

MAGNUSON

SUPERCHARGERS

Installation Instructions for: CORVETTE SUPERCHARGER SYSTEM 1997 TO 2004 C5 CORVETTE



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

*** PREMIUM FUEL REQUIRED ***



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

89-89-57-001 Rev D

Magnuson Products LLC
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magnusonproducts.com * magnacharger.com

SUPERCHARGER INSTALLATION MANUAL

Magnuson SuperCharger Kit
GM 5.7 Liter Engine
1997-2004 Corvette

Please take a few moments to review this manual thoroughly before you begin work:

A quick parts check to make certain your kit is complete (see shipper parts list in this manual). If you discover shipping damage or shortage, please call our office immediately. Take a look at exactly what you are going to need in terms of tools, time, and experience.

Review our limited warranty with care.

When unpacking the supercharger kit **DO NOT** lift the supercharger assembly by the black plastic bypass actuator. This is pre-set from the factory and can be altered if used as a lifting point!

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

Use only premium fuel, 91 octane or better.

Magnuson SuperCharger systems are manufactured to produce about 20 Rear Wheel Horsepower (RWHP) per pound of boost at sea level. To ensure engine stability while enhancing performance, most kits are shipped to achieve about 6 lbs of boost, giving you a gain of about 120 RWHP and about 120 ft lbs of torque at sea level. Altitude, options and vehicle modifications will affect these numbers.

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

Magnuson Products supercharger kits are designed for use on stock vehicles. To that end, the alteration or modification of the fuel system, drive train, engine, and/or supercharger outside of stock parameters in any way can result in engine damage or failure for which Magnuson Products is NOT responsible and will void Magnuson Products warranty. 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

Drives belt = Gates#K061045

Air Filter = K&N#33-2111

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

Tools Required

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

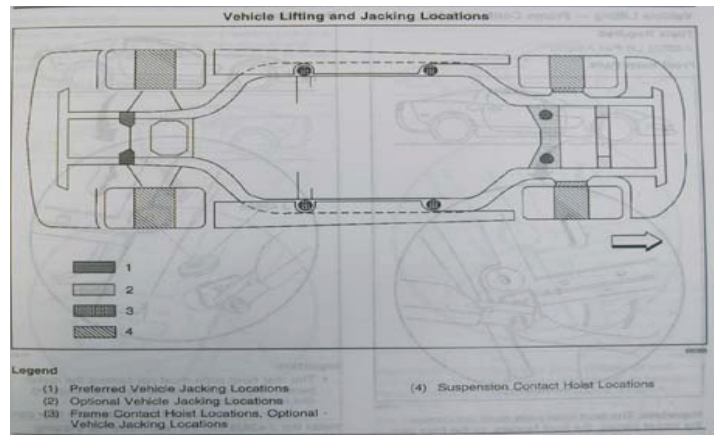
Contact Information:

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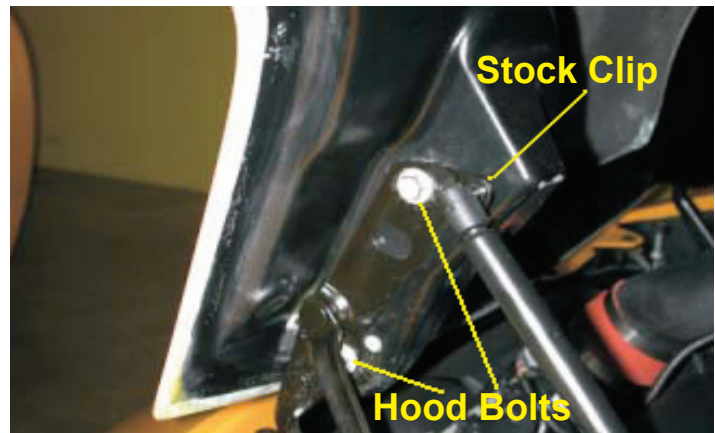
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Email	sales@magnacharger.com

NOTE: The 1997 thru 2004 C5 Corvette system using the 2300 supercharger system does not have a Magnuson Products provided tuner or tuning file at this time. This application will require custom dyno tuning and does NOT come with a CARB or EO certification. If you have any questions, contact Magnuson Products LLC.

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



2. Remove the stock hood by disconnecting the hood lamp electrical connector, unclipping the small gas charged hood shocks and removing the four bolts with a 13mm socket wrench.



3. With a cool engine remove the radiator cap and drain the coolant into a clean drain pan for reuse later. **(Be careful not to remove the radiator cap if the engine is still hot.)**



4. With an 8mm wrench disconnect the (-) negative battery cable. Make sure the cable is far enough away from the battery that it does not accidentally touch the battery and make connection during the installation. **(Wrap negative cable connector with electrical tape.)**



5. Remove the front tires and wheels. Make sure to mark the right and left tires so that they are reinstalled in the same location.



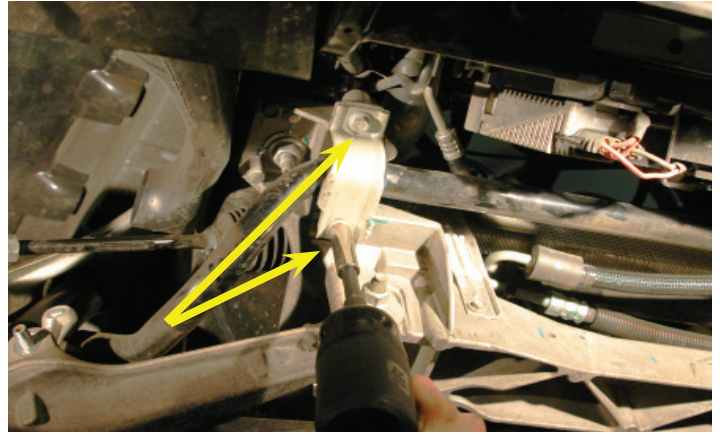
6. Remove the right and left outer tie rod ends from the steering knuckles using an 18mm wrench and a 6mm Allen socket wrench.



7. Remove the nuts that secure the sway bar end links to the lower A-arms on both sides of the vehicle. Use a T-40 or 6mm socket (depending on the year) and an 18mm open-end wrench.



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



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



The crank pulley needs to be pinned to avoid spinning. This entails having the clearance necessary to get drill motors in front of the crank pulley. The way to get additional clearance is to remove the Rack and pinion steering assembly, this is covered in the next eight steps:

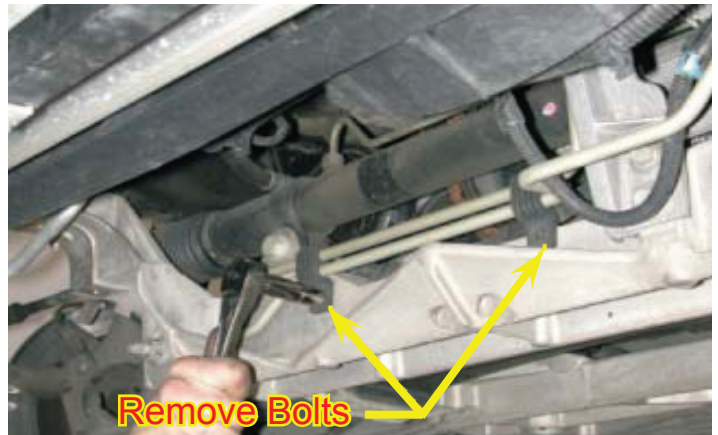
10. Remove the rack and pinion steering shaft pinch bolt using a 13mm socket wrench and short extension.



11. Using an 18mm line wrench, disconnect the power steering high and low pressure lines from the rack and pinion. Use a drain pan to catch any fluid. **Be careful not to damage the seals on the end of the lines.**



12. Remove the two bolts from the power steering cooler using a 10mm wrench. Let the cooler hang down out of the way.



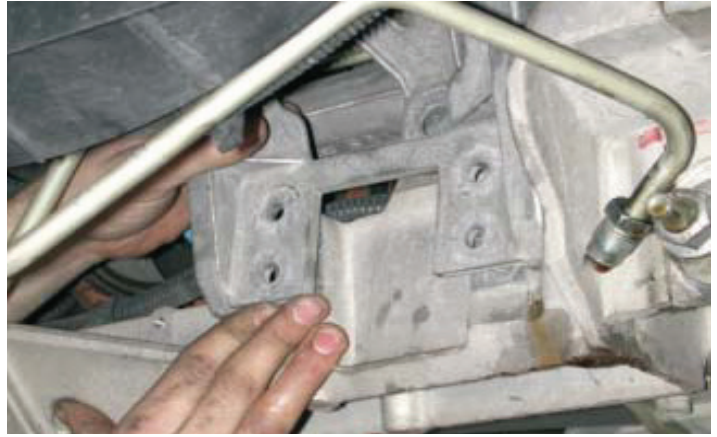
13. Remove the two large bolts holding the rack and pinion in place using an 18mm socket wrench and an 18mm wrench.



14. Remove the four bolts holding the ABS bracket to the frame with a 13mm socket wrench. **Note: Some early models may not have this bracket, so skip this and the next step.**



15. Push the ABS bracket up and out of the way.



16. Using hand tools only, loosen, but do not remove the four cross member mounting nuts using a 21mm socket wrench. A breaker bar may be needed. Only loosen the nuts until the last thread is visible.



17. Using a pry bar, pry the cross member down on the driver side, until it stops against the nuts. Place a shim in the gap to hold it in this position. This clearance is needed to drill the crank for pinning.



18. Remove the rack and pinion from the vehicle by sliding it out the driver side



19. Remove the front harmonic balancer bolt using a 24mm impact socket and a ½" impact wrench.



20. Install the drill guide using the supplied bolt and tighten to 30 ft-lbs with a 24mm socket and torque wrench.



21. Using a small or angled 3/8" drill and the supplied drill bit, insert the drill into the guide holes and drill to the second step of the drill bit. **(Make sure that you drill all the way to the second step.) We recommend safety glasses during all steps. Please be sure to wear them during these steps.**



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



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



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



25. Use compressed air to blow out the holes.



26. Insert the two supplied hardened roll pins into the drilled holes. The use of a small hammer and punch may be necessary to tap the pins in. **(Make sure that the pins are in far enough that they do not touch the balancer bolt.)**



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



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



29. Reinstall the rack and pinion by reversing the un-install steps and by using the torque chart below for proper torque of the front suspension fasteners.



Torque Specifications:

Cross member nuts	80 lb-ft	Sway bar to frame	45 lb-ft
ABS bracket bolts	20 lb-ft	Sway bar link nuts	55 lb-ft
Rack and pinion bolts	75 lb-ft	Shaft pinch bolt	35 lb-ft
Power steering cooler	97 lb-in	Tie rod ends	50 lb-ft
P/S pressure hose	20 lb-ft	Wheel lug nuts	110 lb-ft
P/S return hose	20 lb-ft		

30. Remove the center section of the front spoiler and its two aluminum center supports by removing the four bolts with a ratchet and 10mm socket.



31. Temporarily place the heat exchanger in the mouth of the radiator shroud with its barbs towards the passenger side. Push the heat exchanger up so that its top surface is flush with the inside surface of the radiator shroud. Locate the bottom, forward edge of the heat exchanger side tanks so that they are centered in the frame extension cross bar. Slide the heat exchanger over to the driver side so that the barbs touch the side of the radiator shroud. This is the position the heat exchanger will be mounted in.



32. With the heat exchanger in position, use a pen or scribe to make a mark on the side of the radiator shroud to locate a new hole of at least 1" in diameter at the upper barb. Remove the heat exchanger and using a hole-saw or sharp knife make the hole in radiator shroud for the heat exchanger barb.



