

MAGNUSON

SUPERCHARGERS

Installation Instructions for:
INTERCOOLED SUPERCHARGER SYSTEM
2005-2006 PONTIAC GTO LS2



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

*** PREMIUM FUEL REQUIRED ***



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

Magnuson Products LLC
1990 Knoll Drive, Bldg A, Ventura, CA. 93003
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magnusonproducts.com * magnacharger.com

89-89-60-018 Rev I

INSTALLATION MANUAL

Magnuson Products SuperCharger Kit GM 6.0 LS2 Liter Engines, 2005 and later Pontiac GTO

Please take a few moments to review this manual thoroughly before you begin work, as there are special steps for both the LS1 (2004) and LS2 (2005-on) equipped vehicles: Make 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. Before installing your supercharger system, make sure that your vehicle has **ONLY** 91 octane or higher fuel in the fuel tank. **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 Products LLC is not responsible for the engine or consequential damages.

Magnuson Products supercharger kits are designed for use on stock vehicles. To that end, the alteration or modification of the fuel system, drive train, engine, and/or supercharger outside of stock parameters in any way can result in engine damage or failure for which Magnuson Products is NOT responsible and will void Magnuson Products warranty and CARB certification. Aftermarket engine recalibration devices that modify fuel and spark curve (including, but not limited to programmers) are not recommended and may cause engine damage or failure. Use of non-Magnuson Products approved programming will void all warranties. 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 GM fuel filter is recommended at the time of supercharger installation.
Stock spark plugs and stock plug gap is recommended
Drive belt = Gates# K061010
Air Filter = K&N# 33-2289

Tools Required:

Metric wrench set
1/4" - 3/8" and 1/2" drive metric socket set (Standard & Deep)
3/8" and 1/2" drive Foot pound and inch pound torque wrenches
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

Contact information:

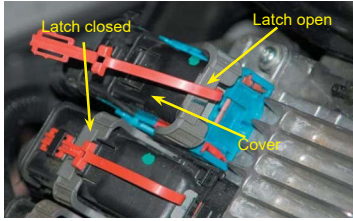
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NOTE: Particularly in cars that are a few years old, or have had inclement weather as a lifetime environment (snow/salt...whatever), some components may get 'locked' into position. A can of WD-40 or silicon lubricant can make some of these parts easier to remove. This pertains to both metal and plastic components. If you are having trouble taking something apart, try some spray and some gentle wiggling.

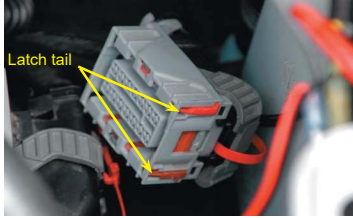
1. **If your Magnuson SuperCharger Kit comes with a hand-held tuner, skip to step #9. If not, follow the next 8-steps below to send your computers to Magnuson Products for re-programming.** Locate the vehicles computer on the front surface of the driver side wheel well.



2. There are three computer connectors, Grey, Black and Blue. Remove the connectors by first removing the Red locking key, then pushing in on the Black cover and pushing the Grey latch down to open it.



3. The computer connectors can be removed when the latch is pushed down and the red tail of the latch is visible on the end of the connector.



4. Remove the two T20 TORX screws that secure the computer to its mounting bracket.



5. Note: If your vehicle has an automatic transmission, you will also need to remove the transmission control computer located on the back side of the drivers kick panel, inside the vehicle.



6. Here are the shipping materials supplied to quickly return the vehicle computers to Magnuson Products LLC.



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



8. **If your MagnaCharger Kit came with the hand-held tuner, the first step is to reprogram the tuning for your vehicle's computer.** This will allow it to function correctly with your new MagnaCharger Supercharger after installation. Follow the instructions in the supplied SuperChips Tuner manual.



9. Before starting the supercharger installation, press the fuel door release button giving access to your gas cap, and then remove the negative (-) battery cable from the terminal with a 10mm wrench.



10. On top of each shock tower remove the two nuts that secure the strut tower brace with a 13mm socket wrench.



11. Remove the strut tower brace and fasteners from the vehicle, the brace can be reinstalled after the supercharger installation.



12. Remove the two engine covers by pulling up firmly along the edges.



13. Use a flat blade screwdriver to pry up on the five push pin rivets on the radiator cover.



14. Lift up and remove the radiator cover and put aside for later re-installation.



15. Use a 7mm nut driver or flat-blade screwdriver to loosen the Air Tube clamp at the Mass Air Flow meter (MAF).



16. Use a 7mm nut driver or flat-blade screwdriver to loosen the Air Tube clamp at the throttle body.



17. Remove the PCV tube from the air tube and from where it connects to the valve cover barb.



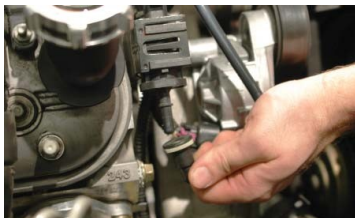
18. Remove the air tube completely, it will not be re-used.



19. Disconnect the Electronic Throttle Control (ETC) connector on the passenger side of the throttle body.



20. The EVAP Solenoid is located at the front of the passenger side cylinder head. To disconnect the EVAP line, press the gray tab and pull to remove.



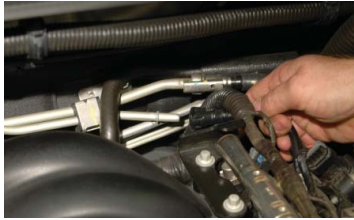
21. Remove the other end of the EVAP line from behind the throttle body on the driver side manifold.



22. Unplug the EVAP line at the top barb of the EVAP sensor.



23. Remove the other end of the EVAP line at the fire wall by squeezing on the connector and pulling it free.



24. We will not be using the OEM EVAP lines, but we will be utilizing connectors, so put them aside where they won't get damaged for later usage.



25. Disconnect the Evaporative Purge Solenoid (EVAP) electrical connector.



26. Remove the PCV hose that connects the intake manifold to the engine valley cover vent.



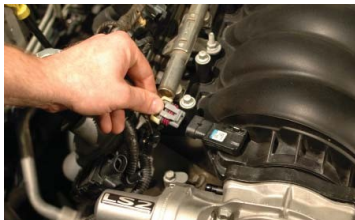
27. Disconnect the eight fuel injector connectors by pulling up on the grey release latches and then squeezing them at the top.



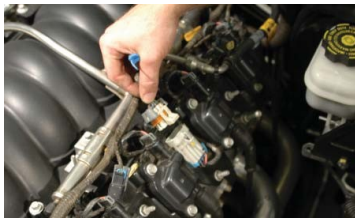
28. Remove the injector harness clips from the intake manifold by pulling the clips from the fuel rail mounting holes.



29. At the front of the intake manifold locate the Manifold Absolute Pressure (MAP) sensor and disconnect the electrical connector.



30. On both sides of the engine disconnect the ignition coil pack connectors from the coil packs by first removing the blue lock key.



