MAGNUSON SUPERCHARGERS

Installation Instructions for:

INTERCOOLED SUPERCHARGER SYSTEM
2015-18 Dodge Challenger SRT Hellcat

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

*** PREMIUM 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.

89-89-61-062 Rev.A

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INSTALLATION MANUAL

Magnuson Supercharger
Dodge 6.2L HEMI Engine
2015-2018 Challenger Hellcat

Please take a few moments to review this manual thoroughly before you begin work: Make a quick parts check to make certain your kit is complete (see shipper parts list in this package). If you discover shipping damage or shortage, please call our office immediately. Take a look at exactly what you are going to need in terms of tools, time, and experience. Review our limited warranty with care. When unpacking the supercharger kit DO NOT lift the supercharger assembly by the black plastic bypass actuator. This is pre-set from the factory and can be altered if used as a lifting point!

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

Use only premium fuel, 91 octane or better.

Magnuson 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.

Non “Magnuson Approved” calibrations or “tuning” will Void ALL warranties and CARB certifications.

Tools Required:

- Metric wrench set
- ¼” - 3/8” and ½” drive metric socket set (Standard & Deep)
- 3/8”and ½” drive Foot pound and inch pound torque wrenches
- Phillips and flat head screwdrivers
- Fuel line quick disconnect tools (included in kit)
- Small or angled 3/8” drill motor
- Drain pan
- Hose cutters
- Hose clamp pliers
- Safety glasses
- Metric Allen socket set 3/8” drive
- Shop vacuum cleaner
- Blue Loctite
- Right Angle drill for pinning crank pulley
- Helpful Tool: Air or electric impact wrench..

Contact information:
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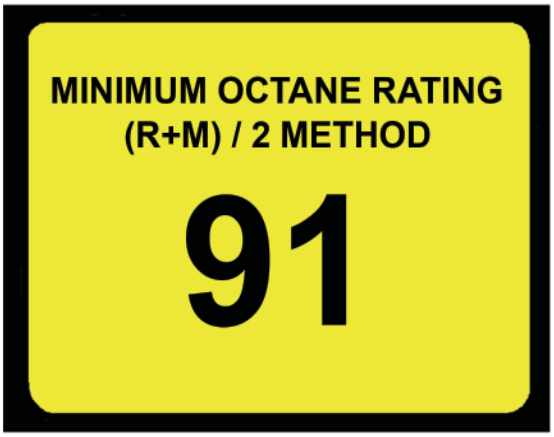
Section 1: Tuning Your Vehicle Computer and Initial Steps

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

1. The first step is to use the provided DiabloSport Trinity hand held tuner to setup the calibration for your new supercharger system. Follow the instructions in the supplied DiabloSport tuner manual. Locate your EO sticker and follow the instructions for placing the sticker on the supercharger. **NOTE: For now, the customer will have to read the stock file from the vehicle using the tool, and must email the file to calibration. Here the file will be modified and emailed back to the customer for install in the car.**

2. Your Intercooler system is sensitive to corrosion. It's very important to use the OEM recommended coolant mixture in your supercharger system as well.



3. Your system requires the use of a minimum 91 Octane gasoline fuel. This system is NOT compatible with E85 fuel.

4. In the trunk of the vehicle, below the lift up panel is the vehicle battery. Disconnect the battery negative (-) cable at the terminal using a 10mm wrench and set it aside where it will not accidentally make connection with the battery post. Wrap the electrical connector with a rag to insulate it.

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

Section 2: Coolant Drainage and Front Fascia Removal

6. Remove the splash shields below and behind the nose fascia. There are two main components, with ten plastic push pin rivets, four 10mm hex head bolts, and seven 7mm hex head bolts holding these components to each other and the framework. Start by removing the push pin rivets by prying out on the center spreader and then pull the rivets free. Now remove the two 10mm bolts joining the two main components together.

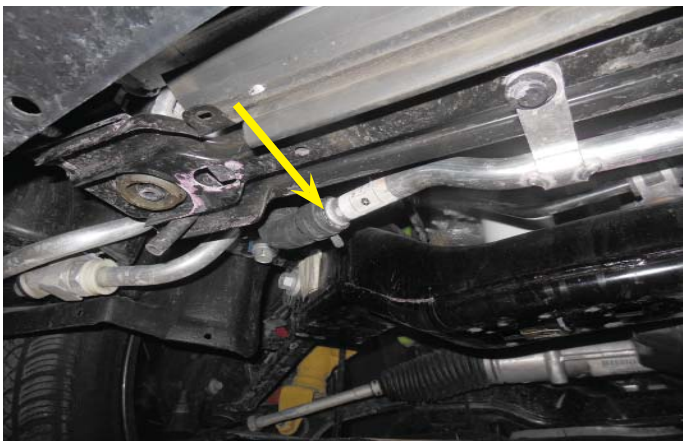
7. Remove the seven 7mm hex head bolts from the front of the splash shield where it joins the spoiler.

8. Pull the front splash shield from the vehicle and set aside for later installation.

9. The rear splash shield is now dangling. Remove the two rear 10mm hex head bolts holding the rear splash shield to the under carriage and pull the rear splash shield out of the vehicle and set aside the well for later re-installation.

