Installation Instructions for:
INTERCOOLED SUPERCHARGER SYSTEM
1997 TO 2003
C5 & Z06 CORVETTE

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

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INSTALLATION MANUAL

Magna Charger
GM 5.7 Liter Engine, C5 & Z06
1997-2003 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 fittings with a shop towel before disconnecting. This will catch any fuel that may leak out. Place the towel in an approved container when the job is complete.
- **Use only premium fuel, 91 octane or better.**

Magna Charger has seen a variance in stock rear wheel horsepower. Numbers between 280 RWHP and 320 RWHP have been recorded on our in-house chassis Dynamometer. Depending on year, transmission, or presence of other installed aftermarket products, RWHP numbers should be 380 RWHP to 420 RWHP at 5 lbs. of boost. Horsepower numbers are reflected by base RWHP numbers and altitude. Magna Charger kits are manufactured to produce about 20 RWHP per pound of boost at sea level. High altitudes will produce different 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. Magna Charger is not responsible for the engine or consequential damages.

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. 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# K061058
- Air Filter= K&N# 33-2111

Magna Charger has joint ventured with RK Sport, 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
- ¼” - 3/8” and ½” drive metric socket set (Standard & Deep)
- 3/8”and ½” drive Foot pound and inch pound torque wrenches
- Belt tensioner wrench
- Phillips and flat head screwdrivers
- ½” breaker bar
- Fuel line quick disconnect tools (included in kit)
- Small or angled 3/8” drill motor
- Drain pan
- Hose cutters
- Hose clamp pliers
- Safety glasses
- Torque angle meter
- ½” impact gun
- Small drift punch
- Hammer
- Harmonic 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.

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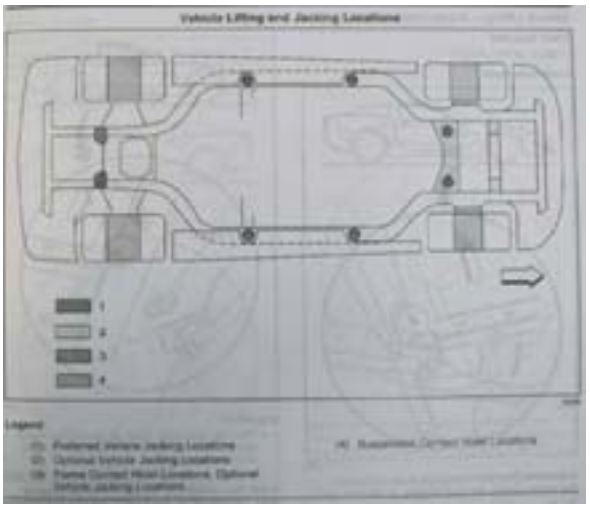
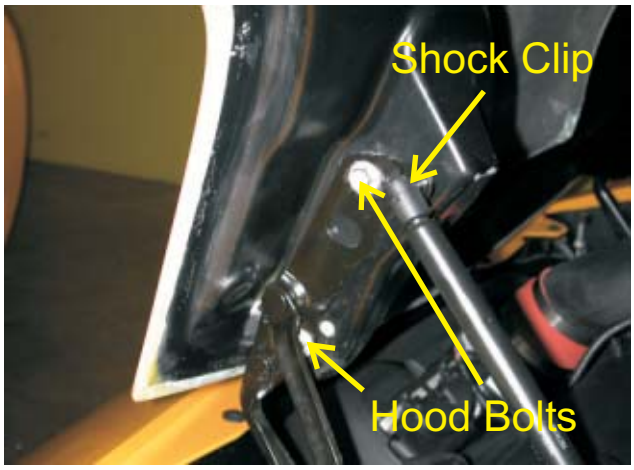
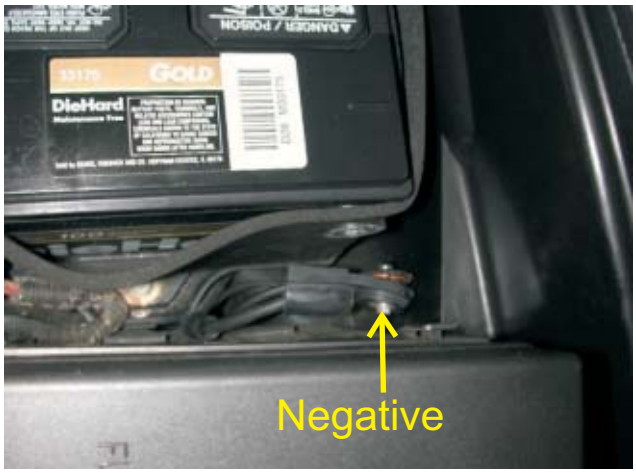


1. Raise the vehicle on a automotive hoist using the factory recommended lift points. Refer to the owners manual or shop guide for these locations.

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).



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.



4. With a 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)

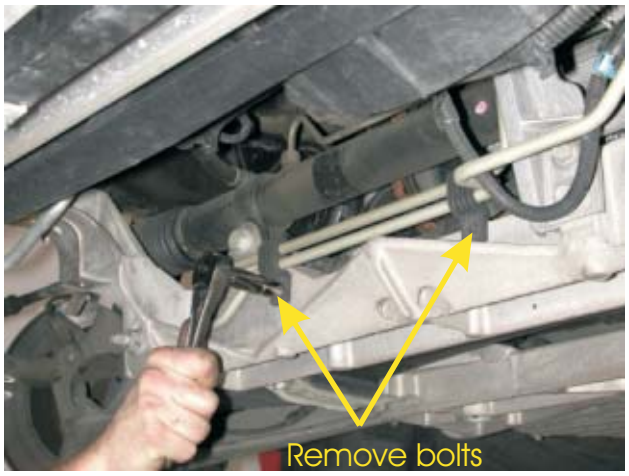
5. Remove the front tires and wheels. Make sure to mark the right and left tires so that they are reinstalled in the same location.

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

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

8. Using a torx T-40 or 6mm Allen socket (depending on year) and a 18mm wrench remove the front sway bar link nuts.

9. Remove the four bolts holding the sway bar to the chassis using a 13mm socket wrench. Remove the sway bar and set aside.



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

10. Using a 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 large bolts holding the rack and pinion in place using a 18mm socket wrench and a 18mm wrench.

13. 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 step #14.)

15. 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.

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

16. 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 remove the rack and pinion.

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

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

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

20. 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.

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

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

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

24. Use compressed air to blow out the holes.

25. 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).

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

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

28. Reinstall the rack and pinion by reversing steps 1-17 and by using the torque chart below for proper torque of the front suspension fasteners.

Torque Specifications

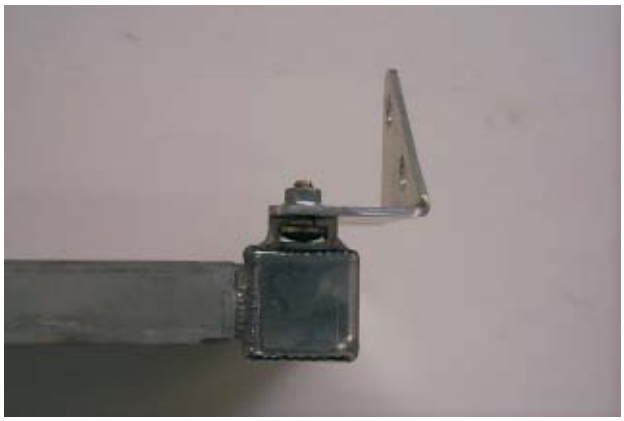
Cross member nuts	80 lb-ft
ABS bracket bolts	20 lb-ft
Rack and pinion bolts	75 lb-ft
Power steering cooler	97 lb-in
P/S pressure hose	20 lb-ft
P/S return hose	20 lb-ft
Sway bar to frame	45 lb-ft
Sway bar link nuts	55 lb-ft
Shaft pinch bolt	35 lb-ft
Tie rod ends	50 lb-ft
Wheel lug nuts	140 lb-ft

29. Remove the center section of the front spoiler and it's two aluminum center supports by removing the four bolts with a ratchet and 10mm socket.