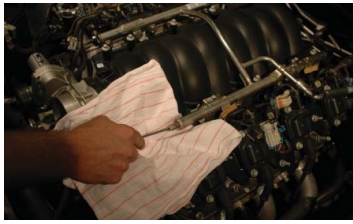
31. Remove the vacuum accessory hose and connector from the rear of the manifold.



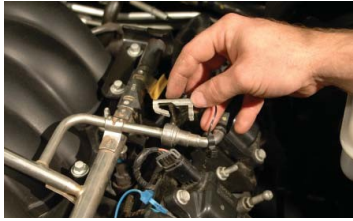
32. Relieve the pressure in the fuel system by removing the cap.



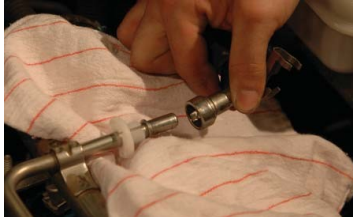
33. On the driver side of the intake manifold, locate the fuel pressure test port. **CAUTION! The fuel in the system is still under some pressure! Depress the check valve with a screwdriver and collect the fuel with a shop towel. CAUTION! Wear eye protection and dispose of shop towel appropriately!**



34. Remove the fuel line locking clip from the fuel rail by first prying the lock clip free with a small screwdriver.



35. Use the supplied removal tool to remove the fuel line connector. First push the line onto the barb, insert the fuel line removal tool and press it into the fuel line, then pull on the fuel line to separate the fuel line from the hard line barb. Catch the dripping fuel with a shop rag and be sure to dispose of properly. We suggest you put a cap on both the fuel line barb and plug the end of the hose to avoid further contamination and mess.



36. Disconnect the brake booster valve from the canister. Put it out of the way by tucking it behind and over toward the passenger side of the engine.



37. Remove the intake manifold by loosening the ten manifold bolts with a socket wrench and a 8mm socket.



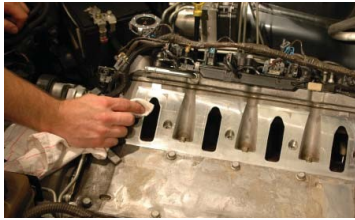
38. Remove the intake manifold, fuel system and throttle body assembly. **CAUTION! Make sure that you do not drop any debris into the intake ports!**



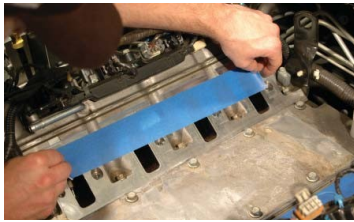
39. Use a shop vacuum cleaner to remove any debris or dirt from the intake port area and engine valley cover.



40. Use alcohol or a suitable solvent to wipe the heads clean being careful to not allow any debris to fall into the exposed ports.



41. Cover the intake ports with tape or clean rags to keep dirt and debris from entering the engine.



42. Drain the radiator using the drain petcock on the driver side of the radiator. You may find that a small pair of channel locks, or small pipe wrench on the petcock flange a handy tool if it's really stuck.



43. Remove the radiator cap to facilitate coolant drainage.



44. Remove the coolant vent hose from the vent pipe.



45. Remove the coolant vent pipe attachment bolts with a 10mm socket wrench.



46. Remove the coolant vent pipe. Ensure that the O-ring gaskets under the vent pipe blocks do not stick to the cylinder heads. If so, remove them as new gaskets are supplied.



47. Install the new vent pipe O-ring gaskets using the supplied Lubriplate lubricant to hold them in place.



48. Install the new vent pipe with the OEM bolts and torque them with a torque wrench and 10mm socket to 106 in-lbs. Verify that your torque wrench is set to in-lbs!



49. Remove the engine oil pressure sensor connector from the pressure sensor located at the rear of the valley cover.



50. Remove the engine oil pressure sensor from the valley cover with a 1-1/16" wrench.



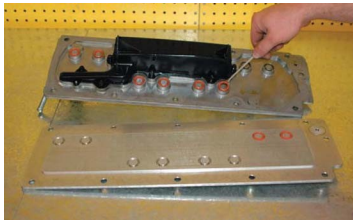
51. Remove the engine valley cover and gasket by removing the eleven bolts with a ratchet and 13mm socket and lift the cover free.



52. The gasket will be reused, the original valley cover and bolts will not. Inspect the gasket for any damage and then reinstall, note that it will only fit correctly in one position.



53. Using a small straight blade screwdriver, remove the eight O-rings from the underside of the engine valley cover and transfer them to the grooves in the bottom of the new cover.



54. Install the new engine valley cover and flathead bolts supplied with a 5mm Allen socket and torque the bolts to 18 lb-ft.



55. Place a small dab of black silicone adhesive in the recesses of the valley cover.



56. Insert the six O-rings into the recesses in the new valley cover.



57. Use some Teflon tape or paste on the threads of the removed Oil Pressure transmitter and install the Oil Pressure Transmitter in the new valley cover with a 1-1/16" socket and torque it to 15 ft-lbs.



58. Re-connect the oil pressure transmitter electrical connector. Follow that harness toward the passenger side and push the clip free from the hole in the engine lift bracket.



59. Remove the engine lift bracket from the rear of the passenger side cylinder head by removing its two mounting bolts with a 16mm wrench.



60. **Vehicles with automatic transmission only. Manual transmission vehicles please skip to step #62.** The automatic transmission fill tube will need to be moved slightly outward to avoid contact with the supercharger fuel cross-over pipe.



61. Move the automatic transmission fill tube by pulling it firmly outward towards the fender of the vehicle. It will only be necessary to move the tube 1/4"- 3/8". After installing the supercharger and manifold assembly, check for contact between the transmission fill tube with the fuel cross-over pipe, and the brake lines. See step #155.



62. Unplug MAF sensor at the air box.



63. Unscrew the three screws holding the cover of the airbox to the housing. Pull up on the cover and remove for later installation.



64. Remove the OEM air filter.



65. Unclip the coolant steam vent hose (disconnected in step #45) from the radiator mounts and tuck over toward the passenger side of the vehicle out of the way.



66. Disconnect the radiator overflow hose from the barb at the radiator fill neck, unclip from the fan shroud mounting clips and pull the hose free, tuck the hose into the air box out of the way.



67. Disconnect the upper radiator hose from the water pump barb and tuck the hose between the block and the airbox on the driver side out of the way.



68. Unplug the fan control plug at the passenger side of the fan shroud.



69. Remove the fan shroud from the radiator by releasing the lock tabs on each side of the fan shroud and pulling free.



70. Remove the lower radiator hose from the water pump.



71. Use a large flathead screw driver to lever the retaining clips from the radiator mount slot.



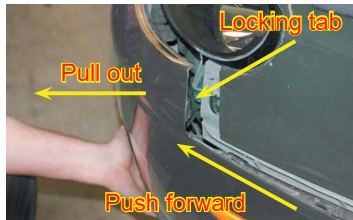
72. Remove the two screws in each wheel well that secure the front fascia.



73. Carefully **(do not use excessive force or you can break the plastic mounting tabs)** pull out on the wheel well edge of the front fascia just enough to clear the lip. This picture shows it pulled further out since the clips were already unsnapped.



