MAGNUSON
SUPERCHARGERS

Installation Instructions for:

2006-10 JEEP CHEROKEE 6.1 Liter HEMI

INTERCOOLED SUPERCHARGER SYSTEM

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

*** PREMIUM FUEL REQUIRED ***

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

89-89-61-071 Rev E

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INSTALLATION MANUAL

Magnuson Supercharger Kit
JEEP 6.1L HEMI Engine

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.

Use only premium fuel, 91 octane or better.

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

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

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

After you finish your installation and road test your vehicle, please fill out and mail in the limited warranty card, so we can add you to our files (this is important for your protection).

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
Right Angle drill for pinning crank pulley. Helpful Tool: Air or electric impact wrench.

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ATTENTION

Due to the possibility that your specific vehicle application may not be supported with a preloaded file on your hand held tuner, Magnuson products requests that before disconnecting the battery and beginning the install of your supercharger system that you perform the following functions.

For an SCT X3 or X4 Programmer

1. If your system is supplied with an SCT Hand Held programmer, please remove the programmer from its package and review the instructions for programming your vehicle.
2. Attempt to program your vehicle. If the selections for your specific vehicle are available please continue with the programming process.

Note* (If the specific selections for your vehicle are not available please discontinue the programming process and move to step 4)

3. After the programming is completed you may continue with the installation of your Magnuson Supercharger system.
4. If you have an unsupported vehicle please follow the instructions provided with the programmer and upload your stock file to the hand held unit. Once the upload is completed, please follow the instructions for downloading your stock file to a computer and email it to simon.gale@magnusonproducts.com Once you have extracted your base file you can continue the installation process for your supercharger system.

For any Chrysler/Jeep application using a Trinity, In-Tune or Predator

1. Remove the programmer from the packaging and review the Magnuson supplied instructions. (At this time there are no preloaded files for your supercharger application)
2. Follow the instructions provided and upload your original back-up file to the tuner.
3. Transfer the file to your computer and email it to: simon.gale@magnusonproducts.com

Once you have extracted the file from the vehicle you may continue with the installation of your supercharger system

NOTE: For the purpose of this instruction manual, all references to left or right hand side shall be as indicated from the position of being seated in the drivers seat of the vehicle.

MAGNUSON SUPERCHARGERS

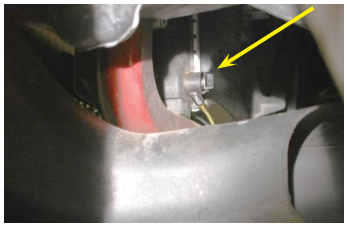
1. Jeep Grand Cherokee 6.1L HEMI Install. To make the install a little easier, we hyper-opened the hood for more clearance using a cut dowel. These instructions assume a factory-stock starting point.

2. The first real step in the installation is to flash your computer to calibrate for the new supercharger with your new Diablo tuner. Follow the instructions in the supplied Diablo tuning manual. Locate your EO sticker and follow the instructions for placing the sticker on your supercharger. **NOTE: For now, the customer will have to read the stock file from the vehicle using the tool, and must email the file to calibration. Here the file will be modified and emailed back to the customer for install in the car.**

3. Use a 10mm wrench to disconnect the negative battery terminal. **Set aside where it cannot accidentally touch the battery post.**

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

5. Open the drain valve located on the bottom left hand side of the radiator. You can reach this valve through the left hand side front wheel well. Collect the drained fluid in a clean pan and set aside for later re-use.

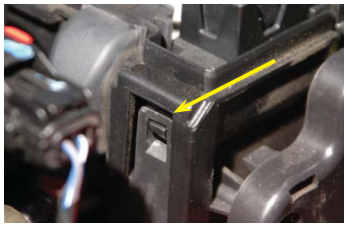


6. Remove the radiator cap to facilitate draining. Upon drainage completion, replace the cap loosely and tighten up the drain valve.

7. The strut tower brace must be removed to ease installation. Slide the EVAP solenoid straight up to remove it from its mount. Temporarily tuck it out of the way over the oil dipstick.

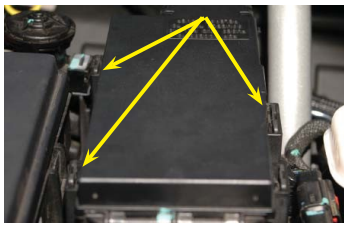
8. Open the cover of the forward fuse center just behind the battery on the left hand side of the engine compartment, and un-snap the hinges from their posts to remove the cover. Set aside for later usage.

9. With the cover removed, use a small screwdriver to release the three hold down clips. The forward fuse center should now be free to pull up.

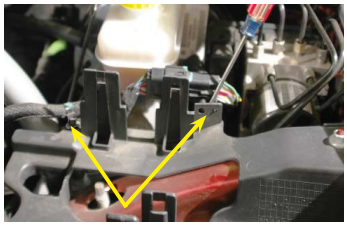


10. Lift the forward fuse center and unplug the two wire harness plugs from the bottom of the fuse center. Pull the fuse center up and over toward the engine.

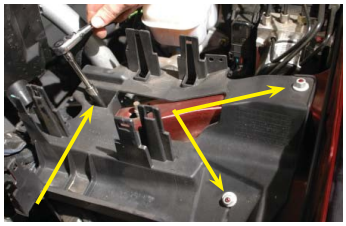
11. Again use a small screwdriver to release the locking clips of the rear fuse center located just forward of the brake reservoir. Pull the rear fuse center up off the mounting posts and push it over toward the engine with the forward fuse center.



12. There is a wiring harness that has two clip locations that tie the harness to the fuse center mounting bracket. Pry these harness clips off of the fuse center mounting bracket.



13. Use a 10mm wrench to remove the three nuts holding the fuse center mounting bracket to the strut tower/ interior tire well studs.



14. You now have access to the left hand side bolts holding the strut tower brace in place. Use an 18mm wrench to remove the nuts securing the strut tower brace in position (two each side). We used an impact wrench but this is not necessary.

15. Pull up on the strut tower brace to pull it off the studs. On the left hand side, the mounting flange will hit the bottom of the brake cylinder. Pull the brace completely off the right hand side, and angle the brace to the rear to gain clearance to further pull the strut tower brace from the vehicle. Set aside for later use.

