MAGNUSON SUPERCHARGERS

Installation Instructions for:
Dodge Durango / Jeep Grand Cherokee
(Fitment Shown on Next Page)



PREMIUM 91 OCTANE 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.

89-89-61-099 Rev.D

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

INSTALLATION MANUAL

Magnuson Supercharger Kit:
2014-2024 Dodge Durango with 5.7L Engines
2018-2024 Dodge Durango with 6.4L Engines
2014-2021 Jeep Grand Cherokee with 5.7L and 6.4L Engines*

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!

Use only premium gasoline fuel, 91 octane or better. The use of non-premium fuel can cause engine failure and will void your warranty.

Magnuson Products recommend that you run a minimum of one tank of premium 91 octane or better 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.
DO NOT RUN E85 FUEL WITH THE SUPERCHARGER.
DO NOT USE OCTANE BOOSTERS. If you have used octane boosters in the past you will have to replace your spark plugs and the O2 sensors.

Magnuson Superchargers systems are designed for engines and vehicles in “GOOD” mechanical condition. Magnuson Superchargers 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 Superchargers also recommend the following services to be performed on your vehicle while installing the supercharger system:

- 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 tensioner 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 of your engine and application.

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

- Coolant system pressure test and flush.
  NOTE: YOU MUST USE MOPAR SPECIFIED COOLANT MIXTURE!

Non “Magnuson Superchargers Approved” calibrations or “tuning” will Void ALL warranties and CARB certification. Our supplied calibration is designed for use with the components provided in this kit. Any adjustment to the intake, or exhaust systems or other engine components may adversely affect engine performance and may trigger your check engine light.

*NOTE: Only fits the Grand Cherokee WK2 Platform. This system does not fit the WL Platform. Both platforms were produced for Model Year 2021, please verify your Grand Cherokee’s platform before purchase.

Tools Required:

- **Metric wrench set**
- **Metric 3/8” and 1/2” drive socket set (standard & deep)**
- **3/8” and 1/2” drive ft-lbs. and in-lbs. torque wrenches**
- **Metric Allen socket set 3/8 drive**
- **Metric Allen wrenches**
- **Torx socket set 3/8 drive**
- **Phillips and flat head screwdrivers**
- **Funnel**
- **Drain pan**
- **Hose cutters**
- **Hose clamp pliers**
- **Safety glasses**
- **Nut driver**
- **Compressed air**
- **Air gun**
- **Heat gun**
- **Drill motor and drill bits**

Drive Belt:

- **K061010 for 2016+ M.Y. Vehicles (No P/S)**
- **K061020 for 2011-2015 M.Y. (With P/S)**

Contact Information:

Magnuson Superchargers
1990 Knoll Drive, Bldg A
Ventura, CA 93003

Sales/Technical Support Line:	**(805) 642-8833**
Websites:	**www.magnusonsuperchargers.com**
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Bill of Material Content Note

This supercharger kit contains hardware that is used across various platforms. The install manual will reference the correct part number to use depending on the model year and vehicle platform you are working on.

Any extra hardware left over at the end of the installation is not required for your specific application and can be discarded.

Notes for 5.7L Durango/Grand Cherokee Vehicles

5.7L applications will require the following additional hardware, which is not included in the kit:

- Throttle body extension harness (Caspers PN 109272R-18). (www.casperselectronics.com)
- A suitable aftermarket cold air induction system is recommended to reduce inlet restriction. If the stock airbox will be retained, it is recommended that the lower portion be modified as detailed later in this manual.

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

Section 1: Initial Preparation

1. Before beginning the installation run a full tank of premium 91 octane or higher fuel through your engine. DO NOT USE E85 FUEL OR OCTANE BOOSTER! The vehicle must have premium fuel prior to starting the install.



2. If your kit has a provided handheld tuner follow the instructions in the provided pamphlet to install your tune. WARNING: DO NOT BEGIN THE INSTALLATION BEFORE OBTAINING YOUR NEW CALIBRATION FILE. IN SOME CASES, ESPECIALLY WITH NEWER VEHICLES, THIS STEP CAN TAKE SEVERAL DAYS AND YOUR VEHICLE WILL BE IMMOBILIZED WHILE YOU WAIT FOR THE NEW CALIBRATION FILE. The pictures shown may be slightly different from the items you receive.