10. Open the drain valve on the bottom right side of the radiator. Collect the drained fluid in a clean pan and set aside for later re-use.

11. Also at this time drain the intercooler fluid. This can be accomplished by removing the spring clamp at the location shown with the arrow and disconnecting the flexible hose from the hard line. Reconnect once the fluid has been drained. Collect this drained fluid in a clean pan and set aside for later re-use.

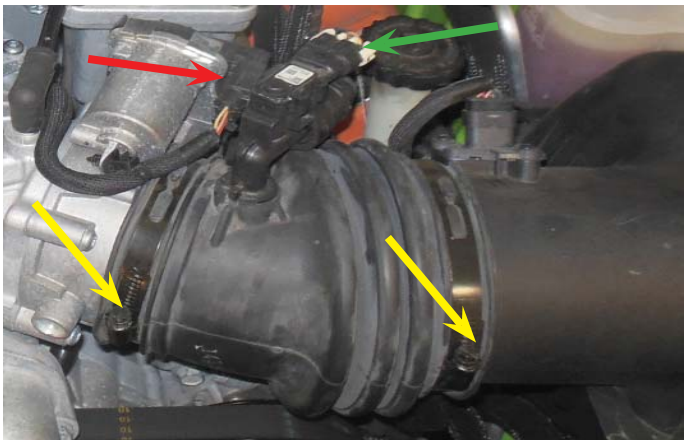


12. Remove the fill cap for both the radiator and intercooler reservoirs to relieve back pressure and facilitate drainage.

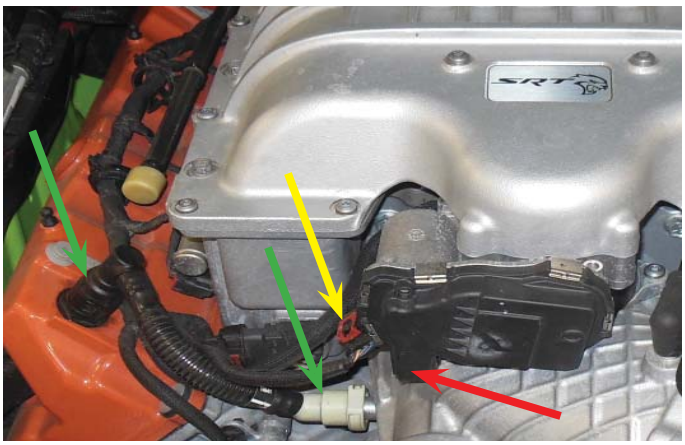
Section 3: Factory Supercharger Removal

13. Relieve the tension from the supercharger belt and remove from the engine. This belt will not be reused.

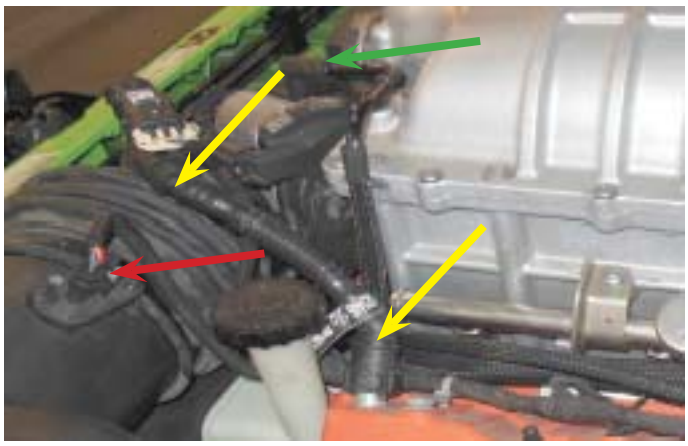
14. Remove the two clamps on the intake air tube shown with the yellow arrows using air tube shown with the yellow arrows using an 8mm wrench. At this time you can also unplug the connector going to the pressure sensor located at the green arrow location. Remove the intake air tube from the vehicle, set aside for some parts that will be reused later. Unplug the electronic throttle control (ETC) from the throttle body.



15. Pull the red locking clip back away from the connection and depress the release clip to unplug the TMAP connector at the yellow arrow location. At the same time disconnect the vent line at the green arrow locations. Unplug the bypass throttle at the red arrow location.



16. Disconnect the vent line shown with yellow arrows at both ends and remove from engine. This will not be reused. Disconnect the vacuum line at the green arrow location. Unplug the MAF sensor at the red arrow location.



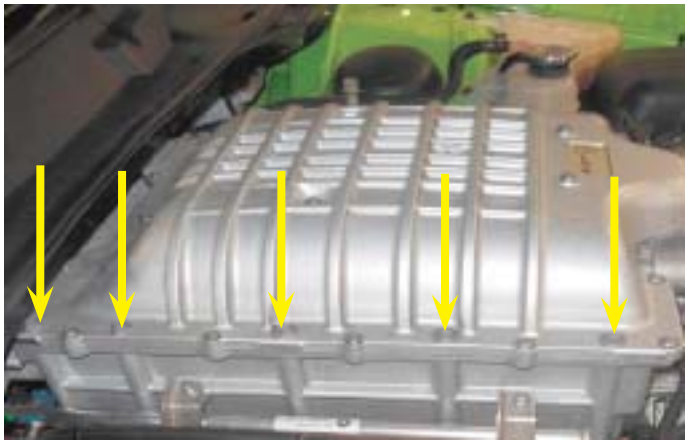
17. Pull the red locking clip and disconnect the wire shown with the yellow arrow for the TMAP sensor. There are two other TMAP sensors at the red and green arrow locations. There is a fuel pressure and coolant temperature sensor that must be unplugged as well at the back of the supercharger.