16. Remove the two HEMI coil covers from the vehicle by pulling up to unsnap from the mounting posts.

17. Disconnect the IAT sensor plug at the intake air tube.

18. Use an 8mm wrench or flathead screwdriver to loosen the clamps on the factory air intake tube at the throttle body and air box on the right hand side.

19. Remove the intake air tube from the vehicle. This will not be reused. There is a PCV vent tube running from the air box to the oil fill spout, this has a soft mounting clip on the intake air tube. Be careful to not damage the PCV vent tube.

20. Pull the throttle body harness anchoring clip from the throttle body mounting bracket as shown.

21. Disconnect the ETC from the throttle body. To achieve release, first press the red lock clip up to release the lock, then squeeze below the lock clip and pull the ETC away from the throttle body.

22. Disconnect the eight fuel injectors by pulling up on the red locking clip, then squeezing the base below the locking clip to release the injector control plugs.

23. Disconnect the MAP sensor from behind the air intake manifold on the right hand side behind the OEM manifold. If you cannot get this unplugged easily, you will have another chance while you are removing the OEM manifold a little later in the instructions.

24. Disconnect the brake booster valve from the brake booster by pulling the fitting out of the mounting grommet. The other end of this hose is connected to the intake manifold and will have to be routed when removing the manifold. Temporarily lay the hose on the left hand side by the fuel rails.

25. Disconnect the PCV vent tube running from the intake air box to the oil fill spout. Set aside for use in a later step.

26. Disconnect the EVAP hose from the left hand side of the manifold, just behind the throttle body.

27. Remove the fuel line safety clip. Set aside for later.

28. Use shop rags to catch residual fuel and the fuel line removal tool to disconnect the fuel line from the right hand side fuel rail. First press the fuel line further onto the fuel rail barb, then push the fuel line removal tool into the fuel line to release the locking clip. Now pull the fuel line free. **We recommend plugging the fuel line and capping the fuel rail barb. Clean up residual fuel using shop rags and dispose of the contaminated rags properly.**

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

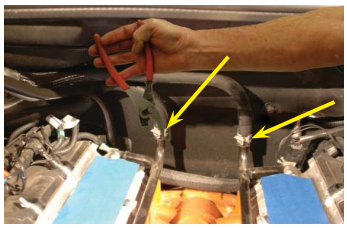
30. With the help of an assistant, carefully lift the OEM intake assembly from the vehicle. At this time if you didn't have success pulling the MAP sensor plug free, with the manifold moved slightly forward you should have an easier access to disconnect the sensor. Snake the brake booster hose around the existing water heater hoses as you pull the intake assembly out of the vehicle. Set aside as we will be using components later in assembly.

31. Use a shop vacuum to remove any debris from the heads and adjacent surfaces. Be careful to not allow any debris to fall into the exposed ports.

32. Wipe the port surfaces clean using shop rags and alcohol, lacquer thinner, or acetone (or some other non-petroleum based product).

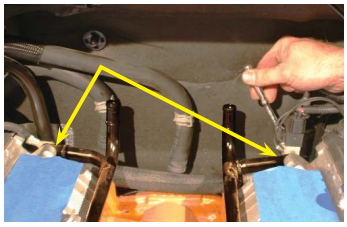
33. Use tape or shop rags to cover the exposed ports to prevent contamination.

34. Remove the two heater hose clamps from the hard line barbs at the rear of the valley by the firewall, they run over the valley to the water pump.

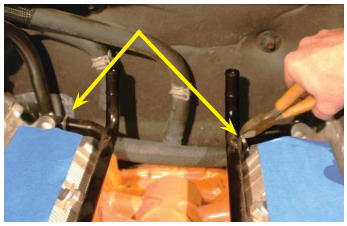


35. Disconnect the two heater hoses from the hard line barbs. There will likely be some residual coolant in the hoses and tubes, so take appropriate precaution and dispose of contaminated shop towels properly.

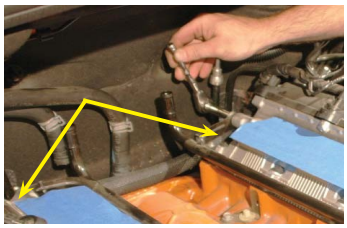
36. Use a 10mm wrench to remove the nuts holding the ground wires and ground sensor from the studs anchoring the heater hard lines to the back of the block. There are ground wires on both the left hand side and right hand side. Pull these wires and the ground sensor from their studs.



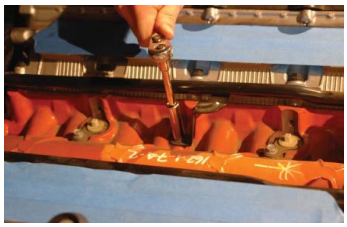
37. There are two zip-tie clamps holding the wire harness to the heater hard line mounting brackets. Cut these zip-ties off the brackets.



38. Use a 10mm wrench to remove the studs holding the two heater hard lines to the back of the heads.



39. The left hand side heater hard line has two additional mounting bolts. Use a 10mm wrench to remove the center mounting bolt from the middle of the valley.

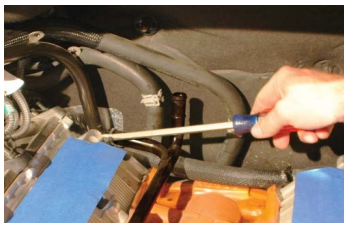


40. Use a 10mm wrench to remove the heater hard line mounting bolt from the water pump.

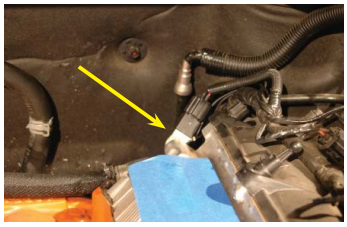
41. Temporarily disconnect the temperature sensor connection from the sensor.

42. Use a large flathead screwdriver to carefully lever the heater hard line barb from the water pump on the left hand side using the water pump as a fulcrum.