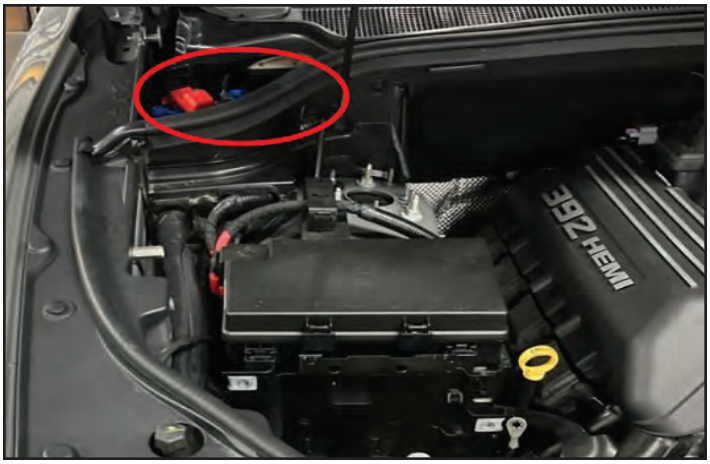
3. **Do Not** remove your PCM until you are instructed to in a later step. If you purchased the kit without calibration you can disregard this step. If your kit has a PCM shipper box and HP Tuners RTD device you will mail in your PCM for unlock to the address shown in the RTD Flash Tool Instructions. Detailed instructions will be provided in a later step for removing the PCM from your vehicle.



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



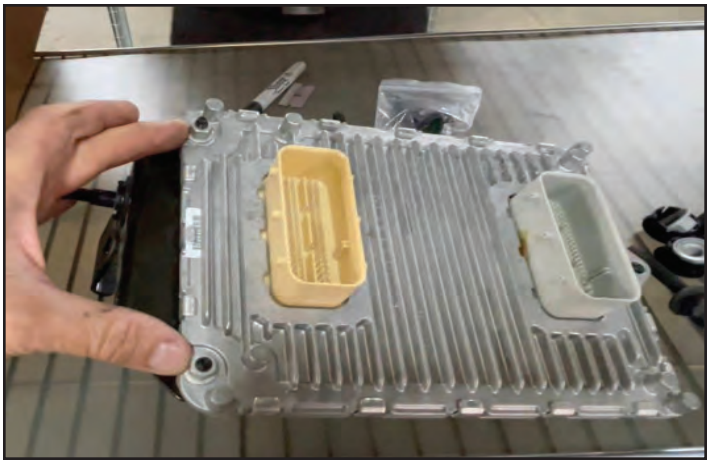
5. Locate the positive battery terminal in the RH side of the cowl (encircled location in red). Disconnect the negative lead and place a rag between it and the terminal.



6. If you are not providing your own calibration you will need to send in your PCM for unlock. There is a box provided for sending in your PCM with instructions included.
Remove the plastic cover that houses the PCM and set it aside. Remove the fasteners that secure the PCM to the bracket. Lift the PCM up to gain access to the main harness connectors. Cycle the locks on the connectors and disconnect them from the PCM. Remove the PCM from the vehicle.



7. Take the PCM to a work bench and remove the (2) nuts that secure it to the bracket. Carefully package the PCM and ship it out to be updated as per the included addendum instruction.



8. 2018+ Vehicles Only Security Bypass Cable Installation
The following slides detail installation of the security bypass cable required for PCM programming on 2018+ vehicles.
Note: the cable is only required for programming; it can be installed and routed under the dash permanently or removed after the PCM has been updated.



9. Looking up from the passenger side foot well, remove 3 push pins circled in red holding the cover plate to the underside of the dash.



Section 2: Security Bypass Cable Installation

10. Disconnect (2) electrical connectors so the close-out panel can be moved out of the way.



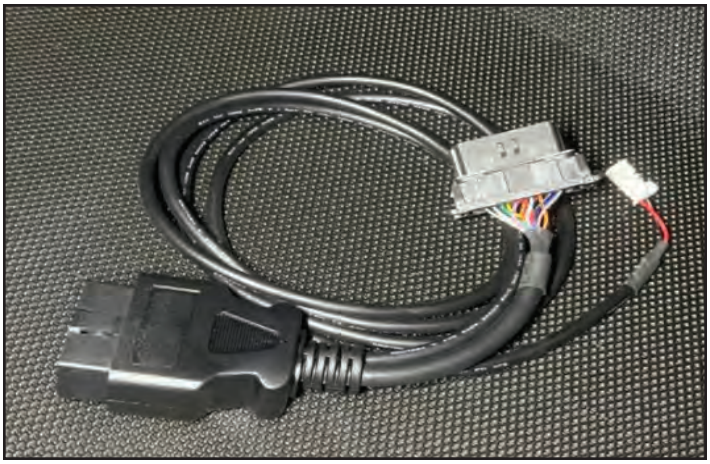
11. Remove the trim panel from the RH side of the center console by gently pulling it away to release it from its' mounting tabs, Set the panel aside (Durango shown, Grand Cherokee similar).



