position.



57. We're going to jump to pinning the crank here while there is extra room on the top of the engine. Remove the two mounting 8mm bolts near the top on each side of the fan shroud assembly.



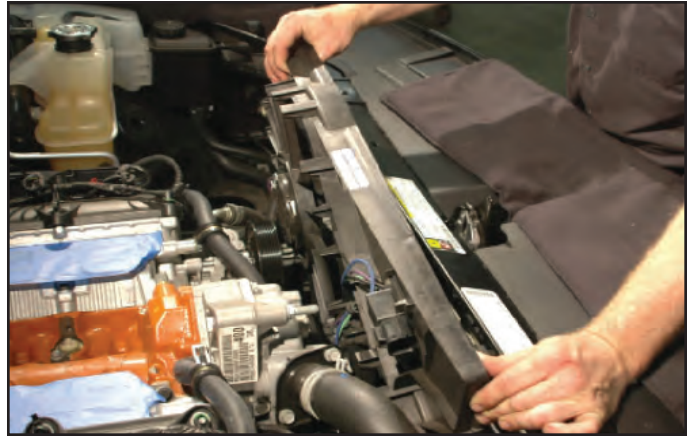
58. Disconnect the fan electrical power connection on the passenger side of the fan shroud assembly.



59. Remove the 10mm bolt from the air box mount on the driver side front of the engine compartment and pull the air box assembly out of the vehicle for later reinstall.



60. Remove the fan shroud assembly from the vehicle by carefully pulling the unit up and out for reinstallation later. You can get some more room by removing the upper radiator hose, or you can alternately pull the shroud from the vehicle from the bottom.



61. Use a 21mm wrench to remove the crank harmonic balancer pulley bolt. Set aside for later use. We found that a large flathead screwdriver can be used through the holes of the pulley can anchor the pulley from spinning when inserted through and onto either side of the block against existing adjacent bolts. These locations can be used again later for tightening and torque purposes.



62. Install the crank pin drill guide with the provided bolt and a 22mm wrench. It's convenient to align the two holes for the crank pins in the drill guide horizontally for ease of access.

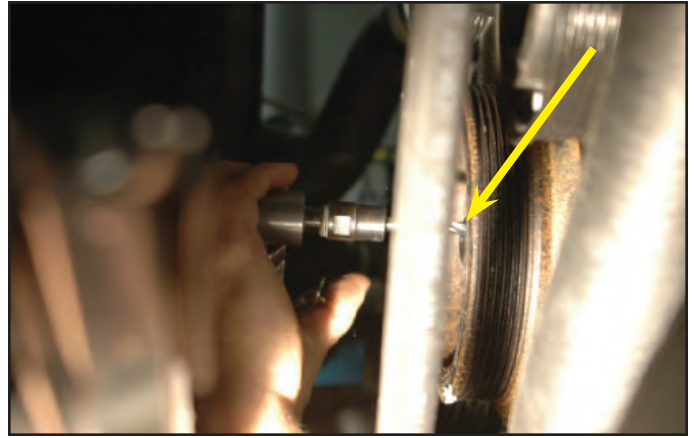


63. Torque the temporary bolt holding the drill guide to 40 ft-lbs.



Use safety glasses to protect your eyes while performing the next 5 steps of drilling and using compressed air.

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



65. Blow out the holes using compressed air watching out for your eyes..



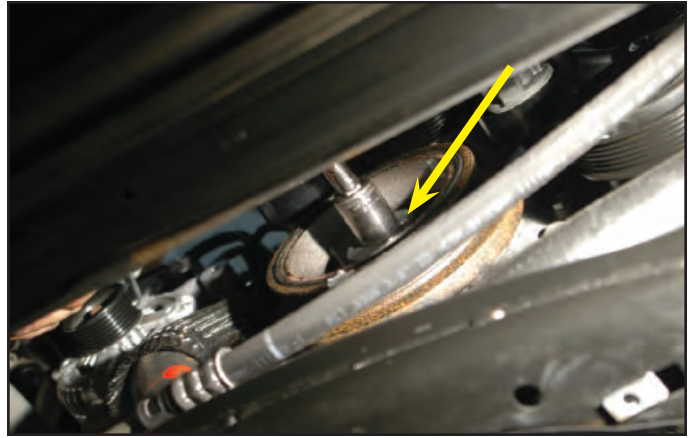
66. Install the provided reaming bit into the drill motor and ream the holes you just made out.



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



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



69. These are the two crank pins.



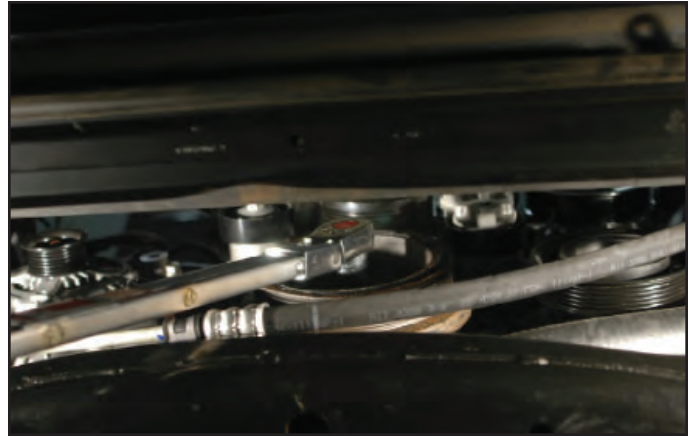
70. Put a generous bead of green Loctite 680 on the pins and press one into each of the two holes you just prepared.



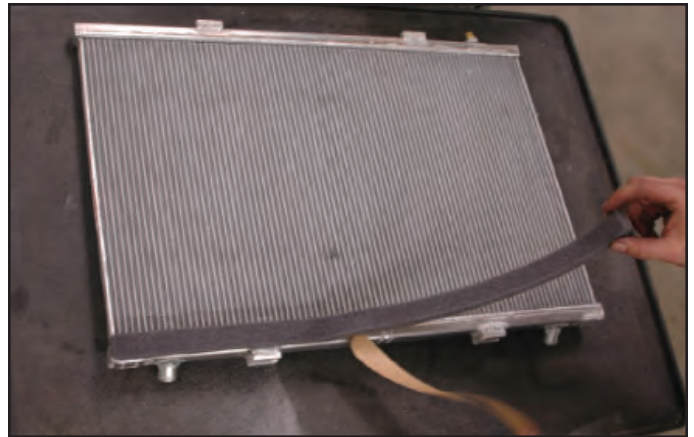
71. Use a hammer and drift-pin or nail-set to tap the crank pins in completely. Ensure that they are in completely, and will not touch the surface of the crank bolt directly when installed.



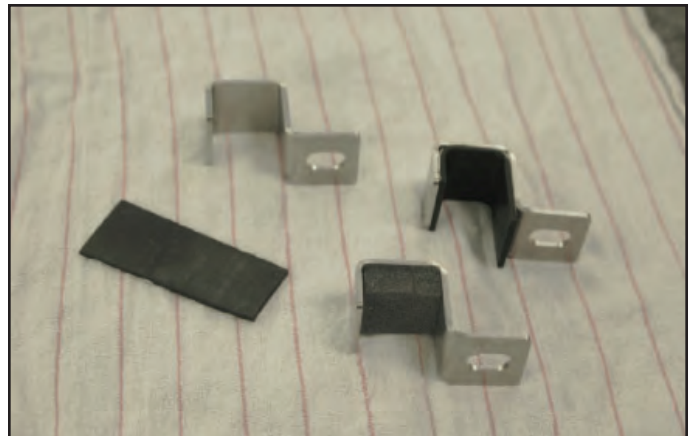
72. Re-install the removed OEM crank bolt and torque to 129 ft-lbs. Verify your torque wrench settings. We fabricated a tool to hold the crank while torquing the bolt. **Should you wish, you can wait until the supercharger assembly is together and the belt installed and under tension at which point you can use a wrench on the supercharger pulley bolt to anchor the harmonic balancer pulley. Just don't forget it!**



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



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



75. Insert two of the supplied carriage bolts in the slots on the top of the heat exchanger for attaching the mounting hooks.

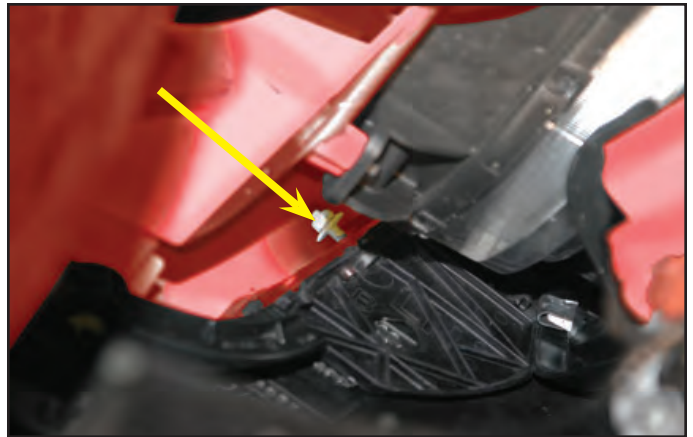


76. Pull up on the two halves of the radiator cover to unsnap them from their mounting holes and set aside for the moment.

NOTE: If your vehicle has the Power Steering cooler in front of the AC condenser, it is necessary to remove the fascia. With or without the PS cooler, this removal will facilitate install, however if you do not have it, you can skip to step #101.