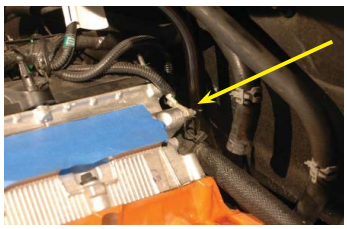
43. On the right hand side the heater hard line needs to be pulled toward the rear to remove it from the water pump. Use the large screwdriver with the head as a fulcrum to lever the hard line free from the water pump.



44. Replace the left hand side ground sensor and ground wires to the head using the original stud. Clock the ground sensor toward the left hand side fender to gain the clearance necessary for the supercharger installation.



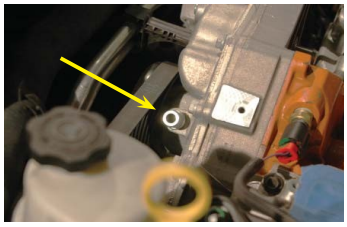
45. Replace the right hand side ground wires to the head using the original stud. Make sure you have accounted for all the wires.



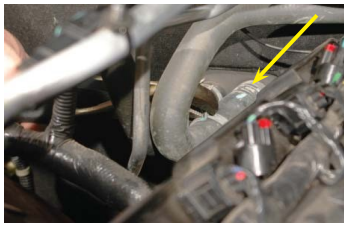
46. Place a generous bead of the supplied Green Loctite on the two supplied water pump hose barbs.

47. Use your fingers to press one of the prepared barbs into the right hand side hole in the back of the water pump that was vacated by the right hand side hard line heater pipe that ran under the OEM intake manifold.

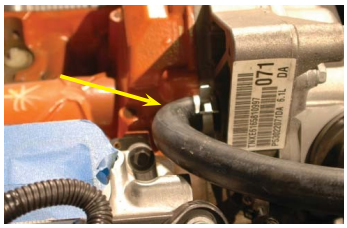
48. Use your fingers to press the other prepared barb into the left hand side hole of the water pump that was vacated by the removal of the left hand side hard line heater pipe that ran under the OEM intake manifold.



49. Remove the stock center-most heater hose from the firewall hose barb on the right hand side of the engine compartment.

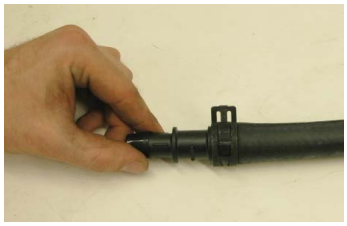


50. Cut 2-1/2” off the short end of the supplied 4” x 48” x 5/8” 90° elbow hose and attach the short end to the barb just installed on the right hand side of the water pump using a provided spring clamp.



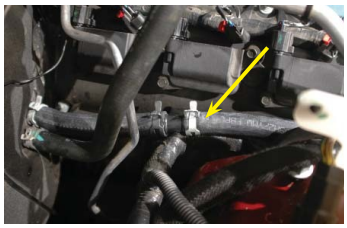
51. Route the hose toward the right hand side fender. Use the bolt hole at the front of the right hand side head near the water pump, add the supplied spacer, then the Adel clamp with the lobe up and pointed toward the rear of the vehicle, and the supplied bolt to anchor the heater hose as shown in this picture.

52. Install the supplied ¾" -5/8" coupling (hose mender) in the supplied ¾" x 7" section of hose. Secure in place with a supplied spring clamp.



53. Use the stock clamp removed from the OEM heater hose removed earlier to attach the 7" piece of hose to the center-most heater barb at the firewall on the right hand side of the engine compartment.

54. Cut the right hand side hose installed at the water pump to meet the coupling (hose mender) installed on the 7" hose just installed. Press onto the coupling and secure with a supplied spring clamp.

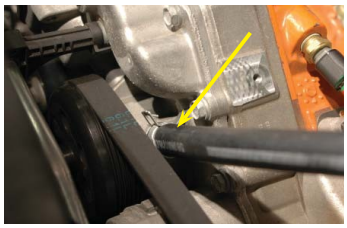


55. Use a piece of the supplied split loom to cover the hose over any locations that may experience chaffing.

56. Cut about 1-1/2” from the end of the other heater hose at the firewall that used to run to the left hand side hard line running under the OEM intake manifold.

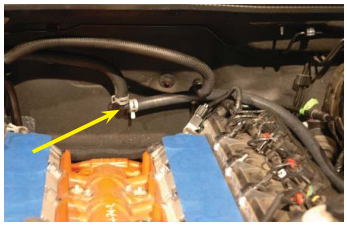
57. Install the provided 5/8” 90° elbow on the end of the hose you just cut. Secure the elbow on the hose so that the open end points toward the left hand side fender and the handles of the hose clamp point toward the right hand side fender.

58. Attach the supplied 5/8” x 48” hose to the left hand side barb installed on the water pump using a supplied spring clamp.

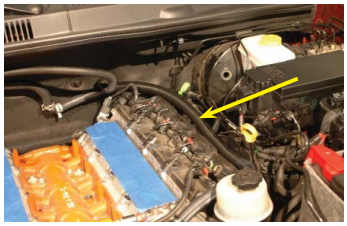


59. Use the bolt hole on the front of the left hand side head, the supplied spacer, then Adel clamp and bolt to anchor the hose you just installed to the engine. The lobe of the Adel clamp should be pointing up and toward the front of the vehicle.

60. Route the hose over the power steering reservoir, between the dip stick and front coil pack, back around the remaining coil packs and cut to fit at the 90° elbow on the OEM heater hose. Secure in place with a supplied spring clamp.



61. Cover the hose at chaffing points with the supplied split loom to protect the hose from damage.



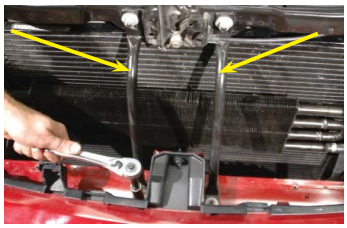
62. Remove the six push pin rivets securing the fascia by prying up the center spreading pin using a flat head screwdriver and then pull the pins out.

63. Pull forward and up to remove the fascia grille. Set aside in a safe location for later re-install.

64. Cut strips of the supplied adhesive backed rubber and apply to the inside surfaces of the low temperature radiator mounting brackets, on top of the strips applied, cut and add the ½" adhesive backed rubber as shown.