12. Pull the carpet back on the LH side of the passenger footwell. The CANBUS connector is shown in the encircled area.



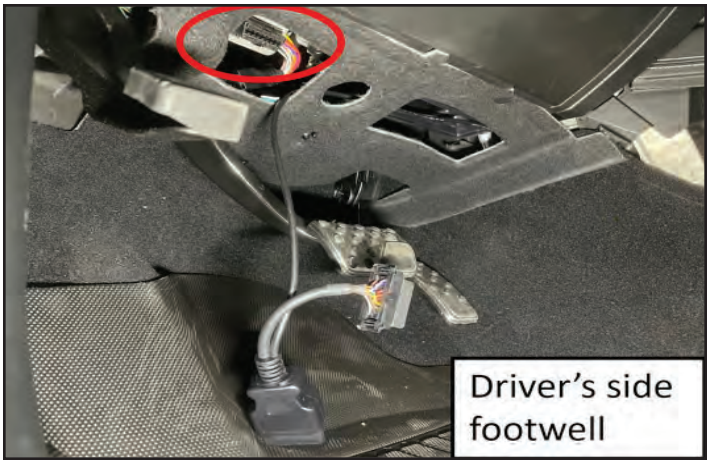
13. Select the cable from the kit.



14. Pass the large OBD connector end of the cable through the center tunnel toward the drivers' side footwell.



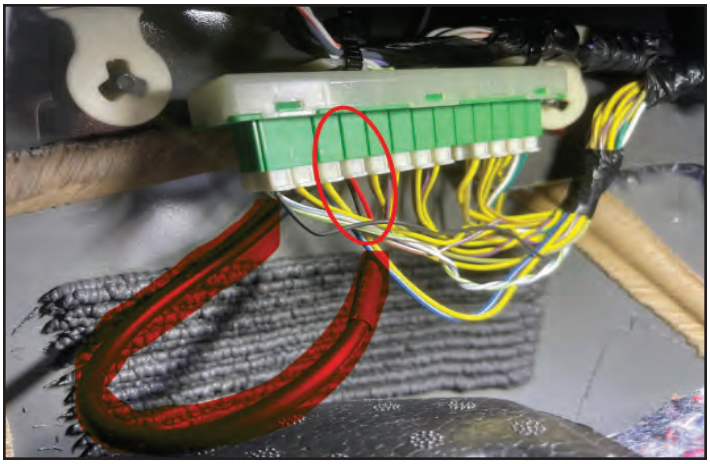
15. Working from the drivers footwell, route the connector above the drivers' side close out panel and over to the factory-installed OBD port.



16. Plug the OBD connector into the factory port, ensuring it is fully seated.



17. Back on the passenger side, connect the 2-pin plug into ANY open slot in the CANBUS connector. Ensure it is fully seated.



18. Push the carpet back into place and re-install the passenger side panel back in place.



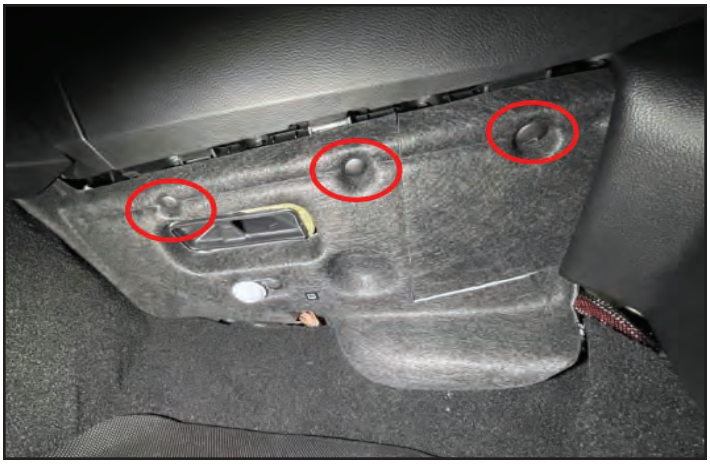
19. Re-install (2) electrical connectors back into the passenger side close-out panel.



20. Position the close out panel back into place, ensuring it tucks up above the edge of the carpet and under the dash neatly.

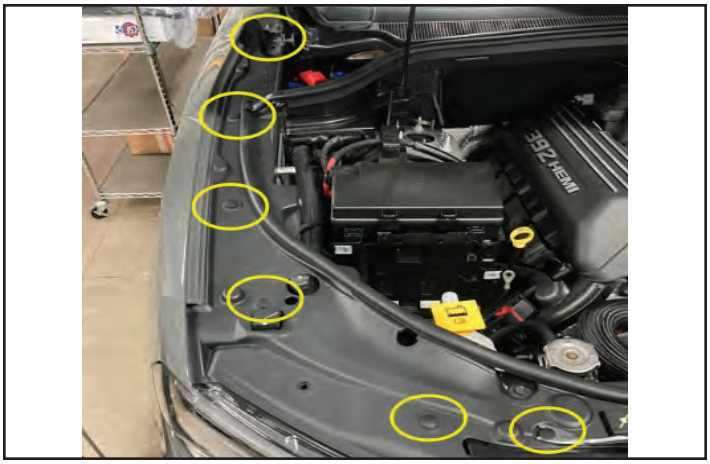


21. Re-secure the close out panel by pushing the (3) fir tree connectors back into place in the locations shown (Durango shown, Grand Cherokee similar).