18. Remove the fuel line from the manifold on the right side of the engine. First push the fuel line further onto the fuel manifold barb, then press the locking tabs to release the fuel line, and pull the fuel line free. Use shop towels to capture any residual fuel and dispose of them properly. It's a good idea to cap the fuel rail barb and plug the fuel line to avoid seepage of fuel.

19. Disconnect the upper intercooler hose at the yellow arrow location and the lower at the red arrow location and cap the ends. Be careful of the residual fluid in the lines. Have rags ready for clean up.

20. Pull out on the red locking clip and press on the release clip to unplug the eight fuel injector connections. Four of these locations are shown with arrows here.

21. Remove the 10 bolts holding the supercharger in place. Five of the left side locations are shown here. The other five are on the opposite side. Have two other people assist you in removing the supercharger. It weighs over 100 pounds so be careful when lifting. An engine lift is recommended if available.



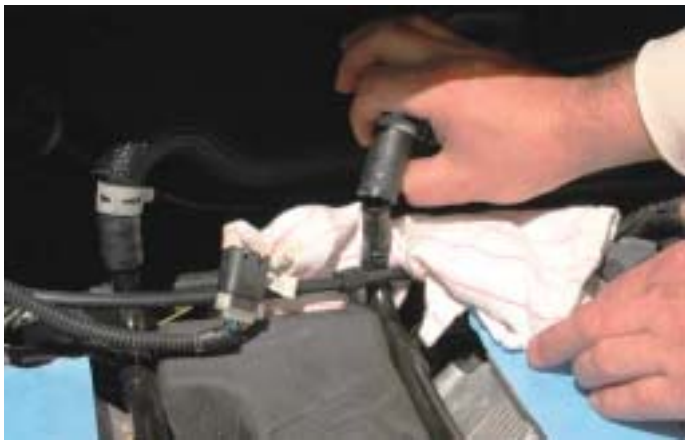
22. Use a vacuum to remove any debris from the heads and adjacent surfaces. Be careful to not allow any debris into the open ports. Wipe the port surfaces clean using a shop rag and alcohol (lacquer thinner, acetone or some other non-petroleum based solvent). Use tape or shop rags to cover the exposed ports and prevent debris from entering the port.

Section 4: Heater Line Replacement

23. The factory heater lines that run through the manifold valley will be removed in the next few steps. The engine shown in the next few steps does not directly match the 6.2L in the Hellcat, but the steps are the same.

24. Remove the two heater hose clamps from the hard line tubes running forward to the water pump over the valley between the heads of the engine.

25. Disconnect the two heater hoses from the hard line connection at the rear of the engine by pulling the lines free from the hard line barbs.



26. Un-clip the grounding connectors on both left and right heads near the heater hard line mounts.

27. Remove the 10mm hex head nut holding the ground sensor and an additional grounding wire to the left side heater hard line mounting bracket/stud at the rear of the head.

28. There is an additional 10mm hex head bolt holding the left side hard line to the water pump. Remove this bolt using a 10 mm wrench.

29. Remove the left side hard line by pulling up, or use a large screwdriver to lever against the water pump. Remove the hard line from the vehicle, this will not be reused. There will likely be some residual coolant inside the tube, so take precaution and be aware of potential spillage.

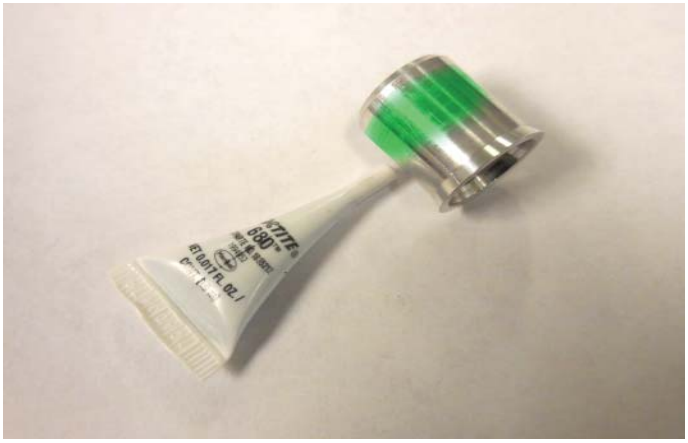
30. Remove the right side hard line mounting bolt/stud on the back of the head using a 10mm wrench.

31. Remove the right side heater hard line from the engine. If necessary , you can use a large screwdriver and with the back of the head as a fulcrum, lever the barb free.