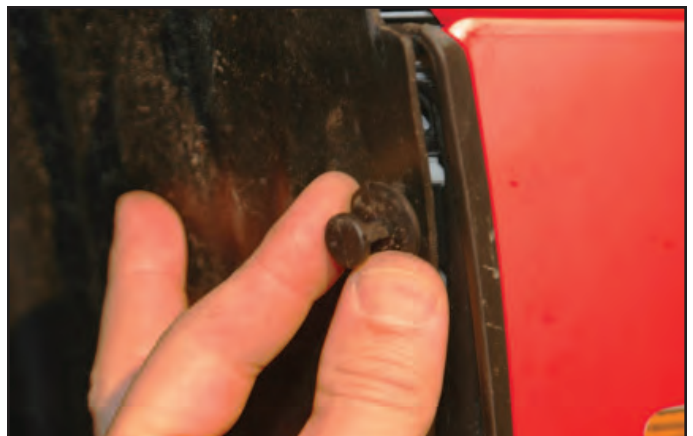
77. There are four studs and nuts and two bolts attaching the nose fascia to the fender assembly that need to be removed first. From below the vehicle, right where the fender flange makes a bend upward, adjacent to the outside edge of the headlight assembly, there is a stud nut attaching the two pieces together. Use a 10mm wrench to loosen the nut on both the passenger and driver side (shown here). Once loosened, it can be removed by hand. Set the nut / washer aside for later re-installation.



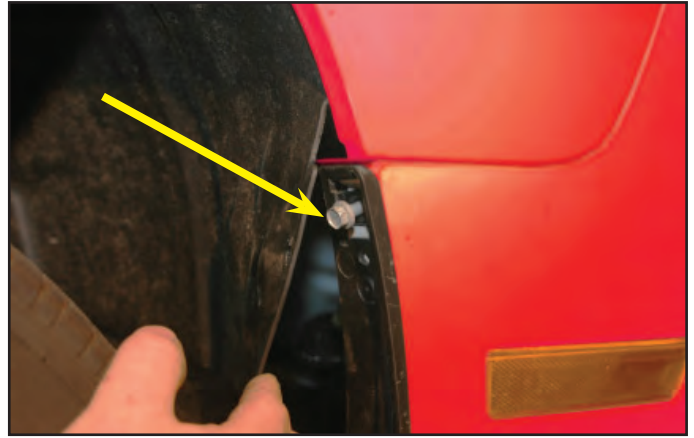
78. While you are below the vehicle, on the passenger side there is a main harness connector that spreads down to connect to the fog lights, corner markers, etc. Disconnect the plug tying the harness to the harness of the fascia/grille.



79. Remove the forward 3 push-pin rivets holding the wheel well shroud to the fender on each side of the vehicle by prying out the center pin and then pull the push rivets out.
NOTE: Some vehicles will have one-time rivets (without the center spreader pin). If these get damaged in the removal, use the provided push-pin rivets at re-installation.



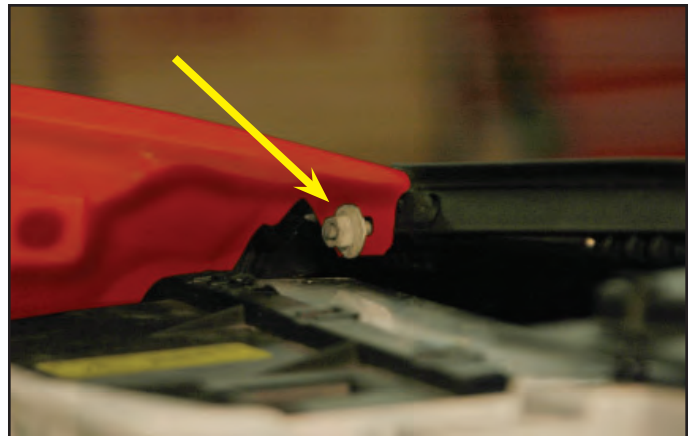
80. Once the rivets are out, pull back on the wheel well shroud to expose the bolt by the junction of the fender and the fascia and use a 10 mm wrench to remove the bolt on each side of the vehicle.



81. Carefully but firmly pull outward on the fascia near the side reflector to disengage the plastic mounting clips on each side of the vehicle.



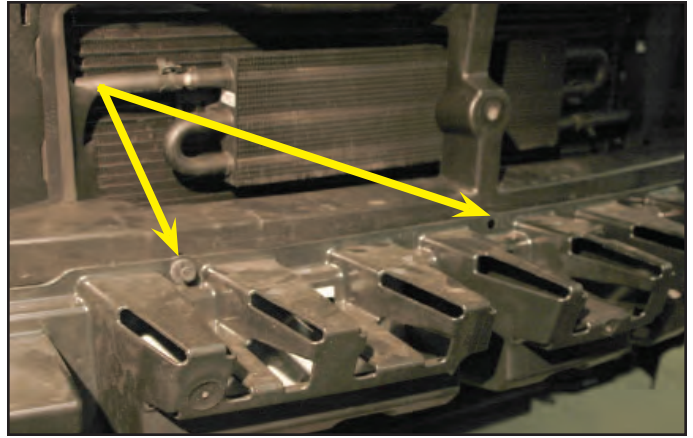
82. From the top of the vehicle; the corner of the fender by the hood attaches to the fascia with a 10mm nut on the fascia mounted stud. Loosen this nut/washer and remove from each side of the vehicle.



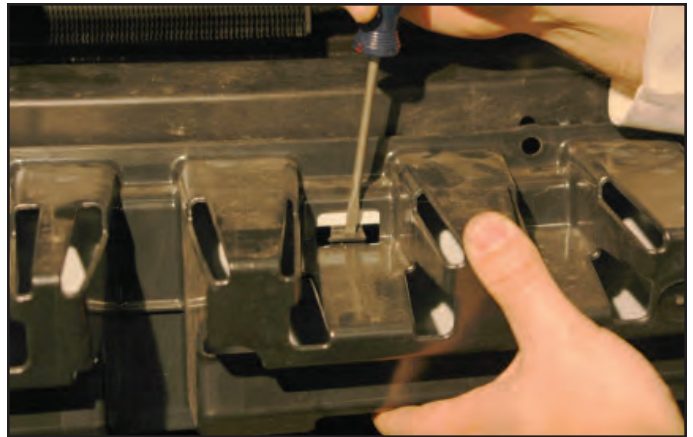
83. Six push pin rivets attach the top of the fascia to the frame support. Pry out the center of the push pin which allows the rivets to be pulled free. Carefully pull the fascia/grille forward to remove from vehicle. There is a plastic guide pin that slides into the fender flange on each side. It helps to have an assistant and pull from the sides to allow the guide pins slide out more easily. Verify that your electrical connection is disconnected and set the fascia/grille aside in a safe place.



84. Remove the three push pin rivets holding the plastic bumper section to the sub frame.



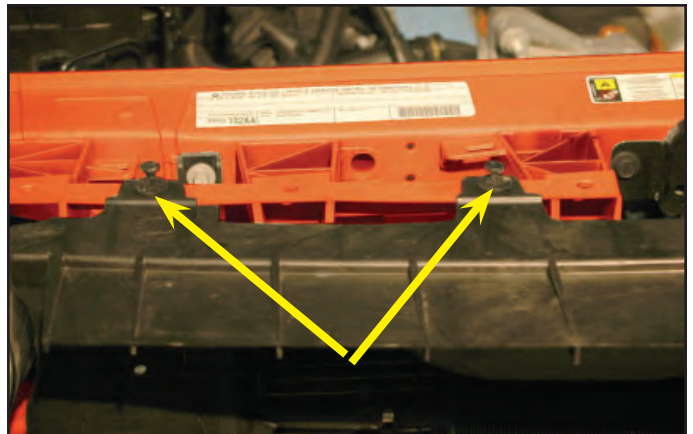
85. The remaining eight clips holding the plastic bumper section to the sub frame can be released using a flathead screwdriver to depress the locking tab.



86. Once the clips are released, pull the plastic bumper section free and set aside for installation later.



87. Pull out the center post of the plastic push pin rivets on the upper plastic grille fascia support, pull the rivets out completely.



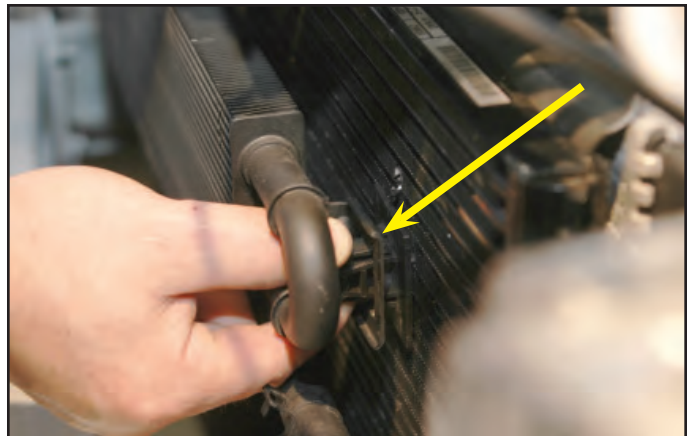
88. Remove the plastic grille fascia support and set aside for re-installation later.



89. On the passenger side of the vehicle the hose from the power steering condenser must be pulled off the mounting tab to allow the cooler to be moved forward.



90. The power steering cooler is held to the upper section of the AC condenser with two plastic clamps. Release the clamps by depressing the locking tabs behind the tube.



91. Pull the power steering cooler off the mounting clamps and allow it to hang freely.



92. Use a saw, or cutting wheel to remove the locking tab from the face of the power steering mounting brackets. Be careful to not damage the AC condenser.