30. Temporarily place the heat exchanger in the mouth of the radiator shroud with its barbs towards the right hand (passenger) side. Push the heat exchanger up so that it's 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 left (driver) side so that the barbs touch the side of the radiator shroud. This is the position the heat exchanger will be mounted in.

31. With the heat exchanger in position, use a pen or scribe to make a mark on the side of the radiator shroud for a hole 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.

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



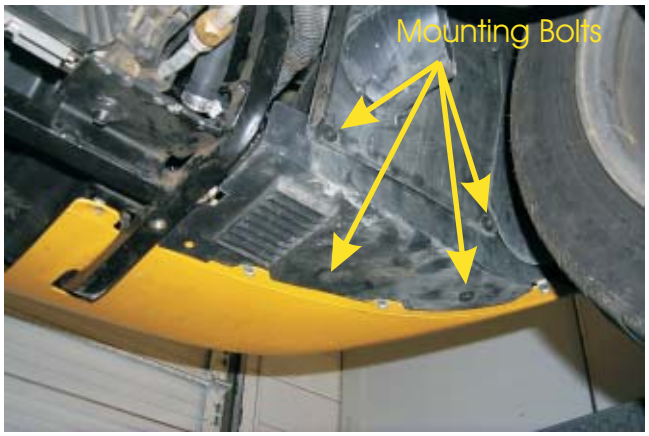
33. The brackets attach to the heat exchanger by sliding into the open ends of the channel on the front face of the heat exchanger side tanks. The square portion of the bolt shaft must be aligned with the side channel. Tighten the mounting nuts to lock the brackets in position.

34. 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.

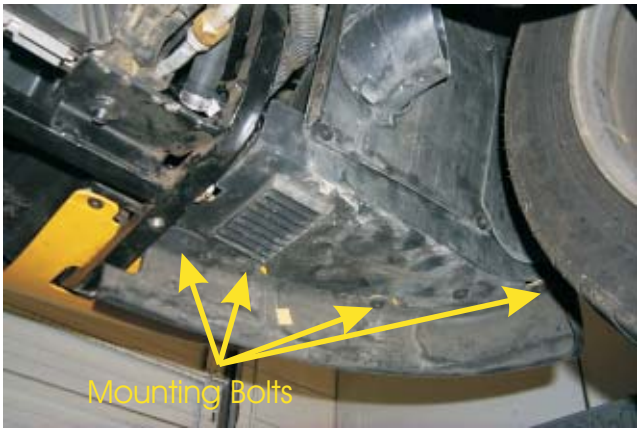
35. Replace the heat exchanger after drilling the mounting holes. Using the 8x25mm bolts and flange nuts supplied, bolt the heat exchanger in place on the left side only. Loosen the mounting bracket nuts on the right side only and temporarily slide the bracket down so that you can install the heat exchanger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

36. 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.

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



39. 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.



38. Remove the right hand (passenger side) corner of the front spoiler by removing the four mounting bolts and washers with a ratchet and 7mm socket.

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

41. 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.

42. Here is the coolant pump complete with it's 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.

43. 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.

44. 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 from step # 41.) Then through the nose cover flap to be secured with the nut and washer on the bottom of the car.

45. 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.

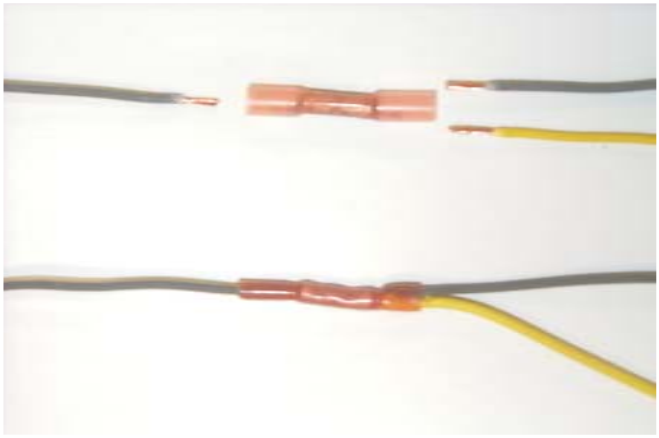
46. To ensure proper airflow to the heat exchanger modify the center section of the front spoiler. From the backside using the mounting bracket as a guide, cut the upper rubber portion off along the top edge of the mounting bracket. Reinstall the front spoiler with its two aluminum center supports and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

47. This is the intercooler heat exchanger relay and wiring (Split-loom removed for clarity).

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

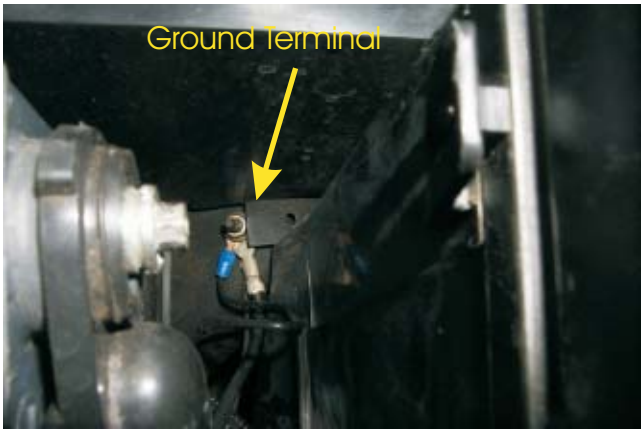
49. Detach the fuse relay center from it's base by gently prying open the four retaining clips. Pull up firmly on the fuse relay center to expose the three wiring blocks located on the bottom.

50. Note that 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. Into the selected grey wire, install a crimp/shrink connector with the yellow wire from the relay. This photo shows the relay wiring installed.



51. Install the crimp/shrink connector by cutting the grey wire and stripping a ¼" of insulation off each end. Insert one end of the grey wire into the crimp/shrink connector and crimp it securely. Into the other end of the connector, insert the remaining end of the grey wire AND the stripped end of the yellow wire from the relay and crimp it 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; <u>you must shrink the plastic covering!</u>**

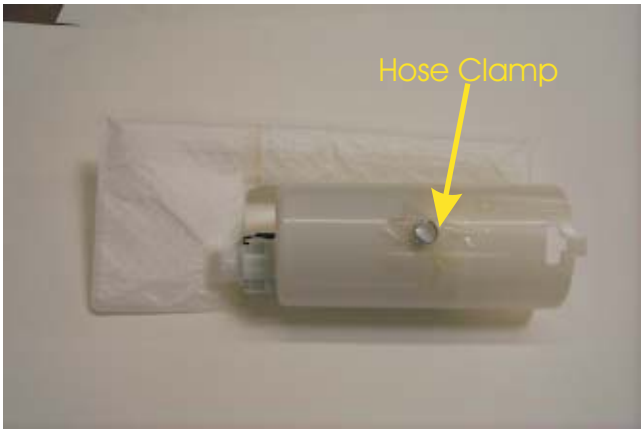
52. Here is the crimp/shrink connector and yellow wire installed on the grey wire of the white-wiring block.



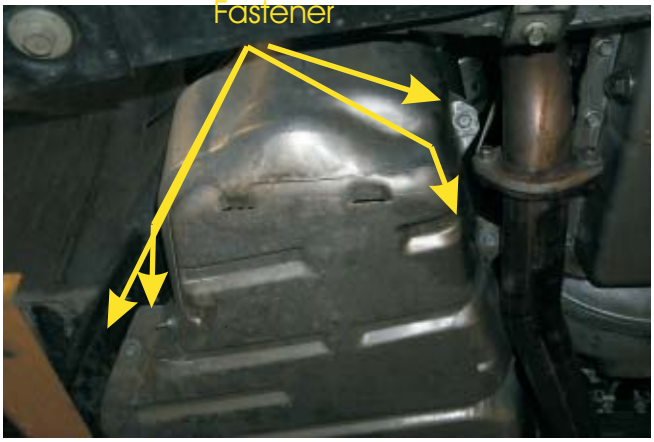
53. Route the black wire with the ring connector down under the bottom edge of the fuse relay center base to the ground terminal located directly below the negative terminal of the battery. Remove the nut of the ground terminal with a ratchet extension and deep10mm socket. Place the ring connector of the black wire on the ground terminal and reinstall the nut securely. Route the group black & red wires (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 the 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.