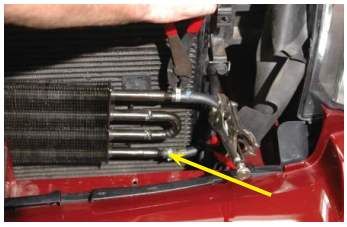
65. Use acetone or lacquer thinner to clean the end caps of the low temperature radiator on the inside surface (the side opposite the hose barbs). Cut strips of the supplied adhesive backed foam to fit, and attach to the cleaned surfaces. This should completely cover the tanks and act as a buffer against the existing low temperature radiator.

66. Remove the two fascia support braces from the bumper support and upper cross member at the hood latch using a 13mm wrench. Set aside for later re-install.



67. Use pinch off pliers or (carefully) vice grips to clamp off the two power steering hoses prior to the power steering cooler.

68. Use a drain pan to catch dripping fluid from the power steering cooler, and cut the two hose clamps holding the pinched hoses to the power steering cooler. Pull the hoses off the hose barbs of the power steering cooler, and pull the cooler off the plastic tabs mounting the cooler to the face of the air conditioning condenser. Set the power steering cooler aside for later reinstallation.

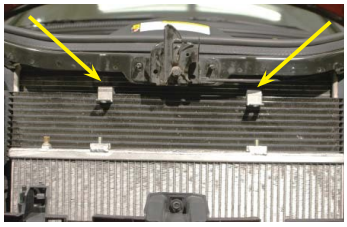


69. The existing power steering cooler plastic mounting tabs will have to be removed. We found the easiest solution was to use a saw blade to cut the tabs off of the mounting plate.

70. There is an existing threaded hole in the top surface of the bumper support on the left hand side. Use a drill motor and drill bit to open this hole to ¼".

71. Measure over 19" toward the right hand side, mark and drill another ¼" hole to match the setback of the existing hole.

72. Slide the two carriage bolts into the slots of the charge air cooler low temperature radiator and place the low temperature radiator just in front of the air conditioning condenser on top of the bumper support. Use the location of the two bolts to locate where to place two of the prepared charge air cooler low temperature radiator mounting brackets. Press the mounts into position on the air conditioning condenser top tank.



73. Slide the charge air cooler low temperature radiator up and secure to the located mounting brackets using the provided nuts.

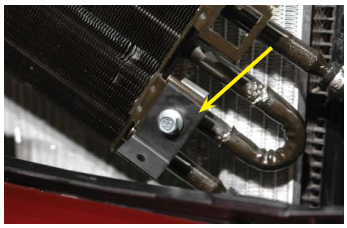
74. There are five tabs holding the grille to the fascia one on each side, and three on the top surface. Use a flathead screwdriver to carefully lever the tabs free from their locking position. Let the grille fall below onto the splash shield to allow access to the bottom surface of the charge air cooler low temperature radiator.

75. Place the remaining low temperature radiator mounting clamp on the bottom left hand side of the low temperature radiator, hooking over the bottom tank of the air conditioning condenser and secure in place with the remaining carriage bolt and nut.

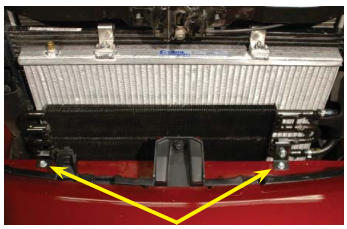
76. Flip the power steering cooler over so that the mounting tabs that were originally on the rear are now facing forward. Slide the provided crimp clamps onto the power steering hoses that you pinched off earlier and press the hoses back onto the power steering cooler hose barbs. Securely crimp the hoses onto the barbs using crimp pliers or dykes, be careful to not cut the clamps.

77. Remove the pinching pliers of vice grips from the two power steering cooler hoses. Attach the supplied acute (below 90°) angle mounting bracket to the right hand side, lower power steering bracket with the angle being up leg pointing forward. Use the supplied threaded plate as backing with the supplied bolt. Align the backing plate flush with the top of the bracket and tighten securely.

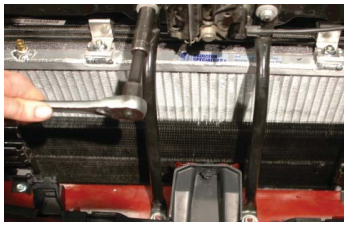
78. Attach the obtuse (greater than 90°) angle mounting bracket to the left hand side lower mounting bracket using the supplied threaded plate with the angle being down leg pointing forward. Finger-tighten the bolt to the backing plate at this time.



79. Use the provided bolts and nuts to attach the two mounting brackets to the two holes prepared in the top surface of the bumper support. Tighten the bolt and backing plate of the left hand side mounting bracket.



80. Re-attach the fascia braces on either side of the hood latch in their original location using the factory hardware and tighten securely.



81. Disconnect the PCV hose from the PCV valve on the stock intake manifold.

82. Use a 15/16” wrench, remove the PCV valve from the stock intake manifold.

83. Install the PCV valve in the right hand side hole of the supercharger lid and tighten with 15/16” wrench.

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

85. Remove the throttle body from the OEM intake manifold assembly using a 10mm wrench.

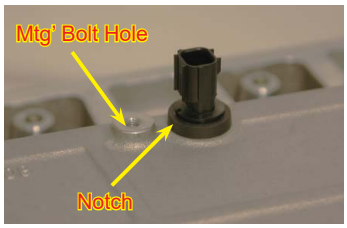
86. Inspect the installed throttle body O-Ring on the new supercharger inlet. If there is any nicks or damage to the O-Ring it must be replaced.

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

88. Remove the factory IAT sensor form the OEM air tube.

89. Lube the O-ring of the removed IAT sensor with the provided Lubriplate lubricant.

90. Flip the supercharger assembly upside down onto clean shop towels. Remove the bolt and mounting bracket over the IAT grommet temporarily. Press the IAT sensor into the grommet in the bottom of the supercharger assembly with the notch in the stop ring pointing toward the mounting bolt hole. Secure in place with the tongs of the mounting bracket and bolt.



91. Plug the extension harness into the tail of the IAT sensor.

92. Inspect, and 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. When finished flip the supercharger back over onto some blocks to protect the IAT sensor from damage.

