

MAGNUSON

SUPERCHARGERS

Installation Instructions for: CORVETTE SUPERCHARGER SYSTEM 2015+ LT4 Z06 CORVETTE



Step-by-step instructions for installing the
HeartBeat of supercharger systems.

*** PREMIUM GASOLINE FUEL REQUIRED ***

ATTENTION!

Your MAGNUSON SUPERCHARGER kit
is sensitive to corrosion!

Use only the vehicle manufacturer
recommended coolant for your engine in
the intercooler system as well.

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

89-89-57-035 Rev B

INSTALLATION MANUAL

Magnuson Supercharger Kit GM 6.2 Liter Engine

Chevrolet Corvette 2015+ LT4 Z06

Please take a few moments to review this manual thoroughly before you begin work. Make a quick parts check to be certain your kit is complete (see Bill of Material (BOM) parts list inside the accessory box). 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 gasoline fuel, 91 octane or better.

Magnuson Products recommend that you run a minimum of one (1) tank of premium fuel through your vehicle prior to installation of the system to prevent any possible damage that may occur due to running the supercharged engine on lower octane fuel.

Magnuson Products Supercharger systems are designed for engines and vehicles in "GOOD" mechanical condition. Magnuson Products recommend that a basic engine system "Health Check" be performed prior to the installation of this supercharger system. Be sure to check for any pending or actual OBDII codes and fix/repair any of the stock systems/components causing these codes. If there are codes prior to the installation they will be there after the installation.

Magnuson Products also recommend the following services to be performed on your vehicle before starting and running the vehicle post supercharger system installation:

- Fuel Filter change
- Engine oil and filter change using brand name oil (organic or synthetic) and filter
Note: It is VERY IMPORTANT to use the factory specified oil viscosity. The original equipment manufacturer has selected this grade of oil to work with your other engine systems such as hydraulic chain tensioners and variable cam controls. Deviation from this specification may cause these systems to fail or not function properly. Please refer to your owner's manual for the recommended oil viscosity for your engine and application.

- On newer vehicles not requiring new spark plugs it is important to verify the spark plug air gap.

On older vehicles Magnuson Products recommend these additional services to be performed:

- New spark plugs with the air gap set at the factory specifications OR new specifications if required by the installation manual.
- Coolant system pressure test and flush. **NOTE: YOU MUST USE GM SPECIFIED COOLANT MIXTURE.**

Non "Magnuson Approved" calibrations or "tuning" will Void ALL warranties and CARB certification.

Drive belt = Gates#K080865HD

Tools Required

Metric wrench set
1/4" - 3/8" and 1/2" drive metric socket set (standard & deep)
3/8" and 1/2" drive Ft-lbs and in-lbs torque wrenches
Phillips and flat head screwdrivers
1/2" breaker bar
Serpentine belt wrench
Fuel line quick disconnect tools (included in kit)
Funnel
Hose cutters
Hose clamp pliers
Safety glasses
Hammer
Nut driver
Compressed air
Heat gun
Metric Allen socket set 3/8 drive
Metric Allen wrenches
Torx socket set 3/8 drive
Plastic pry bar
Oetiker clamp pliers

Contact Information:

Magnuson Products LLC
Magna Charger Division
1990 Knoll Drive, Bldg A
Ventura, CA 93003

Sales/Technical Support Line	(805) 642-8833
Websites	www.magnusonsuperchargers.com
Email	sales@magnusonproducts.com

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NOTE: This instruction manual follows the process we used to complete this installation on our test vehicle.
This does not imply there aren't alternate approaches.

Section 1: Tuning your Vehicle Computer and Initial Steps

Any reference to left or right side of vehicle is given from driver's seat perspective.

1. If your kit came with the SCT tuner follow the provided SCT instructions for uploading the new tune to your vehicle. If your kit did not come with an SCT tuner you will have to use HP Tuners or equivalent to load your calibration.
2. Your Intercooler system is sensitive to corrosion. It's very important to use the OEM recommended coolant mixture in your super-charger system as well.
3. Your system requires the use of minimum 91 Octane gasoline fuel. This system is **not** compatible with E85 fuel.



4. Remove the negative cable from the battery with a 10mm wrench. The battery is located in the right rear of the cargo compartment under the carpet. Place a rag over the negative terminal to prevent accidental connection. Place a rag over the rear hatch latch to prevent locking.