54. Route the large red wire and fuse holder out from under the fuse relay center base through the same hole as the smaller branches of the factory harness. (Note: split-loom has been removed in this photo for clarity) remove the nut from the B+ terminal on the fuse relay center with a ratchet and deep 13mm socket. Place the ring connector on the B+ terminal and reinstall the nut securely. Once all four electrical connections are made, use a Ty-wrap supplied to secure the relay to the existing wring and gently tuck it into the fuse relay center base. Finally, snap the fuse relay center back into its original location and replace the B+ cover.

Warning:
Before attempting installation of the new upgraded fuel pump, ensure that the fuel tank is less than 1/8th by checking the fuel level gauge. Even though the gauge may read empty, some residual fuel will be present in the tank. Exercise extreme caution and common sense when working around gasoline. Extinguish all open flame or other sources of ignition and be sure to perform the following steps in an area with adequate ventilation. Personal protection in the form of eye protection and fuel resistant gloves is strongly recommended.



55. Here is the new upgraded fuel pump assembly. Note the new crimp type hose clamp that is taped to the body; remove it now for later installation.

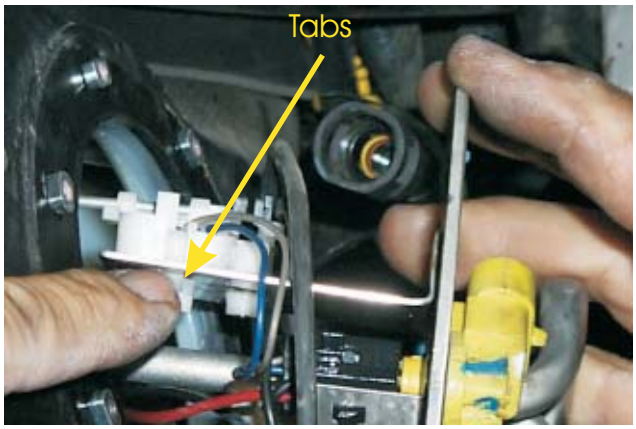


56. Remove the right rear wheel to gain better access to the fuel pump assembly on the driver side. Using a ratchet, 10 and 13mm sockets remove the two fasteners that retain the end cap on the fuel tank panels.

57. Pull down, but do not remove the large bottom panel by removing the next two bolts and only loosening two forward most fasteners with a ratchet and 13mm socket.

58. Remove the three fuel lines by pushing their plastic connectors firmly towards the steel tubes, then squeezing the blue or green release triggers. Note that just behind the connectors on the fuel lines are colored flags. These flags (black, blue and green) match a colored dot on each of the steel tubes, if the dots are not visible: the names of the colors are stamped into the access cover near the base of the pipes.

59. Remove the six bolts that secure the access panel with a ratchet and a 7mm socket. Pull the access cover and pump assembly out of the tank four to six inches and stop. Note the white plastic fuel level transmitter mounted near the top of the access panel and it's thin, metal float arm going back into the tank. Carefully move the float arm through it full range of motion and make note of how far it moves.



60. Detach the fuel level transmitter from its mount by pushing in on the two tabs on the backside of it's mount.

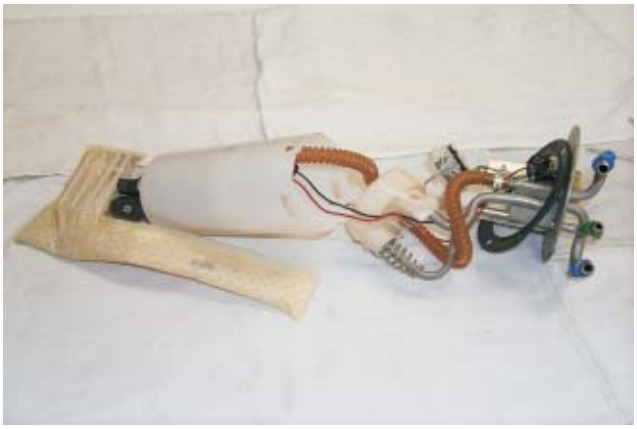
61. With the fuel level transmitter loose, reach into the opening and pull out the loop of orange plastic fuel line, this will ease removal of the pump assembly.

62. Pull the pump and transmitter assembly up at about a 45-degree angle and out towards the outside of the car. Note that there is a large fuel strainer attached to the end of the white plastic can, and even with the tank empty it will be dripping with gasoline when you remove the pump assembly. Use a large shop towel or drain pan to catch this excess fuel.

63. Prepare a clean work space and lay the complete pump assembly on clean dry shop towels to catch any residual fuel as you disassemble it.

64. Disassemble the pump assembly by separating the “can” or body from it’s lid. Do this by gently prying up at the three retaining points.

65. When removing the lid from the can, it can be helpful to use three small screwdrivers as wedges to hold the edges of the can up as you pull the lid free.

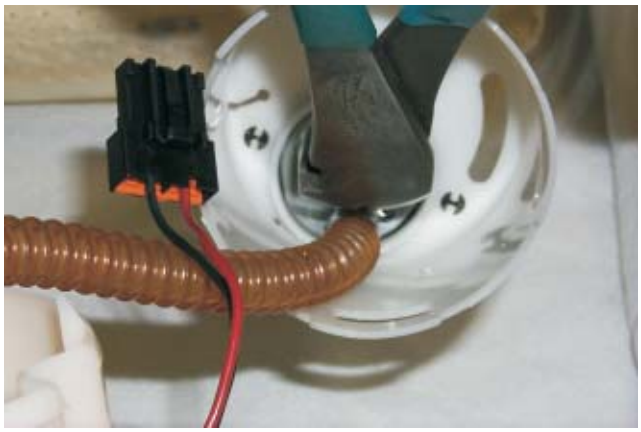


66. Here is the pump assembly with the lid removed. Unclip the black and red wires from the side of the lid and slide the lid up along the orange fuel line.

67. Sliding the lid up the fuel line reveals the fuel pump connections. Remove the electrical connector by squeezing and pulling it out.

68. Remove the fuel line connection by carefully spreading the “loop” in the clamp. Do this by using a small tool such as a scribe or small screwdriver and some patience. Take care not to damage the fuel line itself, as it must be reused on the new pump. The clamp will be replaced.

69. This is an end view of the new pump and can assembly. It is identical to the one just removed.

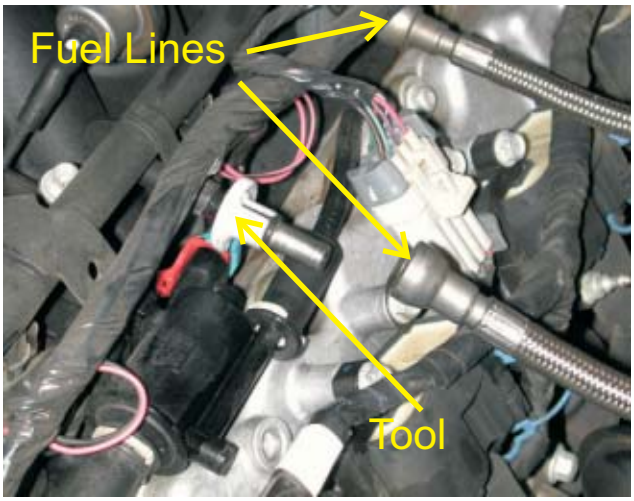


70. Install the fuel line on the new pump by sliding the new clamp (taped to the can previously) over the end of the fuel line. Slide the fuel line on the nipple of the pump and crimp the loop tightly.