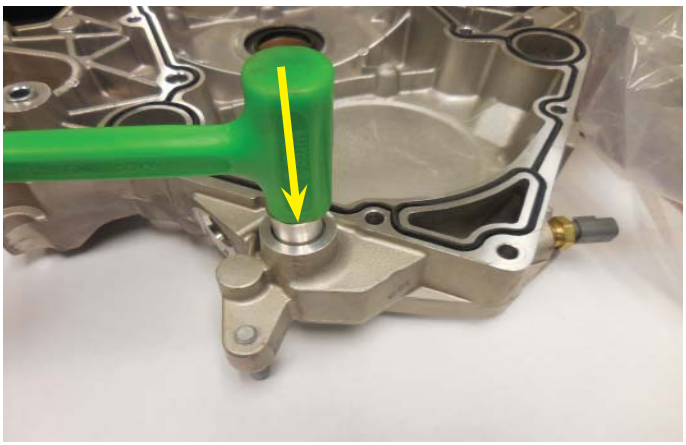
32. Disconnect the wiring mount shown with the arrow and remove it from the electrical harness. Insulate the wire with electrical tape in the area where the mount was removed.

33. Gather the provided bushings (2 each) shown. Ensure that it has the two O-rings installed inside. Apply a thin coat of the provided Lubriplate grease to these two O-rings.

34. Apply a light coat of provided Loctite 680 on the outside of the bushings as shown.



35. Here is a view of the timing chain cover separate from the engine for clarity on the location of the bushing from the last step. Place the bushing squarely into the location shown with the arrow, and carefully tap it in evenly until it bottoms out with a soft faced hammer like this small plastic deadblow. Repeat the process for the heater line port on the opposite side that attaches to the water pump housing.



36. Install the provided heater hard lines in place of the ones you just removed using the original hardware to secure it. Run the wiring harness through the middle of the hard lines as shown. Lube the O-rings inside the bushings as well as the tube ends being inserted. Reconnect the left and right heater lines with the OEM spring clamps. Also connect the fuel pressure sensor and coolant temperature sensor.

37. Here is another image of the wire from the VVT sensor running up the center of the heater hard lines.

Section 5: Crank Pinning

38. We're going to jump to pinning the crank here while there is extra room on the engine. Remove the two mounting 8mm hex head bolts near the top on each side of the fan shroud.

39. Disconnect the fan electrical power connection on the right side of the fan shroud assembly.

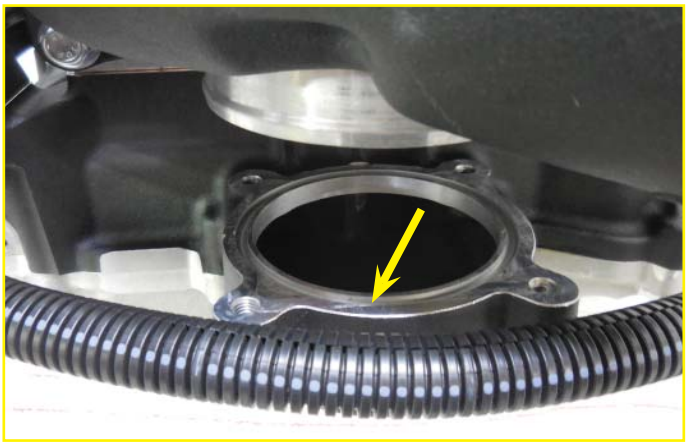
40. Remove the fan assembly from the vehicle by carefully pulling the unit down and out fro reinstallation later. The transmission cooler line mount has a 10mm hex head mounting bolt on the cross frame. Remove the bolt to gain additional clearance on the bottom.

41. Follow the provided addendum for detailed instruction on pinning the crank pulley.

Section 6: Supercharger Preparation and Installation

42. Remove all the red plastic caps from the supercharger assembly. Remove the 4 bolts holding the inlet in place (three are shown with arrows). Remove the bypass from the factory supercharger along with the upper rubber coupler. Place the upper rubber coupler on the bottom of the inlet.

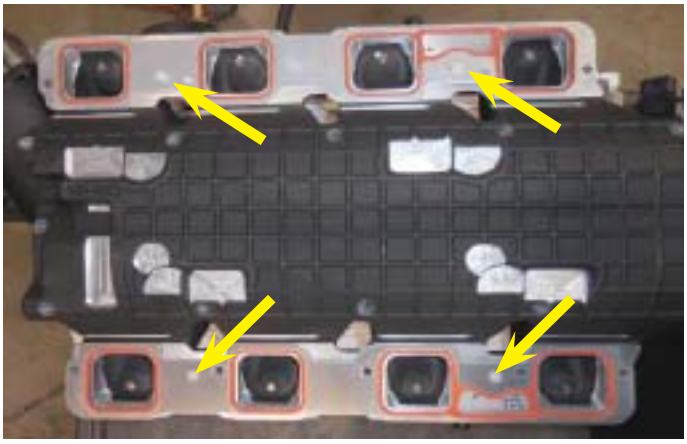
43. Place the provided O-ring in the area shown with the arrow. Secure the factory bypass using the provided four M6x35mm bolts making sure it is centered, and torque them to 108 in-lbs. Place the inlet with the upper rubber coupler onto bypass and secure it back to the supercharger with the four M8-25mm bolts removed in the last step, and torque them to 18 ft-lbs.