Section 2: Removal of Factory Supercharger and Accessories

5. Disconnect the EVAP line from the intake duct. You will have to press the gray button (shown with the arrow) on the connector to release it.



6. Loosen the two hose clamps for the intake duct using an 8mm nut driver or standard screwdriver.



7. Remove the intake duct from the throttle body and the air filter box. This will be reused.



8. Remove the supercharger belt by rotating the tensioner shown with the arrow in a counter-clockwise direction using a short 15mm socket and a serpentine belt wrench. This belt will not be reused.



9. Here you can see the serpentine belt wrench attached to the tensioner. Rotate it counter-clockwise to release the belt tension and pull the belt off the pulleys. The belt will not be reused.



10. Use hose pinch off pliers to restrict the flow of coolant on the two intercooler hoses shown.



11. Now remove the clips retaining the hoses in the location shown with the arrows. You can use a small screwdriver or pick to pull the clips out. Place a rag under the connections to catch any coolant.



12. Here is one of the clips removed in the last step.



13. Disconnect the two intercooler hoses at the locations where the retainer clips were removed.



14. Once you have the hoses connected you can cap the two ends where shown.



15. Disconnect the two EVAP plugs shown.



16. Disconnect the electrical plug from the EVAP solenoid.



17. Disconnect the three EVAP connections shown with arrows.



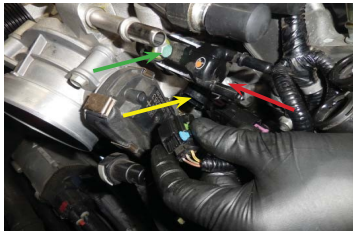
18. Also disconnect the EVAP line shown. Remove all the EVAP lines that were just disconnected from the vehicle.



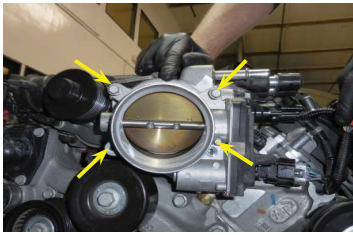
19. Unplug the Electronic Throttle Control (ETC) connector where shown. First you will have to release the red tab by pulling it out. Then press the lever on top while pulling out on the connector.



20. Disconnect the electrical connection for front MAP sensor shown with the yellow arrow. For the MAP sensor you will have to pull on the blue tab, and then press on the black lever while pulling out on the connector. Remove the bolt holding the EVAP solenoid shown with a green arrow, and set aside the EVAP solenoid for later installation. Remove the Torx bolt shown with the red arrow and remove the front MAP sensor. Set the front MAP sensor aside for installation to a new assembly later.



21. Remove the 4 bolts shown with arrows using a 10 mm wrench.



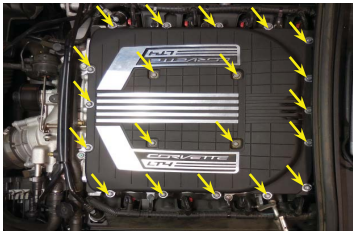
22. Remove the throttle body from the vehicle.



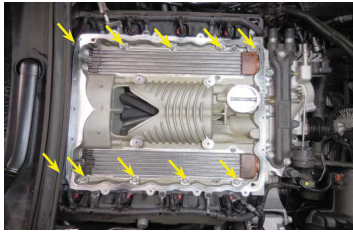
23. Vacuum out across the supercharger lid. Remove all debris from the counterbores shown with arrows.



24. Remove all 20 bolts holding the lid in place. Then remove the lid.



25. Remove the 10 bolts shown with arrows holding the supercharger housing in place.



26. Two of the bolts from the last step are hidden below the cowl. This is on the right rear of the supercharger.



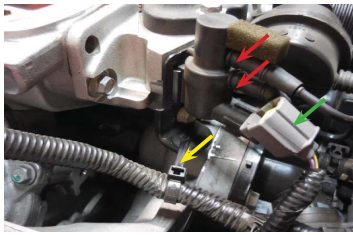
27. Here is the other hidden bolt on the left rear of the supercharger.



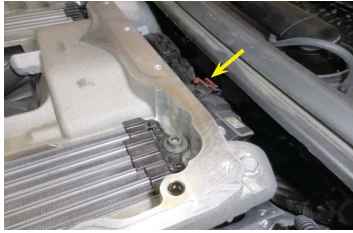
28. Use a plastic pry bar to remove 5 wire tie anchors on both sides of the supercharger housing.