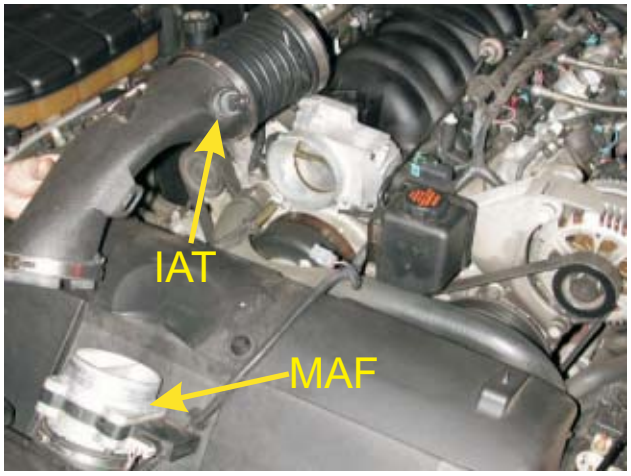
71. Use a pair of side cutting pliers to crimp the loop of the new clamp around the fuel line. Take care not to cut the loop but only tighten it. Finally install the electrical connector.

72. After installing the fuel line and electrical connector, clip the red and black wires back into their slot on the side of the lid. Slide the lid down the fuel line until it snaps into place on the new can. Insert the fuel strainer of the pump can into the opening of the fuel tank first, followed by the float arm of the transmitter. Slide the arm and can in the opening together in the same position as you pulled them out. Before pushing the can all the way in, snap the transmitter back into its original position and move the float arm through it's full range of motion to insure that it is not restricted in the tank. Push the pump in until the access cover is up against the gasket in its original position. Install the six retaining bolts and torque them to 62 in-lbs. Reattach the three fuel lines by lining up the release triggers with the slots on the connectors. Match the colored flags on the lines to the colored dots on the pipes. If the dots are not visible, the names of the colors are stamped into the access cover near the base of the pipes. Disregard the color of the release triggers. Ensure that you replace the fuel lines in the correct position. Reattach the electrical connection on the access cover. Push the lower fuel tank panel back into place and reinstall the two fasteners you removed. Reinstall the tank end panel with its fasteners and torque all the panel fasteners to 12 ft-lbs. Refill the fuel tank with 91 or greater octane unleaded fuel.

73. 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 reused.

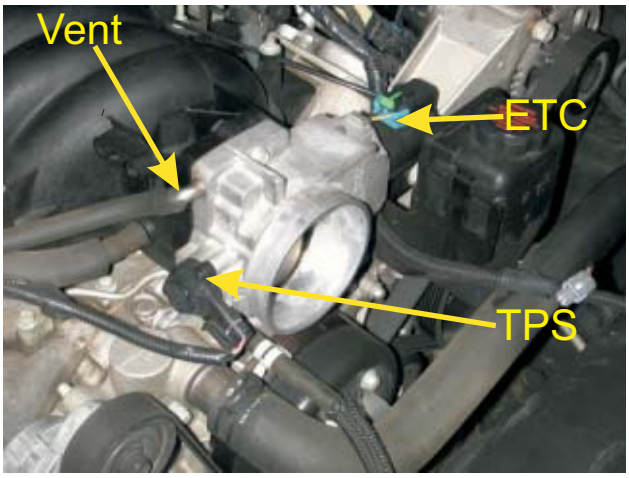


75. With the fuel line disconnect tools (included in kit), remove the fuel line or lines. (Early models have both pressure and return hoses) from the fuel rail. Be careful, the system may be under pressure. Safety glasses are recommended and stay away from sparks and flames, remember fuel is flammable.

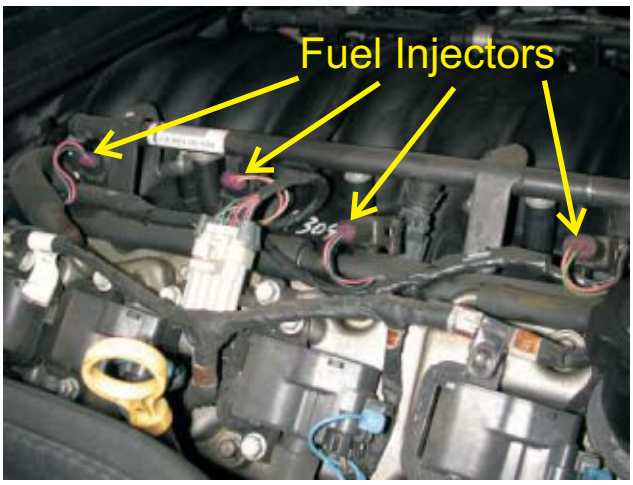


74. Remove the air cleaner duct from the throttle body and mass air flow meter (MAF). Unplug the intake air temp sensor (IAT) connector. Take care not to damage the meter, it is fragile. The air cleaner duct will not be reused.

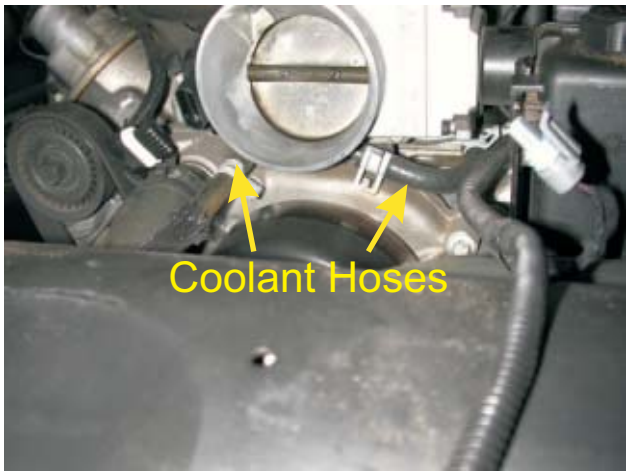
76. Disconnect and remove the (EVAP) canister purge tube from the throttle body and purge canister solenoid. (Push in on the center of the white plastic clips and pull).



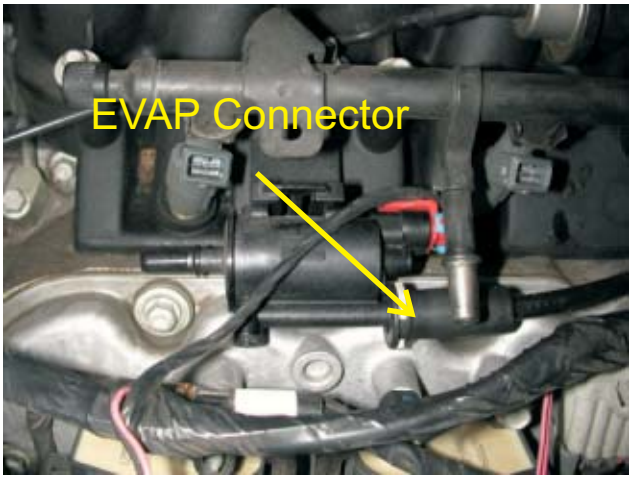
77. Disconnect the electrical connectors from the throttle body, (TPS), (ETC) and also remove the crankcase breather vent tube.