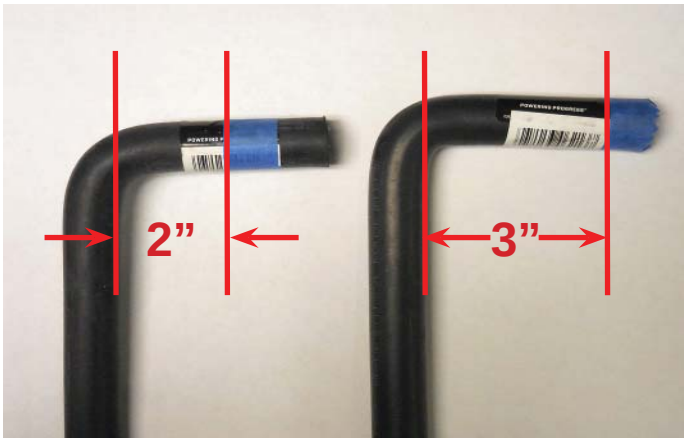
44. Remove the throttle body from the OEM intake manifold assembly using a 10mm wrench on the four mounting bolts.

45. Secure the throttle body with the provided M6x45mm bolts. Sandwich the included throttle adapter between the inlet and throttle. Torque the mounting bolts to 108 in-lbs. Verify your torque wrench settings.

46. Remove the factory gaskets and swap them over to the new supercharger. Inspect for damage/defects and replace if necessary.

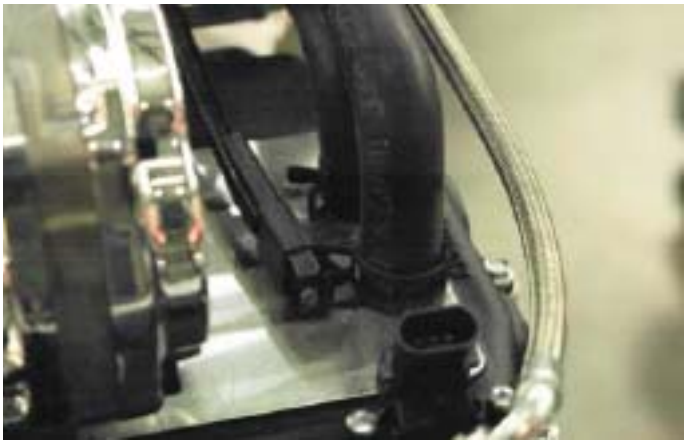


47. Gather the two provided 4” x 36” x 3/4” 90° elbow hoses. Cut one of the short legs of the provided hoses down to 2 inches measured from the inside edge of the hose and the other down to 3 inches as shown in the photo. Remove the labels after you are done.

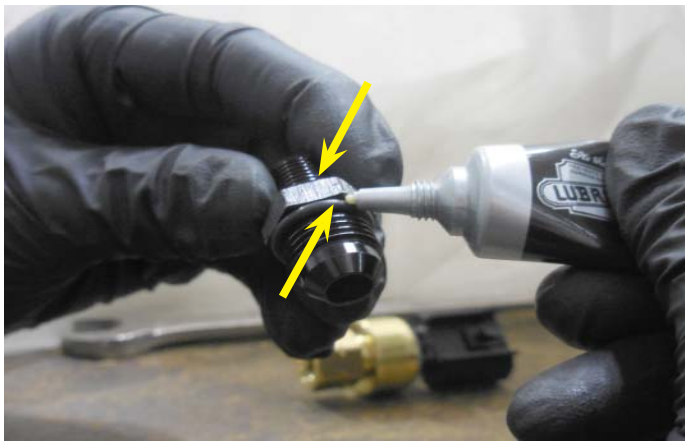


48. Attach the hose that you cut to 2 inches in the last step to the passenger side intercooler hose barb at the rear of the supercharger lid with one of the provided spring clamps. Route this hose toward the right side of the supercharger assembly.

49. Attach the hose that you cut to 3 inches two steps ago to the driver's side intercooler hose barb at the rear of the supercharger lid with one of the provided spring clamps. This hose will also route toward the right side fender, just above the other hose.



50. Lightly lubricate the two O-rings on the fitting shown with the provided Lubriplate grease.



51. Securely tighten the fitting from the last step to the end of the fuel rail shown using a 1/2" wrench.

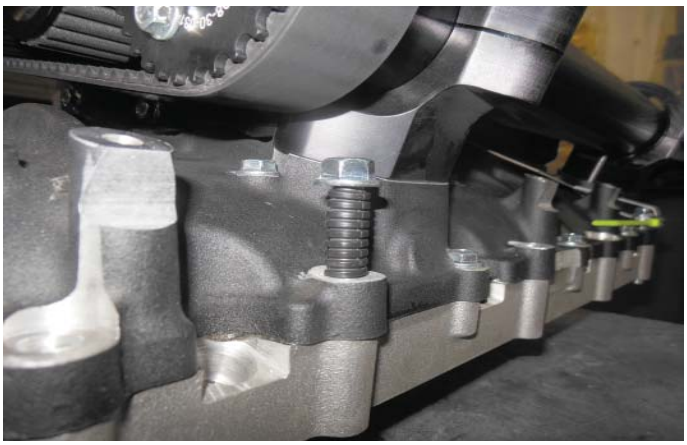
52. Securely install the provided temperature sensor shown at the end of the fitting from the last step using a 5/8" wrench.