29. Remove the wire tie anchor shown with the yellow arrow. Disconnect the plug shown with the green arrow. Also disconnect the two hoses shown with red arrows. Now you should be able to slide the solenoid off. This solenoid will be reinstalled later.



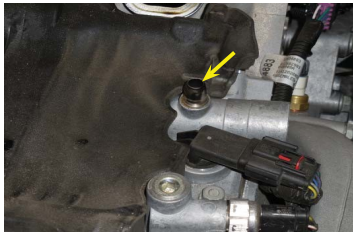
30. Disconnect the MAP sensor at the rear of the supercharger. Pull the red safety clip prior to disconnecting the connector.



31. At this point you will need some help to remove the supercharger from the engine. Have at least one other person on the opposite side of the engine bay while you lift it up, then pass it off to the other person. Carefully clean up the surface around the intake ports. Use isopropyl alcohol to clean the surface around the ports. **Make sure nothing enters the intake ports.**



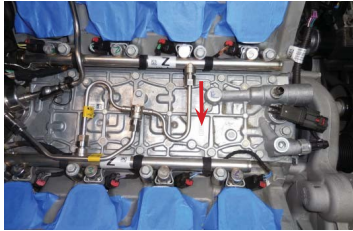
32. Clean and Inspect the PCV fitting shown with the arrow to ensure it isn't damaged.



33. Apply blue tape over the ports to prevent anything from entering the engine. Remove the insulation from the manifold valley shown with an arrow. This insulation will not be reused.

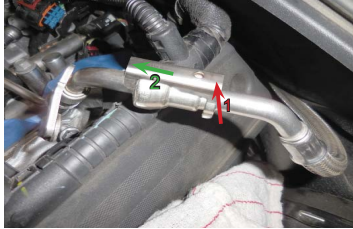


34. Vacuum out the manifold valley to remove any debris.



Section 3: Fuel Line Removal and Rerouting

35. Remove the fuel line safety clip by prying up at the side shown with the yellow arrow first, and then sliding off in the direction of the green arrow.



36. Place the provided plastic tool over the fuel line at the location shown. Place rags under the fuel line connection. Push the fuel line in towards the engine as shown with the red arrow. Now pull the plastic tool towards the fuel line shown with the green arrow. This will disengage the fuel line connection allowing you to pull the line off.



37. Loosen the T30 Torx fasteners (2 each) at the coil covers.



38. Remove the coil cover. Repeat on the opposite side.



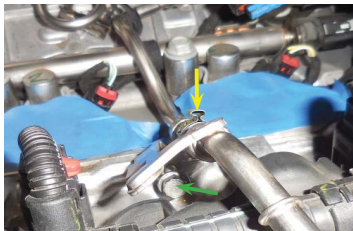
39. Disconnect the spark plug wire from rear coil on the left side. Disconnect the electrical connector on top of the coil. Remove the two screws securing the coil using a 10 mm socket.



40. Set the coil aside for reinstallation later. You may need to remove the rear coil on the right side of the engine as well. We have found that it is possible to access the right rear bolt without removing the right rear coil.



41. If you find that the Oetiker clamp on the fuel line has the ear facing inwards as shown with the yellow arrow you will have to rotate it 180° for more supercharger clearance. This can be done by spreading the crimped area slightly with a small screwdriver. After you rotate the clamp it will have to be recrimped with Oetiker clamp pliers. Also at this time remove the bolt at the green arrow location with a 10 mm wrench.



42. Place rags in the manifold valley under the fuel line. Repeat the process of removing the safety clip and disconnecting the fuel line using the provided plastic fuel line tool.



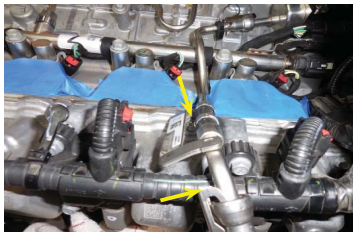
43. Once you have removed the fuel line you will need to bend the mounting bracket at the location shown with the yellow arrow to move the hose further away from the supercharger. This bend will have to be about 85°. Also at this point you can see that the Oetiker clamp has been rotated to allow more clearance (shown with the green arrow)



44. Reinstall the lower portion of the fuel hose ensuring that it clicks in place. Install the safety clip over the fuel hose making sure that it is offset to the side as shown with the arrow to make more clearance for the supercharger.