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



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

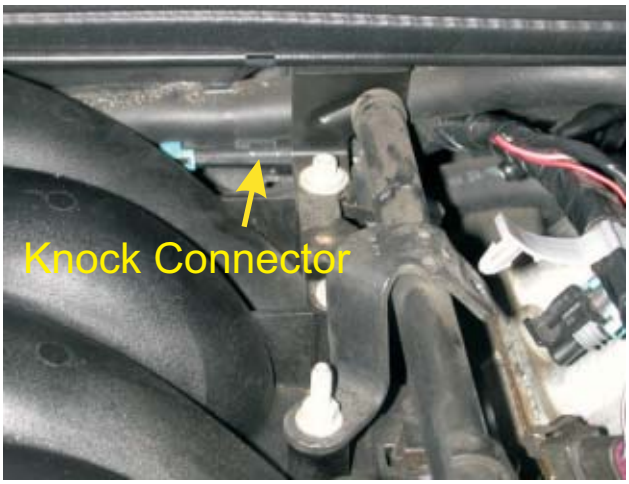


80. Disconnect the (EVAP) canister purge solenoid electrical connector.

81. Remove the (EVAP) canister solenoid and mounting bracket.

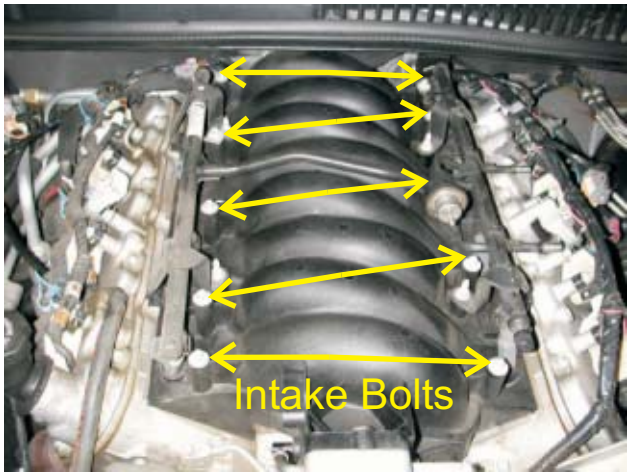
83. Disconnect the power brake booster vacuum line at the power brake booster by pulling the check valve out of the grommet.

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

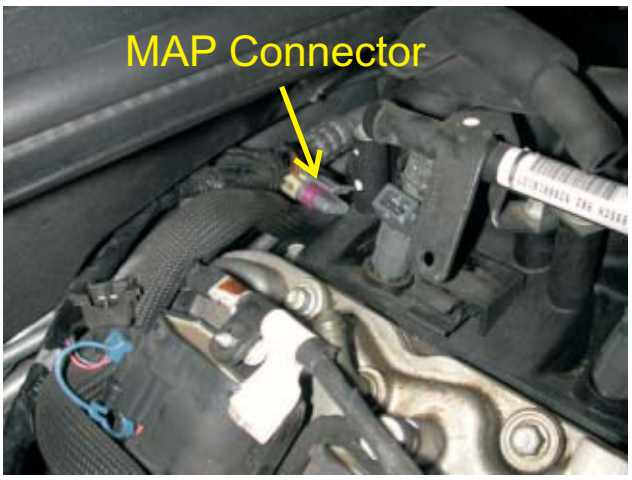


84. Remove the knock sensor wire harness connector from the (PCV) tube and unplug.

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



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



87. 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).

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

89. 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).

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

91. 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 pipe.

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

93. 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 lb-ft).

94. 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 an a oil recycling center.)

95. 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.

96. 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.

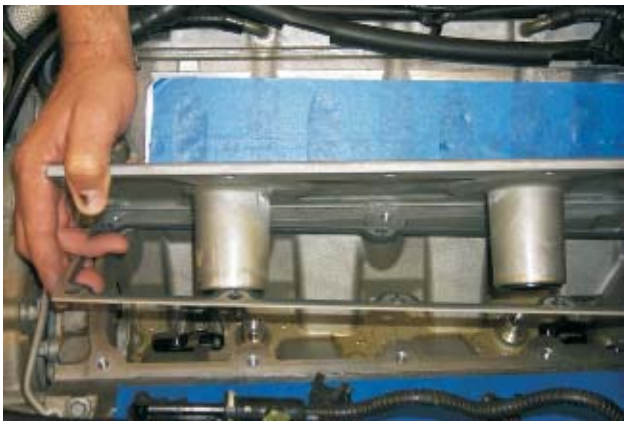
97. Clean work area, then lay out the supercharger kit and organize yourself for reassembly.

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

98. Using the stock bolts removed in step 19, install the new front coolant vent pipe and rear block off blocks. (Late model vehicles all ready have the rear blocks installed). Make sure that the small o-ring gaskets are in place.

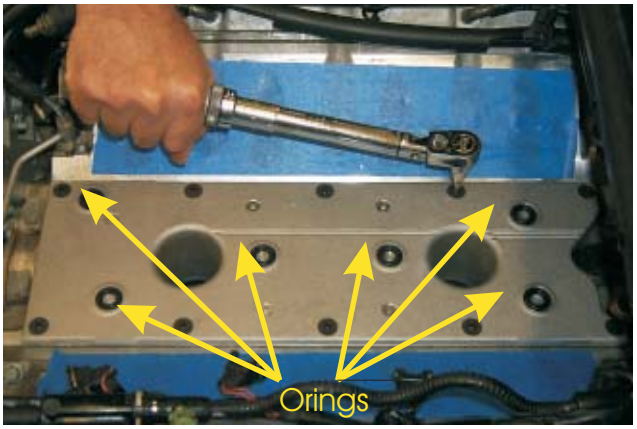
100. On the engine valley cover, remove the two black rubber knock sensor covers by gently prying them up using a small straight blade screwdriver. Disconnect the electrical connectors by squeezing the side of plugs with a pair of long jaw or needle nose pliers and pulling up.

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



103. 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.

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



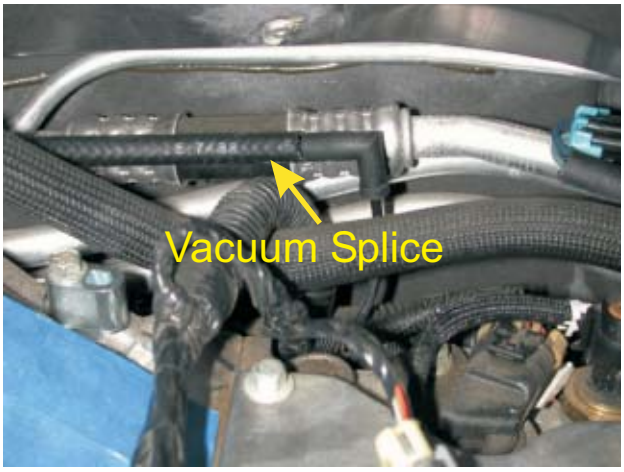
104. Install the new engine valley cover and flathead bolts supplied with a 5mm Allen socket and torque the bolts to 18 lb-ft. Insert the six O-rings in the recesses in the new valley cover.

105. Reinstall the knock sensors and torque them to15 lb ft. 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.

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

106. 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.

108. 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.

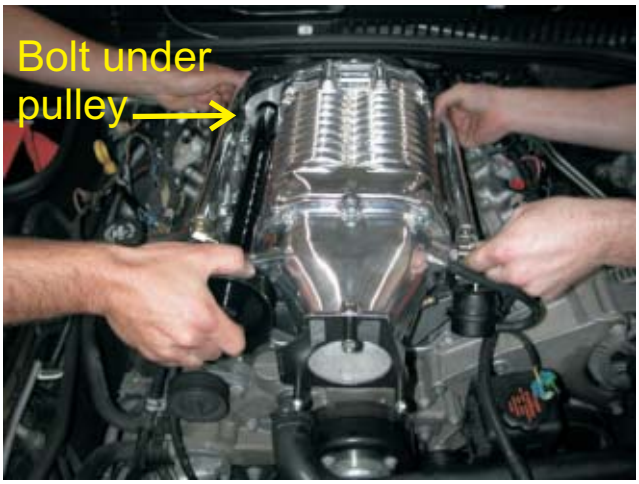


109. Install the supplied ¼" vacuum hose splice and 33" piece of 1/4" vacuum hose to the fitting at the rear of the engine as shown. The other end of this hose will connect to the front of the supercharger by the throttle body in a later step.

110. 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 lb-in).

111. Remove the protective tape from the cylinder heads and supercharger. (Make sure that there is no debris in the ports). Also at this time install the new supplied intake gaskets (8) into the lower intake manifold.

112. 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.)



113. Carefully, 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 under the rear supercharger pulley on the passenger side as it hangs out a little and must be aligned first).