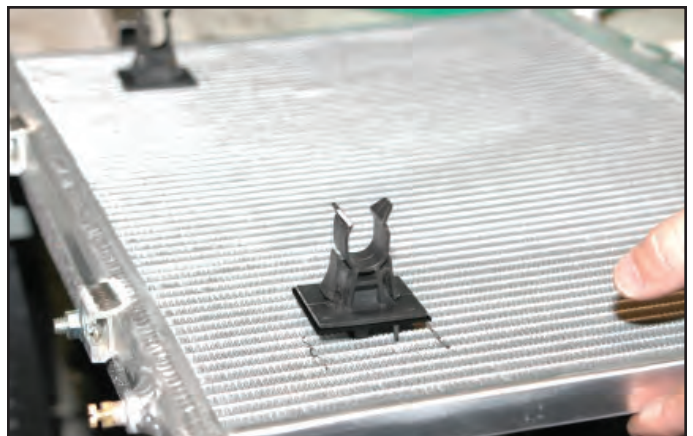
93. The supplied plastic brackets for the relocation of the power steering condenser will mount on the face of the supplied intercooler heat exchanger (the face is the side with the hose barbs). From the top of the intercooler heat exchanger fins (the top tank has the air bleed valve), just below the upper tank tube, measure down 3" on each side.



94. Measure 3" from the outside of each side of the heat exchanger as shown, and mark the location of the two measurements (on each side) by deforming the fins between the tubes.



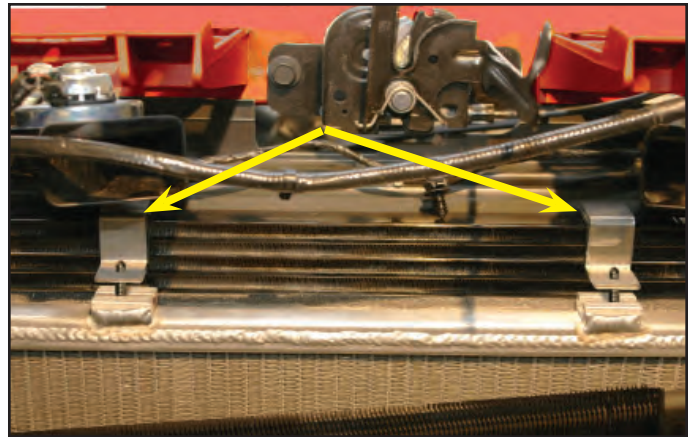
95. Add one of the supplied rubber mounting bracket squares to each of the supplied AC condenser mounting brackets, and carefully press the supplied mounting brackets through the intercooler heat exchanger fins at the junction of the top and side measurements. It will be necessary to cut holes in the rubber for the pins to pass through. Orient the brackets as the original were oriented, the tube mounting slots are horizontal.



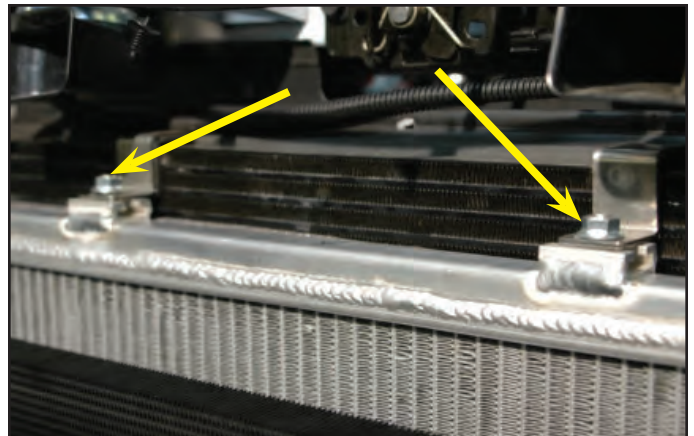
96. Add another of the supplied rubber mounting bracket squares to each of the exposed pins on the mounting brackets you just installed (on the back-side of the heat exchanger) and push the supplied retaining clip disks onto the pins protruding through the intercooler heat exchanger to lock the mounting brackets in place. Cut off any remaining nibs of the pins so they will not interfere with the existing radiator surfaces.



97. Make sure that the air bleed valve is installed on the top of the heat exchanger. Push the heat exchanger up from the bottom of the vehicle, in front of the existing air conditioner condenser, behind the power steering cooler. Use the carriage bolts on the top of the heat exchanger to locate where to press the mounting hangers on the top of the air conditioning condenser.



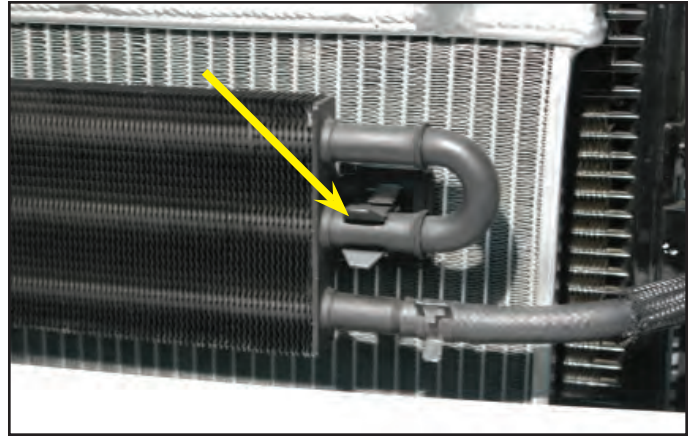
98. Run the heat exchanger carriage bolts through the mounted hangers, and use the 12mm nuts provided to secure the hangers in place.



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



100. Press the power steering cooler onto the new mounting brackets attached to the heat exchanger, and connect the power steering hose back to the mounting clamp on the passenger side.



101. **NOTE: If you removed the fascia and installed the heat exchanger, the next four steps are already done or not necessary.** Temporarily remove the horns using a 10mm wrench.



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



103. Replace the horns using the original hardware.



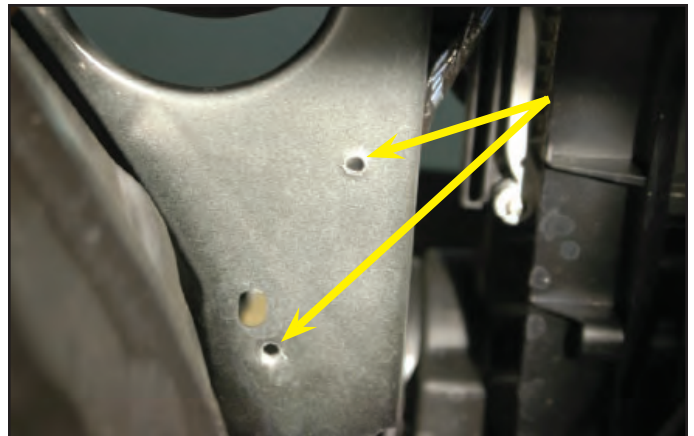
104. Attach the remaining carriage bolt to the passenger side mounting slot on the bottom of the heat exchanger. The remaining vibration damper foam backed bracket will clamp over the bottom of the air conditioning condenser and be secured to the carriage bolt just installed using the remaining 12mm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



105. **NOTE: All vehicles continue here:** On the front driver side of the engine compartment, below the air box location there is a cross frame plate with the air box inlet hole and a large ground wire. Open two existing holes to accommodate the intercooler pump using a ¼" drill bit. Image here is viewed from below.



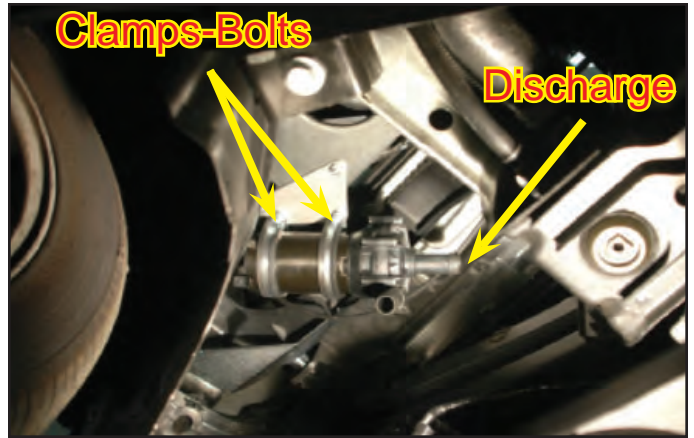
106. Test the holes with the provided bolts for the intercooler pump mounting bracket. It should look like this as viewed from below.



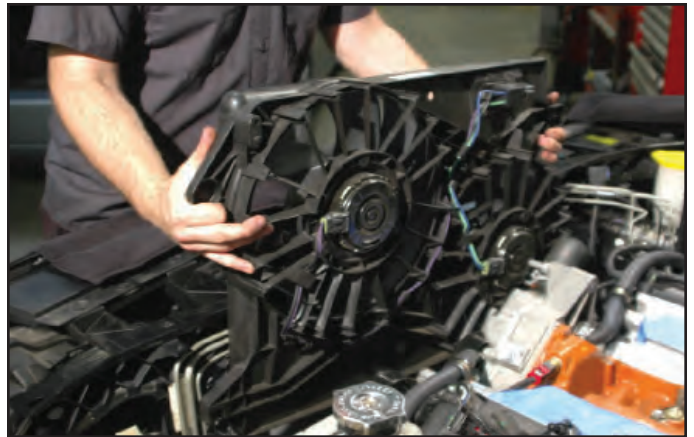
107. Push the bolts down from the top, and using the supplied hardware, attach the intercooler pump mounting bracket as shown.



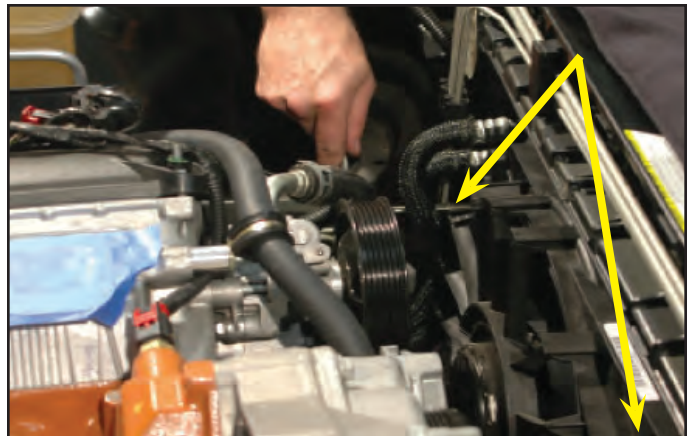
108. Attach the intercooler pump using the supplied Adel clamps and nuts as shown. The discharge barb should be pointing down, and the inlet forward angling slightly toward the center of the grille.