74. Carefully push on the front fascia forward and then pull out at the edge of the fascia below the head light on both sides to free the locking tab. A customer sent us an alternate method, we have not tested the procedure so we can't say if it is better: **(Not shown in image at right)** "You need to place your hand below the headlight on the bumper cover, and push quick and hard towards the REAR of the car while at the same time pulling out on the end of the bumper cover, and it will come right off after just one or two tries. Perform this on both side of the bumper one at a time."



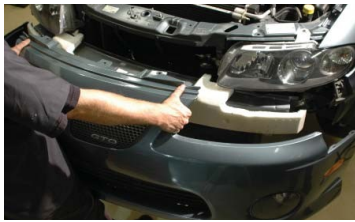
75. Disconnect the fascia electrical connection located on the driver side.



76. Remove the three screws that secure the front fascia or "nose" of the vehicle with a cross-head screwdriver.



77. Remove the fascia complete.



78. Remove the hard foam fascia backing by pulling it off the frame support.



79. Lever on the thumb tabs on the radiator to separate the AC Condenser from the radiator.



80. Carefully lift the radiator free from the vehicle.



81. Use a 15/16" (24mm) socket and an impact wrench to remove the crank bolt at the harmonic damper.



82. Install the provided drill guide and bolt at the harmonic damper on the crank pulley.



83. Torque the provided bolt on the drill guide to 35 ft lbs. Verify your torque wrench settings.



84. Use the provided 1/4" drill bit and the guide holes to drill the two holes for the provided crank pins. Be sure that you drill down to the second step on the bit. If you wrap a strip of tape above the second step (toward the shank), it will be easier to see you've drilled far enough by when the tape touches the drill guide.



85. Blow out the holes you just drilled with air. Be sure that you are wearing safety glasses, and that no debris gets into exposed openings.



86. Use the provided reamer bit to clean and hone the holes you just drilled.



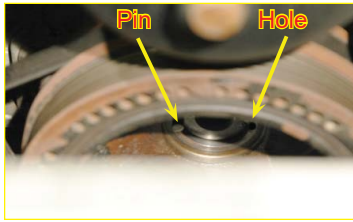
87. Use a 15/16" (24mm) socket and impact wrench to remove the temporary bolt and drill guide tool installed in steps #82 and 83.



88. Blow out the holes that you created again, being sure you are wearing safety glasses and that no debris contaminates any openings.



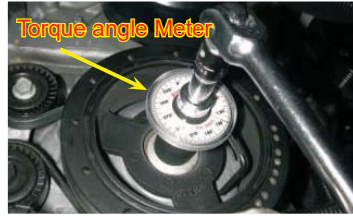
89. Put a bead of Green Loctite on the two provided hardened crank pins and insert them into the holes you just prepared.



90. Tap the pins in with a hammer and punch as needed. Ensure that they are in sufficiently as to not come into contact with the crank bolt to be installed next.



91. Install the new harmonic damper crank bolt and torque to General Motors specifications of 50 N-m (37 ft lbs) then tighten an additional 140° using a torque angle meter.



92. Use a 15mm wrench to lever the tensioner and remove the OEM belt.



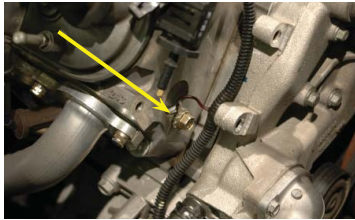
93. Use a 13mm wrench to remove the OEM tensioner assembly.



94. Use a 13mm wrench to remove the ground bolt on the passenger side head.



95. Relocate the bolt and ground wire to the existing hole just under the existing freeze plug as shown. Tighten the bolt with the ground wire incorporated using a 13mm wrench.



96. Remove the existing tensioner bolt from the supplied belt tensioner assembly using a 16mm wrench. Replace the bolt with the new longer supplied bolt using a 19mm wrench.



97. Assemble the tensioner with the adjustable bracket brace as shown. Test fit the tensioner assembly, and adjust the bracket brace as needed.



98. Torque the tensioner mounting bolts to 40 ft lbs. Verify your torque wrench settings.



99. Torque the main tensioner bolt to 50 ft lbs locking against the nut on the adjustable bracket brace.



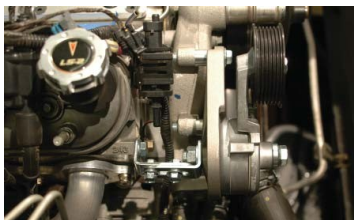
100. Use a 15mm wrench to tighten the brace bracket bolt on the passenger side head where the ground wire was removed in step #94.



101. Tighten the two adjustable bracket bolts.



102. Your finished assembly should look like this.



103. Reinstall the radiator in its original position re-engaging the locking clips. Now, connect the lower radiator hose and set the OEM clamp in position beyond the barb.



104. Reinstall the fan shroud assembly. Ensure that the locking clips are once again engaged.



105. Press the AC condenser back onto the radiator mount tabs. Press on the ends of the assembly, not in the center tube-fin sections where the heat exchanger could collapse.



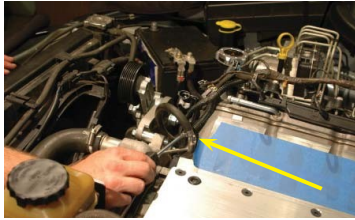
106. Reconnect the fan shroud control plug.



107. Reconnect the radiator over flow hose and snap into the guide clamps along the fan shroud.



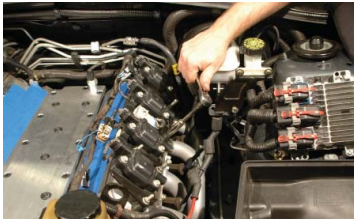
108. Reconnect the steam vent hose to the steam pipe at the passenger side hose barb using one of the supplied hose clamps as shown.



109. Remove the eight plug wires from the coil packs on both sides of the engine.



110. Use a 10mm wrench to unbolt the coil brackets from both sides of the engine.



111. Remove both coil brackets from the engine.



112. Remove the plastic wire covers from both coil brackets using a small flat head screwdriver to release the clips holding the halves together.



113. Locate the plastic cross-head screw in the rain gutter to the right of the center windshield wiper. Remove the screw with a screwdriver. From the underside in the engine compartment, push the screw base up and out so that just the hole in the rain gutter remains.



114. Using a small straight blade screwdriver, open the harness clamp and pull the harness free.



115. Remove the harness clamp from the fire wall, it will not be re-used.



116. Here is the new harness clamp assembly, it will mount in the rain gutter hole that you removed the screw from in the previous step.



117. Install the harness clamp around the harness and hoses. Secure the new clamp with the supplied bolt and nut in the rain gutter hole. Tighten them securely with a 10mm wrench.



118. Remove the throttle body by removing the four mounting bolts with a 10mm socket wrench.



119. Carefully remove the original O-ring behind the throttle body on the original intake manifold.



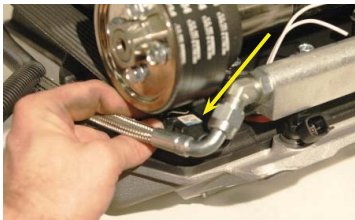
120. Install the throttle body O-ring into the groove on the new inlet manifold. The LS2 throttle body will be installed after the supercharger assembly is installed on the engine.