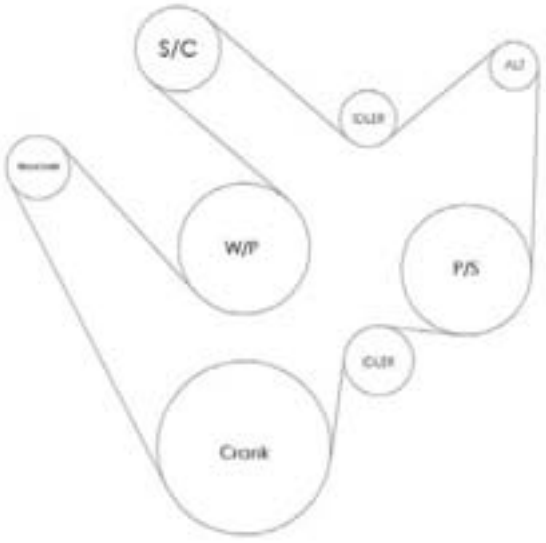
115. Remove the black plastic sleeves that hold the intake bolts up and start all ten intake bolts by hand, do not tighten until all the bolts are started. (Be careful not to cross thread the bolts).

114. Plug in the (MAP) sensor electrical connector at the rear of the supercharger manifold.

116. Torque the supercharger manifold bolts, working from the center out to 10 N-m (89 lb-in) using a 10mm socket and a inch pound torque wrench.

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

118. 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.



Belt Routing Diagram

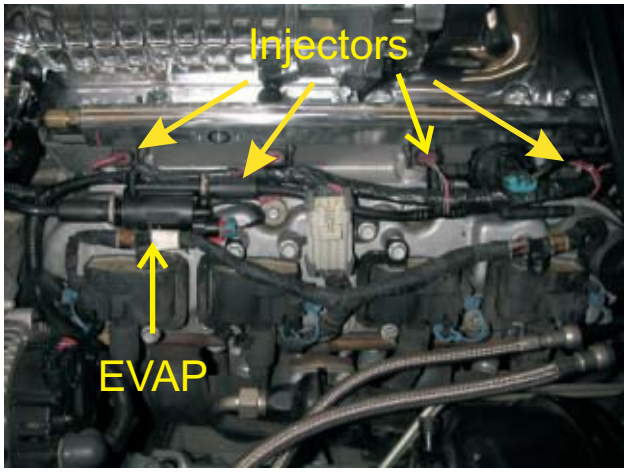
119. Using a small amount of oil or grease, lubricate the O-rings on the fuel regulator or pulse dampener and install into the new supplied fuel manifold. Reinstall the original C-clip using the C-clip pliers.

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

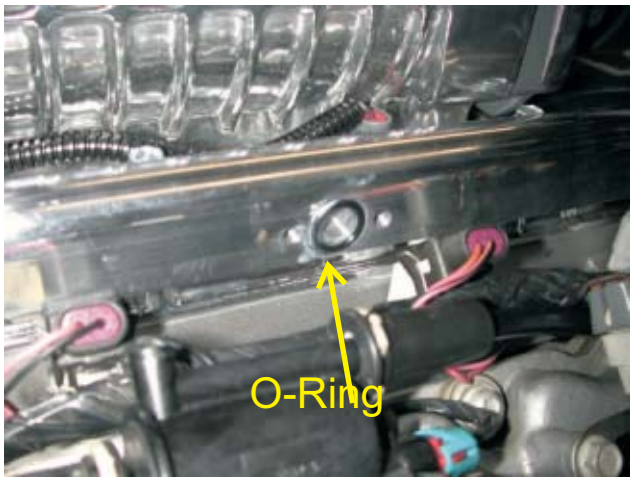
122. Install the throttle body on the supercharger manifold using the supplied gaskets, stock throttle body bolts, and the power steering reservoir bracket from step121. Torque the bolts to 12 N-m (106 lb-in).

121. Install the power steering reservoir bracket to the throttle body mounting location by placing a new intake gasket on both sides of the bracket.

123. Install the new supplied 1/4” x 42” piece of throttle body coolant hose and clamps.(Make sure to use the hose marked coolant hose) Hook one end of the hose to the drivers side of the throttle body, the other end will be hooked up in a later step. Take the remaining stock hose and cut 2 1/2” of length from the end. Install the stock hose on the passenger side of the throttle body.



124. Reinstall the (EVAP) hose and solenoid as shown in the picture, then plug in the eight fuel injector electrical connectors, making sure that they are plugged in all the way.

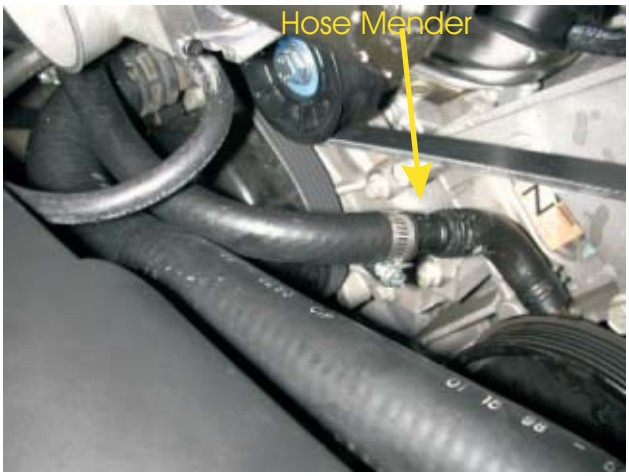


125. Using a small amount of grease install the fuel manifold O-ring to the drivers side fuel rail.

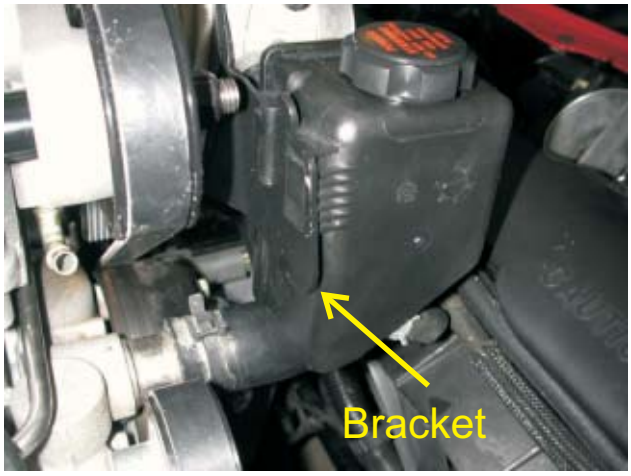
126. Install the fuel manifold to the drivers side fuel rail using the supplied O-ring and two 6mm bolts. Using a 10mm socket wrench, torque the bolts to 12 N-m (106 lb-in). Be careful not to pinch the O-ring.

127. 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.

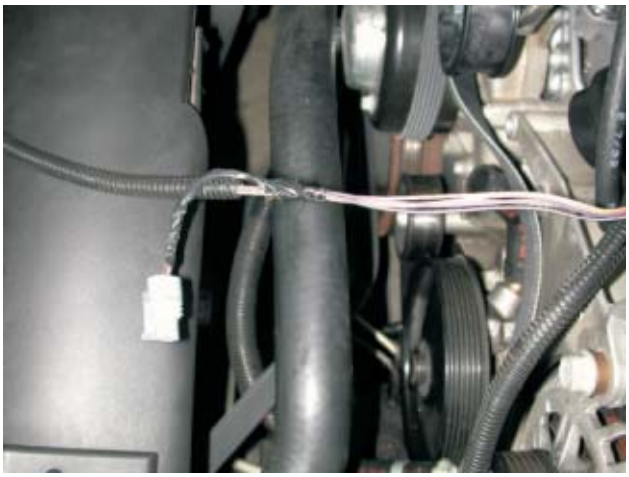
128. Install the 10” piece of 5/8” hose to the power steering reservoir tank using the supplied hose clamp.