109. Re-install the OEM fan shroud assembly in the vehicle.



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



111. Connect the fan control plug.



112. Use an 8mm wrench and the supplied bolts to secure the intercooler reservoir to the supplied mounting bracket.



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



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



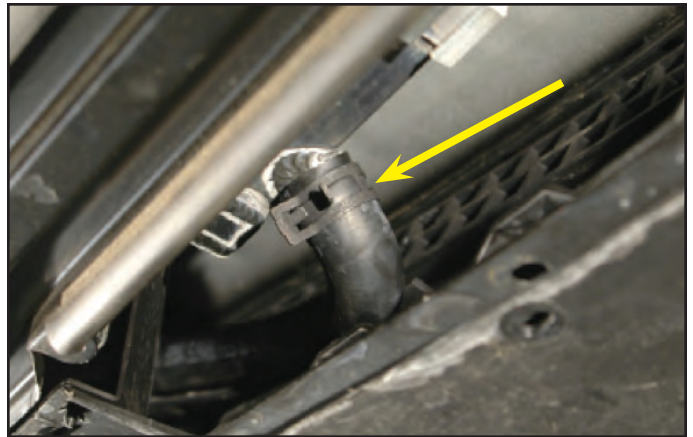
115. Cut off the short end of the provided 4" x 60" x 3/4" elbow hose, and one of the provided 4" x 36" x 3/4" leaving a little more than 1" of the short end (as measured from the inside of the curve).



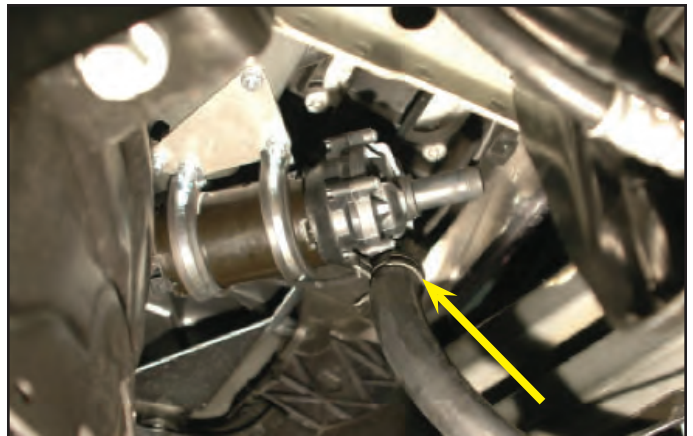
116. Attach the short end of the modified 4" x 60" x 3/4" elbow hose to the passenger side hose barb on the front/bottom of the intercooler heat exchanger using one of the supplied spring clamps. The hose should be pointing toward the driver side of the vehicle. Route the long end of the hose along the fascia and up into the driver side of the engine compartment.



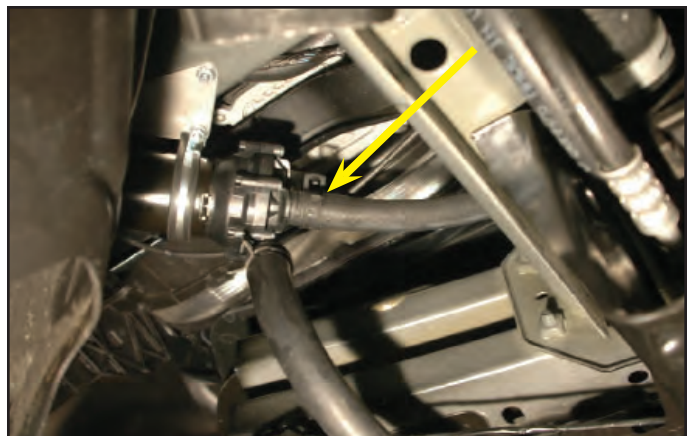
117. Attach the short end of the other 4" x 36" x 3/4" you modified two steps ago to the driver side hose barb of the intercooler heat exchanger using another of the supplied spring clamps.



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



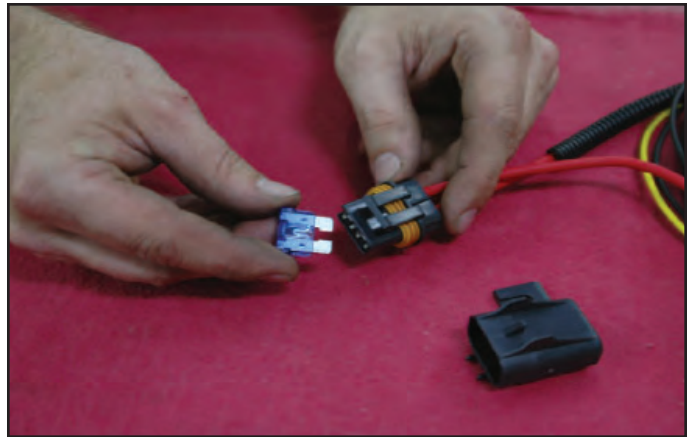
119. Connect one end of the supplied 36" x 3/4" hose to the inlet barb on the intercooler pump using one of the supplied spring clamps, and route the other end up into the engine compartment as shown.



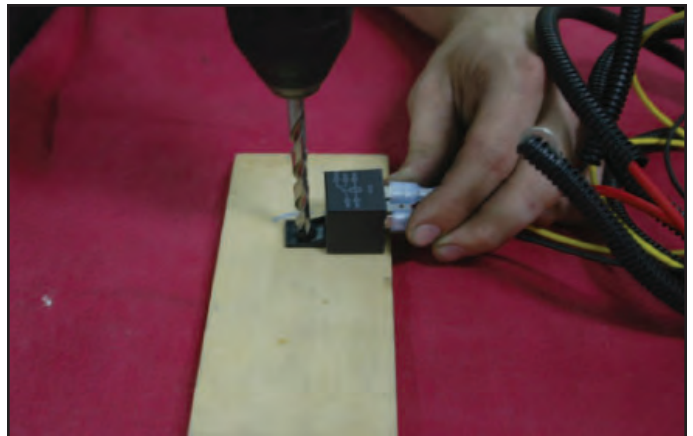
120. Use a supplied worm gear clamp to attach the end of the hose from the intercooler pump inlet barb to the lower discharge barb on the forward end of the intercooler reservoir.



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



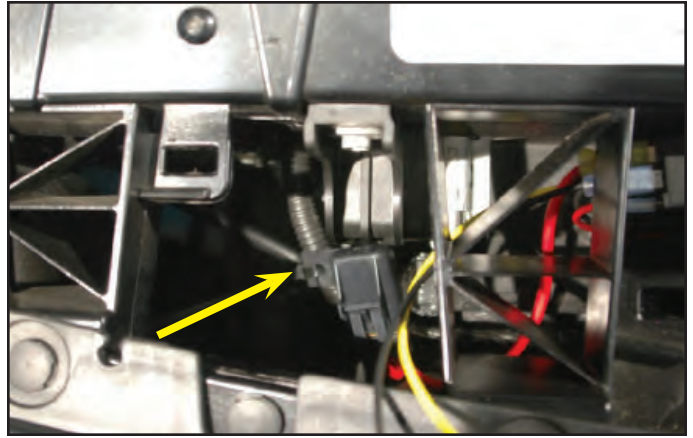
122. Use a 10mm wrench to remove the bolt from the passenger side horn mount. Open up the hole of the intercooler relay to accommodate the removed horn bolt.



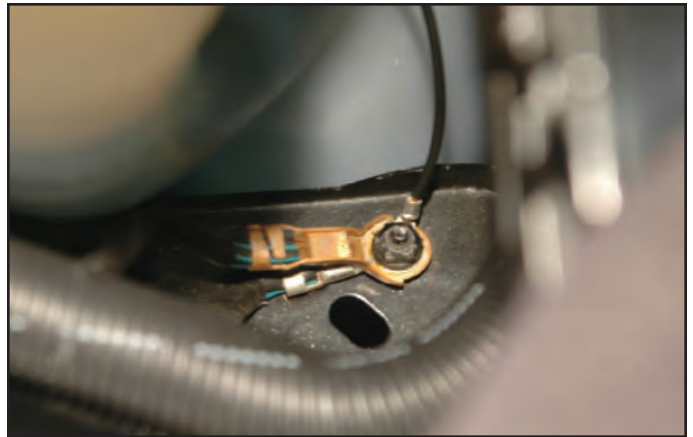
123. Replace the passenger side horn mounting bolt incorporating the intercooler pump relay.



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



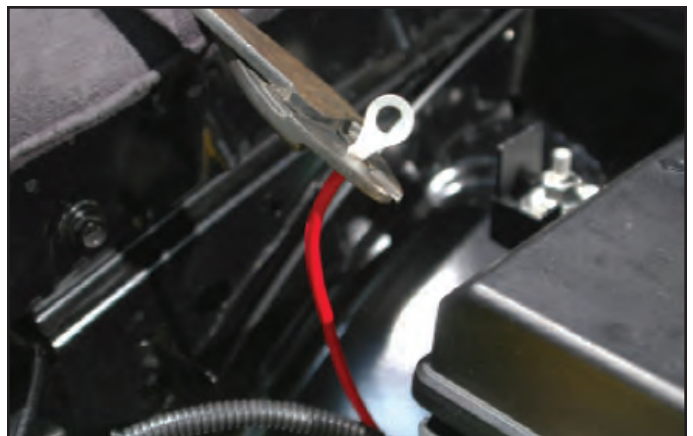
125. Route the black wire with the eyelet terminal down to the existing ground wire stud at the front, base flare of the wheel well near the windshield washer reservoir. Remove the nut with a 10mm wrench and replace incorporating the black ground wire.