121. Remove the Manifold Absolute Pressure (MAP) sensor from the stock intake manifold by tilting the sensor forward and lifting it free. Ensure that the orange rubber seal is not missing or damaged as it and the sensor will be re-used.



122. Apply a small amount of the grease supplied to the MAP sensor seal and install the sensor in its new location at the right rear of the supercharger manifold.



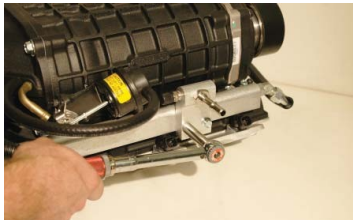
123. Install the MAP sensor in its new location using the supplied bracket and the button head Allen screw with a 4mm Allen wrench. Should you have trouble with the MAP sensor hold down clip, it may be necessary to remove plastic prong slots for clip clearance. A Dremel or rasp-file will suffice...**be careful to not go too deeply on your removal, take off only what's necessary to ensure fit.**



124. Install the fuel manifold O-ring into the recess on the fuel rail with some of the grease supplied.



125. Install the fuel manifold using a 10mm socket and torque wrench. Torque the manifold fasteners to 106 in-lbs.



126. Install the two intake manifold gaskets supplied onto the recesses in the manifold face. Ensure that the gaskets are fully seated in recesses.



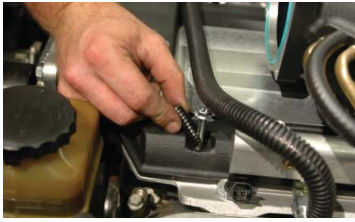
127. Remove the tape from the ports. Use silicone or some mild soap and water solution to lubricate the port surfaces. This will help align the manifold and bolt holes. **(Do not use anything that will damage the silicone port gaskets.)**



128. With the help of an assistant carefully set the supercharger and manifold assembly in place. Do not use the black plastic bypass canister as a lifting point. This is pre-set from the factory and can be damaged if you lift with it.



129. Remove the split-loom sections that support some of the manifold to cylinder head bolts. Start all ten bolts by hand to ensure proper alignment of the manifold.



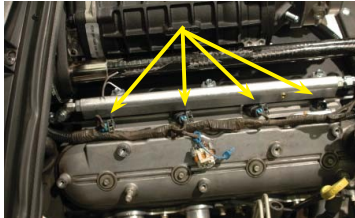
130. Torque all ten bolts that secure the manifold to the cylinder heads gradually and evenly to a torque of 89 in-lbs. Use a 10mm socket and torque wrench. When tightening start at the center and work out with an opposing/crossing pattern.



131. Install the throttle body onto the new inlet manifold with the original mounting bolts. **Note that the throttle body control is on the driver side of the supercharger to clear the jack shaft.** This will not affect function. Torque the mounting bolts to 106 in-lbs.



132. Plug in the injector control plugs on both sides of the supercharger assembly.



133. Reinstall the passenger side coil pack using the stock hardware. Torque the bolts to 106 in lbs. Verify your torque wrench settings.



134. Pre-mount the supplied spacers using the provided grommets to hold the bolts in place on the driver side coil pack as shown.



135. Mount the prepared driver side coil pack to the valve cover using the supplied hardware. Torque the mounting bolts to 106 in lbs. Verify your torque wrench settings.



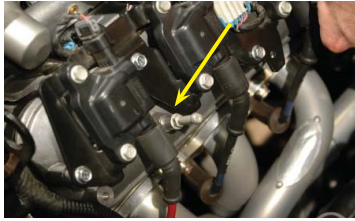
136. Reinstall all plug wires on both sides of the engine.



137. Plug in the main coil pack control connector and blue lock keys on both sides of the engine.



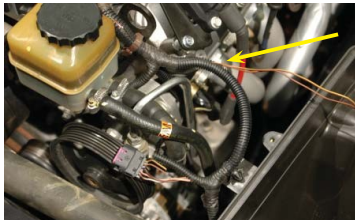
138. Remove the two rocker cover socket pins on the driver side and reinstall incorporating the supplied spacers. Tighten down using a 10mm wrench. These spacers are only necessary on the driver side.



139. Remove the tape and split loom from the harness to about 6" below the MAF connector. Make sure you are looking at the MAF sensor, not the MAP sensor. This came from the connection at the air tube by the air inlet box. Locate the **Brown/Yellow** and the **solid Brown** wires. These are the Intake Air Temperature (IAT) sensor wires on the connector. Cut these two wires approximately 2" below the connector.



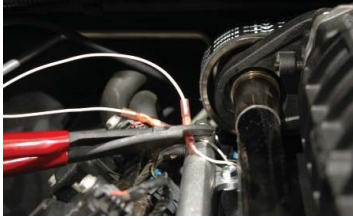
140. Pull the cut end of the remaining wires back out of the split loom to the loom junction near the power steering reservoir on the driver side of the engine.



141. At the back of the supercharger lid on the passenger side just forward of the jack shaft pulley are two **white** IAT wires. These wires will be extended to meet the wires you just cut from the MAF connector.



142. Cut the supplied **white** wire in half. Strip off about $\frac{1}{4}$ " off the four ends of the **white** wire. Use two crimp/shrink connectors to join the IAT wires together extending their reach.



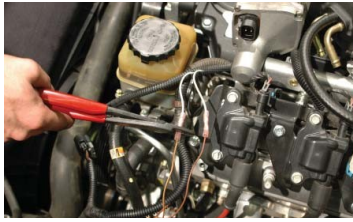
143. Use a heat gun or blow dryer set on high to shrink the insulation on the connectors so that they contract around the wires completely. **You must shrink the insulation, as crimping the connectors alone is not enough to secure them!**



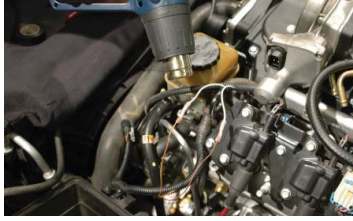
144. Slide a piece of the supplied split loom over the **white** wires. Route the wires under the fuel rail between the rail and coil brackets forward, and under the throttle body to the driver side of the vehicle.



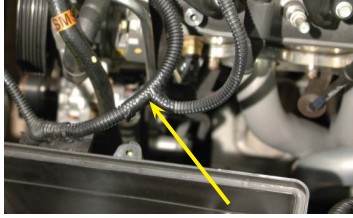
145. Strip about ¼" off the ends of the **Brown/Yellow** wire and solid **Brown** wire cut from the MAF connector. Use two of the crimp/shrink connectors to join the **white** wires to the **Brown/Yellow** and solid **Brown** wires removed from the MAF connector.