33. Attach the mounting brackets to the heat exchanger using the round-headed carriage bolts supplied.



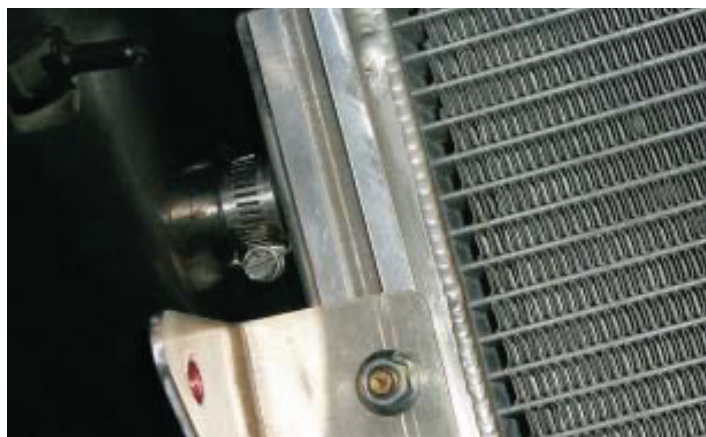
34. The brackets attach to the heat exchanger by sliding into the open ends of the channel on the front face of the heat exchanger side tanks. The square portion of the bolt shaft must be aligned with the side channel. Tighten the mounting nuts to lock the brackets in position.



35. Replace the heat exchanger in its previous position in the mouth of the radiator shroud. Using the mounting brackets as a template, mark the sides of the radiator shroud for the bracket holes. Remove the heat exchanger and drill four 3/8" holes in the radiator shroud for the mounting bolts.



36. Replace the heat exchanger after drilling the mounting holes. Using the 8x25mm bolts and flange nuts supplied, bolt the heat exchanger in place on the left side only. Loosen the mounting bracket nuts on the right side only and temporarily slide the bracket down so that you can install the heat exchanger hose and #10 clamp on the upper barb.



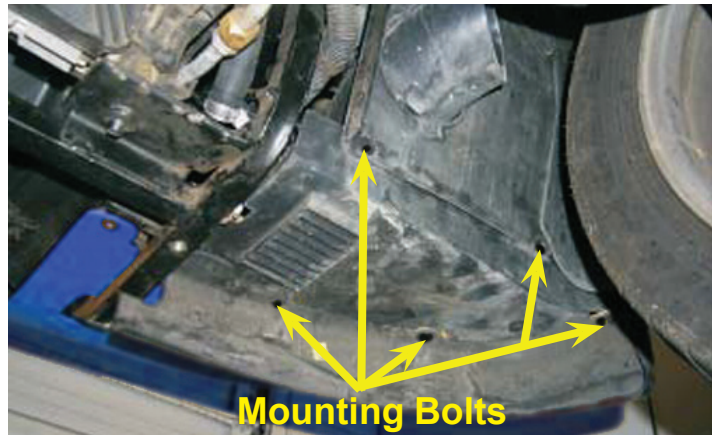
37. Using the long molded "L" hose supplied, pass the short leg of the "L" through the new hole in the side of the radiator shroud to the upper barb of the intercooler heat exchanger. Attach the hose with one of the #10 clamps supplied. Route the long leg of the "L" hose along the frame rail, under the coolant reservoir and along-side the engine for now, you will attach this end in a later step. After the hose is attached to the heat exchanger, slide the mounting bracket back into position and bolt it into the radiator shroud with the 8x25mm bolts and nuts supplied.



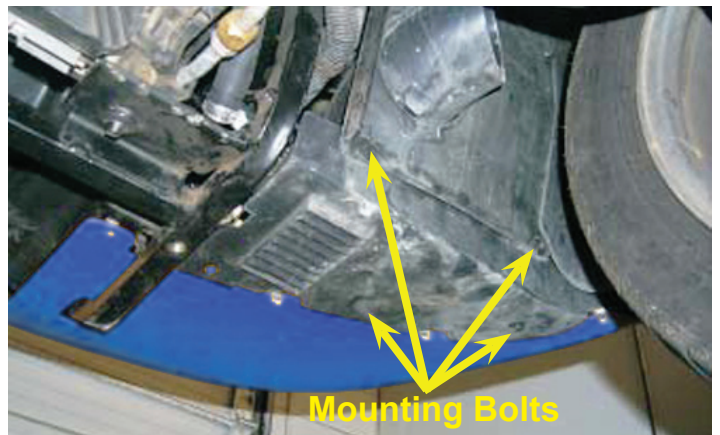
38. Here is the heat exchanger bolted in position with the hoses installed.



39. Remove the passenger side corner of the front spoiler by removing the five mounting bolts and washers with a ratchet and 7mm socket.



40. Remove the right hand splash panel by removing the two mounting bolts and washers on the bottom surface and the two along the bottom edge of the wheel well with a ratchet and 7mm socket.



41. After removing the right hand splash panel, remove the horn assembly by unbolting its mounting bracket with a ratchet and 13mm socket. Pull the assembly free then disconnect its electrical connection.



42. On the inside of the frame extension tab, remove the bolt and clip nut that secures the inner flap of nose cover with a ratchet and 7mm socket. Pull the nose cover flap down and out.



43. Here is the coolant pump complete with its mounting clamp; short hose and fasteners. Assemble your pump this way. From the length of hose supplied, cut a length 4" long and attach it to the outlet barb of the pump with the #10 clamps supplied. Position the mounting clamp so its mounting tabs are on the same side of the pump as the outlet barb.



44. Pull the loose edge of the nose cover down so you can install the pump on top of the frame extension with the electrical connection pointing forward towards the front of the car. Slide the pump outlet hose on to the lower barb of the heat exchanger and secure it with a #10 clamp. The mounting clamp tabs should be pointing towards the center of the car.



45. Here is a view from the other side of the pump installed with the outside edge of the nose cover pulled back. The pump will be mounted by passing the mounting clamp bolt through the hole in the frame extension tab (where you previously removed the clip nut). Then through the nose cover flap to be secured with the nut and washer on the bottom of the car.



46. To secure the pump clamp bolt, slide a thin 10mm wrench in the gap between the nose cover flap and radiator shroud to hold the head of the clamp bolt. Tighten the nut securely with a ratchet and 10mm socket. **Note: The position of the short hose and clamps.** The horns, splash panel and corner of the spoiler will be replaced later after the pump wiring is installed. Ensure that the short hose from the coolant pump will reach the lower barb of the heat exchanger. If necessary loosen the pump clamp bolt and rotate the pump so the hose will reach.



47. To ensure proper airflow to the heat exchanger, modify the center section of the front spoiler. From the backside using the mounting bracket as a guide, cut the upper rubber portion off along the top edge of the mounting bracket. Reinstall the front spoiler with its two aluminum center supports and four mounting bolts with a ratchet and 10mm socket.



48. On the left is the Intercooler wiring and on the right is the Fuel Pump Booster with its wiring and mounting hardware.



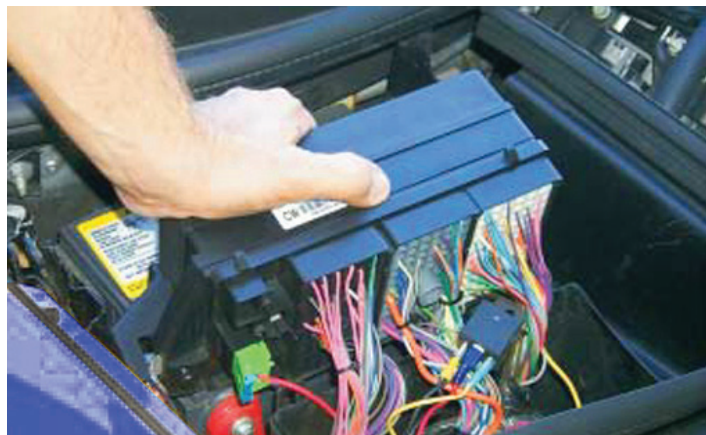
49. On the passenger side of the engine compartment is the fuse/relay center. Remove the B+ terminal cover by pulling up on it.



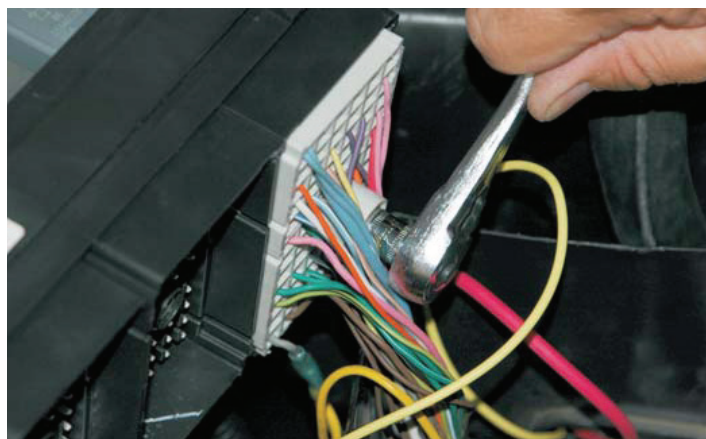
50. Detach the fuse relay center from its base by gently prying open the four retaining clips. Pull up firmly on the fuse relay center to expose the three wiring blocks located on the bottom.



51. **Note: The three wiring blocks are three different colors, black, grey and white.** On the white block, locate the grey wires. On early cars 1997 to 2000 there will be three grey wires of small, medium and large sizes. 2001 and up cars will have only two grey wires, a small and a large. On early cars select the medium of the three; on the later cars select the smaller of the two. To ensure that you have the correct Grey wire, temporarily re-connect the negative battery terminal. Using a circuit tester, probe the grey wire and have an assistant turn the ignition to the ON position. **DO NOT START THE VEHICLE.** The circuit tester should show power in this wire for 3 to 5 seconds and then stop. If you do not get this result, you have the wrong wire.



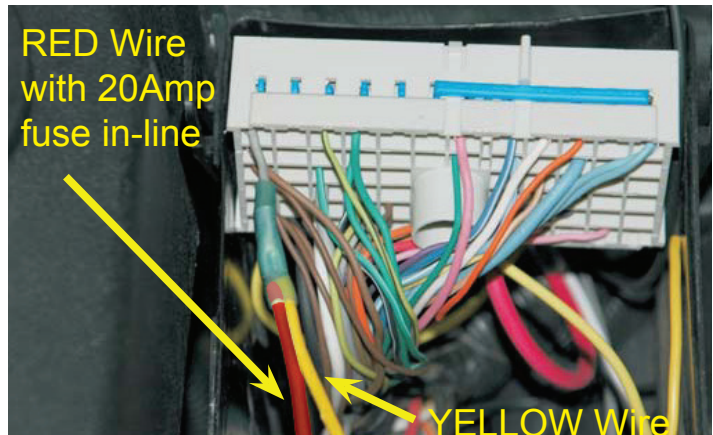
52. Once the correct wire has been located, disconnect the negative battery terminal. It is often easier to work on the wiring by disconnecting the three wiring blocks from the bottom of the Fuse/Relay center. Use a small socket wrench and a 7mm socket to do this. There will sometimes one or two smaller wire connectors as well. These will easily unclip from the bottom of the Fuse/Relay center. Remove the positive battery cable connections from the fuse/Relay center by removing the securing nut with a 13mm socket wrench.