45. Reinstall the bolt holding the fuel line in place. Also connect the other end of the fuel line, and install the safety clip.



Section 4: Preparing the Supercharger and Installation

46. Remove the MAP sensor from the back of the OEM supercharger.



47. Install the OEM MAP sensor from the last step on the left rear of the Magnuson supercharger.



48. Apply some supplied Lubriplate grease to the PCV seal at the bottom of the Magnuson supercharger.



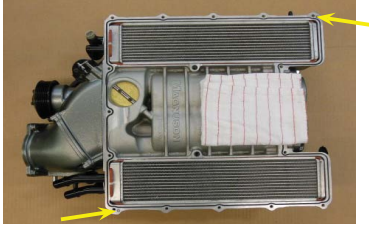
49. Supercharger assembly shown. Remove lid bolts (17 each) from the top with an 8 mm socket. Note the bolt locations for replacement in later steps.



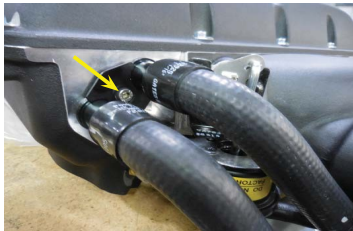
50. Remove lid carefully. Make sure not to damage the O-ring seal on top of the housing.



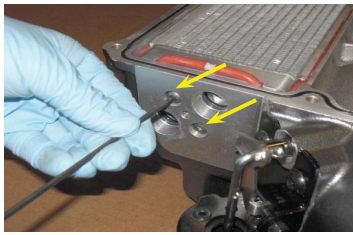
51. Top view of supercharger without lid. Place **clean** rag over the rotors to keep the area clean. **Check that the alignment pins are still installed in the locations shown with yellow arrows. The red arrow indicates the rubber cap that covers the "boost port" on the right side of the supercharger.**



52. Remove the spigot retaining bolt from the supercharger with a 4 mm Allen wrench as shown. Then carefully remove the retaining bracket and spigots. Repeat on opposite side, taking note of spigot length and location. Remove the hose assemblies and set aside for later reinstallation.



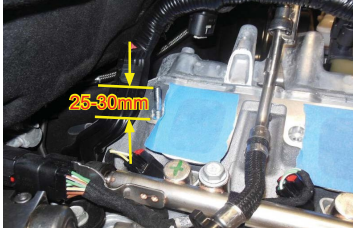
53. Remove the charge air cooler fasteners (2 each) with a 3 mm Allen wrench. Repeat on opposite side.



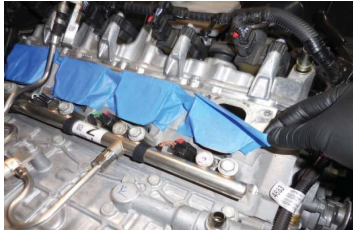
54. Carefully pull out the charge air coolers by hand. Pull evenly around the perimeter to disengage the seal.



55. Apply blue Loctite 242 to longer thread section of the stud provided. Install prepped stud into threaded hole at the left side rear head inlet port location. Adjust the thread height to 25-30 mm.



56. Remove the blue tape from the intake ports.



57. Wipe down the intake port outer sealing surfaces with a rag coated with Tri-flow. Pull the coil harnesses to the sides to make clearance for supercharger installation. Ensure that there are no tools or other items left in the valley area before you install the supercharger.



58. Have someone help you locate the supercharger into the manifold valley location. Ensure that the blower fits over the stud that was installed earlier. Also align the PCV barb fitting with the seal that you lubricated earlier.



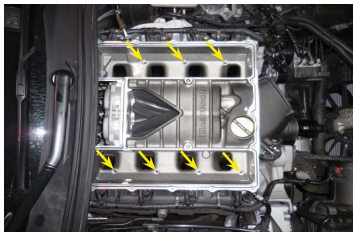
59. Plug in the MAP sensor at the rear of the supercharger.



60. Install nine of the provided seal washers onto two M6x35mm bolts and seven M6x45mm bolts as shown with yellow arrow. Also apply some provided Loctite 242 to the bolts as shown with the blue arrow. The 6mm flange nut and the last seal washer will be used at the stud location installed earlier.