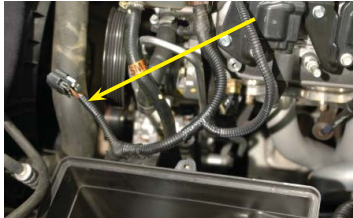
146. Use a heat gun or a hair dryer set on high to shrink the insulation on the connectors so that they contract around the wires completely. **You must shrink the insulation, as crimping the connectors alone is not enough to secure them!**



147. Ensure that the split loom reaches all the way to the supercharger lid and cut the split loom to fit. Use tape to join the split loom to the existing wire harness as shown.



148. Tape over the cut ends of the **Brown/Yellow** wire and solid **Brown** wire to the MAF sensor, tuck back into the existing wire harness. Tape over the end to secure the split loom.



149. Locate the MAP connector on the harness. Remove the black tape and split loom from the MAP connector and wires. Viewing the connector from the top or clip side, note the location and colors of the three wires on the connector: **Purple/White** on the left, **Green** in the center and **Black** on the right. Approximately 1" behind the connector cut these three wires.



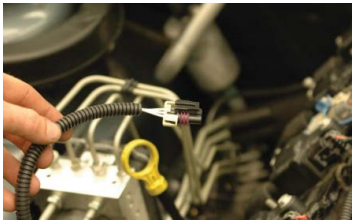
150. Install the new MAP harness to the **Purple/White**, **Green** and **Black** wires using the crimp/shrink connectors supplied. The new harness wires are all **white**, so care must be taken so the new **white** wires are in the same positions as the colored wires on the original connector. It's a good idea to stagger your connections to avoid bulges in the split loom. Strip about 1/4" of insulation from the ends of all the wires and crimp the connectors on.



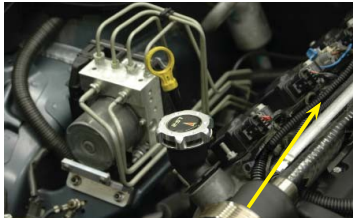
151. Use a heat gun or hair dryer set on high to shrink the insulation so that it contracts around the wires completely. You must shrink the insulation, as crimping the connectors alone is not enough to secure them!



152. Use a piece of the supplied split loom to completely cover over the new extended wires.



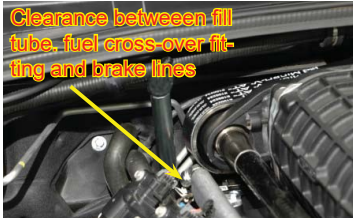
153. Route the split loom covered wires back between the fuel rail and coil pack to the rear of the engine.



154. Connect the new MAP Sensor connector to the MAP sensor behind the fuel rail below the jack shaft pulley. It may be necessary to loosen the passenger side fuel rail in order to plug in the MAP Sensor.



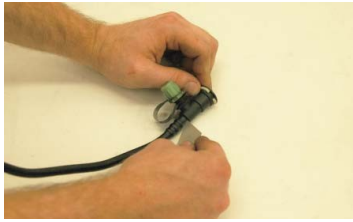
155. If you have an automatic transmission: Ensure that there is clearance between the transmission fill tube, the fuel cross-over pipe, and brake lines. Cut a piece of the provided 3/16" hose to protect the lower brake lines. Split the hose lengthwise and slip over the brake lines where they are adjacent to the transmission fill tube. This was referenced in steps #60-61.



156. Locate the two hard plastic EVAP lines previously removed.



157. Using a sharp shop knife, cut the hard plastic tube where it covers the barbed end of the EVAP fittings. **Take care not to damage the fittings as they will be reused.**



158. Use the piece of 5/16" EVAP hose supplied and cut it into two pieces. One piece 32" long and the other 17" long. Starting with the longer of the two, assemble the hose with the test port on one end (the right angle will go on the other end after the hose is routed), use the #6 clamps supplied. On the remaining hose, assemble it with the straight quick disconnect fitting and clamp as shown.



159. Connect the long EVAP hose with the Test port fitting to the fire wall connection.



160. Route the other end of the hose forward between the driver side coil pack and the fuel rail. Pass the hose under the inlet manifold and supercharger drive toward the EVAP purge solenoid.



161. Install the right angle fitting on the end of the routed hose, secure with provided #6 clamp and connect to the top barb of the Purge solenoid.



162. Connect the quick disconnect fitting from the shorter EVAP hose to the lower connection on the solenoid.



163. Connect the remaining end of the short EVAP hose to the fitting on the passenger side of the inlet manifold above the supercharger drive shaft as shown, no clamp is necessary.



164. Connect the electrical control plug to the EVAP Solenoid.



165. Locate the Vacuum accessory line at the fire wall on the passenger side by the heater hoses.



166. Remove the short piece of hose from the coupler (hose mender) beyond the check valve, and install the supplied longer length of 3/16" hose onto the end of the coupler (hose mender).



167. Remove the cap from the small barb on the driver side, rear corner of the supercharger lid. Connect the new extended vacuum accessory line to the now exposed hose barb.



168. Use a loose zip tie to anchor the vacuum hose to the existing fuel line hose as shown.



169. Connect the fuel line to the fitting on the fuel manifold. Pull on the fuel line to ensure that it is securely attached. **You should not be able to remove the line without using the fuel line removal tool.**



170. Secure the fuel line using the lock clip. Make sure that the lock clip snaps into place.



171. Locate the Electronic Throttle Control sensor (ETC) on the factory wire harness. It's near the oil fill spout.



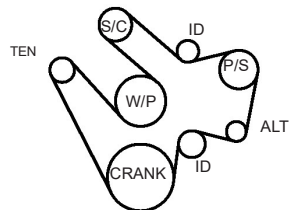
172. Plug in the supplied ETC extension harness into the existing ETC plug.



173. Route the extended harness under the supercharger, behind the idler support bracket and plug the connector into the throttle body as shown.



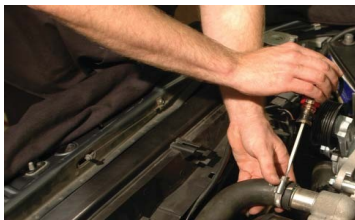
174. Here is the new accessory drive belt routing diagram. Drive Belt part: Gates# K061010.



175. Using a long 15mm wrench to compress the tensioner, install the new belt using the diagram above.



176. Reconnect the upper radiator hose and tighten the clamp in position beyond the barb.



177. Replace the stock filter element with the K&N air filter element supplied.



178. Replace the air box cover, tighten the three fasteners and place the K&N "Warning" label on the cover. This label stops a mechanic/technician from removing the high flow K&N filter which is reusable using a K&N filter service kit.



179. Plug in the MAF electrical connection to the MAF Sensor on the bottom of the air tube on the air box cover as shown.



180. Here is the new air tube and mounting components.



181. We found it easier to install the hose connector on the throttle body first. Tighten the supplied clamp securely.



182. Attach the bellows end of the air tube on the air meter.



183. Attach the hose end of the air tube to the throttle body. Tighten all clamps securely.



184. Install the PCV inlet hose. Cut a 17" length of 3/8" hose supplied and attach one end to the barb near the front of the passenger side valve cover by the oil fill neck. Attach the other end of the hose to the barb on the side of the new air tube. No clamps are necessary.