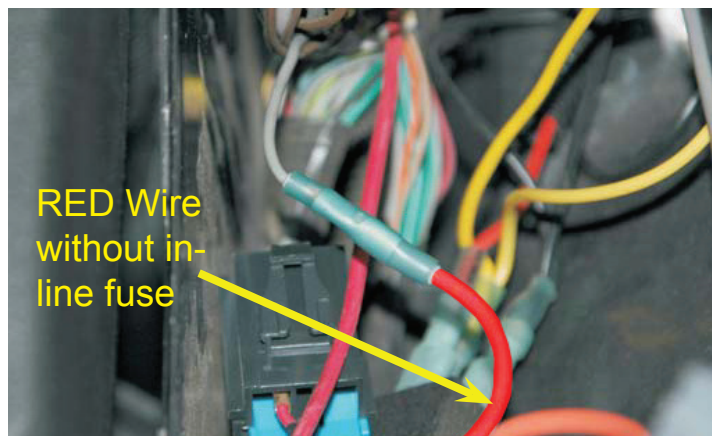
53. Here is the Fuse/Relay removed showing the three wiring blocks. **Note: The different colors.**



54. With the correct GRAY wire located, cut the wire approximately 1-1/2" from the block and strip the insulation back 1/4" from both ends. Locate the YELLOW wire from the Intercooler heat exchanger relay wiring and cut the female spade connector off the end of it. Strip the insulation back 1/4" and connect the end of this wire AND the end of the RED wire with the in-line 20Amp fuse from the Fuel Pump Booster harness to the end of the GREY wire on the white wiring block with a blue crimp/shrink connector. Install the crimp/shrink connector by inserting the stripped wire ends into the crimp/shrink connector and crimp them securely. Using a heat gun or a blow-dryer set on high, shrink the plastic covering of the connector until the clear sealant from the inside of the connector can be seen oozing out from under the plastic covering. Crimping the connector alone is not enough to insure a permanent connection; you must shrink the plastic covering!



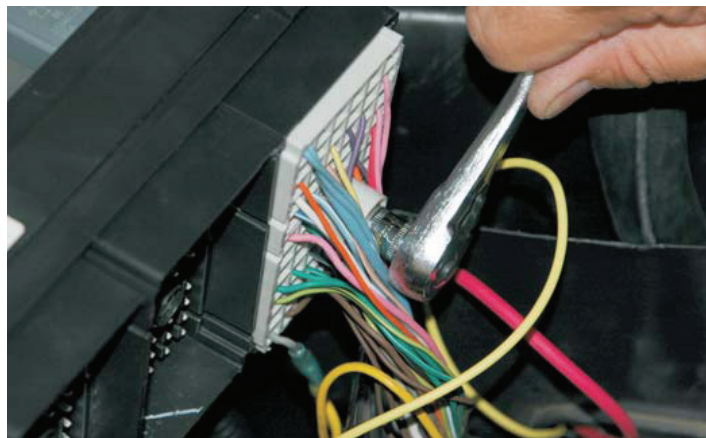
55. Connect the RED wire without the in-line fuse from the Fuel Pump Booster harness to the remaining end of the Grey wire under the Fuse/Relay center with a Blue crimp/shrink connector.



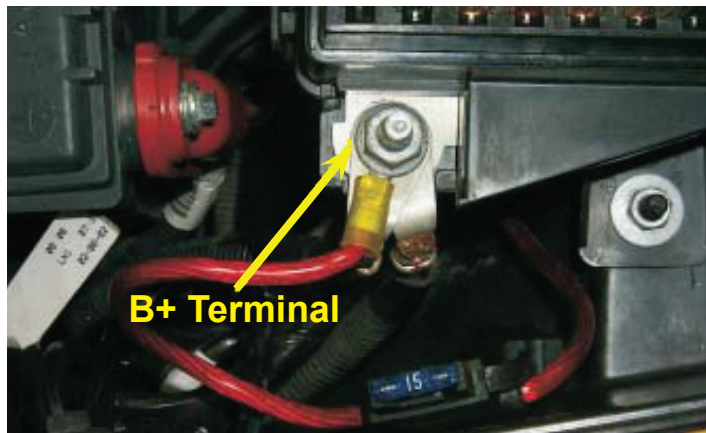
56. Route the black wires with the ring connectors from both the Fuel Pump Booster harness and the intercooler relay down under the bottom edge of the fuse relay center base to the ground terminal located directly below the negative terminal of the battery. Remove the nut of the ground terminal with a ratchet extension and deep 10mm socket. Place the ring connectors of the black wires on the ground terminal and reinstall the nut securely. Route the grouped black & red wires of the intercooler relay harness (covered with split-loom) and pump connector out from under the fuse relay center base through the same hole as the large wiring branch. Continue these wires forward along the same path as the factory harness, to the pump and plug the pump connector in the pump base. Secure the split-loom along the way as necessary with the Ty-wraps supplied.



57. Once the three electrical connections are made, re-connect the three wiring blocks and clip connectors to the bottom of the Fuse/Relay center. Use a Ty-wrap supplied to secure the relay to the existing wiring and gently tuck it into the fuse relay center base. Route the large red wires with the fuse holders and the large black connector from the Fuel Pump Booster harness out from under the fuse relay center base through the same hole as the smaller branches of the factory harness. Finally, snap the fuse relay center back into its original location.



58. Remove the nut from the B+ terminal on the fuse relay center with a ratchet and deep 13mm socket. Place the ring connector of the larger red wire from intercooler harness on the B+ terminal and reinstall the nut securely. Replace the Fuse/Relay center and B+ covers.



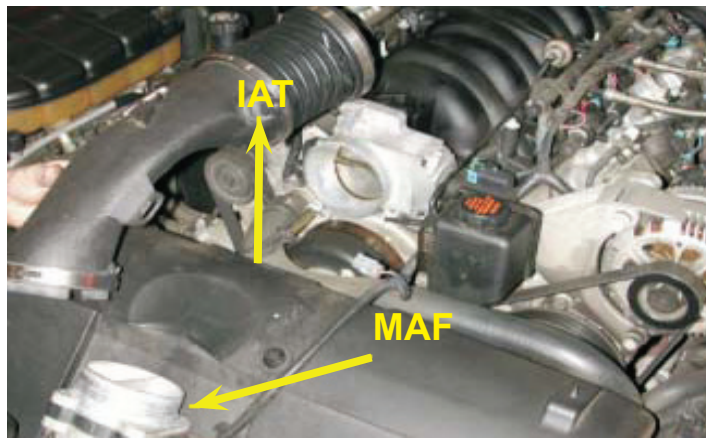
59. Mount the Fuel Pump Booster module to the outside surface of the black plastic partition that separates the battery and fuse/relay center from the rest of the engine compartment. Use the module as a template and drill four 3/16" holes in the partition to mount the module. Attach the module using the four bolts and nuts supplied. Tighten them securely with a 10mm socket wrench.



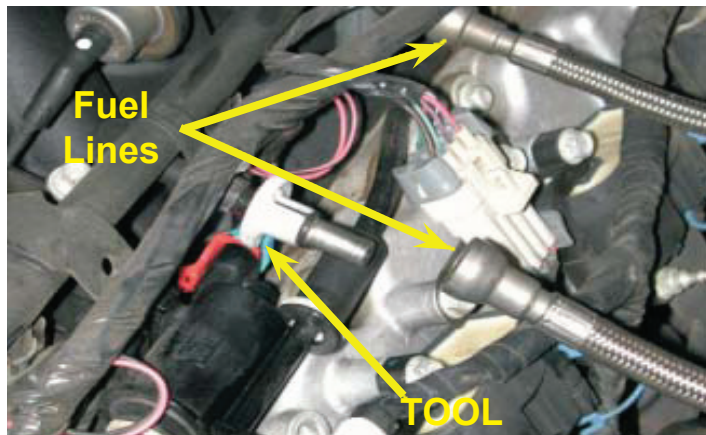
60. Remove the left and right plastic fuel rail covers by pulling upwards on them, as they are held on by push clips. The covers will not be re-used.



61. Remove the air cleaner duct from the throttle body and mass air flow meter (MAF). Unplug the intake air temp sensor (IAT) connector if applicable. Take care not to damage the meter, it is fragile. Some early model vehicles (97-01) will have the IAT sensor in the air cleaner duct. Later model vehicles (02-04) will have it as a part of the MAF sensor. The air cleaner duct will not be re-used.



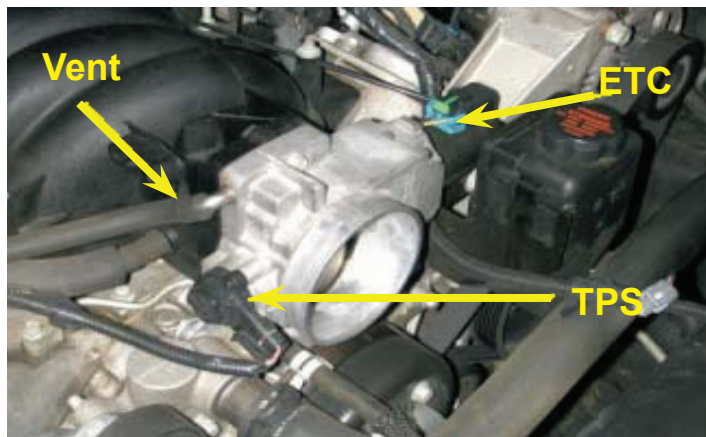
62. With the fuel line disconnect tools (included in kit), remove the fuel line or lines (early models have both pressure and return hoses) from the fuel rail. Clip the tool over the barb, press it into the fitting and then pull the fuel line away. **Be careful, the system may be under pressure.** Safety glasses are recommended and stay away from sparks and flames, remember fuel is flammable.



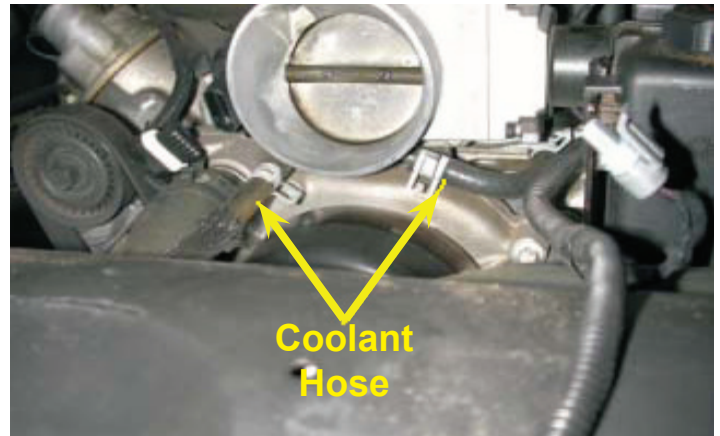
63. Disconnect and remove the EVAP canister purge tube from the throttle body and purge canister solenoid. (Push in on the center of the white plastic clips and pull.)



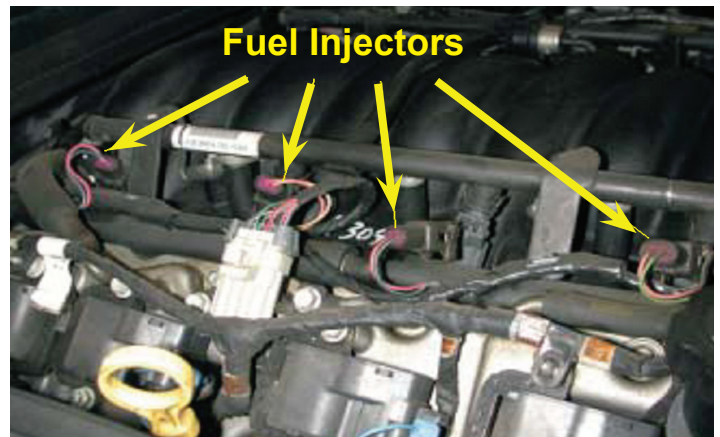
64. Disconnect the electrical connectors from the throttle body, TPS, ETC and also remove the crankcase PCV vent hose.



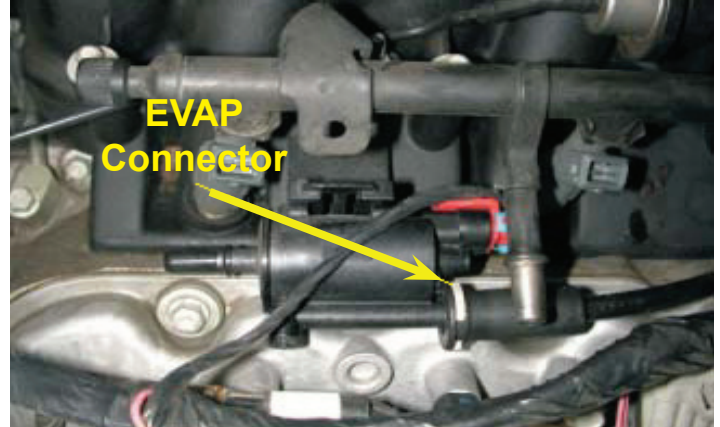
65. Remove the throttle body coolant hoses from the bottom of the throttle body using hose clamp pliers.