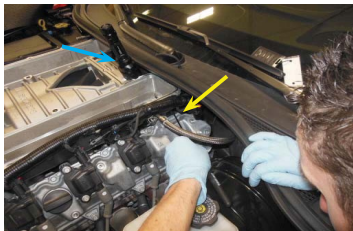
61. Place the seven M6x45mm bolts from last step with washers installed into the seven locations shown here with arrows. Thread them into these locations carefully by hand, and keep them loose for now.



62. Place the provided M6 flange nut on the end of an extendable magnet. It helps to have the magnet face attach to a flat portion of the hex.



63. **Install one of the provided seal washers at the stud location before installing the nut.** Use a magnet to help locate the nut at the stud location installed earlier (yellow arrow location). You can use a flashlight to help illuminate the area (blue arrow location).



64. Use a magnet to help hold one of the provided M6 x 35mm length flanged bolts. Ensure that a seal washer has been installed (shown with an arrow). Also ensure that Loctite 242 has been applied to this bolt. Install at right rear corner of supercharger.



65. Use a flashlight to help see the location of the right side rear mounting bolt as you guide it in place with the magnet.



66. Location of right rear flanged mounting bolt. Hand tighten at this point until all mounting bolts are located.



67. Ensure that a provided 6mm seal washer has been installed to the last provided M6 x 35mm length flange bolt, and apply Loctite 242 to the end. Install this M6 x 35mm bolt in the front location shown with an arrow. Only hand tighten.



68. You will find a torque diagram at the back of the book. Make sure you installed the bolts with the O-rings in the proper locations. You will find the torque order on the diagram. First finger tighten all bolts. Gradually work your way up to the torque specification listed while you follow the numerical order listed in the diagram. **Make 3 passes, slightly increasing tightening each time. Then make a final pass at 106 in-lbs following the torque sequence.** Use an open end wrench to tighten the nut installed at the left rear of the supercharger.



69. Apply some provided Lubriplate grease to the silicone seal around the outside of the charge air coolers prior to reinstalling them.



70. Reinstall the charge air coolers (2 each). Ensure that the port holes match with holes in the housing. Make sure the silicone seal does not roll upward.



71. Locate the four bolts that held the charge air coolers in place. Apply the provided Loctite 242 on the ends of each bolt.



72. Install the four bolts from the last step to secure the charge air coolers in the locations where they were originally. Use the ends of the coolant crossover hose assemblies that were removed earlier to help align the inlets of the coolers while you are tightening the charge air coolers in place. (Note: this photo shows the pins that are used in production to align the inlets.)



Section 5: Hose Line and Lid Installation

73. Gather the following provided hose assembly.



74. Install the hose assembly from the last step in the location shown highlighted in green. The side with the 90° will go under the bracket in the arrow location. The other end of the hose will route around the right side of the supercharger.



75. The hose assembly from the last step will continue to route over the right valve cover and will connect to the fitting shown with the arrow.



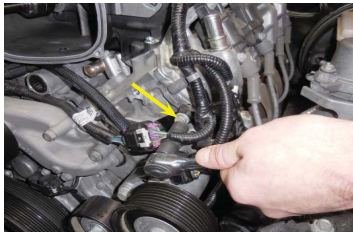
76. Gather the following supplied front MAP sensor bracket assembly and 5/16"x12.5" long hose. Install the hose on the brass barb. This will allow you to reroute the front MAP sensor into a new location. Install the front MAP sensor to the adaptor using the OEM bolt in the location shown with an arrow.



77. Install the supplied M8x45mm bolt and spacer shown to the front MAP sensor mounting bracket assembly from the last step.



78. Remove the bolt from the location shown with the arrow but do not remove the bracket it is holding. This will be secured with the new assembly in the next step.



79. Install the provided hose assembly with the bolt and spacer from two steps ago into the location where the bolt was removed in the last step. Make sure that it holds the OEM bracket in its original location.



80. Install the 5/16" hose that was attached to the front MAP sensor adaptor as shown. This hose has been highlighted in green for clarity. Connect the end of the hose to the 90° air fitting shown with the arrow.



81. Gather the following coolant crossover hose assemblies. The longer of these goes to the outside inlet holes on the supercharger.



82. Install the coolant crossovers in their original locations as shown.



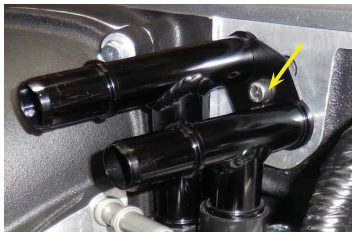
83. Slide the lower hose behind the waterpump housing shown with the arrow. If you should notice any sharp edges at this location use the provided 7" long mesh to cover this lower hose.