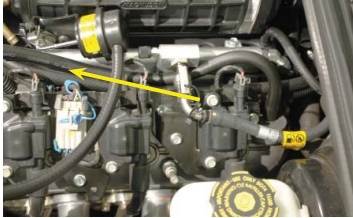
185. Remove the rubber cap from the rear of the driver side valve cover hose barb just beyond the coil brackets.



186. Assemble the PCV outlet hose by cutting a 16" length of the 3/8" hose. Attach one end the hose to the driver side valve cover PCV barb.



187. Route the hose forward between the fuel rail and coil bracket.



188. Install the plain end of the 16" PCV outlet hose on the forward barb of the supercharger inlet on the driver side of the inlet as shown.



189. Remove the brake booster check valve from the OEM hose from the factory manifold.



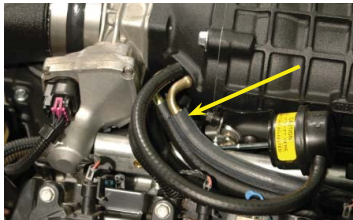
190. Cut a 22" long piece of the supplied 11/32" brake hose. Install the just removed factory check valve on one end of the hose.



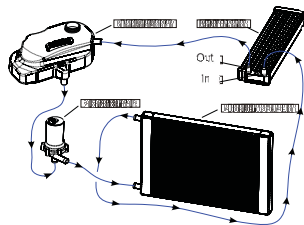
191. Install the check valve into the grommet on the brake booster. Route the hose over the reservoir, forward between the fuel rail and coil bracket (parallel to the PCV hose just installed) as shown.



192. Connect the end of the brake booster hose to the remaining barb on the driver side of the inlet manifold as shown.



193. This is a diagram of the complete intercooler system plumbing. Note the routing of the hoses and their connections.



194. Use a 10mm wrench to disconnect the positive battery terminal.



195. Use a 13mm socket to remove the battery hold down bracket as shown.



196. Completely remove the battery from the vehicle. Put aside for later re-installation.



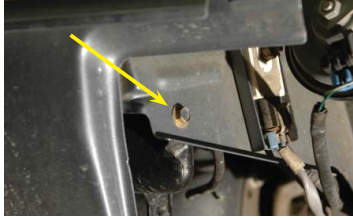
197. Adjacent to the battery is the fill neck for the washer reservoir. From below the car on the passenger side, locate and depress the clip on the electrical connector and disconnect it from the pump.



198. Remove the fluid supply hose from the pump and then temporarily cap the pump nipple with the rubber cap supplied. Some fluid may leak out, so have a towel or shop rag handy and make sure to dispose of properly.



199. Locate and remove the bolt that secures the side of the reservoir bolt with a 10mm socket wrench. This bolt is near the horn relay on the cross frame.



200. Locate and remove the bolt that secures the back of the reservoir bottle to the frame rail behind the front of the passenger side tire/wheel well with a 10mm socket wrench.



201. Remove the push-lock fastener that secures the bottom of the reservoir to the wheel well.



202. Remove the yellow filler cap from the neck of the reservoir.



203. Remove the reservoir by rotating it 90° for the curves of the neck to pass through the hole as you are lowering it down and out.



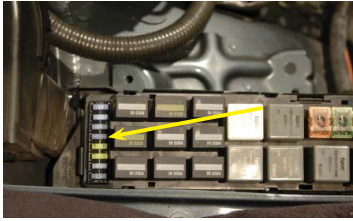
204. This is your intercooler pump wiring harness.



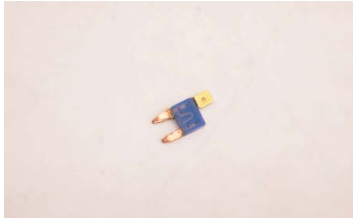
205. Install the provided 15amp fuse in the fuse holder and replace the cover.



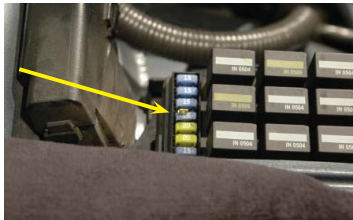
206. Remove the cover of the Fuse/Relay center on the passenger side of the engine compartment. Remove the fourth 15 amp fuse from the top marked "AUTO TRANS" temporarily from the base.



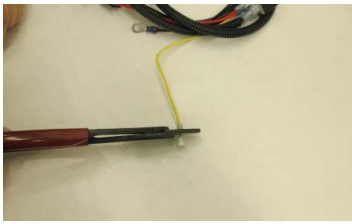
207. Place one leg of the 15 amp fuse through the Fuse-Tap supplied as shown.



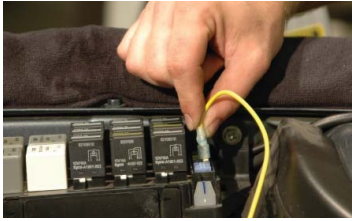
208. Install the fuse and Fuse-tap back into its original location.



209. On the end of the **yellow** wire from the relay harness, strip the insulation back 1/4" and crimp on the female spade terminal.



210. Connect the female spade terminal to the male spade of the Fuse-Tap you installed previously in steps #207-208.



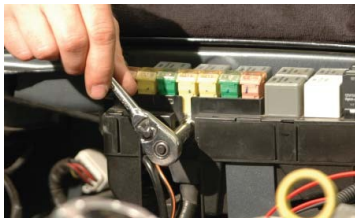
211. Remove the nut of the chassis ground connection located just below the Cruise Control module platform (below and to the rear of the fuse center) with a 10mm wrench and place the ring terminal on the stud.



212. Add the **Black** ground negative (-) wire with the ring terminal to the chassis ground connection and re-install the nut to the ground.



213. Connect the **Red** positive (+) wire with the ring terminal to the main power connection on the side of the Fuse/Relay Center. Remove the nut with a 10mm wrench and place the ring terminal on the stud by passing the **red** wire up from under the base and on to the stud. Re-install the nut and tighten securely.



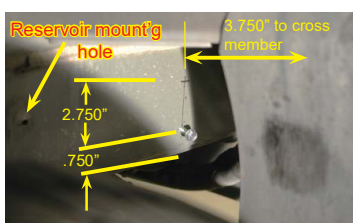
214. Zip-tie the coolant pump relay to the existing harness between the fuse center and the cruise control module by passing the zip-tie through the mounting hole of the pump relay as shown.



215. Install the Fuse/Relay center cover on the base by raising the relay slightly to hook the rear edge of the cover on the base then snap the cover in place.



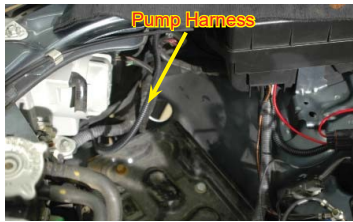
216. On the outside of the passenger side frame rail, forward of the windshield washer reservoir mounting hole (see step #199), 3-3/4" behind the adjoining cross member, and starting 3/4" up from the bottom of the frame rail, use the supplied self-tapping screws to drill/tap two 1/4" holes in the locations shown.