66. Disconnect the eight fuel injector electrical connectors. Push in on the center of the wire clip and pull off.



67. Disconnect the EVAP canister purge solenoid electrical connector. Also disconnect the remaining EVAP line from the solenoid at this time.



68. Remove the EVAP canister solenoid and mounting bracket.



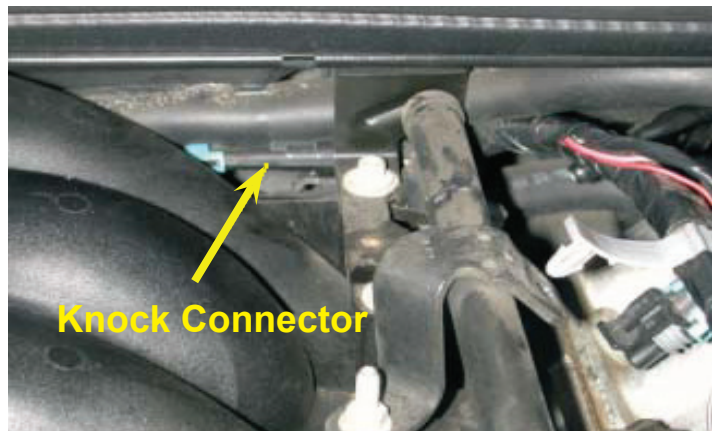
69. Disconnect the fuel injector wire harness from the clips and lay the wiring aside and out of the way.



70. Disconnect the power brake booster vacuum line at the power brake booster by pulling the check valve out of the grommet.



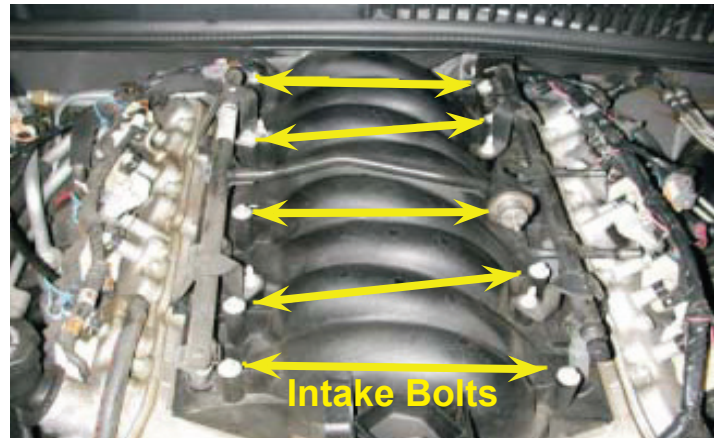
71. Remove the knock sensor wire harness connector from the PCV tube and unplug.



72. Remove the PCV tube assembly. (On some models also remove the ground strap nut on the front passenger side with a 10mm socket wrench.)



73. With a 8mm socket wrench remove the ten intake manifold bolts.



74. At the rear of the intake manifold, disconnect the MAP sensor electrical connector and vacuum line. **(Be careful not to break the intake manifold as it is plastic.)**



75. Carefully remove the intake manifold assembly and set aside.



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



77. Cover the intake manifold ports with tape or clean rags to keep dirt and objects from entering the engine. (Remember, be clean.)



78. Using a 10mm socket wrench, remove the two or four coolant vent pipe bolts. (Some models have a small pipe in the front and some have a large pipe that goes from the front to the back.) Only remove the front pipe.



79. Remove the accessory serpentine belt by rotating the tensioner pulley bolt clockwise with a 15mm fan belt tensioner wrench. The belt will not be reused.



80. Remove the stock tensioner assembly by removing the two mounting bolts with a 15mm wrench. You will need to remove the stock idler pulley as well. It's easier to remove the pulley first.



81. Install the stock idler pulley on the new tensioner assembly then install the assembly in place of the stock unit with the original bolts and torque them to 40 ft-lbs.



82. Using a 15mm socket wrench, remove the two 10mm bolts that hold on the power steering oil reservoir to the cylinder head. Remove the bracket from the reservoir and reinstall the bolts back into the cylinder head and tighten to 50 N-m (37 ft-lbs).



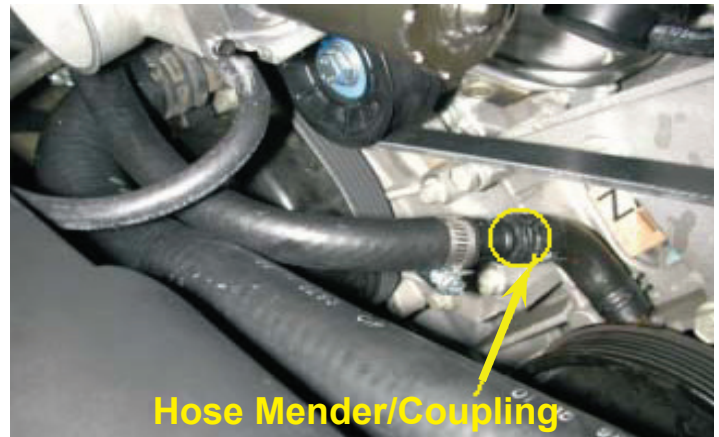
83. Using a power steering oil suction tool or turkey baster, remove the fluid from the reservoir and put into a disposable container. (Old fluid can be disposed of at an oil recycling center.)



84. Using a pair of hose clamp pliers, remove the large hose clamp on the power steering reservoir and remove the reservoir from the hose. Place a rag under the reservoir to catch any oil dripping.



85. Using the supplied 5/8" hose mender and 5/8" hose clamp, install the power steering reservoir hose to the power steering pump.



86. Route the reservoir under the top radiator hose and over to the passenger side of the car. The reservoir will be mounted in a later step.



87. Using the stock bolts removed earlier, install the new front coolant vent pipe and rear block off blocks. (Late model vehicles already have the rear blocks installed.) Make sure that the small O-ring gaskets are in place.



88. Torque the coolant vent pipe bolts to 12 N-m (106 in-lbs) using a 10mm socket and torque wrench.



89. On the engine valley cover, remove the two black rubber knock sensor covers by gently prying them up using a small straight blade screwdriver. Disconnect the electrical connectors by squeezing the side of plugs with a pair of long jaw or needle nose pliers and pulling up.



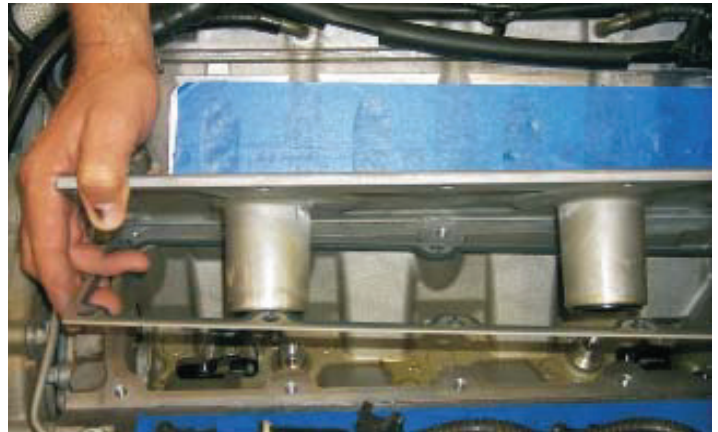
90. Remove the two knock sensors by using a ratchet and a deep 22mm socket.



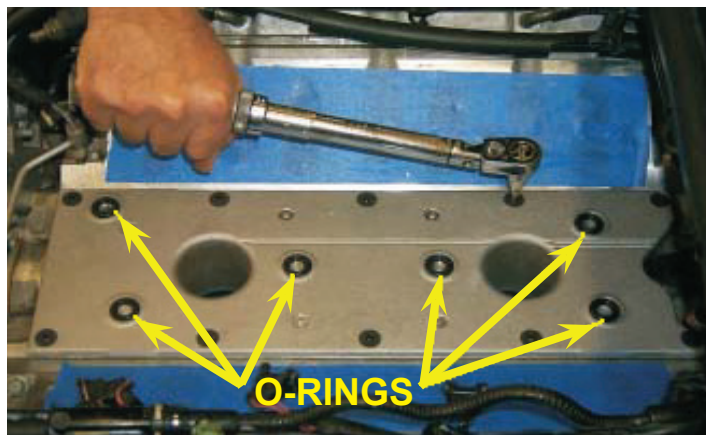
91. Remove the engine valley cover and gasket by removing the ten bolts with a ratchet and 10mm socket.



92. The gasket will be reused, the original valley cover and bolts will not. Inspect the gasket for any damage and then reinstall. **Note: It will only fit correctly in one position.**



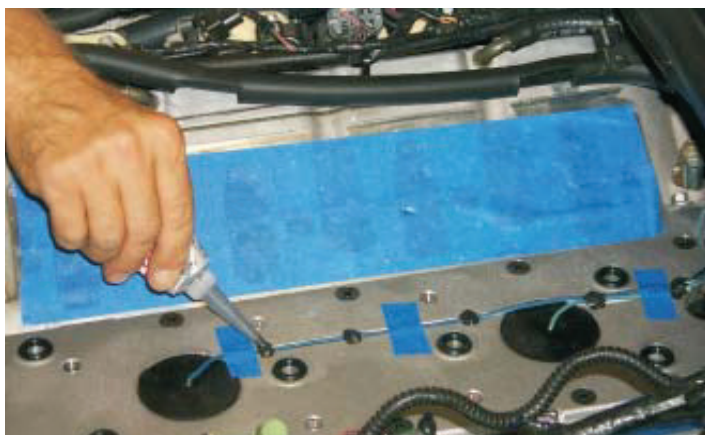
93. Install the new engine valley cover and flathead bolts supplied with a 5mm Allen socket and torque the bolts to 18 ft-lbs. Insert the six O-rings in the recesses in the new valley cover.



94. Reinstall the knock sensors and torque them to 15 ft-lbs. Reattach the electrical connectors by pushing the plug down firmly until a “click” is heard. Before installing the covers, apply a bead of the silicone adhesive supplied to the side of each of the covers. Finally push the covers back into place.



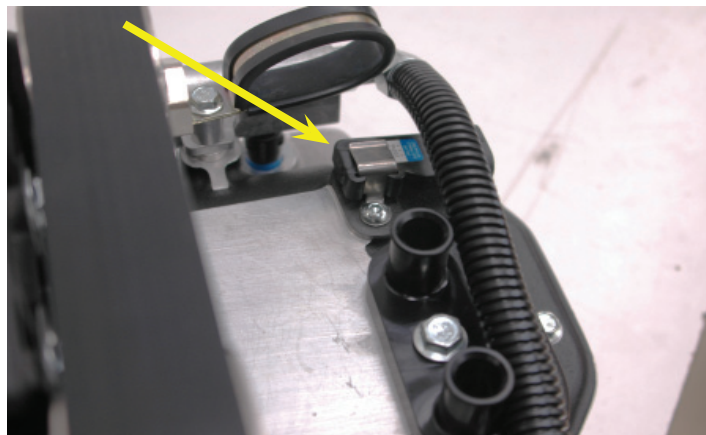
95. Remove the existing tape from the knock sensor wires so that they can be installed on the grooves in the top of the new valley cover. Use some tape to hold the wires in place temporarily, and then use some of the silicone adhesive to retain the wires permanently.



96. Remove the MAP sensor and seal from the stock intake manifold by tilting the sensor forward and lifting the sensor out.