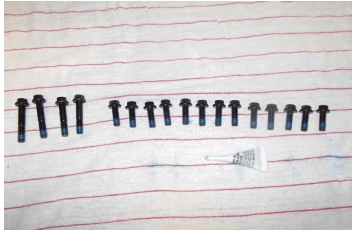
84. Gather the following retainers for the coolant crossovers. Apply the provided Loctite 242 to the ends of the bolts as shown.



85. Install one of the retainers, and bolts from the last step in the location shown with the arrow. Repeat this procedure on the right side. Make sure the bolts are secure and tight.



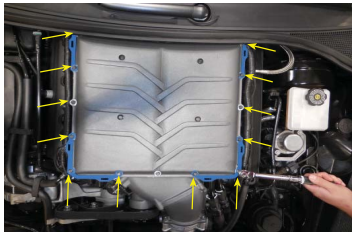
86. Provided fasteners shown for lid with 8 mm socket head. Apply a light coat of blue Loctite 242 to the bottom of each bolt as shown. From left to right we have M6 x 40 mm length (2 each), M6 x 35 mm length (2 each), and M6 x 20 mm length bolts (13 each).



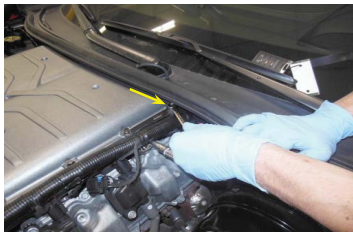
87. Hand tighten the M6 x 35 mm length bolts (2 each) shown in the last step into locations shown with yellow arrows. Lightly tighten M6 x 40 mm length bolts (2 each) into rear locations shown with blue arrows.



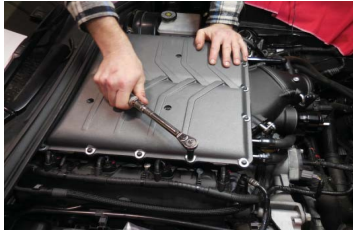
88. If you opted for the beauty cover you will attach the brackets for it at this point. Place beauty cover brackets (optional) in locations highlighted in blue, and install the M6 x 20 mm length bolts (13 each) from earlier step around lid perimeter. Pull up on cowl trim near the back of the supercharger lid to help locate the rear bolts.



89. Tighten the bolts at back of lid with open end wrench.



90. **Torque all lid bolts to 106 in-lbs using the torque order diagram in Appendix C at the back of this instruction manual.**

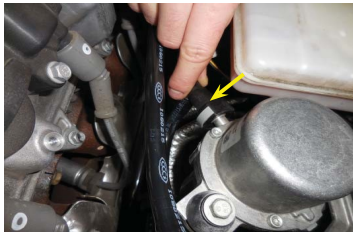


Section 6: Brake Booster, and Coolant Line Installation

91. Disconnect the electrical connection shown from the brake booster hose. Pull the check valve from the brake booster housing.



92. Disconnect the connection shown with the arrow. Remove the brake booster hose assembly. This will be replaced by a provided assembly in the next steps.



93. Gather the supplied brake booster hose assembly shown in the foreground. The assembly that was just removed is shown in the back as a reference.



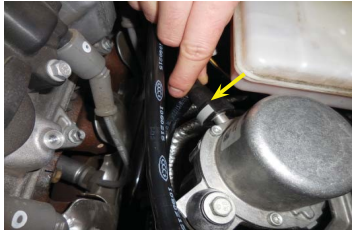
94. Apply a very small amount of Lubriplate grease to the provided brake booster check valve barb.



95. Install the provided brake booster check valve into the location where the OEM version was removed. Ensure that it is pressed in completely. Connect the electrical connection to the check valve.



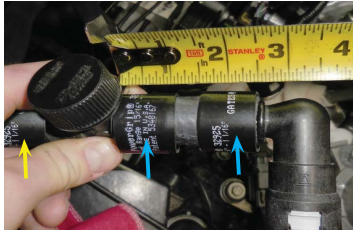
96. Install the provided brake booster connection in the location shown with an arrow.