93. **NOTE: The following two steps are a change from the procedure for mounting the charge air cooler hoses we followed while photographing this install due to encountered difficulty of the hose install with the supercharger installed. As such some later photographs may not show these hoses in place.**

94. Cut 2” off the short end of two of the provided 4” x 36” x 90° elbow hoses.

95. Using the provided spring clamp, attach the short end of one of the hoses to the right hand side charge air cooler hose barb behind the supercharger. The hose will point toward the right hand side of the vehicle.

96. Connect the short end of the other modified 4” x 36” x 90° elbow hose to the left hand side charge air cooler hose barb behind the supercharger using a provided spring clamp. This hose will also route toward the right hand side of the vehicle.

97. Remove the tape or rags from the top of the engine heads.

98. Wipe any tape residue or debris off using lacquer thinner or alcohol or some other suitable non-petroleum based solvent.

99. With the help of an assistant, set the supercharger assembly in place. Be careful with the protruding bolts and the IAT sensor harness wires which must exit below the assembly toward the front of the supercharger on the right hand side.

100. Torque the supercharger mounting bolts to 106” lbs. using a center-out, crisscross pattern. Verify your torque wrench settings.

101. Connect the MAP Sensor plug onto the MAP Sensor located on the right hand side behind the supercharger.

102. Connect the eight fuel injector plugs. Ensure that they clip securely in place.

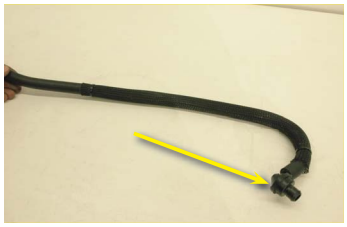
103. The IAT extension harness should be exiting below the supercharger intake manifold assembly on the right hand side of the engine. Connect the extension to the existing IAT plug and tuck the wires under the throttle body upon completion.

104. Plug in the throttle body connection.

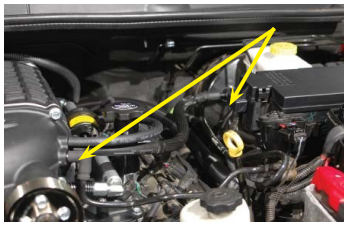
105. Plug the EVAP sensor tube onto the inlet on the supercharger inlet as shown.

106. Remove the stock brake booster hose from the OEM intake manifold.

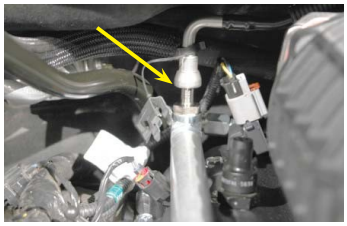
107. Remove the brake booster valve from the end of the hose and re-connect the valve to the opposite end of the hose by the “J” bend.



108. Connect the brake booster valve to the brake booster canister and route the hose forward to connect to the hose barb on the supercharger inlet as shown.



109. Install the fuel line on the new fuel manifold barb at the rear-right hand side fuel rail.



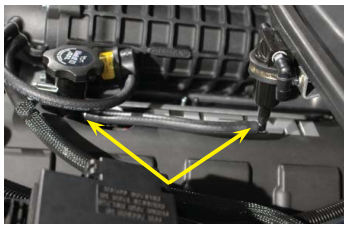
110. Pull on the fuel line; this should not be removable without using the fuel line removal tool. After verifying your connection, snap on the fuel line safety clip.

111. Extend the 'lobe' of the notch in the left hand side coil pack cover approximately 1" further toward the rear of the cover and press in place over the coil packs in the original location. This modification is to create clearance with the oil separator drain hose to be installed next.

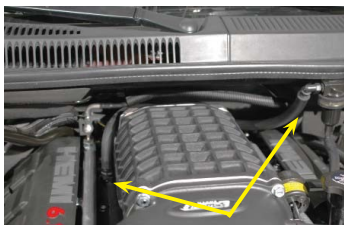
112. On the left hand side below the windshield cross brace is an existing stud pointing down. Use the provided nut to attach the provided bracket to the stud and tighten with a 10mm wrench.

113. Use the provided Adel clamp and bolt to attach the oil separator to the bracket just installed using a 10mm wrench. The embossed arrow on the top of the valve points toward the left hand side fender. Once installed, twist the left hand side barb to point down and the bottom barb to point toward the oil fill spout.

114. Trim the 3/8” hose to fit between the oil separator valve and oil fill spout barb and install between the two, no clamps are necessary.



115. Install a 24” piece of the supplied 1/2” hose between the right hand side PCV barb in the supercharger lid and the right hand side barb of the oil separator valve.

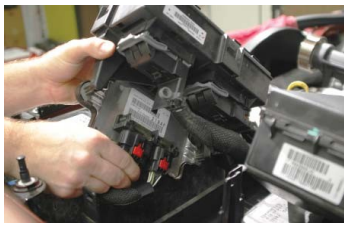


116. Install a 42” piece of the supplied 1/2” hose between the right hand side barb on the supercharger inlet and the left hand side barb of the oil separator valve.

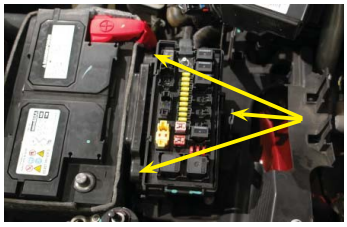
117. Re-install the strut tower brace using the original nuts, an 18mm wrench and torque to 70 ft. lbs.

118. Install the fuse center mounting bracket using the original three nuts and tighten using a 10mm wrench.

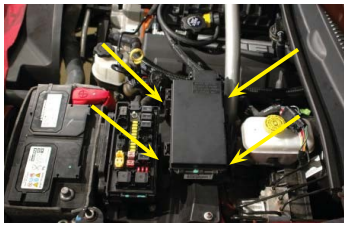
119. Re-connect the two forward fuse center plug connections.



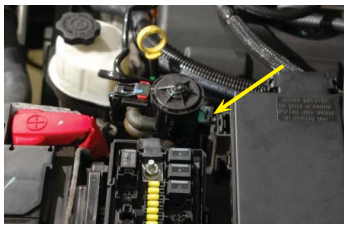
120. Install the forward fuse center onto the three fuse center mounting bracket posts. An audible click is heard when locked in place.