97. Use the provided Lubriplate lubricant to lube the O-ring, then install the MAP sensor and seal on the supercharger manifold by pressing it in the hole and using the supplied bracket and the short 6mm button head Allen bolt.



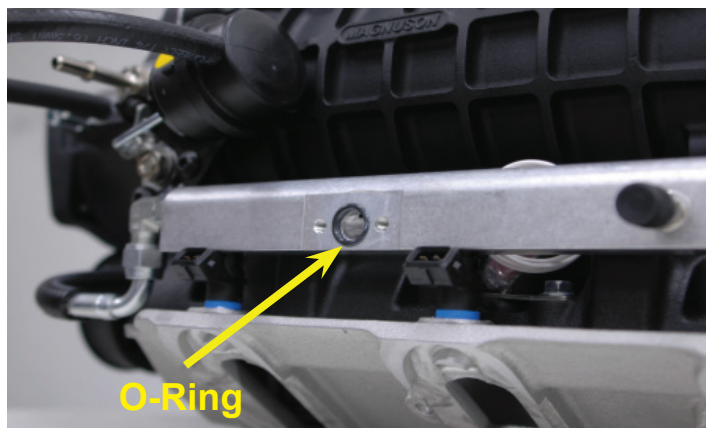
98. Using a pair of C-clip pliers, remove the stock fuel pressure regulator or pulse dampener from the stock fuel rail assembly on the stock intake manifold.



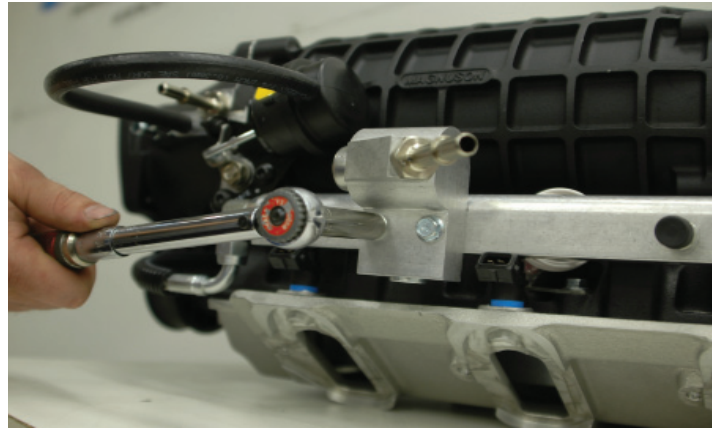
99. Using a small amount of oil or the supplied Lubriplate lubricant, lubricate the O-rings on the fuel regulator or pulse dampener and install into the new supplied fuel manifold. Reinstall the original C-clip using the C-clip pliers.



100. Lubricate the supplied O-ring with the supplied Lubriplate lubricant and install into the driver side fuel rail manifold recess as shown.



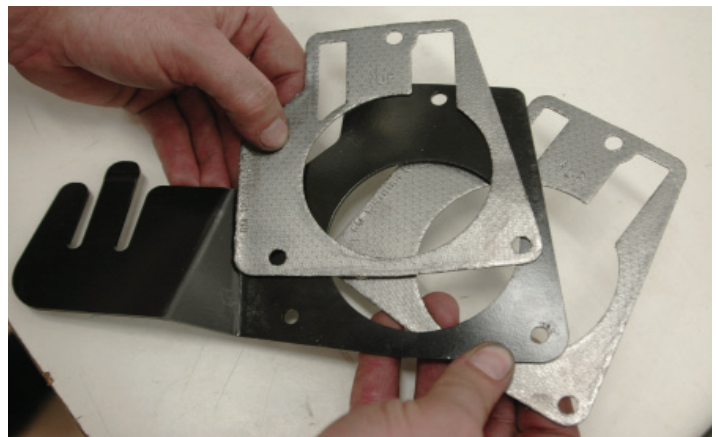
101. Mount the new fuel supply manifold to the driver side fuel rail using the supplied bolts and torque to 106" lbs. Ensure that the O-ring remains seated correctly and doesn't get pinched over the edges.



102. Using a 10mm socket wrench remove the throttle body from the stock intake manifold.



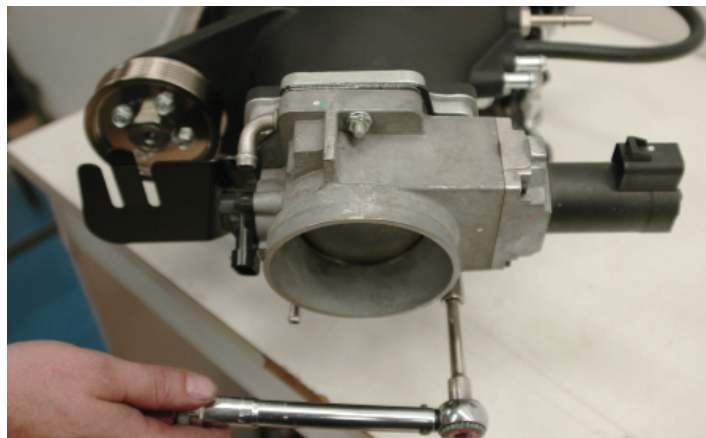
103. The supplied throttle body gaskets sandwich the power steering reservoir mounting bracket. **Note the "UP" designations on the gaskets and verify that the idle slot is not being blocked by gasket material.**



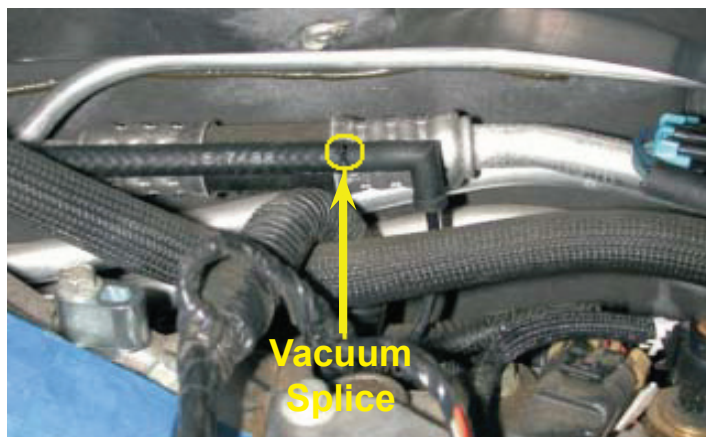
104. Screw in the supplied throttle body mounting studs into the three holes of the adapter plate and mount the power steering reservoir bracket to the throttle body location by placing a new intake gasket on both sides of the power steering reservoir bracket as shown.



105. Install the throttle body on the supercharger inlet using the supplied hardware on the supplied mounting studs, sandwiching the power steering reservoir bracket from the previous steps. Torque the nuts to 12 N-m (106 in-lbs).



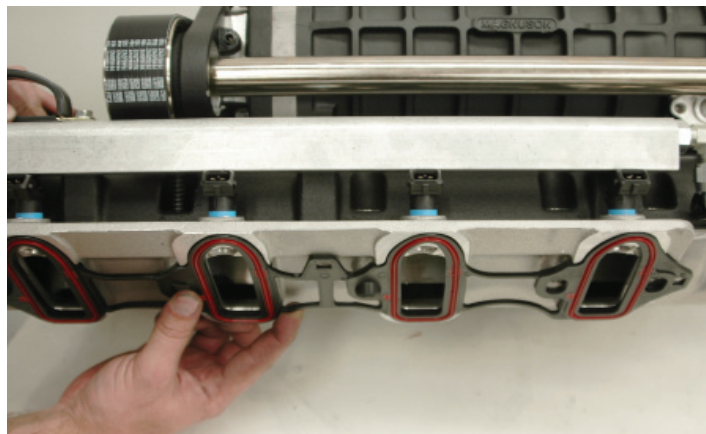
106. Install the supplied 1/4" vacuum hose splice and 33" piece of 1/4" vacuum hose to the fitting at the rear of the engine as shown. Route the hose over to the driver side of the engine compartment. The other end of this hose will connect to the front of the supercharger by the throttle body in a later step.



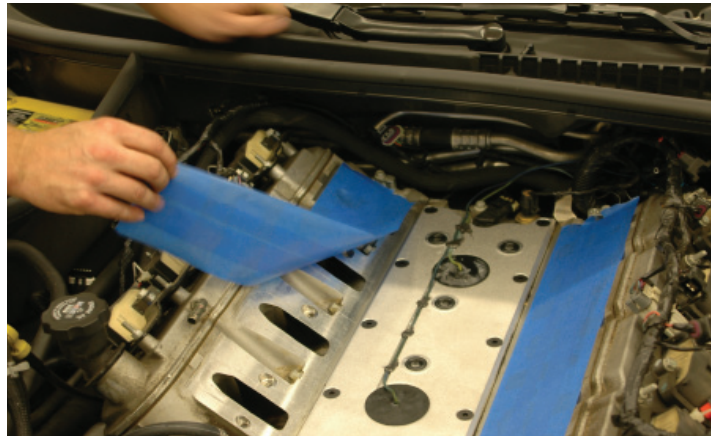
107. Reinstall the crankcase vent tube assembly PCV on the engine before installing the supercharger. If it has a ground strap, install it now and torque the nut to 12 N-m (106 in-lbs).



108. Install the new supplied intake gaskets (2) into the recesses in the intake manifold.



109. Remove the protective tape from the cylinder heads and supercharger. Clean off any tape residue using alcohol or some other non-petroleum based solvent. **IMPORTANT: Make sure that there is no debris in the ports.**



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



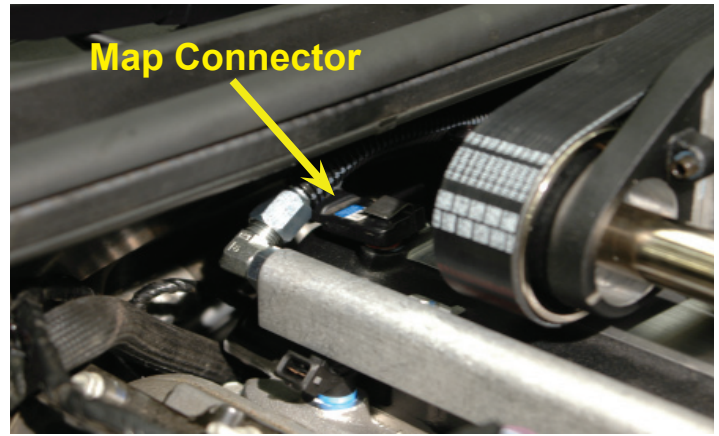
111. Carefully, with the help of an assistant, set the supercharger assembly on the engine. Line up the bolt holes with the holes in the cylinder heads. **(Be careful of the one bolt that is under the rear supercharger pulley on the passenger side, as it hangs out a little and must be aligned first.)**



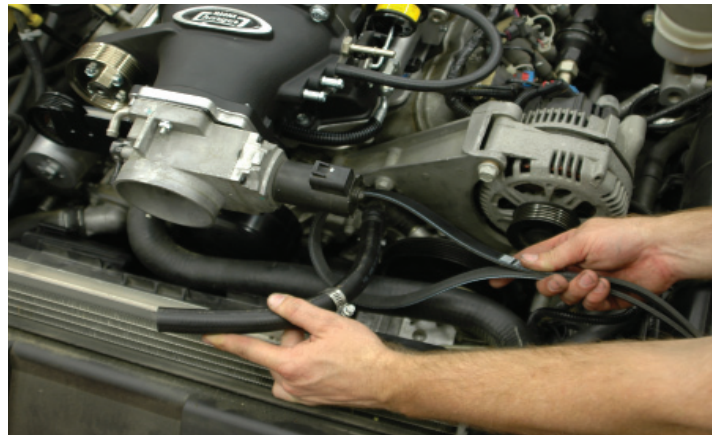
112. Remove any black plastic sleeves that hold the intake bolts up and start all ten intake bolts by hand, do not tighten until all the bolts are started. **(Be careful not to cross thread the bolts.)** Torque the supercharger manifold bolts, working from the center out in a crisscross pattern to 12 N-m (106 in-lbs) using a 10mm socket and a inch pound torque wrench.