217. Use these holes, the self-tapping screws, and the two provided Adel clamps to mount the intercooler coolant pump on the outside of the frame as shown. **Note: The pump outlet is pointing forward, and the inlet is pointing down with the electrical connection on the top.**



218. Route the pump harness and connector down to the pump through the harness hole next to the battery platform.



219. Plug the pump harness connector into the end of the pump.



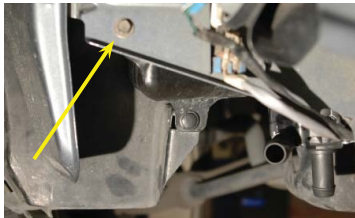
220. Snake the neck of the windshield washer reservoir back up through the original hole.



221. Reattach the rear mounting bolt of the reservoir to the original existing threaded hole on the frame rail using the stock bolt as shown.



222. Secure the reservoir bottle with the stock fasteners using the stock bolt at the cross member (near the horn relay) into the bolt clip on the reservoir, and the push rivet to the wheel well.



223. Remove the rubber plug from the pump barb and reattach the small fluid hose, then connect the washer pump electrical connector removed in step #197. Replace the inner fender panel and secure it with the OEM cross head screws.



224. Re-install the filler cap on the neck in the engine compartment.



225. Replace the battery in the battery tray.



226. Tighten down the battery hold-down bracket using a 13mm wrench.



227. Re-attach the battery positive (+) terminal and tighten using a 10mm wrench.



228. Use a sharp knife or hole-saw to drill a 1-1/2" hole in the passenger side of the splash shield as shown for the intercooler coolant hoses to reach the heat exchanger.



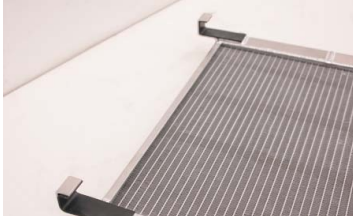
229. Drill a second hole of the same size above the hole you just made, also using either a sharp knife or hole-saw as shown.



230. Connect the two holes as shown using a sharp knife to remove the material between. Then sand or ease the hole to remove any sharp edges in the plastic.



231. Cut two strips of the supplied adhesive backed rubber about 4" in length. Assemble the supercharger intercooler heat exchanger by peeling the backing paper off the two short plastic strips and apply them to the inside of the upper mounts of the heat exchanger.



232. There is a mounting bolt at the driver side of the A/C dryer cylinder. This unit needs to be rotated counterclockwise (as seen from above) to allow clearance between the hard-line tube and flare nut (adjacent to the hand in this picture) and the new supercharger heat exchanger. Loosen the mounting bracket bolt and twist the A/C dryer cylinder about 20° counterclockwise (as seen from above). Re-tighten the mounting bolt.



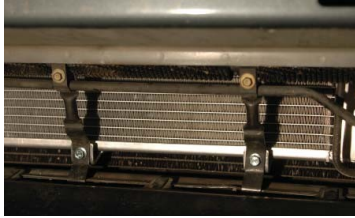
233. Lower the front heat exchanger into place on the front of the A/C condenser. Ensure that the adhesive backed rubber strips sandwich the existing A/C condenser and don't get pulled away from the mounting hooks.



234. Verify that you have adequate clearance between the black A/C dryer cylinder and the heat exchanger. If there is any question, loosen the dryer cylinder mounting bolt and rotate as needed...be sure to re-tighten the mounting bracket bolt.



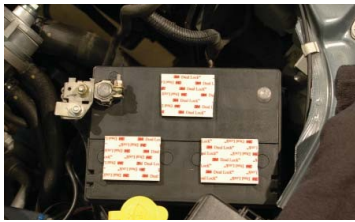
235. Install the two 6 X 20mm bolts through the power steering cooler bracket and into the lower brackets on the heat exchanger. You can access these bolts through the lower grill or by pulling down the lower splash apron. Tighten the two bolts securely with a 10mm socket wrench.



236. The intercooler fluid reservoir will attach to the top of the battery with adhesive backed Velcro strips. Clean the bottom of the coolant reservoir with lacquer thinner, as it must be very clean for the adhesive to attach. Clean the top of the battery as well.



237. Cut the Velcro supplied into six pieces 2-1/2" long. Attach the "hook" piece to the mating "mat" piece of each giving you three assemblies. Peel the paper backing off of one side and using the reservoir as a guide, press the Velcro assemblies firmly onto the battery as shown.



238. Test fit the intercooler reservoir for now. Leave the backing in place on the Velcro for final attachment in a later step.



239. Cut a piece of the supplied 3/4" hose to 80" in length. Connect one end of the hose to the upper barb of the heat exchanger. Secure the hose with one of the provided #10 hose clamps and tighten firmly. Route the hose down and through the elongated hole you created in steps #228-230.



240. Cut a piece of the supplied 3/4" hose to 24" in length. Connect one end of the hose to the lower barb of the heat exchanger. Secure the hose with one of the provided #10 hose clamps and tighten firmly. Route this hose through the same hole, below the hose just installed.



241. Connect the hose from the lower heat exchanger barb to the outlet barb on the intercooler pump (this hose passes through the new hole in the splash shield) as shown. Secure the hose with #10 clamps.



242. Trim the molded 90° "elbow" hose supplied by cutting 1-1/4" from the short leg and the long end to 24" in length.



243. Connect the short "elbow" end of the hose to the inlet barb on the intercooler pump as shown. Route the other end up toward the reservoir.



244. Secure the long end of the "elbow" hose to the bottom reservoir barb using a provided #10 hose clamp, tighten firmly.



245. Route the long $\frac{3}{4}$ " hose end from the heat exchanger upper barb up into the engine compartment and connect it to the rear barb of the water manifold as shown. Secure the hose with #10 clamps.



246. Using the remaining hose cut from the molded 90° "elbow" hose, cut a piece to 9-1/4" in length and install it onto the right barb on the intercooler water manifold. Connect the other end to the upper barb on the intercooler reservoir. Secure the hose with #10 clamps.



247. Cut two pieces of the supplied split loom to cover the hoses as they pass through the air deflector. Loosely group your hoses together using the supplied zip ties.



248. Cut pieces of the supplied split loom to protect your hoses from any existing hard edges or potential wear points such as the transmission cooler hard line.



249. Inspect your hoses carefully and notice any areas that need additional protection, such as the swing arm mounting bracket, other hose clamps, etc. Protect any such areas using the provided split loom.



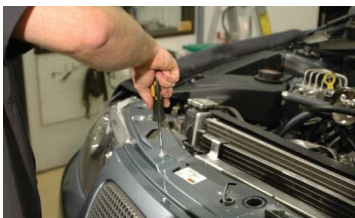
250. In preparation for installing the fascia, replace the Styrofoam fascia backing by pressing back into place.



251. Re-place the fascia by carefully lifting the unit into position.



252. First loosely replace a couple of the upper mounting screws to hold the unit from falling.



253. Then reconnecting the electrical connection below the headlight in the fascia on the driver side, forward of the wheel well.



254. Snap the locking tabs back into place below the headlights and then replace the remaining mounting screws and tighten all around.