97. Install the final connection of the provided brake booster hose assembly at the inlet adaptor (yellow arrow location).



98. On the OEM intercooler hose line remove the filler "T". Add a provided shrink clamp (shown with the yellow arrow) to the hose and install the provided filler "T". Then add the provided 2.5" long hose, two shrink clamps (shown with blue arrows), and one of the 90° quick connect fittings.



99. Use a heat gun to secure the shrink clamps into the positions shown in the last step. Move the heat around the clamp constantly to create an even heat. Ensure that the connections are tight. You will start to see the shape of the barb once they are tight.

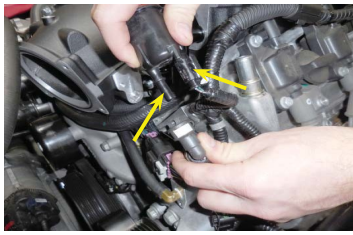


100. Remove the hose fitting from the end of the other intercooler hose and add a shrink clamp and the second 90° quick connect fitting shown with the yellow arrow, and use a heat gun to secure it. Now connect the two fittings at the supercharger barbs as shown with the blue arrows. Ensure that the connections click in place.



Section 7: EVAP, Throttle Body and Belt Installation

101. Reinstall the EVAP hose and the electrical connection to the EVAP solenoid.



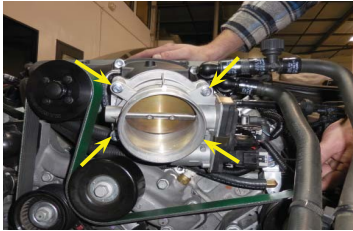
102. Place the EVAP solenoid in the location shown with the yellow arrow.



103. Use the original bolt to secure the EVAP solenoid, and torque it in place to 106 in-lbs.



104. Reinstall the throttle body with the factory bolts (4 each). Torque the throttle body bolts (4 each) to 106 in-lbs.



105. Refer to the secondary belt routing diagram at the back of this manual. Install the provided supercharger belt on all the pulleys except the 68mm smooth idler (blue arrow location). Then rotate the tensioner counter-clockwise (shown with a yellow arrow) using a 15mm socket and serpentine belt wrench. The serpentine belt wrench is a flat bar designed to give more clearance in tight areas. Then slip the belt under the 68mm smooth idler pulley. You may need help from someone for this step.



106. Install the OEM air duct between the throttle body and air box lid. Secure both sides of the air hose with the OEM hose clamps.



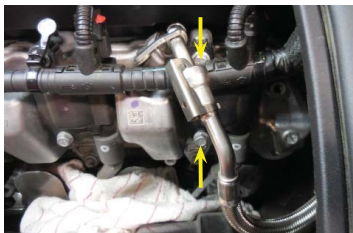
107. Reinstall the EVAP lines shown back to their original connections.



108. Reinstall the EVAP line shown with an arrow to the location on the air inlet hose.



109. Reinstall the left rear coil by attaching the electrical connection, spark plug wire, and then bolting it in place at the locations shown with the arrows. Torque the bolts to 106 in-lbs. Repeat this process on the right rear coil if it was removed.



110. Reinstall the coil covers on both sides tightening the two T30 torx head bolts. You will have to trim the left side coil cover at the point where the fuel line bracket interferes (shown with an arrow).



111. Reinstall the vent hose at the arrow location.



112. Remove the bypass solenoid from the OEM supercharger and connect it to the original electrical connection near the alternator (shown with a yellow arrow). Install the two rubber caps shown with the blue arrows. Secure the bypass solenoid with a provided cable tie (highlighted in green).



Section 8: Coolant Fill and Final Testing

113. Remove the filler cap for the intercooler system shown with an arrow.



114. Place rags around the intercooler filler location. Use the GM approved engine coolant mixture to fill your intercooler reservoir to capacity. You may have to squeeze the hoses to release trapped air. Replace the cap once full. Clear tools and other items from engine area.



115. Connect the battery and tighten with 10 mm wrench.



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



116. Start the engine for a few seconds, then turn it off and check your intercooler coolant level again. At this time you should check for leaks, and the supercharger belt alignment. You will have to repeat this process a few times to ensure the system is full.



117. The supercharger is shown fully installed. Start the engine and check for coolant, and fuel leaks. Test drive vehicle for the first few miles under normal driving conditions. **Do not attempt any wide open throttle runs.** Check for any unusual sounds, vibrations, or engine misfires. The supercharger does have a slight whining noise under boost conditions, which is normal. After the initial test let the engine cool down, and recheck coolant levels.