113. There is an Adel clamp at the rear passenger side fuel rail mounting bolt with an incorporated spacer. Remove this assembly and set aside for later re-install. Plug in the (MAP) sensor electrical connector at the rear of the supercharger manifold.



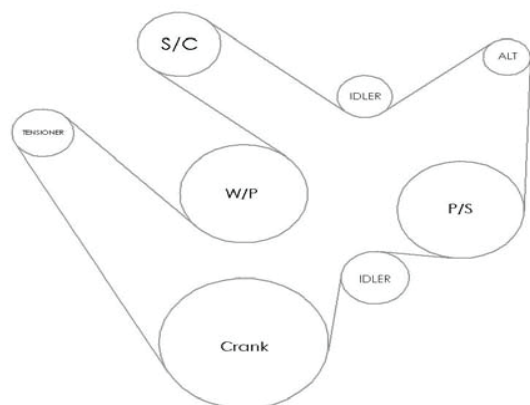
114. Pass the power steering hose through the fan belt as shown.



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



116. Belt Routing Diagram



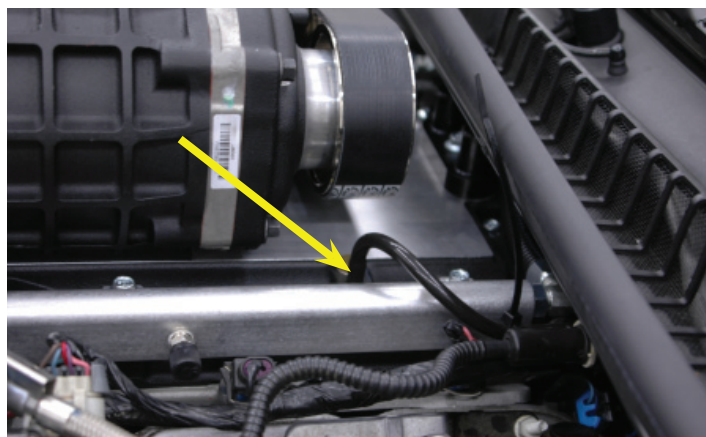
117. Connect the OEM throttle body coolant hose to the passenger side barb of the throttle body. Locate the supplied 1/4" piece of throttle body coolant hose and clamps. **(Make sure to use the hose marked coolant hose.)** Connect one end to the steam vent pipe. Route the new hose under the tensioner brace bracket, forward, up and parallel to the OEM hose just installed. Continue to the driver side barb of the throttle body. Cut to fit and secure with the supplied clamp.



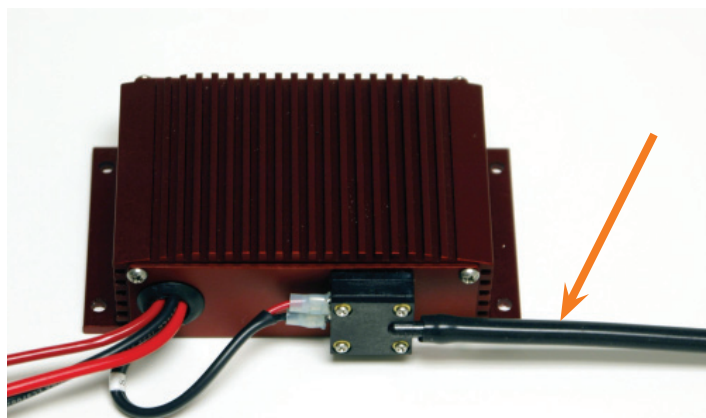
118. Assemble the EVAP Sensor and hoses as original and install the EVAP hard line connector onto the EVAP fitting located on the driver side of the supercharger inlet manifold by pushing it on firmly. Route the other end back to the firewall hard-line EVAP hose barb located behind the driver side head and plug in securely.



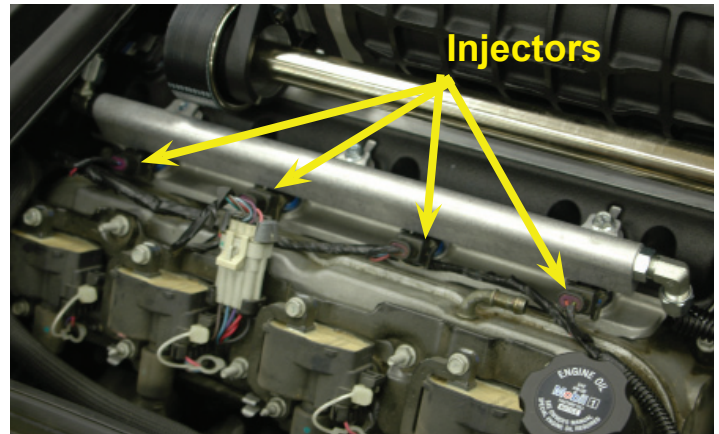
119. On the driver side rear of the supercharger manifold, locate the pressure port capped with a small, rubber cap and remove the cap. Using the hose supplied, connect one end of the hose to the pressure port and then route the other end to the Fuel Pump Booster module. Secure the hose out of the way of the rotating parts at the rear of the blower with the Ty-wraps supplied.



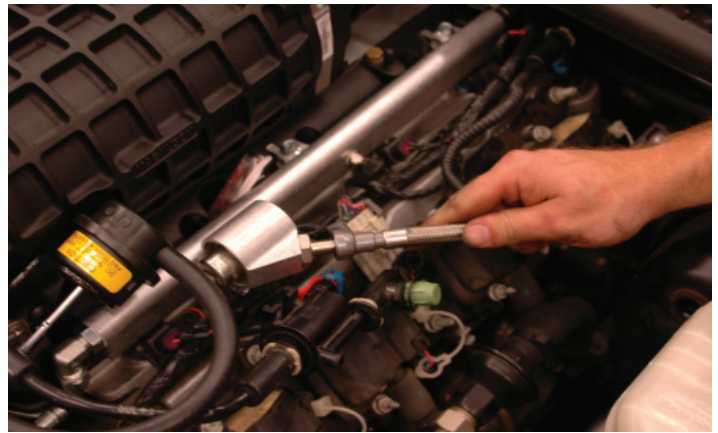
120. Connect the remaining end of the hose to the Fuel Pump Booster vacuum barb. Secure the hose out of the way with the Ty-wraps supplied.



121. Connect the eight fuel injector control connectors, making sure that they are plugged in securely.



122. Push the stock fuel lines (one or two) onto the new fuel manifold fittings. Make sure that they are locked on by pushing and pulling on them lightly.



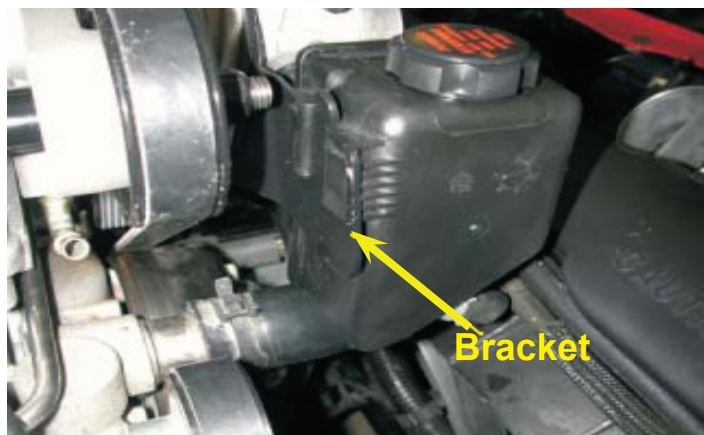
123. Re-install the fuel line safety clips. Test your connections!



124. Connect the extended piece of 5/8" hose connected to the coupling in step #88 to the power steering reservoir tank using the supplied hose clamp.

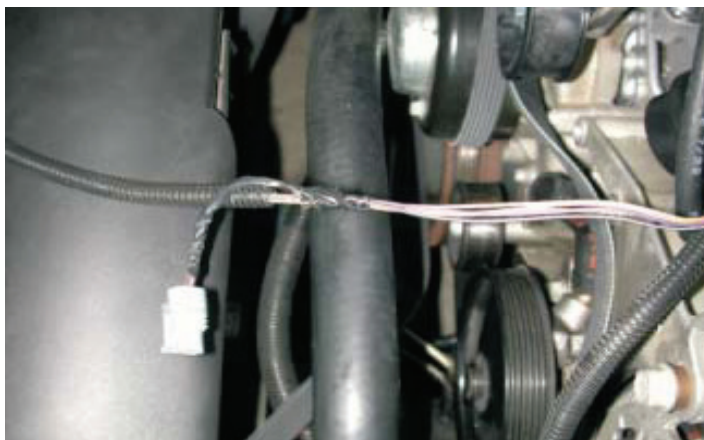


125. Install the power steering reservoir on the reservoir bracket.

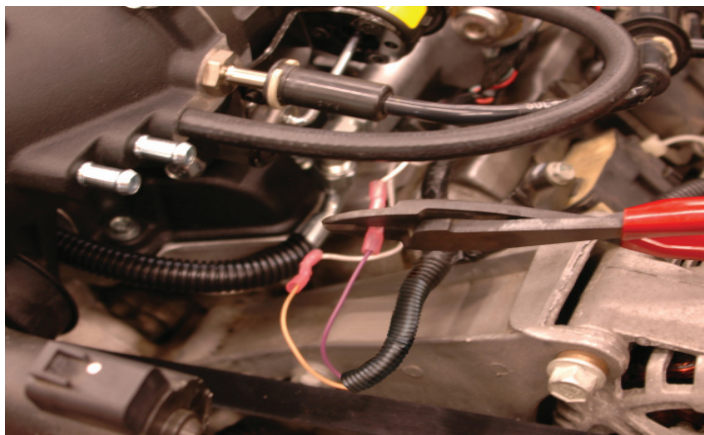


NOTE: 1997-2001 (separate IAT sensor harness), uses the next three steps. 2002 - 2004, skip the next three steps.

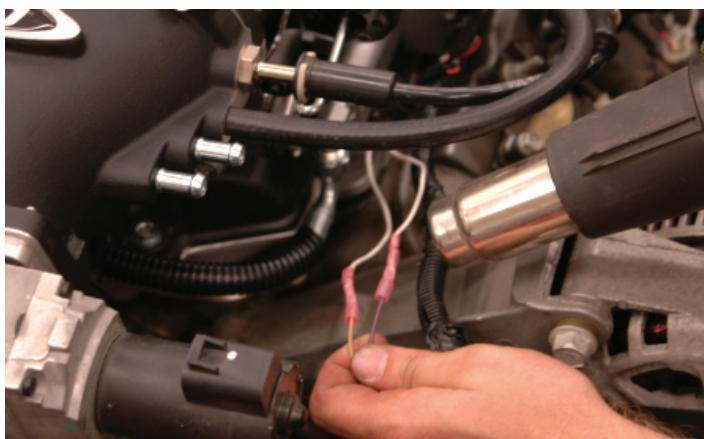
126. Pull back the split loom from the IAT sensor and remove the tape, cut off the IAT sensor plug and re-route the two IAT sensor wires back far enough to meet the two white wires exiting the middle of the supercharger manifold lid.