53. Gather the following provided fuel fitting. Apply a light coat of the provided Lubriplate grease to the preinstalled O-ring.

54. Thread the fitting from the last step on the passenger side fuel rail and securely tighten in place with 3/4” wrench. The photo shows the rail removed but this is easier to install while the rail is attached to the blower.

55. Remove the fuel rail assemblies. They will be reinstalled after the supercharger installation.

56. Ensure that the plastic slit loom is still attached to the bolt shown before installing the supercharger. This helps prevent the bolt from dragging across the surface of your heads. After the supercharger is aligned with the mounting bolt holes on the heads you can remove this slit loom.



57. Remove the tape or rags from over the ports of the heads. Clean the surfaces using alcohol, acetone, or some other non-petroleum based solvent.

58. Lubricate the cleaned heads with some silicone spray or mild soap solution to facilitate aligning the supercharger on the heads.

59. Pre install the provided supercharger belt.

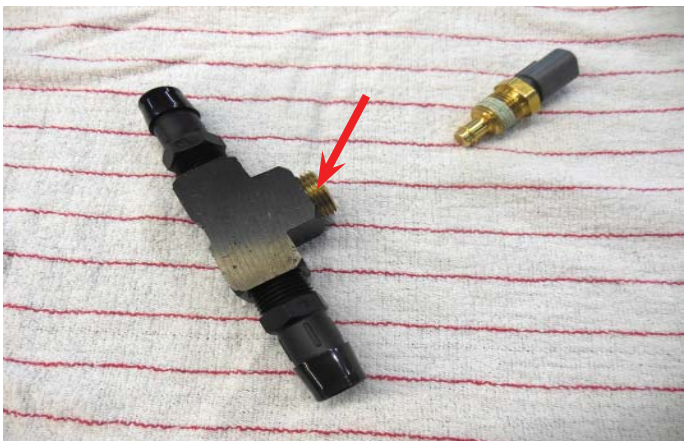
60. Again you will need an engine hoist or a couple of assistants to help you install your Magnuson 2650 supercharger. Carefully lower it into position making sure to line up with the 10 mounting holes. Apply Loctite 242 to the 10 provided M8x60mm supercharger mounting bolts, and install them to the supercharger. Carefully torque these 10 bolts to **18 ft-lbs** starting from the inner bolts and working your way to the outer bolts in a criss-cross pattern.

61. Install the provided fuel pressure sensor extension to the wire connector shown with the yellow arrow. Route this wire along the back of the firewall and towards the location for the driver's side fuel rail. Secure the extension to the hoses with the provided cable ties.

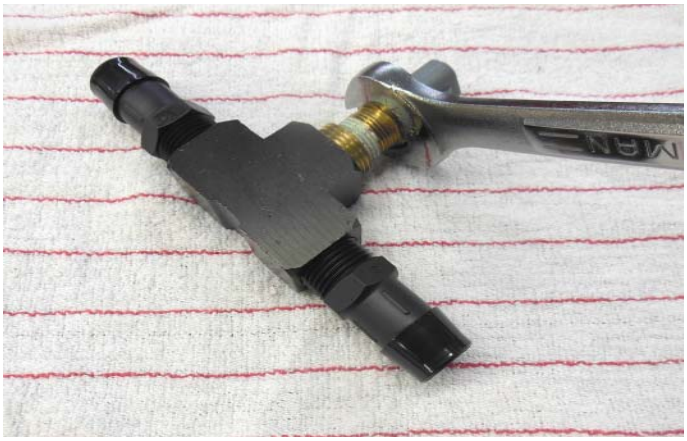
62. Gather the provided fuel rail assembly that was removed earlier. Remove and inspect the fuel injectors from your factory fuel rails. Clean and inspect the injectors. Replace any damaged O-rings with OEM parts. Lubricate the O-rings on the injectors and install them on the supercharger manifold, then reinstall the provided fuel rail assembly on the supercharger. Connect the extension wire from the last step to the pressure sensor on the driver's side fuel rail.

63. Gather the following provided parts. This includes a "T" fitting with hose barbs attached, a threaded reducer and a temperature sensor.

64. Wrap the outside of the threaded reducer with teflon tape, or apply Loctite 567 thread sealant. Install the threaded reducer into the end shown with the arrow.