121. Replace the rear fuse center on the four fuse center mounting bracket posts. Ensure they click into place.



122. Slide the EVAP solenoid back on the mounting bracket.



123. This is the charge air cooler pump and mounting hardware.

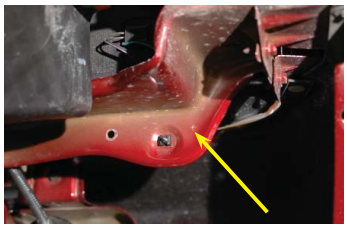
124. Remove the right hand side wheel.

125. Remove the right hand side wheel well splash shield by prying out the center locking post of the two push pin rivets.

126. There are five plastic ‘pop’ rivets. Use an awl or tiny screwdriver to push in on the center post of the rivets to release the lock, the rivets can then be pulled free.

127. Remove the splash shield fender well from the vehicle and set aside to re-install later.

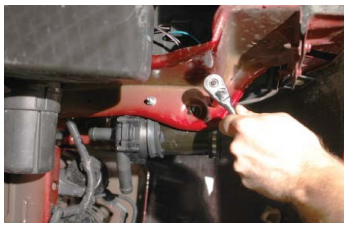
128. Mark a hole ¾" down from the center of the vertical-to-horizontal bend of the fender cross brace.



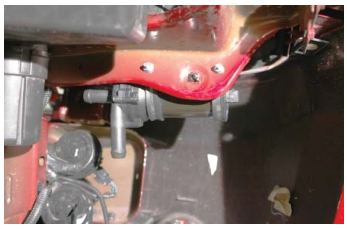
129. Drill a ¼" hole at the mark for an charge air cooler pump mounting clamp.

130. The pump will mount to the forward side of the hole you just drilled and the existing hole toward the center in this configuration. **Note that the spacers will be against the cross brace, the clamp comes next with the lobes pointing down and forward.**

131. Secure the pump as described using the supplied nuts on the rear side of the fender cross brace. The discharge barb of the pump is to point down with the inlet barb of the pump pointing toward the left hand side of the vehicle. Tighten in place using a 10mm wrench.



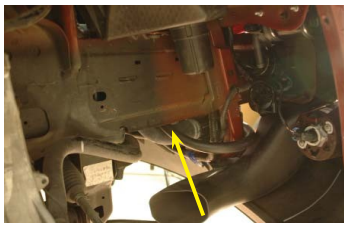
132. Roll the clamps forward and up after tightening and twist the pump to keep the discharge barb pointing down.



133. Cut 2-1/4” off the short end of the two supplied 4” x 60” x 90° elbow hoses.

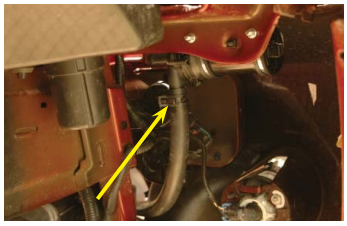
134. Connect the short end of one of the modified hoses to the right hand side barb of the charge air cooler low temperature radiator and route the other end through the opening below the right hand side parking lamp. Secure in place with a provided spring clamp.

135. Continue to route the hose around the radiator support frame, in and over the lower radiator hose and up into the engine compartment on the right hand side over the coil packs back toward the rear of the vehicle.



136. Connect the short end of the other modified 4” x 60” x 90° elbow hoses to the left hand side hose barb of the charge air cooler low temperature radiator and route over toward the right hand side to parallel the hose just installed into the wheel well. Secure in place with a provided spring clamp.

137. Cut the hose to fit and connect to the charge air cooler pump discharge barb using one of the provided spring clamps.



138. Cut 1-1/2” off the end of one of the supplied 4” x 36” x 90° elbow hoses.

139. Connect the short end of the hose to the inlet barb of the charge air cooler pump using one of the supplied spring clamps. Route the hose up into the engine compartment on the right hand side and back toward the rear of the vehicle.

140. Remove the forward right hand side fuel rail mounting bolt using a 10mm wrench.

141. Attach the supplied charge air cooler reservoir mounting bracket to the forward right hand side fuel rail mounting boss location, re-installing the fuel rail mounting bolt. Tighten securely using a 10mm wrench.

142. Modify the OEM right hand side coil pack cover to create clearance with the throttle body, slide under the charge air cooler reservoir mounting bracket and press onto the mounting studs locking in place.

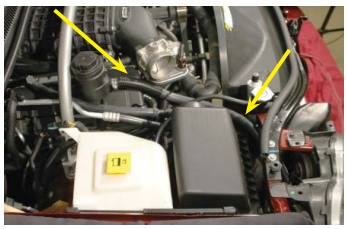
143. Mount the charge air cooler reservoir bottle to the mounting bracket using the supplied bolts and a 10mm wrench.

144. Route the hose from the charge air cooler pump inlet barb to the forward barb of the charge air cooler reservoir bottle. Tie the hose down to the existing harness below the throttle body using a supplied zip-tie, cut the hose to fit and secure to the reservoir bottle using a supplied worm gear clamp. **NOTE: It's important to use worm gear clamps on the reservoir bottle.**

145. Route the hose from the right hand side barb of the supercharger charge air cooler to the rear hose barb of the charge air cooler reservoir, cut to fit and secure in place using a provided worm gear clamp.

146. Connect the hose from the left hand side barb of the supercharger charge air cooler to meet the hose from the charge air cooler pump inlet barb. Cut the hoses to fit and connect together using the provided coupling (hose mender), and secure in place using the provided spring clamps.

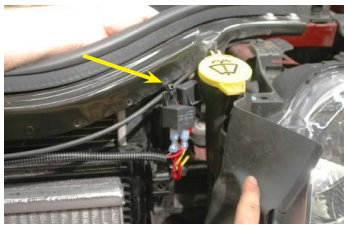
147. Inspect your hoses and cover any locations that may experience chaffing with sections of the provided split loom to protect them from damage.



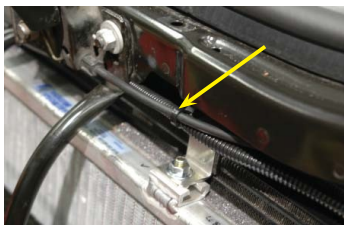
148. Loosely tie your hoses together or to existing hoses, harnesses, or locations where appropriate using the provided zip ties.