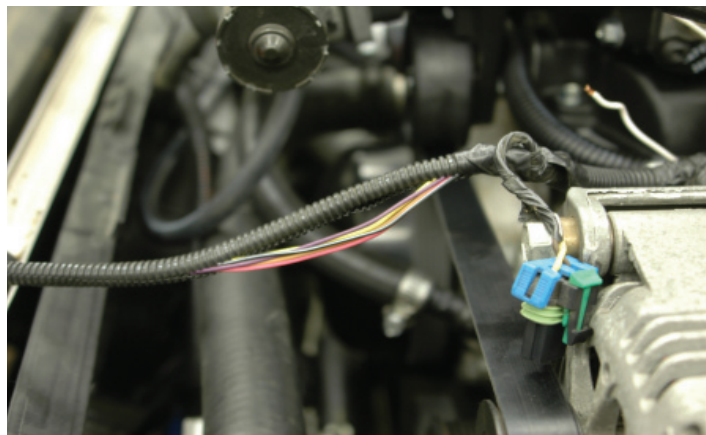
127. Expose about 3/8" of all wire ends and use the provided crimp-shrink connectors to join the wires together.



128. Heat-shrink your connections using a hair dryer on high or heat gun. It is not adequate to just crimp the connections together. Recover the wires all the way to the lid using the original split loom and any additional length of the provided 1/4" split loom necessary.



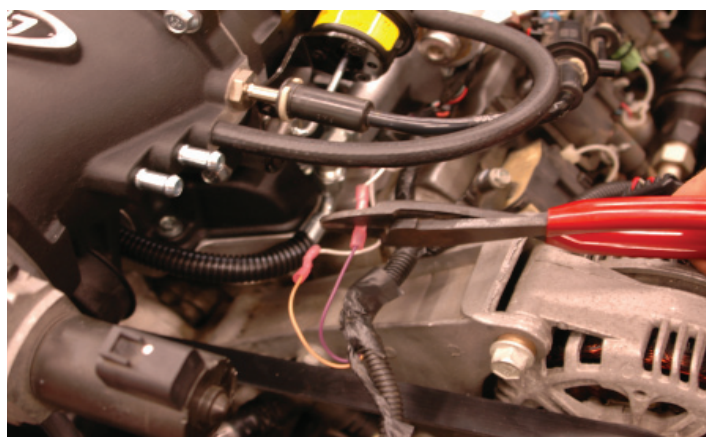
129. 2002-2004 Corvettes have the IAT sensor built into the MAF sensor. Pull back the split loom from the MAF sensor harness and remove the tape to expose the five wires.



130. Cut the tan and purple wires about 4" from the throttle body connection split. Strip about 3/8" from the rear section of the cut ends of the tan and purple wires. The forward pieces can be covered with tape and pushed back into the remaining harness.



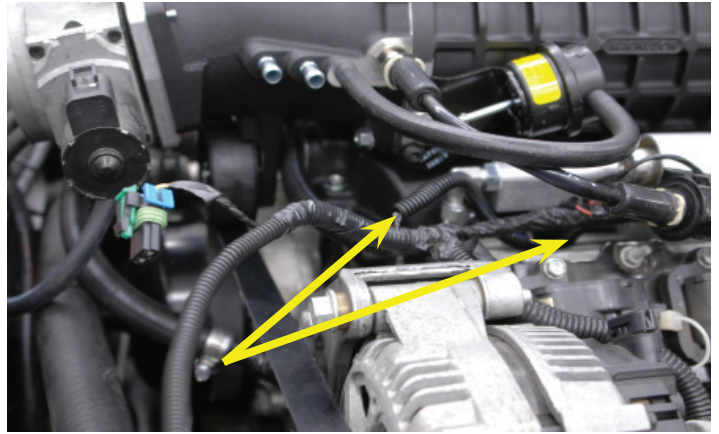
131. Locate and route the two white wires exiting from the middle of the driver side supercharger manifold lid forward, and verify that about 3/8" of wire are exposed. Use the supplied crimp connector to connect the tan and purple wires to the white wires, it doesn't matter which wire you crimp to which white wire.



132. Use a hair dryer on high or a heat gun to shrink your connections. It is not adequate to just crimp the wires together. This also helps avoid moisture contamination.



133. Install a new piece of the provided 1/4" split loom to cover the IAT harness back to the supercharger lid.



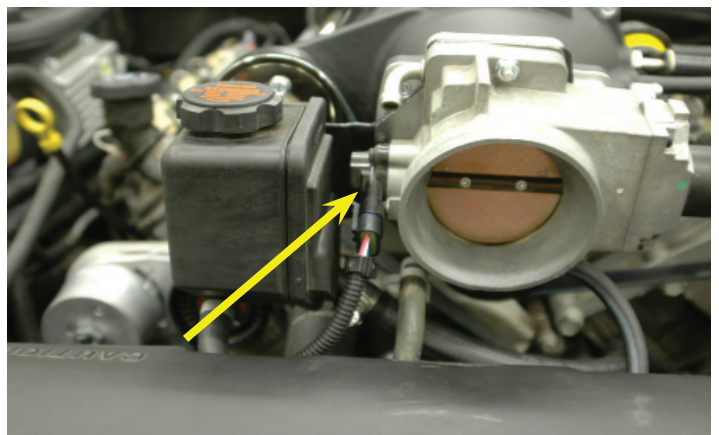
134. All vehicles continue from here: Connect the TPS sensor connector into the female end of the TPS extension supplied.



135. Using a pair of pliers carefully turn the PCV vent tube to the forward position as shown in the picture.



136. Reconnect the throttle body electrical Throttle position sensor connector.



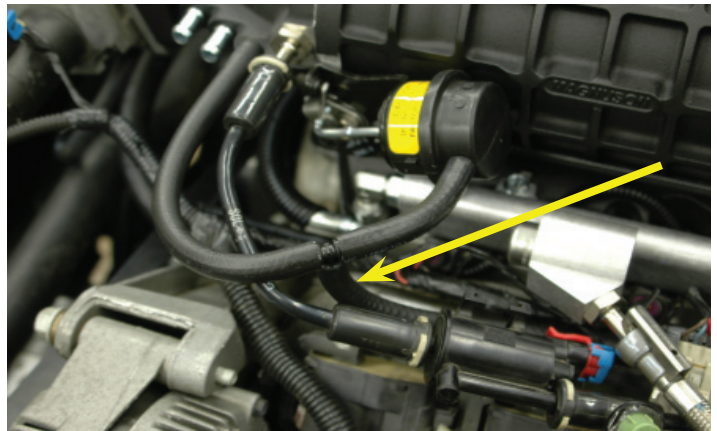
137. Connect the Electronic Throttle control connector.



138. The Bypass vacuum hose will need to be split to accommodate a "T" vacuum connection. Cut the hose near the middle and install the supplied "T" coupling as shown.



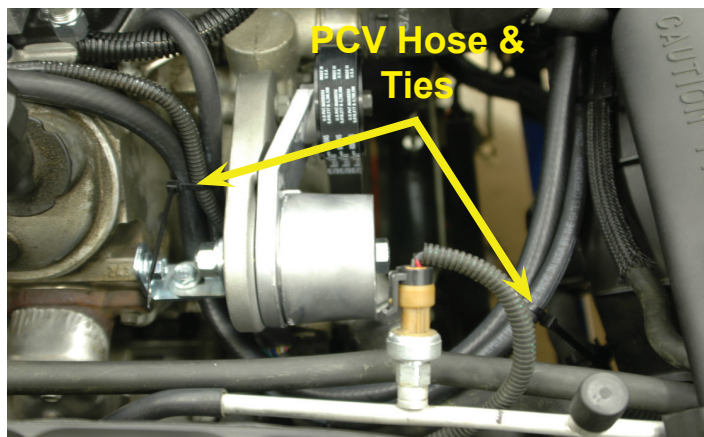
139. Trim the 1/4" vacuum hose that comes from the back of the driver side of the engine compartment to join with the remaining leg of the "T" connector. This is the hose that was installed in step # 110.



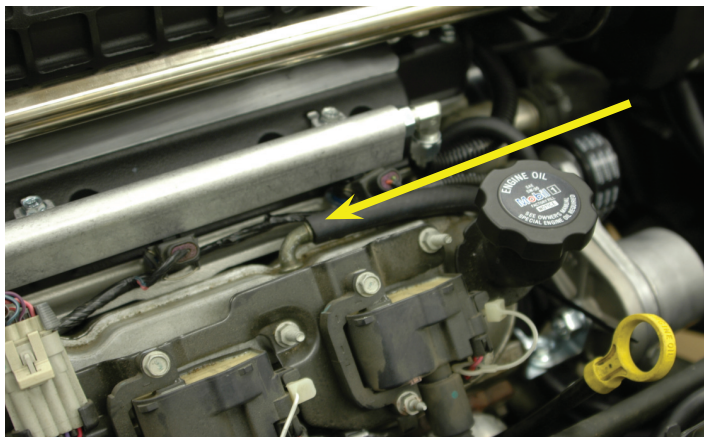
140. Install a 36" piece of 3/8" PCV breather hose to the throttle body barb. Route the hose toward the passenger side, down and back below the tensioner mounting bracket and up, over the valve cover and back paralleling the TPS sensor wire and throttle body coolant hose.



141. Using the supplied nylon wire ties, tie the throttle body coolant hose, TPS sensor wire, and the PCV breather hose together as shown.



142. Connect the other end of the PCV hose from the throttle body to the passenger side valve cover barb as shown.

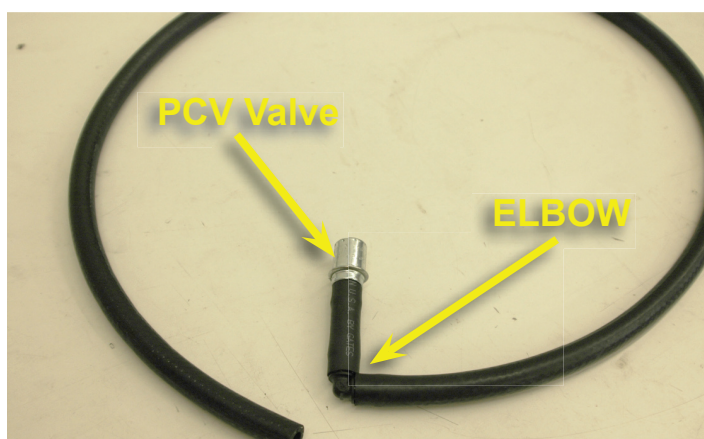


The following four steps are for Z-06 models only, all others skip next four steps:

143. In the rear of the driver side valve cover remove the black plastic plug from the rubber grommet.



144. Assemble the final PCV hose by cutting a 2" length and attaching one end to the 90° "Elbow" fitting. Attach the other end to the new PVC valve. From the remaining hose cut a 38" section and connect one end to the remaining barb on the elbow fitting.



145. Plug the PCV valve into the hole created when you removed the plastic plug from the rubber grommet at the rear of the driver side valve cover.



146. Route the hose forward, below the fuel rail manifold, cut to fit and connect the remaining hose end to the 3/8" hose barb located on the supercharger inlet as shown.



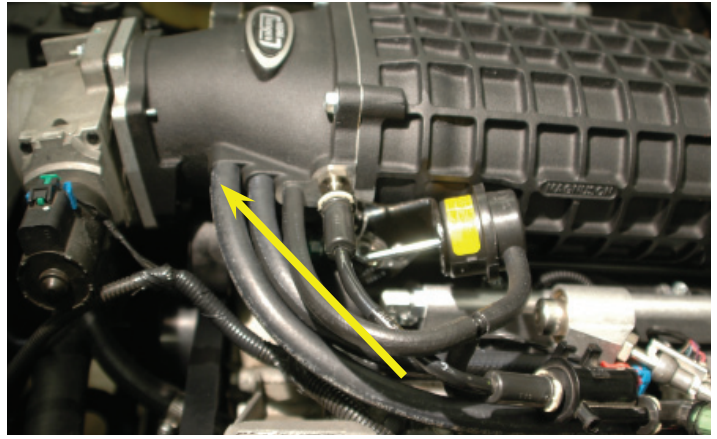
147. **For non Z-06 models:** Cut a section of the provided PCV hose to run from the hose barb located on the rear of the driver side valve cover, route forward, below the fuel rail manifold and connect to the hose barb on the supercharger inlet.