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



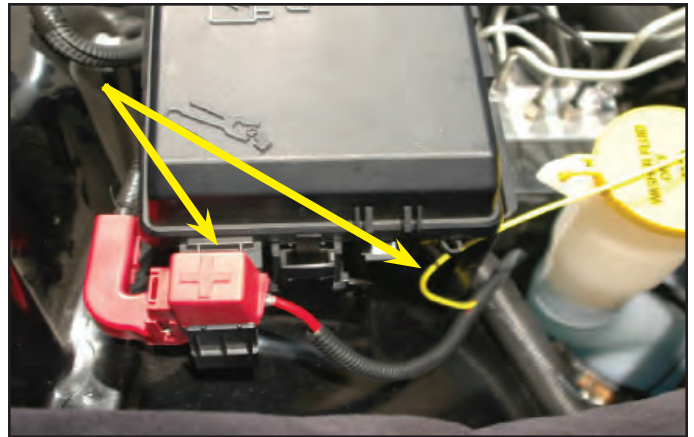
127. Cut the existing eyelet terminal from the end of the red wire and replace with the larger supplied eyelet terminal. Crimp the terminal on securely. Add the yellow wire to the split loom with the red wire, and route the split loom with the red and yellow wires over to the fuse center.



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



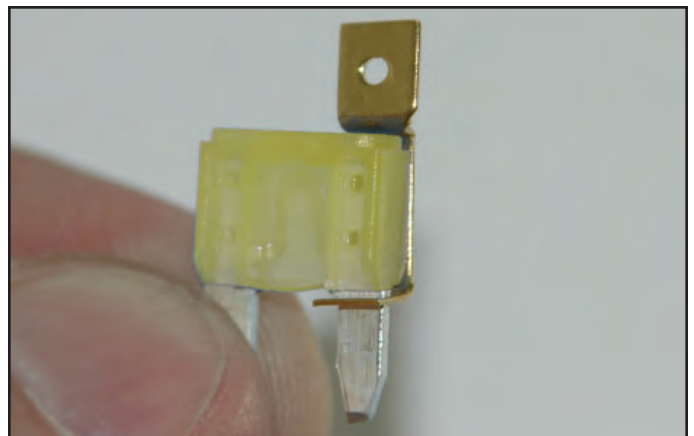
129. Pull yellow wire out of the split loom near the base of the fuse center box. Replace the red wire cover on the positive (+) terminal exposed earlier.



130. Open the fuse center cover and route the yellow wire up inside the front outside corner of the fuse center box. Crimp on the supplied spade connector end securely.



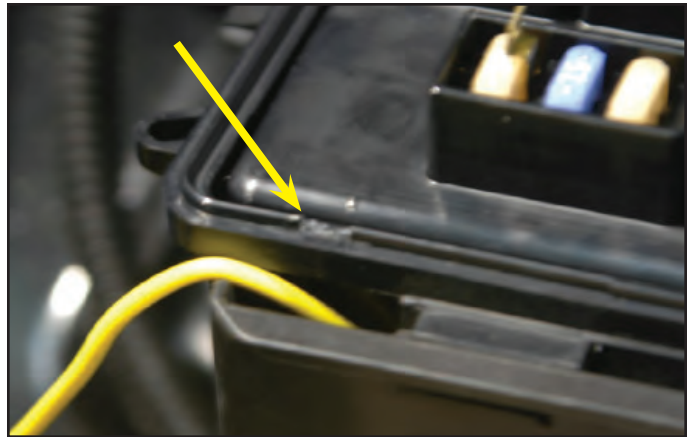
131. Remove fuse #6 (25 amp-injectors, coils, SRV) from the slot, and add the fuse tap to one leg of the fuse.



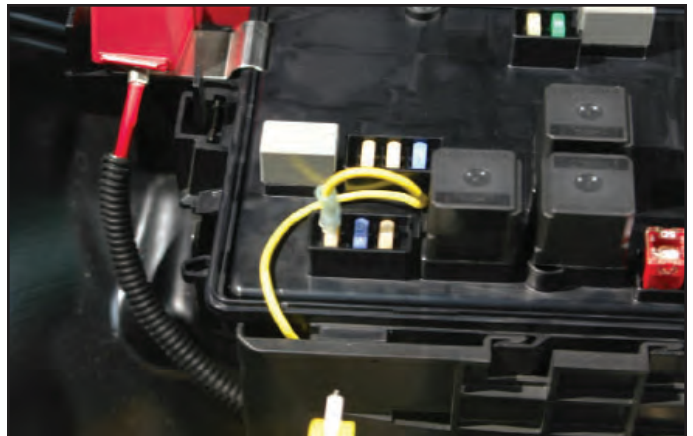
132. Replace the 25 amp fuse #6 back into its designated slot.



133. Cut a small notch in the raised seal of the fuse box cover to allow the yellow wire access without crimping.



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



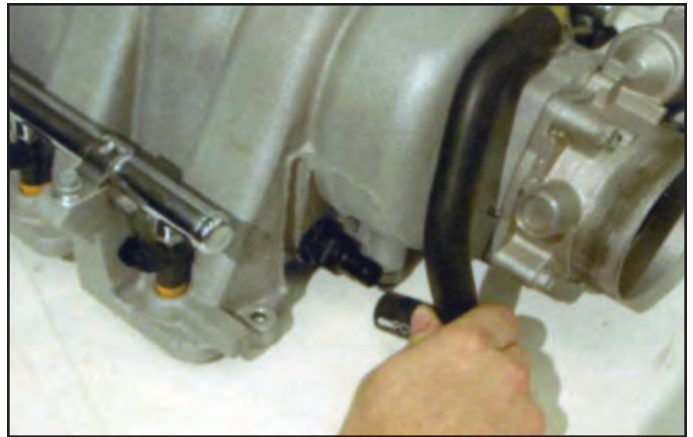
135. Replace the fuse center cover.



136. The throttle body plug needs to be extended to reach the new location on the supercharger inlet. Join the end of the supplied throttle body extension harness to the existing ETC connector.



137. Disconnect the PCV hose from the PCV valve in the stock intake manifold.



138. Use a 15/16" wrench to remove the PCV valve from the stock intake manifold.



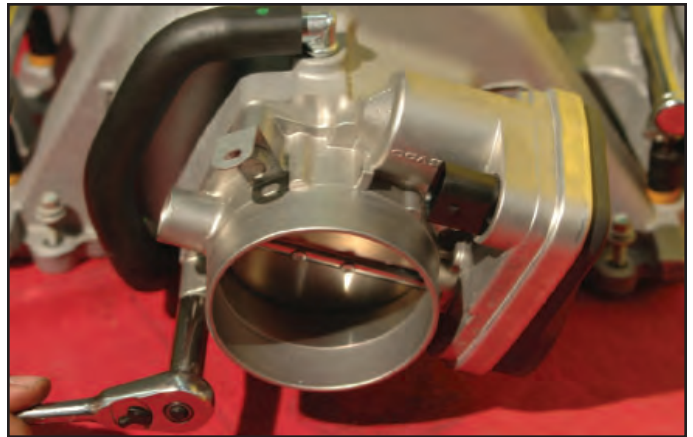
139. Lube the O-ring of the provided PCV valve with the provided Lubriplate lubricant, and thread into the passenger side mounting hole between the fuel rails and near the rear of the supercharger. Snug down using a 15/16" wrench.



140. Remove the oil fill cap from the OEM manifold assembly and install on the new supercharger oil fill spout.



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



142. Carefully remove the OEM throttle body O-ring, clean and inspect for damage and set aside in case you ever need it.



143. Install the provided throttle body O-ring on the supercharger inlet. Place a bead of the provided Lubriplate lubricant on the O-ring to help hold it in place.



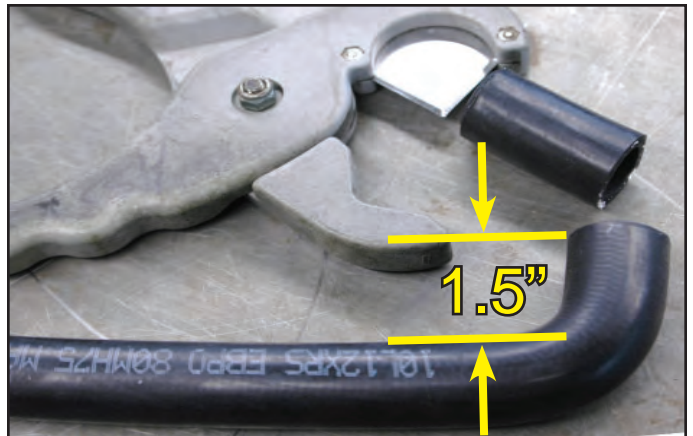
144. Install the throttle body on the new supercharger intake with the motor pointing up. Use the stock bolts removed from the OEM manifold and torque to 106 in-lbs. Verify your torque wrench settings.



145. Remove the factory IAT sensor from the OEM air tube and set aside for later install.



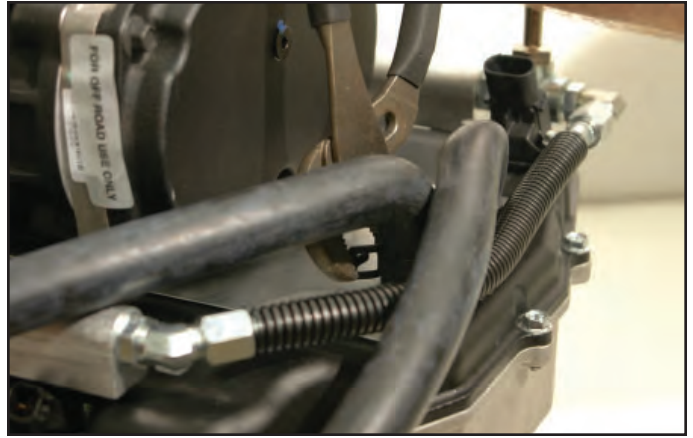
146. Gather two provided 4" x 36" x 3/4" 90° angle hoses and cut each of the shorter legs to 1.5" long measured from the inside edge.