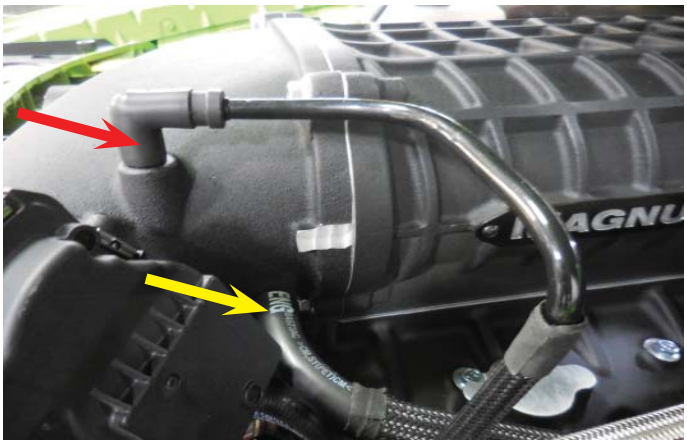


65. Thread the temperature sensor into the reducer that was installed into the last step and securely tighten it.



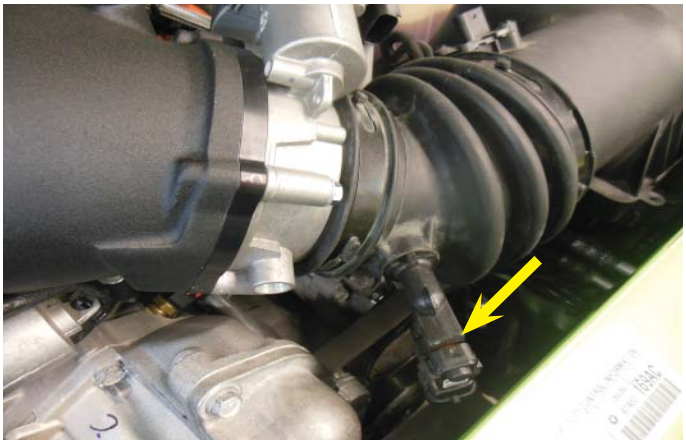
66. Connect the fuel line at the left side fuel rail shown with a yellow arrow. Ensure that the connection is secure, and that the locking clip is fully engaged. Also at this time you will have to cut the hose that goes to the passenger side supercharger intercooler and install the “T” connection with the temperature sensor from the last step at the location show with a red arrow. Now plug in the temperature sensor, and the fuel pressure sensor to the factory connections.

67. Connect the EVAP line at the air inlet (shown with the red arrow), and the brake booster at the yellow arrow location. Also reconnect all the fuel injectors, and the fuel line.



68. Install the provided supercharger belt ensuring that it is aligned, and has proper tension.

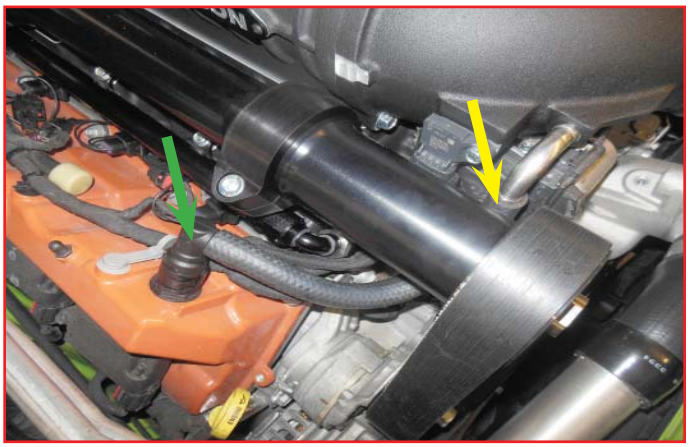
69. Orient the inlet bellows as shown in the photo. Also rotate the vent fitting on the bellows so it faces down as shown at the yellow arrow location.



70. Remove the 90° fitting from the OEM hose as shown. You will have to cut the hose, but be careful not to cut the barbs on the 90° fitting.

71. Install the 90° fitting from the last step onto the provided half inch hose.

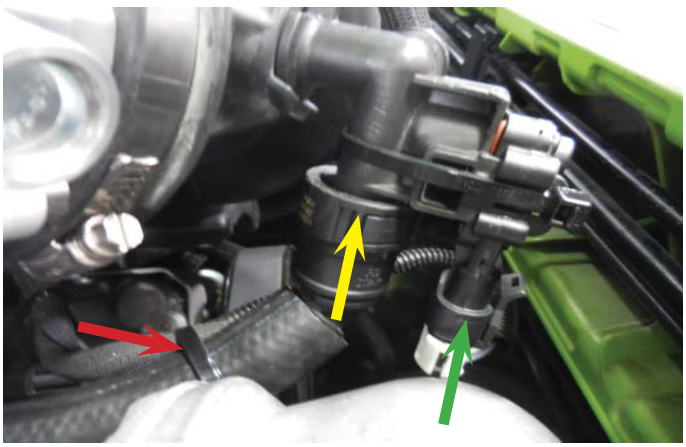
72. Connect the 90° fitting back at the right valve cover at the yellow arrow location, and the other end to the air fitting shown at the green arrow location.



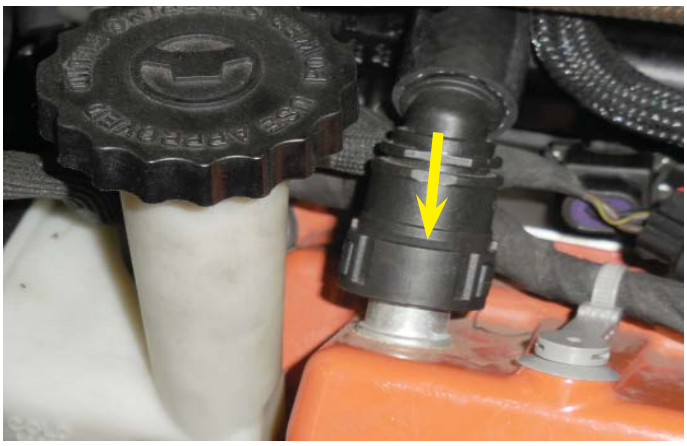
73. Remove the two 45° fittings from the OEM hose shown in the same way you did with the 90° fitting from the previous steps.