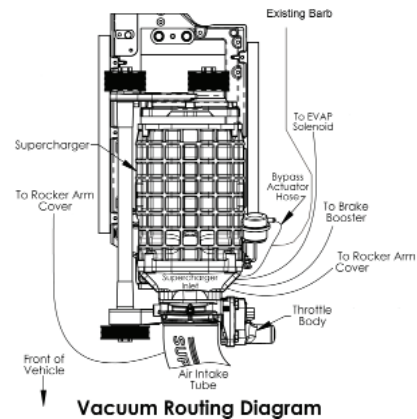
148. All vehicles continue from here: Install the check valve on the 11/32" vacuum hose and plug the check valve into the grommet on the brake booster.



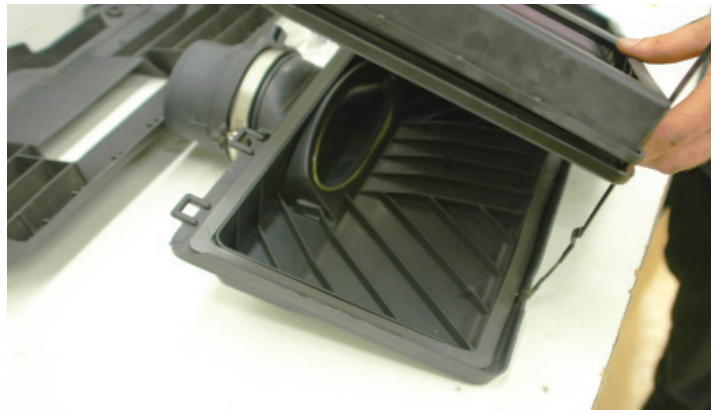
149. Route the hose forward and plug into the remaining hose barb on the supercharger inlet.



150. Here is a diagram of the vacuum connections/routing of the supercharger.



151. Install the new supplied high performance K&N air filter assembly following the instructions supplied by the manufacturer. The adhesive backed gasket attaches to the base cover following the outline. Wipe the surface clean with alcohol prior to attaching then install the filter and close. The picture shows the assembly removed for image clarity but is not necessary for the installation process.



152. Install the new air duct from the throttle body to the MAF meter. Make sure that there are no air leaks. (On early models there is a small vacuum hose that goes from the duct to the fuel regulator nipple.)



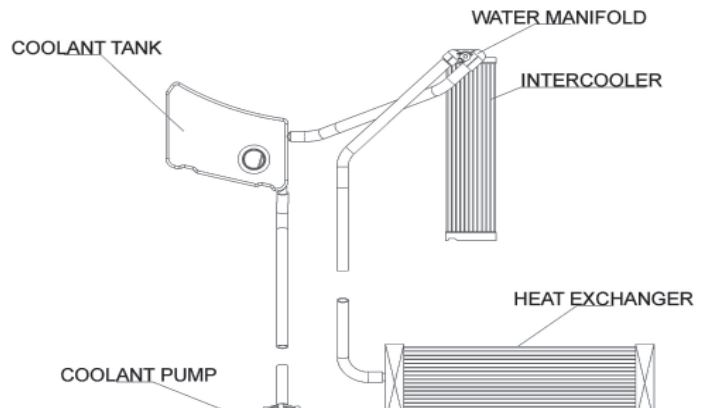
153. Connect the MAF plug to the MAF meter connection.



154. Using only GM recommended fluid, fill the power steering reservoir to the full cold mark. (Re-check the level after start up and after turning the steering wheel lock to lock a few times.)



155. This is a diagram of complete intercooler system plumbing. **Note: The various connections, this is very important.**



156. Temporarily position the intercooler reservoir on top of the battery and remove the rubber strip along the top edge of the surrounding partition. Using a pair of Tin-snips, mark and cut a notch in the top edge of the partition so that a hose can pass through to the upper barb of the reservoir. Reattach the rubber seal along the top of the partition.



157. In the lower corner just ahead of the fuse relay center, create a hole, at least 1" in diameter on the partition floor so a hose can pass through to the lower barb of the reservoir.



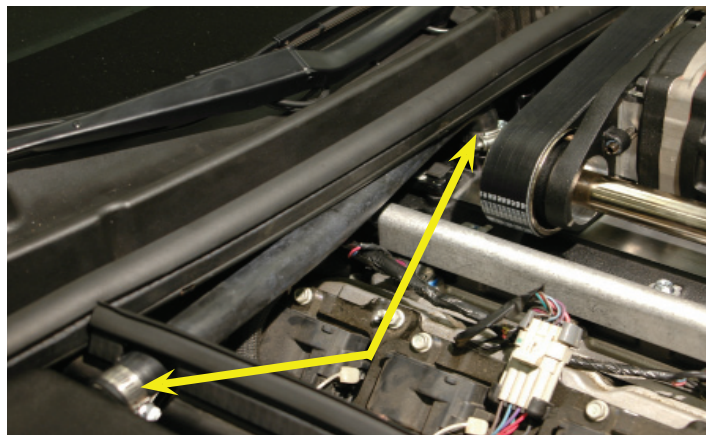
158. Using the Peel-and-stick pad supplied, attach it to the side of the hood latch next to the battery. This will act as a cushion for the reservoir.



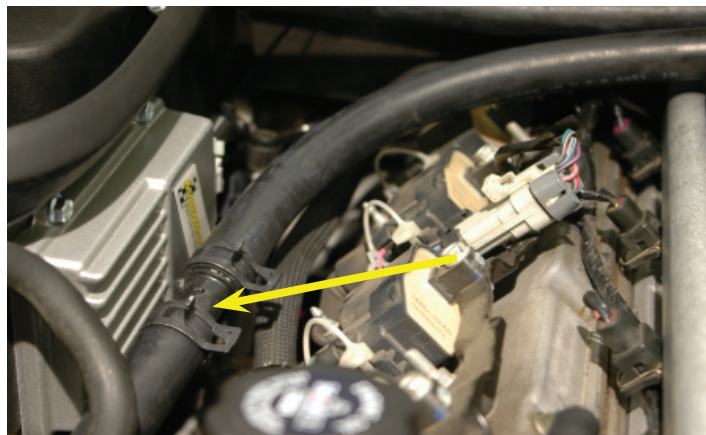
159. Cut the two provided $\frac{3}{4}$ " x 90° elbow inter-cooler hoses so that the short ends are 1-1/4" long from the inside of the curve as shown.



160. Attach one short hose end using the supplied worm gear clamps to the passenger side barb at the rear of the supercharger lid, route the hose over the fuel rail toward the passenger side and away from the supercharger pulleys, through your new notch in the battery partition, and connect to the hose barb on the intercooler reservoir using a provided worm gear clamp.



161. Attach the other short hose end using a supplied worm gear clamp to the driver side barb at the rear of the supercharger lid. Route this hose parallel to the other hose, toward the passenger side fender, forward and cut to join the coupling (hose-mender) on the hose from the top barb of the intercooler heat exchanger you connected in step #50. Secure using the provided spring clamp.



162. Install the Adel clamp to secure the two intercooler hoses (removed earlier from the passenger side fuel rail, rear mounting bolt when you were working with the MAP sensor), incorporate the spacer removed at the same time.



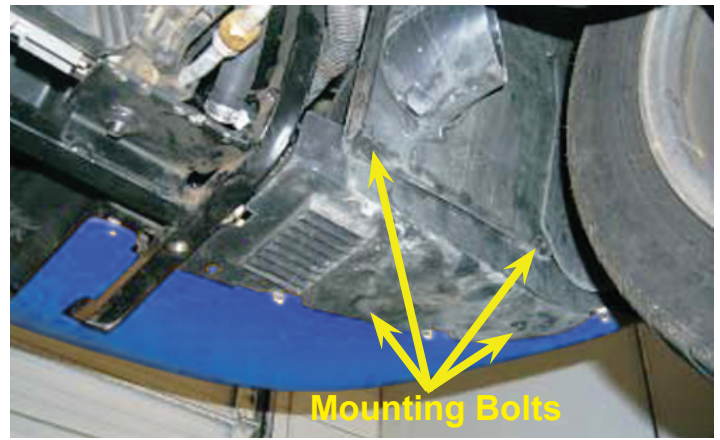
163. From the remaining hose, cut a length that will connect the lower barb of the intercooler reservoir to the inlet (center) barb on the intercooler coolant pump. Route this hose through your new hole in the lower corner of the partition. Continue the hose under the radiator reservoir, along the side of the frame rail and radiator shroud to the pump.



164. Reinstall the horn assembly by first plugging in the horn electrical connector and then attaching the horn bracket to the frame extension with its bolt using a 13mm socket and ratchet.



165. Reinstall the splash panel and corner of the spoiler to the underside of the nose with their eight mounting bolts, using a 7mm socket and ratchet.



166. Fill the inner cooler reservoir with a 50:50 mixture of distilled or de-ionized water only and GM approved engine coolant. The intercooler system will hold approximately 6 quarts of liquid. Fill the reservoir until the fluid level comes to about one and a quarter inch from the top edge of the filler neck. After the initial start-up and the engine has reached operating temperature, recheck the fluid level in the reservoir and all the hose connections.



167. Close the radiator petcock and reinstall the coolant saved from step 4. If more coolant is needed, only use coolant recommended by GM.



168. Reconnect the negative (-) battery cable using an 8mm wrench.



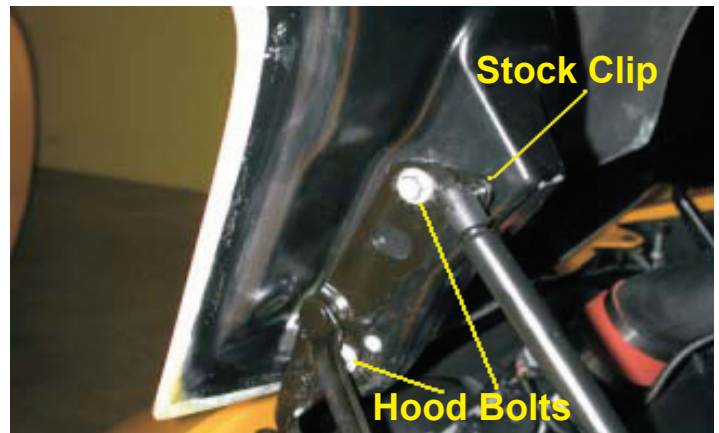
169. Cycle the ignition switch several times to fill the fuel rails. Check for any leaks in the fuel system at this time.



Warning the fuel line fittings are not pressure tested during assembly, make sure to check for fuel leaks now and tighten fittings immediately.

Start the vehicle for 5 seconds and shut off, once again check for fuel leaks and fan-supercharger belt alignment.

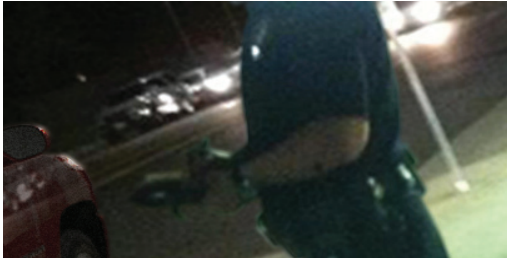
170. Install your new hood with the factory hardware using a 13mm wrench. Check the vehicle over one more time, double checking for any problems.



171. Test drive vehicle for the first few miles under normal driving conditions, listen for any noises, vibrations, engine miss-fire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal.



After the initial 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. Double check the installation one more time and make sure that 91 or higher octane fuel is in the tank. If the problem continues call the Magna Charger tech line. Enjoy your new Magnuson Products supercharger.



Please enjoy your "Magna Charged" performance responsibly.

Now might be a good time to start thinking about that radar-laser detector!

MAGNUSON
SUPERCHARGERS