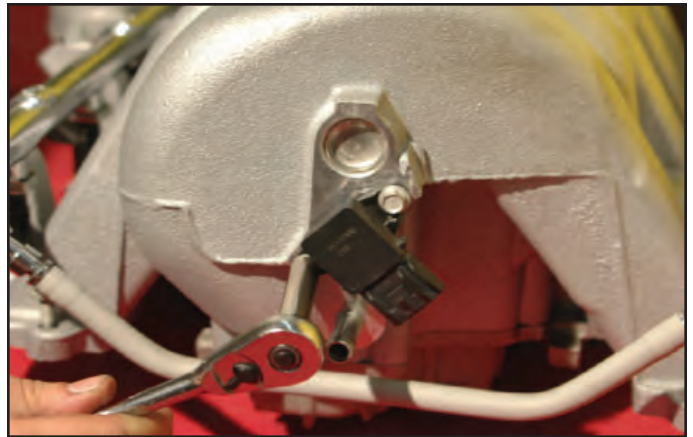
147. Using the provided spring clamps, attach the short end of one of the hoses just modified to the passenger side intercooler hose barb behind the supercharger. The hose will point toward the driver side of the vehicle.



148. Connect the short end of the other modified 4" x 36" x 90° elbow hose to the driver side intercooler hose barb behind the supercharger using a provided spring clamp. This hose will also route toward the driver side of the vehicle.



149. Remove the two bolts holding the MAP sensor to the rear of the OEM manifold using an 8mm wrench.

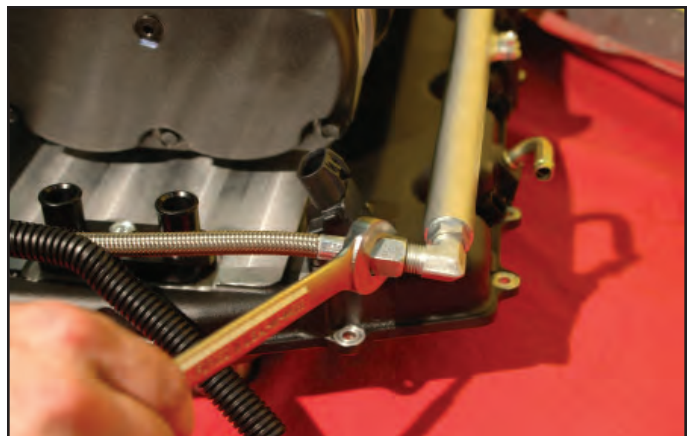


150. The provided 2-Bar MAP sensor has to be modified. Cut off the outside fin on the top-left side and file smooth. It should look like this. Test fit with the receiving connector before continuing.



151. Put a bead of the provided Lubriplate lubricant on the O-ring of the MAP sensor and press into the hole at the rear passenger side of the supercharger lid, behind the supercharger. Use an 11/16" wrench to disconnect the cross-over fuel line at the rear of the fuel rail on the passenger side.

NOTE: The following photos will not show the intercooler hoses for clarity.



152. Secure the MAP sensor using a Phillips head screwdriver. Now re-install and tighten the fuel cross-over line.



153. Flip the supercharger assembly upside down onto some clean shop towels. Use a 4mm Allen wrench to remove the hold-down bracket over the grommet on the bottom of the supercharger manifold.



154. Lubricate the IAT sensor that you removed earlier using the provided Lubriplate lubricant.



155. Press the IAT sensor through the existing grommet carefully. Orient the trigger as shown. The notch in the stop ring should be pointing toward the mounting bolt hole.



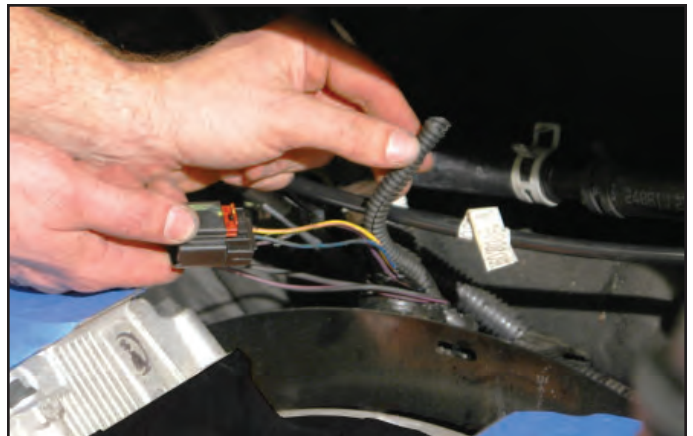
156. Install the 4mm Allen screw with the bracket you removed earlier and lock the IAT sensor in place.



157. Plug in the IAT sensor extension harness provided to the IAT sensor as shown. **NOTE: When installing the supercharger, the tail of the IAT sensor will exit from the front passenger side of the valley.**



158. At the rear of the engine on the passenger side is a large wiring harness with the OEM MAP sensor tail splitting off. Pull off a few inches of the split loom to expose the wires.



159. The MAP sensor plug will need to be extended. Cut the existing wires using a staggered length cut (so there isn't a large bundle of connectors in one location).



160. Cut the color coded wires of the provided MAP extension to meet the staggered cuts you just made on the OEM MAP sensor harness. Strip off about 3/8" of the insulation from all wire ends. Verify your staggered connections in length and color code.



161. Use the provided crimp connectors to join the existing harness to the new extend MAP plug. Again verify your color codes.



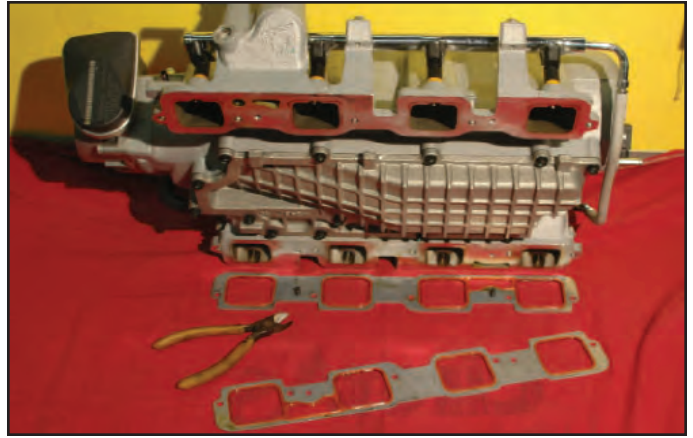
162. Use a heat gun or hair dryer set on high to shrink your connectors to the wires. **It is NOT adequate to just crimp the wires. You must shrink the connectors on to seal the connections from moisture and to ensure connectivity.**



163. Slide a length of the provided split loom over your extended harness and drape it behind the engine toward the passenger side where it can be reached easily from the passenger side fender.



164. Remove the OEM intake manifold gaskets from the intake manifold. Inspect the gaskets for any damage and replace if necessary. Cut off or remove the push pin tabs that held the gaskets to the manifold.



165. Inspect, then install the OEM intake gaskets on the new supercharger intake manifold, press the locking tabs provided into the mounting holes to keep the gaskets in place.



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



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



168. With the help of an assistant, carefully set the supercharger assembly into position.



169. Gather the ten provided M6x70mm bolts and apply Loctite 242 to the ends. **Install and torque the ten provided M6x70mm long bolts to 106 in-lbs using a center-out, criss-cross pattern.** Verify your torque wrench settings.



170. Attach the MAP sensor plug to the MAP sensor.



171. Plug in the eight fuel injectors.



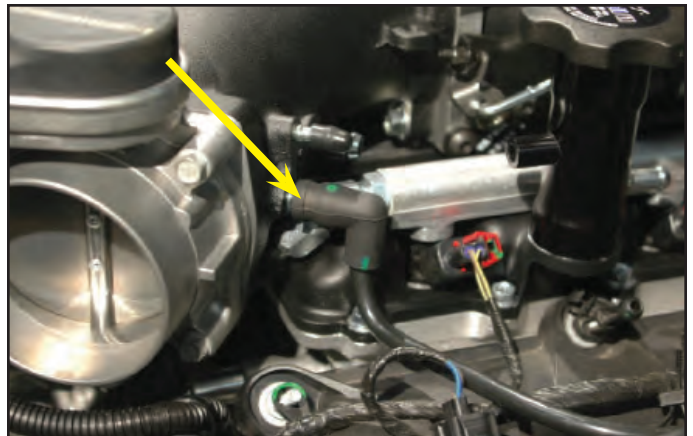
172. Connect the IAT sensor plug to the end of the harness you installed on the IAT sensor located on the bottom of the "Tub". This should be sticking out from under the "Tub" at the front passenger side of the supercharger "Tub".