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



129. Install the power steering reservoir to the reservoir bracket, then route the hose under the throttle body towards the power steering pump.

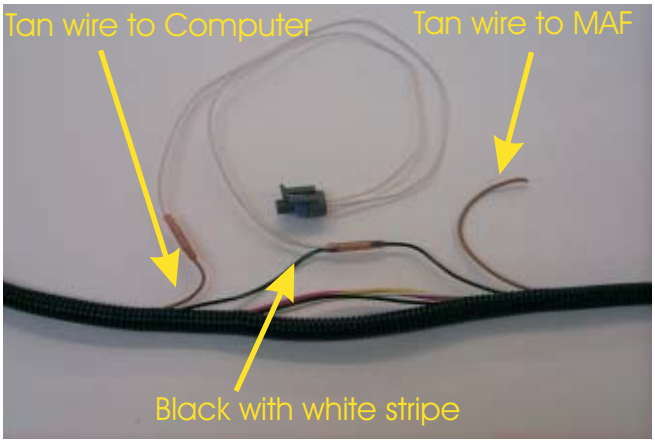


131. (1997-2001, use steps 131, 132, 133 / 2002-on skip to step 134.) Pull back the split loom from the (IAT) sensor and remove the tape, reroute the (IAT) sensor wire harness back far enough to connect the sensor plug to the sensor.

132. Install the new 12” piece of 1/4” split loom to the (IAT) harness.

134. (2002 W/ IAT in MAF sensor). (MAF) sensors with 5 wires have the (IAT) sensor built into the sensor. The new supplied (IAT) harness must be installed as shown.

133. Route the (IAT) harness under the fuel rail and plug the (IAT) harness connector into the (IAT) sensor.



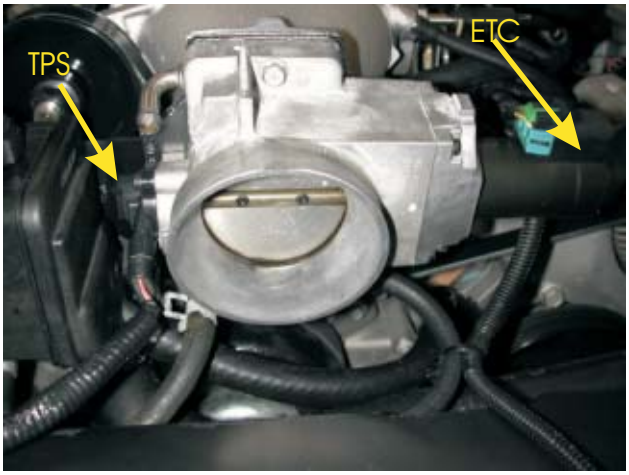
135. Pull the wires out of the split loom next to the alternator. Using the supplied crimp/shrink connector, connect one white wire from the new supplied (IAT) sensor harness to the black with white stripe wire as shown (Do not cut the black wire).

136. Cut the tan wire that goes to the (IAT) sensor as shown. Connect the other white wire from the new (IAT) harness to the tan wire that goes to the vehicles computer using the supplied crimp/shrink connector as shown. (The tan wire that goes to the (MAF) will not be used and can go back into the loom).

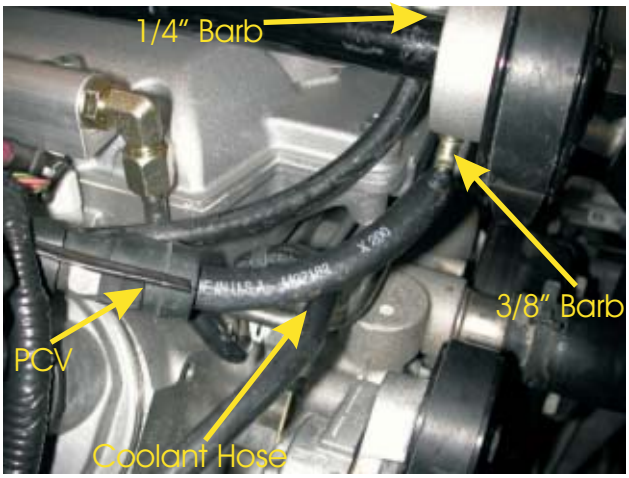
137. Install the supplied 12” piece of split loom to the new (IAT) harness and plug it in to the (IAT) sensor in the supercharger manifold as shown on page 38, step133.

138. Connect the TPS sensor connector into the female end of the TPS extension supplied.

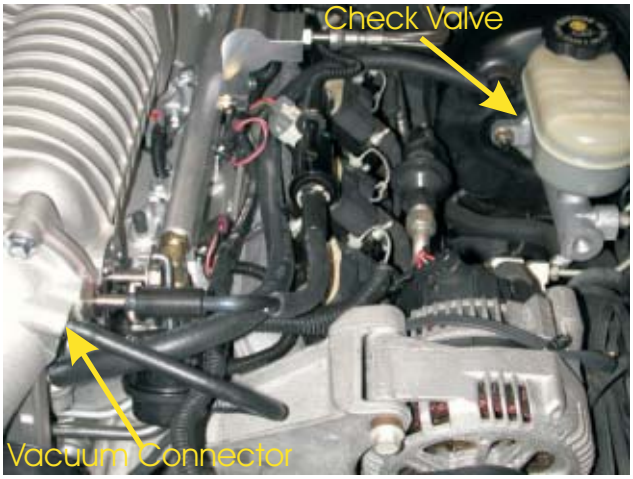
139. Using a pair of pliers carefully turn the (PCV) vent tube to the forward position as shown in the picture.



140. Reconnect the throttle body electrical connectors (TPS) & (ETC).



141. Connect the ¼" vacuum hose that comes from the back of the engine compartment to the ¼" hose barb on the supercharger, connect the 6" early model or the 16" late model piece of 3/8" (PCV) hose to the (PCV) valve and the other end to the 3/8" hose barb on the supercharger. Also connect the ¼" coolant hose that comes from the throttle body to the coolant vent pipe at this time.

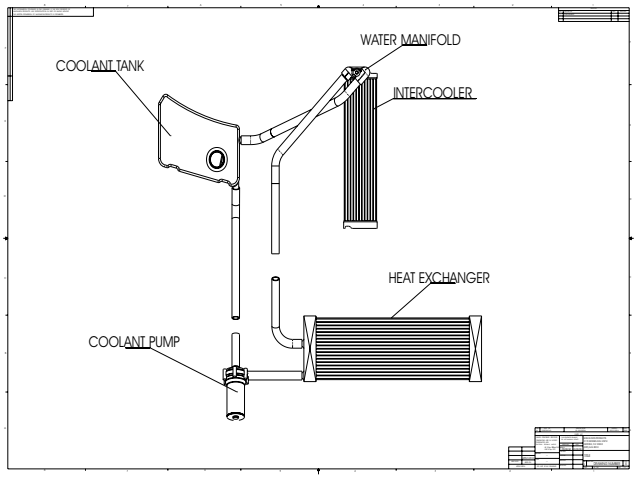


143. Install the new power brake vacuum booster vacuum hose and check valve to the 11/32" vacuum connector on the supercharger, and push the check valve into the hole on the brake booster.

142. Install the 36" piece of 3/8" (PCV) breather hose to the throttle body and the other end to the front valve cover fitting. Using the supplied nylon wire ties, tie the throttle body coolant hose,(TPS) sensor wire, and the (PCV) breather hose together as shown.

144. Install the new supplied high performance air filter assembly following the instructions supplied by the manufacturer.

145. 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).



147. This is a diagram of complete intercooler system plumbing. Note, the various connections, this is very important.

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

148. 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.