74. Install the two 45° fittings that you removed in the last step to the provided 13” long 5/8” diameter hose.

75. Install one end of the hose from the last step onto the fitting at the bellows shown. Also at this time connect the pressure sensor at the green arrow location. Secure the provided 12” extension harness to the hose with tie wraps (shown with the red arrow) to keep it away from the belt.



76. Install the other end of the hose with the two 45° fittings onto the left front valve cover at the yellow arrow location.



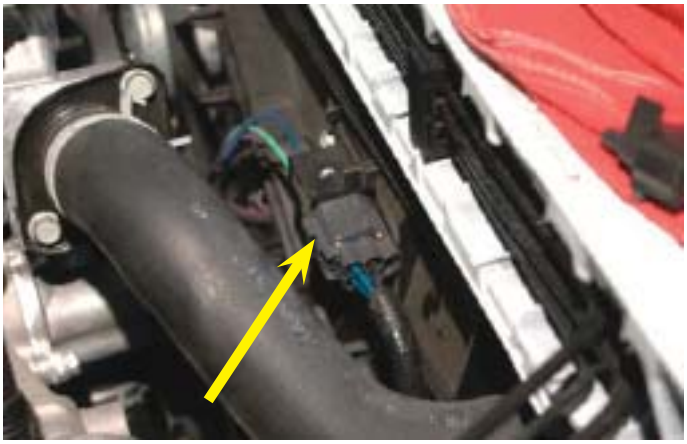
77. Plug in the MAF sensor at the yellow arrow location. Also plug in the throttle control wiring harness at the red arrow location.

78. Install the fan shroud assembly back in the vehicle.

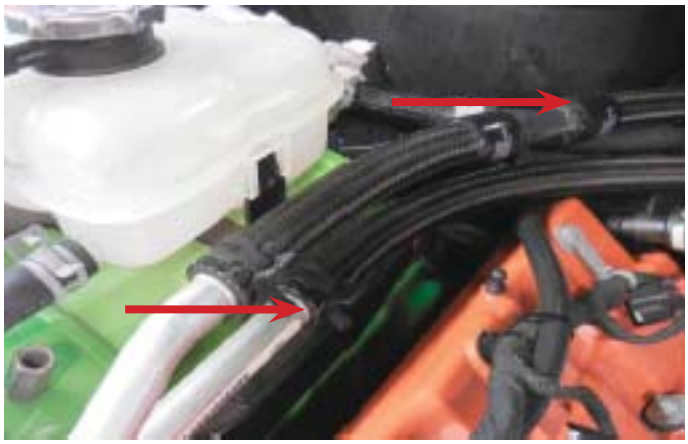
79. Reinstall the bolt mounting the power steering line to the top of the frame cross member with a 10mm wrench.

80. Reinstall the two OEM bolts mounting the fan shroud assembly to the framework with a 10mm wrench.

81. Connect the fan control plug to the fan shroud.



82. Connect the intercooler hard lines back to the rear of the supercharger with the factory hoses. The lower line will have the sensor “T” fitting attached and will attach to the passenger side intercooler fitting on the supercharger. The driver side intercooler fitting on the supercharger will attach at the factory “Y” connection. Cut the hoses to fit. Use the provided clamps to secure the connections.



83. Ensure that all intercooler lines are connected. Refill the intercooler reservoir with the clean fluid you drained earlier. Only use Mopar approved coolant mixture if you need to add more.

84. Make sure the engine coolant hoses are all connected, and the drain petcock has been closed, strain and re-fill your radiator system with the fluid you drainer earlier.

85. Connect the battery negative terminal and key the ignition in the accessory mode to allow the coolant to circulate. Do Not start the engine at this time. Recheck the coolant level for the intercooler reservoir and top off as necessary.

86. Once you have checked the intercooler system for leaks reinstall the shrouds under the car in the reverse order of removal process that was covered earlier

Section 7: Testing

87. Do not perform wide open throttle runs at this time. Test drive your vehicle for a while taking care to not get into boost immediately. Pay close attention to the sounds of your engine. If you notice detonation (pinging) back off immediately and contact your installation facility. The supercharger does have a whining sound while under boost. When you are through with the initial test drive check again for any leaks, and top off with coolant if necessary.

88. After the initial test drive, gradually work the vehicle to wide open throttle runs. Listen for any engine detonation (pinging). If engine detonation is present, let up on the throttle immediately. Most detonation is caused by low octane fuel still in the tank. NOTE: PREMIUM GASOLINE FUEL MUST BE USED (91 Octane or better).

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

Notes

Please enjoy your “Magna Charged”

performance responsibly.

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SUPERCHARGERS