173. Connect the throttle body connection. Zip-tie the wires to maintain clean-secure runs.



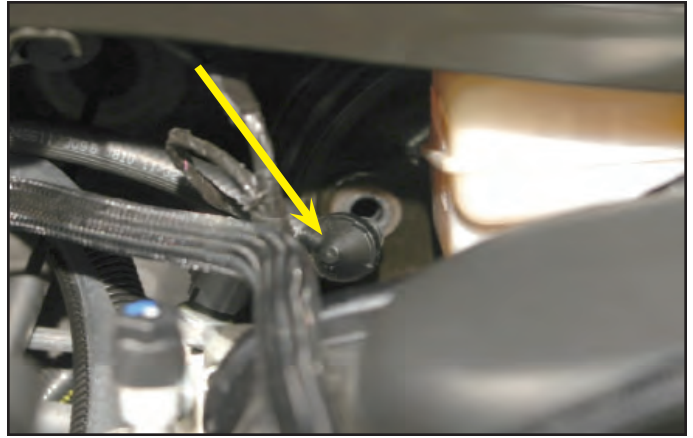
174. Plug the EVAP plastic tube on the driver side of the engine into the barb below the bypass hose on the supercharger intake. Route the tube so that it passes under the second coil plug on the driver side, and on clip onto the inside edge of the valve cover mounting post as indicated.



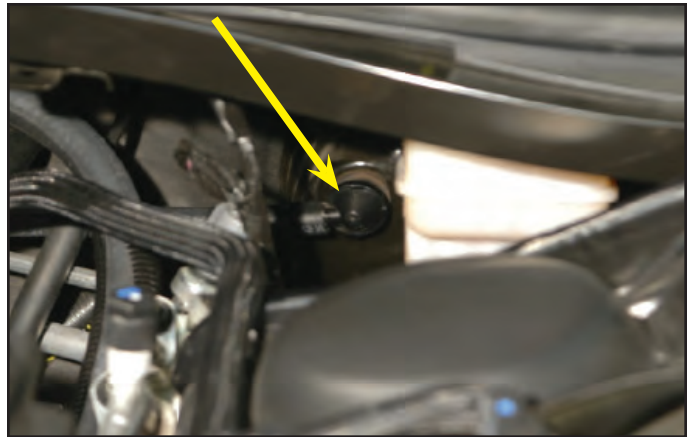
175. Attach the fuel line to the supercharger fuel line barb at the rear passenger side of the supercharger assembly.



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



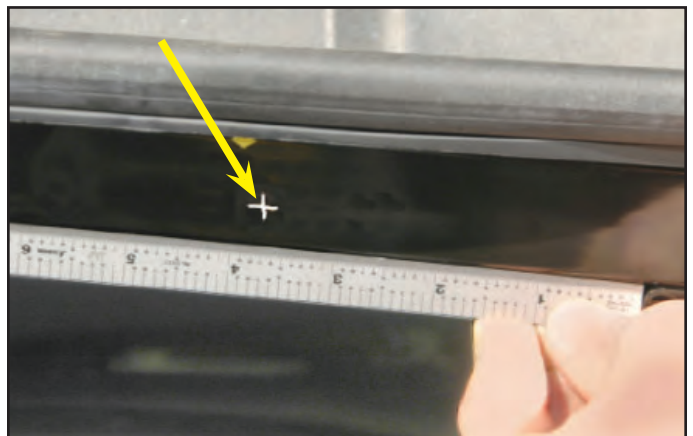
177. Use the supplied 11/32" hose and attach one end to the brake booster valve. No clamps are necessary. Plug the valve back into the brake booster canister.



178. Route the 11/32" hose from the last step under the rear of the fuel rail forward along the fuel rail on the driver side, cut to fit, and plug into the supercharger intake barb as shown. No clamps are necessary. Make sure this hose does not interfere with the bypass actuator linkage.



179. On the driver side at the top and back of the engine compartment there is a channel mounting bracket supporting the square tube cross member. Measure from this channel toward the center of the vehicle and make a mark about 3/8" up and about 3-3/4" toward the center.



180. Drill a ¼" hole completely through the square tube cross member at the mark you just made.



181. Here are the oil separator components for the PCV hose lines.



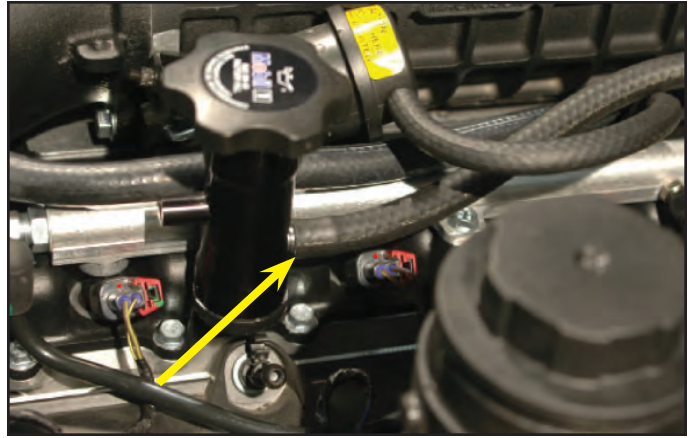
182. Use the provided Adel clamp and spacer and bolt/nut to mount the oil separator to the holes through the square tube.



183. Connect one end of the provided 3/8" hose to the bottom barb on the Oil Separator you just installed.



184. Cut the 3/8" hose from the last step to fit as necessary and connect the other end of the hose to the hose barb on the back side of the oil fill spout.



185. Connect a section of the provided 1/2" hose to the PCV valve installed between the fuel rail and supercharger housing on the passenger side (near the back of the supercharger). Route the hose around behind the supercharger toward the driver side.



186. Connect the other end of the PCV hose to the passenger side oil separator valve hose barb.



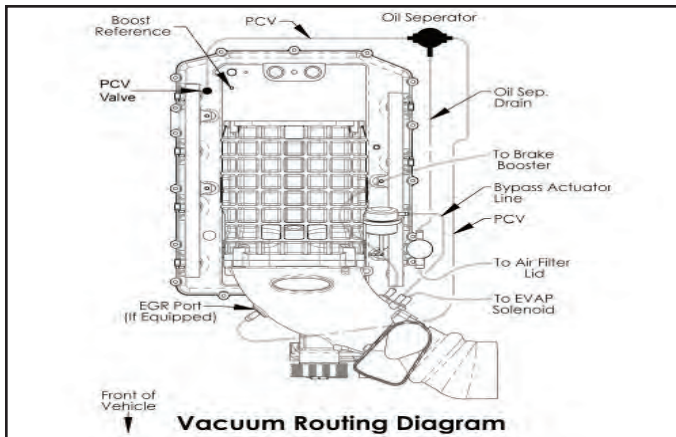
187. Connect a section of the provided 1/2" hose to the driver side hose barb on the oil separator. Route this hose forward along the fuel rail, under the supercharger inlet over to the passenger side of the supercharger.



188. Connect the other end of the hose from the last step to the hose barb on the passenger side of the supercharger inlet.



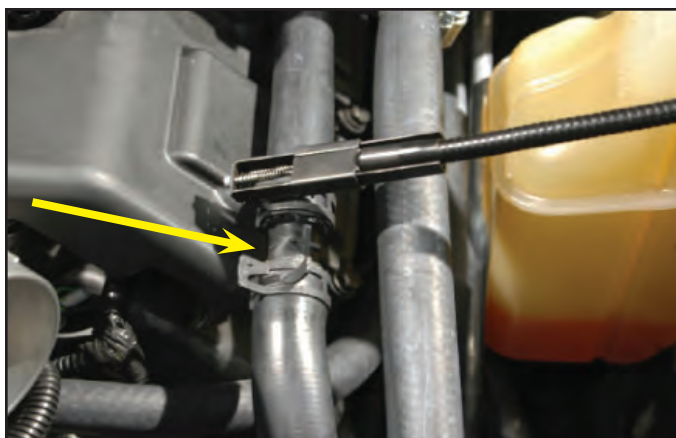
189. This is a PCV Hose Routing diagram to show you the general positions and connections. There is a larger version of this diagram at the back of this manual.



190. Press the passenger side coil pack cover back onto the OEM mounting studs.



191. Use the provided $\frac{3}{4}$ " x $\frac{3}{4}$ " hose coupling (mender) and two of the provide spring clamps to join the hose mounted on the driver side of the supercharger intercooler, to the hose you ran up into the engine compartment from the passenger side heat exchanger barb. This hose should be routed just below the intercooler reservoir.



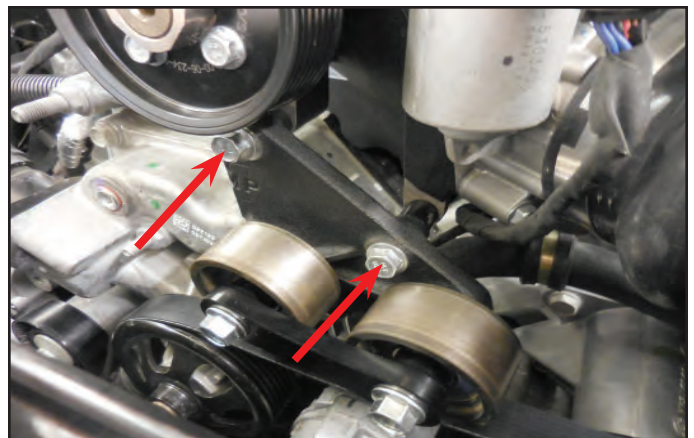
192. Route the hose connected to the passenger side supercharger intercooler hose barb over to the intercooler reservoir. Cut to fit and secure to the intercooler reservoir using one of the provided worm gear clamps. It's important to use worm gear clamps on the reservoir.



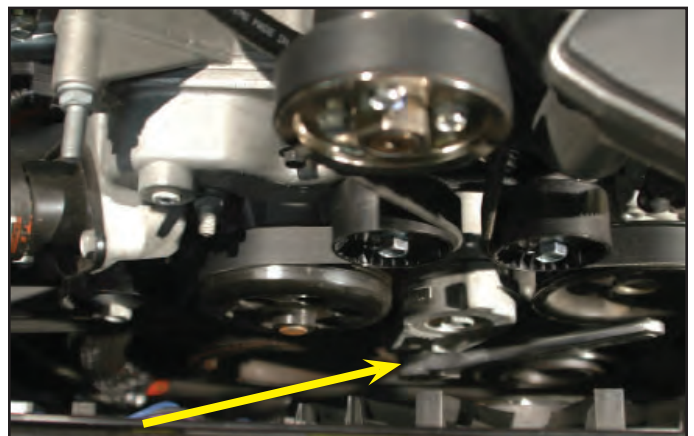
193. Check your hoses for fit and routing secure as necessary and press the HEMI cover onto the driver side valve cover mounting posts.