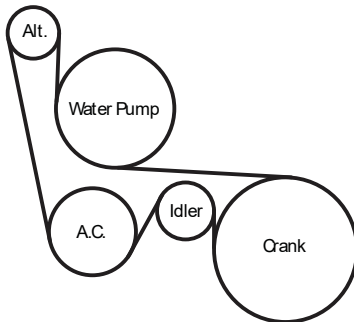


118. After the initial test drive gradually work the vehicle to wide open throttle runs. Listen for any engine detonation (pinging). If engine detonation is detected let up on the throttle immediately. Most detonation is caused by low octane gasoline still in the tank. Premium 91 octane fuel is required. Place the "Supercharged" sticker on the beauty cover trim, and press the cover onto the brackets installed earlier as shown in this photo. Enjoy your new supercharger!



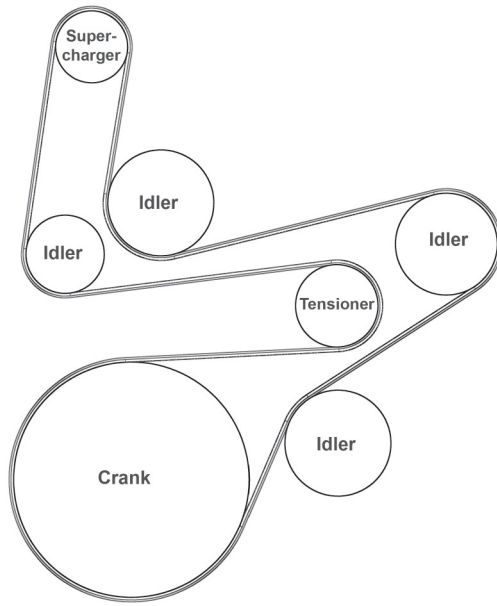
If you have questions about your vehicles performance, please check with your installation facility.

Appendix



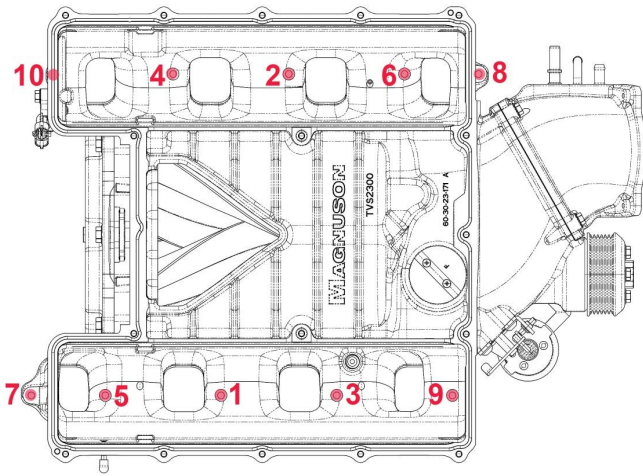
Primary Belt Diagram

Appendix



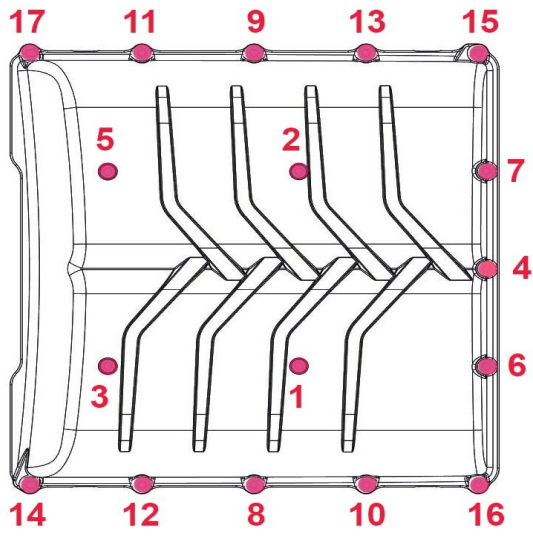
Secondary Belt Diagram

Appendix



**Supercharger Housing
Torque Order Diagram**

Appendix



**Supercharger Lid
Torque Order Diagram**

Notes

Notes



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

Use only premium gasoline fuel, 91 octane or better.

MAGNUSON
SUPERCHARGERS