255. Verify that the radiator drain petcock on the driver side of the radiator (loosened in step #43) and all hoses are tightened then refill the radiator and the intercooler reservoir with a 50/50 mixture of GM recommended engine coolant and distilled or de-ionized water only. The intercooler system will hold approximately 2 gallons (8 liters). Check fluid level periodically.



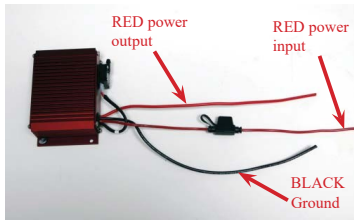
256. Replace the upper radiator cover with the push-lock fasteners that secure them.



257. Here is the Fuel Pump Booster unit and wire hardware.



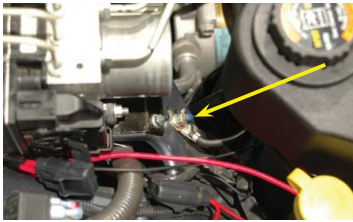
258. Remove the FUSE/RELAY center cover and using the Fuel Pump Booster as a template, drill two 3/16" holes along the top edge to mount the Fuel Pump Booster unit. Assemble the Fuel Pump Booster to the Fuse/Relay center cover with the screws provided. Replace the cover with the fuel Pump Booster attached on to the Fuse/Relay center.



259. Connect the Ring connector to the **BLACK** Ground wire negative (-) by stripping a 1/4" of the insulation from the end of the wire and crimping it on securely.



260. Connect the **Black ground negative (-)** wire of the Fuel Pump Booster onto the chassis ground connection located just below the Cruise Control module platform. Remove the nut with a 10mm wrench and place the ring terminal on the stud. Re-install the nut and tighten it securely.



261. On the passenger side shock tower, locate the circular wire conduit. The cover will need to be removed. We found this easier if we used a large screwdriver to gently pry the entire unit free from the tab mounts on the shock tower.



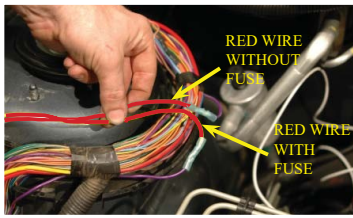
262. Cut the Tie-strap at the bottom of the "drop" tab covering the wires where it meets the Fuse/Relay center. Cut the adhesive wrap at the center of the tab and pry off each to each side. Using a small straight blade screwdriver, gently pry the locking tabs free of the upper cover of the conduit to free the cover. Care must be taken because it would be easy to snap off the tabs.



263. Once the conduit cover has been removed, locate the medium size solid **PURPLE** wire and cut it as shown. Make sure you are cutting the correct wire, there's only one that fits this description.



264. Using the Crimp/Shrink connectors supplied, connect the **RED WIRE WITH THE FUSE HOLDER** from the Fuel Pump Booster to the end of the **PURPLE wire that goes to the Fuse/Relay center**. Connect the **RED without the fuse** to the end of the **PURPLE wire that goes toward the fire wall**.



265. Use a heat gun or hair dryer set on high to shrink the connectors around the wires completely. Crimping alone is not adequate!



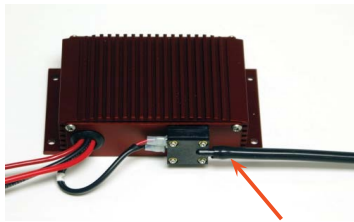
266. Securely tape the new wires together with the existing bundle.



267. Carefully tuck all the wire back into the conduit and snap the top cover back into place. Snap the conduit mounting tabs back onto the shock tower securing the assembly. Route the new **RED** wires out at the base of the conduit.



268. Install the supplied length of 5/32" vacuum hose onto the pressure switch of the Fuel Pump Booster.



269. Route the hose along the fire wall, through the existing loom clamps, behind the supercharger, toward the manifold barb at the driver-side, rear of the supercharger manifold.



270. Cut the existing hose on the supercharger barb (installed in step #167) 3-1/2" from the hose barb, install the "T" fitting provided with the in-line-barbs connecting the severed hose. Connect the end of the hose from the Fuel Pump Booster to the remaining barb of the "T" as shown. Secure the hose as necessary with the Tie-straps provided.



271. Re-attach the battery negative (-) terminal and tighten using a 10mm wrench. Remove the backing from the Velcro and press the intercooler reservoir on top of the battery. Ensure that the Velcro has a good "grip".



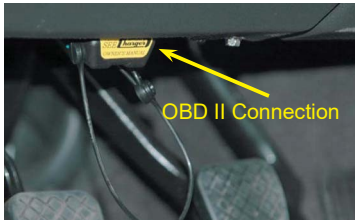
272. Replace the shock tower brace removed in steps #10-11 using a 13mm wrench.



273. Install the "DO NOT RE-CALIBRATE" Sticker on the OBDII port cover supplied.



274. Locate the OBD II connection plug along the bottom edge of the dash above the brake pedal. Install the OBDII cover on the port and secure the attached cord around the wiring harness behind the port. Push the cord up behind the instrument panel so it will not interfere with the vehicle operation.



275. Place the provided Use Premium Fuel Only sticker as a reminder on the inside of your gas cap access cover. **YOU MUST USE PREMIUM FUEL! Engine damage due to premature detonation (pinging) could occur with lower grade fuel.**



276. Place the provided Routing diagram sticker on the radiator cover as shown.



277. Start the vehicle for 5 seconds and shut off, once again check for fuel leaks and supercharger belt alignment. Test drive vehicle for the first few miles under normal driving conditions, listen for any noises, vibrations, engine miss fire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal. Check intercooler reservoir as needed.



278. After the initial test drive gradually work the vehicle to wide open throttle runs, listen for any engine detonation (pinging). If engine detonation is present let up on the throttle immediately. Most detonation is caused by low octane gasoline still in the tank.



279. The OEM GTO engine covers can be modified by trimming them slightly to fit with the supercharger installation. Starting with the passenger side engine cover, trim the cover using a small fine blade saw. **Go Slow!** The plastic of the covers will cut very easily and a professional result can be achieved with a little patience. Test fit the covers as you go. Finish the cut edges with a file and sandpaper.

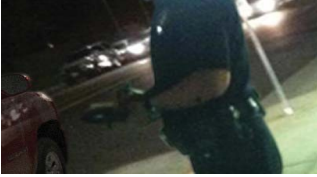


280. On the left side engine cover trim the cover as well. A little more care must be used on trimming this cover as you must make room for the bypass canister. Trim and test the cover fit several times to get a good fit and finish. Leave the finished covers off the engine until you have completed your test drives and final inspection.



If you have questions about your vehicles performance, please check with your installation facility or call Magnuson Products LLC at (805) 289-0044, Monday through Friday, 8am to 5pm.

With the supercharger system installed, the vehicle's PCM should never be re-calibrated by a GM dealer. If re-calibration is needed contact Magnuson products Inc.



Please enjoy your "Magnuson Products Super-Charged" performance responsibly.

Special thanks to our customer William Gruce for editing suggestions and alternate approach ideas...

MAGNUSON
SUPERCHARGERS

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