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

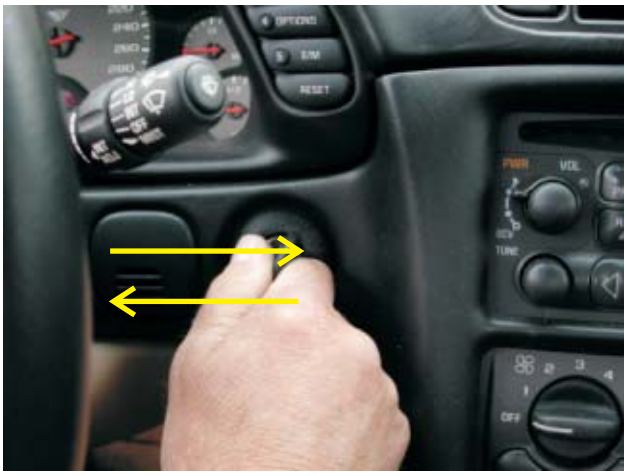
150. Using the Peel-and-stick pad supplied, attach it to the side of the hood latch next to the battery. This will act as a cushion for the reservoir.

151. Starting at the reservoir cut a length of 5/8” hose supplied that will connect from the top barb of the intercooler reservoir to the left hand (driver side) barb on the intercooler coolant manifold. Route the hose though your new notch in the battery partition, over the fuel rail and away from the supercharger pulleys. 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. Connect the remaining end of the long “L” hose to the right hand barb on the intercooler coolant manifold. Secure both hoses with the #10 hose clamps supplied. Reinstall the horn assembly by first plugging in the horn electrical connector and then attaching the horn bracket to the frame extension with it’s bolt using a 13mm socket and ratchet. 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.

152. Fill the inner cooler reservoir with a mixture of water and “Water Wetter” supplied. 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 come to operating temperature, recheck the fluid level in the reservoir and all the hose connections.

153. Close the radiator petcock and reinstall the coolant saved from step 3. If more coolant is needed, only use coolant recommended by GM.

154. Reconnect the negative (-) battery cable using a 8mm wrench.



155. Cycle 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.

156. Using the supplied instructions included with the Superchips Micro Tuner download the modified program into the vehicles computer. NOTE: It is very important that the instructions for the programmer are carefully read and understood. All steps should be followed to a “T”. If you have any questions, contact Superchips or Magnuson Products immediately.

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

158. Check the vehicle over one more time, double checking for any problems.

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

160. 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 Magna Charger supercharger.

INTERCOOLED CORVETTE PARTS LIST

PART#	DESCRIPTION	QTY
02-10-58-00X	**S/C ASSEMBLY, I/C CORVETTE**	**1**
31-14-59-022	**S/A FUEL MANIFOLD**	
35-15-01-001	MANIFOLD, FUEL	1
71-06-10-035	BOLT-HEX, FLANGE M6 X 1.0 X 35	2
80-62-31-112	O-RING, #112	1
69-12-57-001	TOOL, FUEL DISCONECT	1
79-06-10-058	BELT, S/C DRIVE	1
31-14-59-038	**S/A CORVETTE I/C SYSTEM**	
68-01-00-082	HEAT EXCHANGER	1
72-08-12-016	BOLT, RND HEAD, M8 X 1.25 X 16	4
77-10-08-010	NUT, FLANGE HEAD, M8 X 1.25	8
65-12-57-021	HEAT EXCHANGER BRACKET R/H	1
65-12-57-022	HEAT EXCHANGER BRACKET L/H	1
71-08-12-026	BOLT-HEX FLANGE HEAD, M8 X 1.25 X 25	4
68-14-59-002	I/C PUMP	1
48-46-10-038	CLAMP, ADEL #38	1
71-06-10-020	BOLT-HEX FLANGE HEAD, M6 X 1.0 X 20	1
75-00-06-020	WASHER, M6	1
77-73-46-001	NUT, FLANGE HEAD, M6 X 1.0	1
68-01-03-010	I/C COOLANT RESERVOIR	1
68-01-03-002	RESERVOIR CAP,	1
85-55-00-007	3/4" HOSE (72")	1
48-46-10-003	CLAMP, #10	8
90-72-00-002	FOAM TAPE (4" LONG)	1
69-90-24-004	TIE WRAP	12
85-55-80-003	I/C PUMP RELAY WIRING ASSEMBLY	1
82-55-50-115	FUSE, 15 AMP (INSTALLED IN ABOVE)	1
82-55-60-108	CHRIMP/SHRINK CONNECTOR 16-14 GA.	1
89-90-57-001	**LITERATURE KIT**	
91-01-01-001	6" MAGNA CHARGER STICKER	1
91-91-10-001	PREMIUM FUEL ONLY LABEL	1
89-89-00-004	WARRANTY CARD	1
83-91-00-013	LUBRIPLATE GREASE 3/8OZ	1
31-14-59-047	**S/A S/C TO CYL HEAD BOLTS**	
71-06-10-065	BOLT-HEX FLANGE M6 X 1.0 X 65	9
31-41-59-034	**S/A KNOCK PLATE ASSY**	
69-57-00-000	PLATE, ENGINE VALLEY COVER (KNOCK PLATE)	1
81-00-00-007	SEAL, VALLEY COVER (INSTALLED IN ABOVE)	2
80-59-10-309	O-RING, #309	6
72-08-10-025	BOLT, SKT HD, CSUNK/FTHD M8 X 1.25 X 25	10
31-14-59-039	**S/A BELT TENSIONER, I/C CORVETTE**	1
31-14-59-039	BRACKET, TENSIONER	1
56-50-53-006	TENSIONER & PULLEY	1
71-12-17-090	BOLT-HEX, FLANGED M12 X 1.75 X 90	2
NPN	INSTRUCTIONS, TENSIONER	1
88-85-60-025	**FUEL PUMP, IN TANK, I/C VETTE**	1
31-14-59-008	**AIR INLET, I/C VETTE**	
35-12-41-002	MANIFOLD, AIRTUBE	1
82-55-00-011	HOSE, 3.50" X 2"	1
82-55-10-021	HOSE, 3.875" X 2"	1
48-46-10-024	CLAMP #60	4

INTERCOOLED CORVETTE PARTS LIST

Continued

PART#	DESCRIPTION	QTY
31-14-59-006	**S/A, POWER STEERING**	
80-59-57-001	GASKET, THROTTLE BODY	2
69-20-00-001	BRACKET, POWER STEERING RESERVOIR	1
48-46-00-005	FITTING, HOSE CONNECTOR	1
82-05-08-025	HOSE, 5/8" X 13"	1
48-46-10-003	CLAMP, HOSE #10	2
81-00-57-001	SEAL KIT, MANIFOLD TO HEAD, (SET OF 8)	1
31-14-59-004	S/A FRONT STEAM MANIFOLD	1
31-14-59-003	**S/A, HOSES**	
68-12-57-100	CHECK VALVE, P/B M/C	1
82-04-14-100	FITTING, HOSE CONNECTOR, 1/4"	1
68-50-57-100	STEAM COVER	2
82-55-00-002	HOSE, 3/8" X 18" FUEL	1
82-55-00-002	HOSE, 3/8" X 36" FUEL	1
82-55-00-019	HOSE, 11/32" X 24" DOT BRAKE VACUUM	1
82-55-00-020	HOSE, COOLANT, 1/4" X 42"	1
82-01-04-025	HOSE, OIL, 1/4" X 33"	1
48-46-10-019	CLAMP, HOSE	2
31-14-59-009	**S/A BALANCER, PIN**	
69-99-00-070	DRILL JIG	1
71-16-20-120	BOLT-HEX M16 X 2.0 X 120	1
71-16-20-103	BOLT-HEX, FLANGE M16 X 2.0 X 103	1
69-80-00-003	CRANKSHAFT REAMER	1
69-00-30-002	DOWEL PIN, .250 X .500	2
69-80-00-001	STEP DRILL, CRANKSHAFT	1
31-14-59-010	**S/A ELECTRICAL**	
82-55-60-108	16-14GA. BUTT CONNECTOR	1
82-01-04-001	WIRE LOOM, 1/4" X 12"	1
	IAT WIRE HARNESS	1
82-55-80-004	TPS EXTENSION HARNESS	1
69-90-24-004	TIE WRAP, 7.5"	8