194. Mount the provided Idler bracket to the supercharger assembly with the provided M8 x 35 mm bolts (2 each) where shown with arrows. Torque the mounting bolts to 20 ft-lbs with a 12mm socket..



195. Using a 3/8" drive ratchet or breaker bar, spring the tensioner and install the serpentine belt using the belt routing diagram provided in the back of the instruction manual. **Ensure that you have torqued the crank harmonic balancer pulley bolt to 129 ft-lbs.**



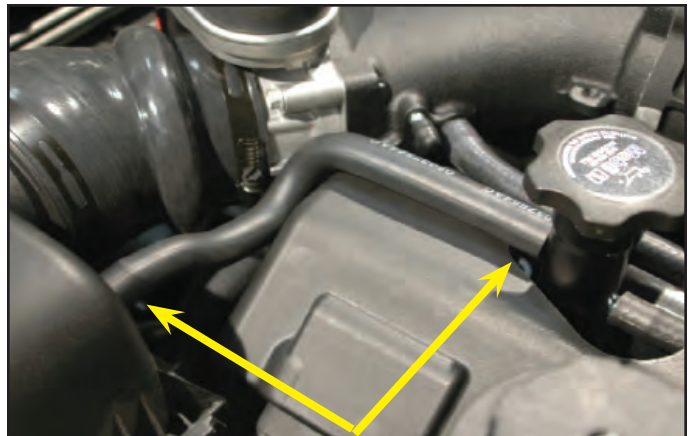
196. Replace the OEM air box in the original location and lock in place with the OEM 10mm bolt.



197. Unsnap the air box cover and press on the supplied hump hose to the cover. Press the throttle body end onto the throttle body as you replace the lid on the air box. Secure the hose connections using the OEM hose clamps from the factory air tube.



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



199. Affix your MagnaCharger button sticker to the recess on the supercharger inlet.



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



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

201. Refill the radiator using the drained strained fluid removed earlier and top off as necessary after verifying that the drain valve is closed. If more fluid is needed make sure to use the manufacturer's recommended coolant mixture.



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



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



204. Start the vehicle for five seconds and shut off. Check for fuel, coolant leaks and supercharger belt alignment. Check radiator and intercooler reservoir levels and top off as necessary. Start the engine again and let it idle for 5 minutes. Recheck the coolant level in the engine and intercooler reservoir. Check all hose connections.



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



206. **NOTE: If you removed your fascia, reverse step numbers 76-88 to reinstall your plastic bumper supports and fascia.** Replace the forward splash shield using the OEM fasteners.



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



208. Affix the Premium Fuel Only sticker to a conspicuous location under the hood.



209. Affix the Premium Fuel Only sticker to the door of your gas fill cap. Ensure that the gas cap is on tight.



210. Test drive the vehicle for the first few miles under normal driving conditions. **Do not perform any wide open throttle tests at this time.** 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, this is normal. When you are through with the initial test drive check again for any leaks, and top off with coolant if necessary.



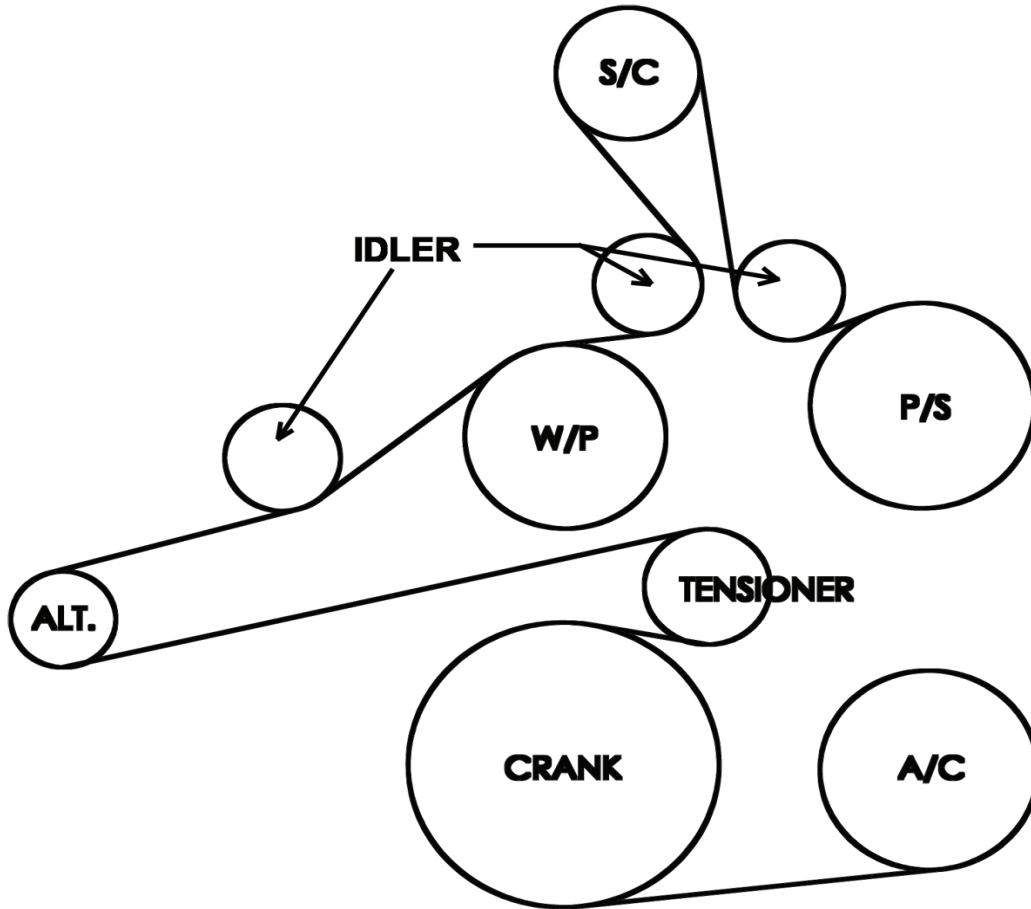
211. After the initial test drive, gradually work the vehicle to wide open throttle runs. Listen for any engine detonation (pinging). If engine detonation is present, let up on the throttle immediately. Most detonation is caused by low octane fuel still in the tank. **NOTE: PREMIUM GASOLINE FUEL MUST BE USED, 91 Octane or better.**



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

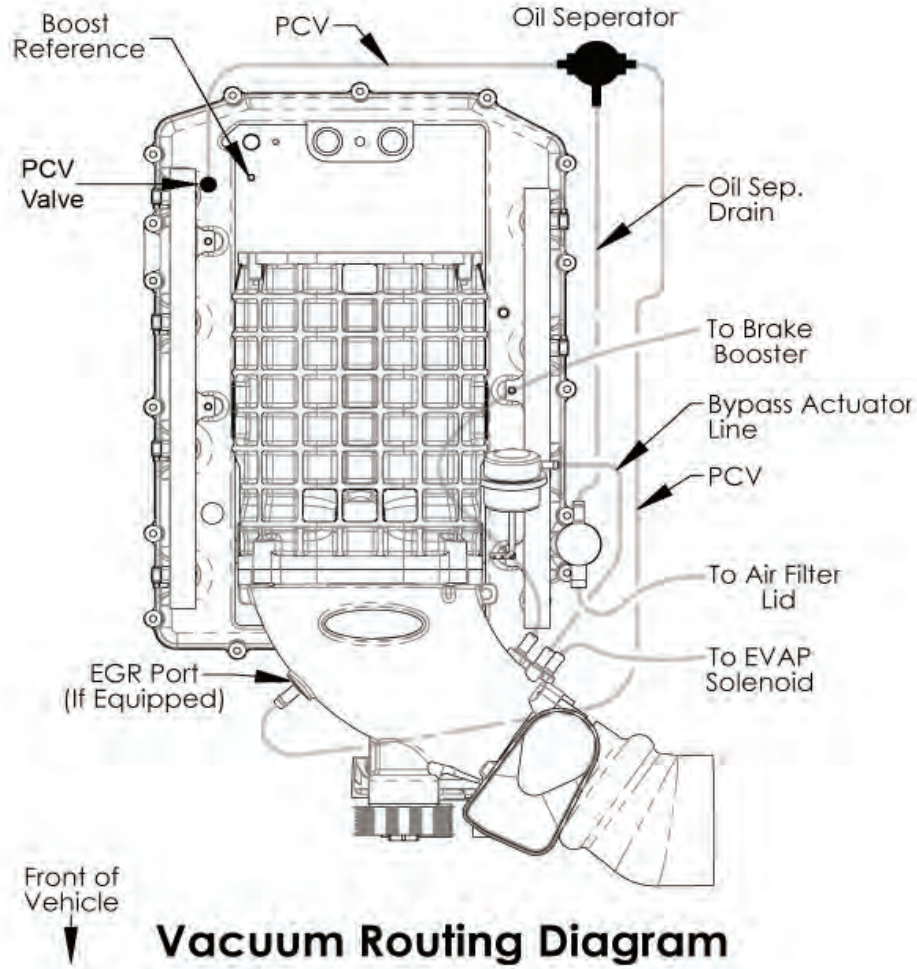
If you have questions about your vehicles performance, please check with your installation facility.

Appendix



HEMI Belt Routing Diagram

Appendix



Notes

Notes



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

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

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

Please enjoy your "Magna Charged"
performance responsibly!

MAGNUSON
SUPERCHARGERS