149. This is the charge air cooler pump relay harness. Install the provided 15A fuse in the fuse holder of the harness and replace the fuse cap.

150. Pull the hood release cable down from under the upper cross brace adjacent to the windshield washer reservoir cap. Use the provided zip-tie to tie the fuse holder and relay close to the washer reservoir.

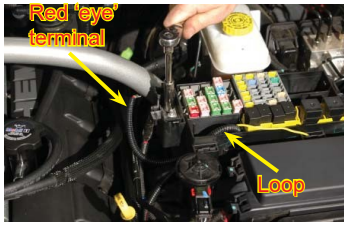


151. Secure the harness in a couple of places with the provided zip-ties.



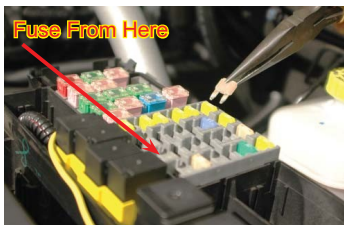
152. Connect the charge air cooler relay harness plug to the receptacle on the charge air cooler pump.

153. Tuck the yellow wire into the split loom covering the red wire from the relay. Route the two wires into the engine compartment over to the rear fuse center on the engine side. Tuck a loop of the harness up into the forward cavity of the fuse center, and pull the yellow wire out of the split loom at the peak of the loop. Remove the nut from the positive post of the fuse center.



154. Replace the nut incorporating the "eye" on the end of the red wire of the relay harness.

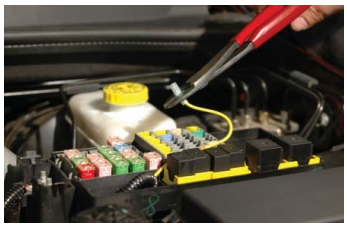
155. Remove the 25A fuse #43 for the **fuel pump** from the rear fuse center. Verify using the owner's manual that you are removing the coil-actuators fuse. **Do not rely on just the fuse number specified, verify by name.**



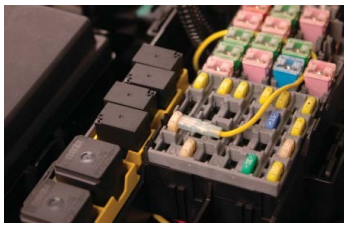
156. Add the fuse tap supplied to one leg of the 25A fuel pump fuse.

157. Replace the 25A fuse back into the slot from whence it came.

158. Strip 3/8" of insulation from the end of the yellow wire and crimp on the supplied spade connection.

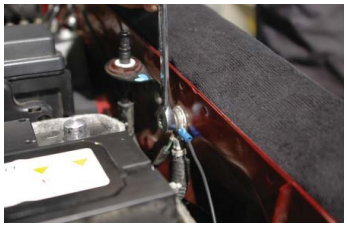


159. Route this wire over to the fuse tap just installed and plug the spade end onto the fuse tap. Bend the wire over toward the center of the box and close the cover.

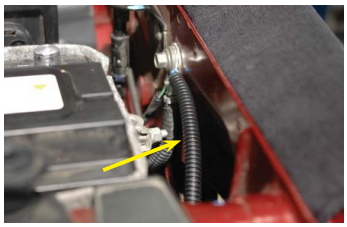


160. Remove the ground bolt on the engine compartment left hand side fender wall by the negative battery terminal.

161. Route the black wire from the relay harness over toward the ground bolt. The existing “eye” terminal is not large enough to fit over the ground bolt. Cut the “eye” terminal off, strip off 3/8” of insulation from the end and crimp on the new “eye” and crimp on securely. Replace the ground wires and bolt incorporating the new black ground wire from the relay harness. **Ensure that you have ALL the ground wires attached.**



162. Cover the black ground wire with a length of the supplied split loom.



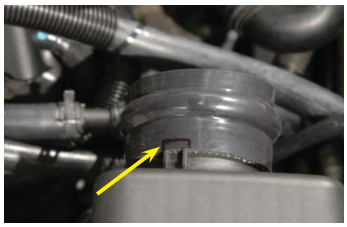
163. Replace the fender well splash shield on the right hand side using the removed plastic push rivets and removed plastic “pop” rivets where you have access to both sides. In this case push the locking pin back into the hole of the ‘pop’ rivet locking it in place. Where you don’t have access to both sides use the provided push rivets.

164. Replace the right hand side wheel and torque the bolts to 110 ft. lbs.

165. Remove the two clamps from the OEM air tube.

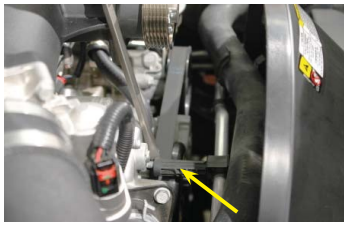
166. This is the air tube components, including the two clamps removed from the OEM unit.

167. Mark and notch the supplied 'hump' hose to go past the two fins on the top of the OEM air box.



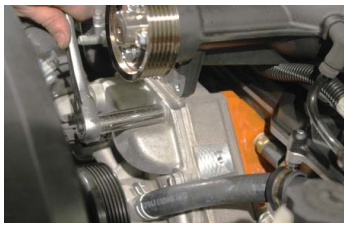
168. Install the notched hose in place on the air box. Slide the other hose completely onto the new air tube throttle body end. Press the air box end of the air tube into the receiving end of the hump hose…rotate the air tube to fit and slide the straight hose onto the throttle body. Tighten all clamps securely.

169. Near the front-center of the engine is a plastic mount anchoring the AC hard line to a stud. Pry this mount off the stud using a large flathead to get a little more room.



170. Use a 3/8” socket or breaker bar to spring the tensioner to remove the factory drive belt. **We used a piece of pipe over a ratchet to gain leverage.**

171. Remove the top water pump bolt using a 13mm wrench.



172. Loosen the tensioner assembly using a 15mm wrench. **This does not need to be removed just loosened enough to remove the next bolt.**

173. Going clockwise (toward the left hand side) from the first water pump bolt, skip one, then using a 13mm wrench remove the next bolt. **You may need to rotate the tensioner assembly to pull the bolt free.**

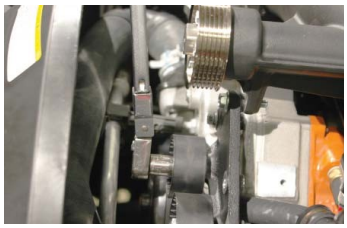
174. Replace the second water pump bolt (you just removed) incorporating the supplied idler bracket as shown. Finger-tighten the bolt at this time.

175. Attach the supplied idler bracket to the top water pump bolt location and the supercharger pulley support using the provided bolts. Torque to 20 ft. lbs.

176. Add the idler pulley with the supplied longer bolt to incorporate the bracket brace installed earlier. Use a 15mm wrench and torque to 40 ft. lbs.

177. Add the supplied nut to the back of the idler pulley bolt securing the idler bracket brace using a 15mm wrench.

178. Install the second idler pulley using the supplied bolt. Use a 14mm wrench and torque the bolt to 40 ft. lbs.

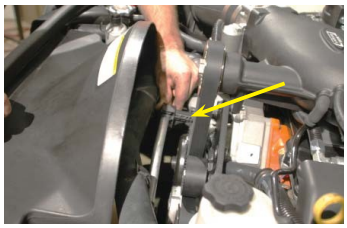


179. Torque the second water pump bolt (finger-tightened earlier) using a 13mm wrench and torque to 20 ft. lbs. Always verify your torque wrench settings.

180. Tighten the OEM tensioner assembly back down using a 15mm wrench to 20 ft. lbs.

181. Install the drive belt on the engine using the belt routing diagram located on the last page of these instructions as a guide. Spring the tensioner using a 3/8" ratchet or breaker bar (we use a pipe for ease of leverage on a 3/8" ratchet).

182. Replace the AC mounting bracket back on the post in front of the engine.

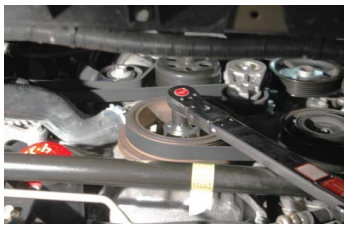


183. Remove the air box end of the hose from the OEM PCV plastic line and replace with the provided 4" section of 5/8" hose. Connect the remaining OEM hose end to the front oil fill spout hose barb and the new hose end to the air box end and air box. Secure to the air box using the provided spring clamp.

184. Snap the lower grille grid back in place.

185. Remove the crank pulley bolt using a 21mm wrench. Put aside for later use.

186. Install the provided drill guide using the provided crank bolt and torque to 40 ft. lbs. It's helpful to align the holes in the guide horizontally.



187. Use an angle drill and the provided step bit to drill two holes for crank pins. The step bit has two small steps. **Drill until the second step reaches the surface of the drill guide.**

188. Blow out the holes using compressed air. **Wear safety glasses.**

189. Ream out the two holes using the provided reaming bit.

190. Remove the temporary crank pulley bolt and drill guide.

191. Once again blow out the holes and area to ensure all debris has been removed.

192. Place a generous bead of the provided green Loctite on the two provided crank pins.

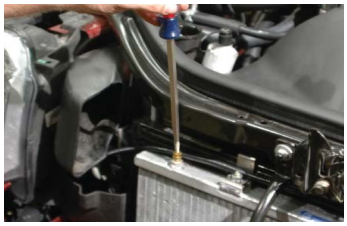
193. Insert the pins in the prepared holes and tap in using a punch. **Make sure the pins are all the way in, the crank pulley bolt should not be able to touch the surface of the pin.**

194. Install the OEM crank pulley bolt and torque to 129 ft. lbs.

195. Re-attach the battery negative terminal using a 10mm wrench.

196. Fill the charge air cooler system with a 50/50 mixture of coolant as specified by your vehicle manufacturer recommendations. Cycle the key a few times to get the pump functioning.

197. Use the bleed valve on the top of the charge air cooler low temperature radiator to facilitate air removal.



198. Fill the radiator back up with the fluid drained earlier. Be sure to incorporate a filter in case any debris contaminated your fluid. Top off as necessary.

199. Replace the front radiator grille using the stock push rivets.

200. Find a place to loop the cable of the OBD port (a panel behind the port can be opened and the cable looped around the wire harness inside) and press the cover over the port.

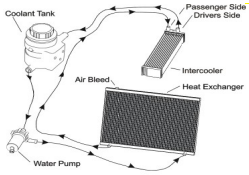
201. Place a “Premium Fuel Only” sticker on your fuel door as a reminder.

202. Start the vehicle for five seconds and shut off. Check for fuel, coolant, fluid leaks and supercharger belt alignment. Check radiator and charge air cooler reservoir levels and top off as necessary.

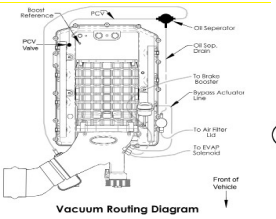
203. After the initial startup and the engine has come to operating temperature, recheck the coolant levels in the engine and charge air cooler reservoir. If necessary open the bleed valve again to allow any residual air trapped to escape the system. Check all the hose connections.

204. Test drive the vehicle for the first few miles under normal driving conditions. Listen for any noises, vibrations, engine miss fires or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, this is normal. Also during the supercharger break-in, the rotors are self-honing, the noise will reduce quickly.

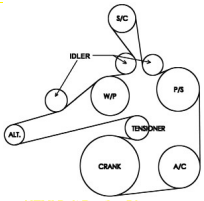
205. After the initial test drive, gradually work the vehicle to wide open throttle runs. Listen for any detonation (pinging). If engine detonation is present, let up on the throttle immediately. Most detonation is caused by low octane fuel still in the tank. **PREMIUM GASOLINE FUEL MUST BE USED!** Have fun and think about getting a radar-laser detector!



Intercooler Routing Diagram
Jeep 6.1 L HEMI



Vacuum Routing Diagram



HEMI Belt Routing Diagram

If you have questions about your vehicles performance, please check with your installation facility or call Magnuson Superchargers at (805)642-8833, Monday through Friday, 8am to 5pm (Pacific Time).

Please enjoy your “Magnuson Supercharged”

performance responsibly.

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