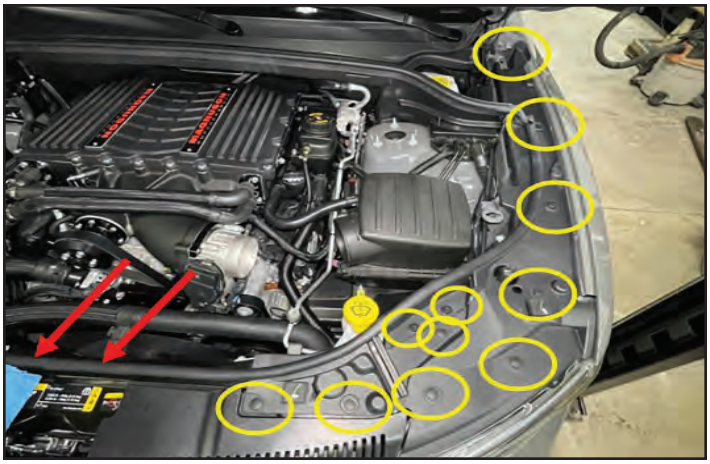


Section 3: Initial Tear Down

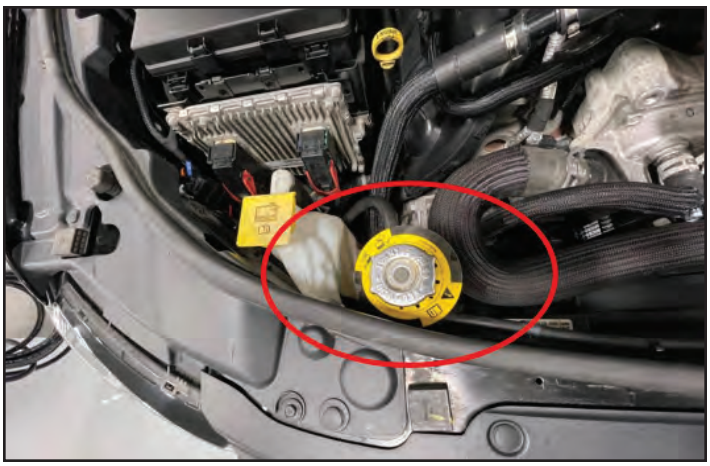
22. Using a forked tool, remove the push pins (encircled in yellow) securing the engine bay cover to the inside fender and headlight bezel. Remove the cover and set it aside.



23. Repeat the removal process for the LH side engine bay cover, including the small close out panel by the air filter box. 11 push pins (circled in yellow) secure it to the vehicle on this side. Remove the rubber molding from the front center of the vehicle (red arrows) by pulling up on the fir tree connectors.



24. IMPORTANT: Ensure the engine has cooled completely before proceeding with this step. The coolant system is under pressure when hot. Severe burns could result from contact with hot coolant. Slowly remove the radiator cap located in the right front corner of the engine compartment.



25. Locate the coolant drain plug under the vehicle in the left front corner. Find a suitable container to collect the used coolant. Loosen the red plug and drain the coolant from the engine.



26. Inside the LH and RH front wheel wells, remove fasteners or drill out the rivets (as applicable) securing the front fascia to the fender liners and fenders.



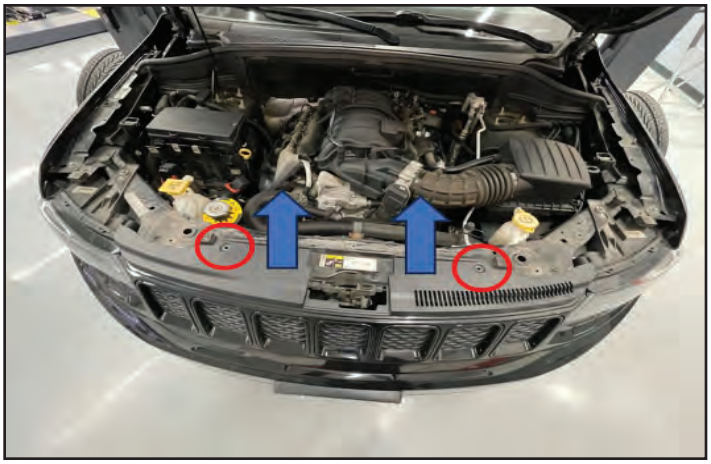




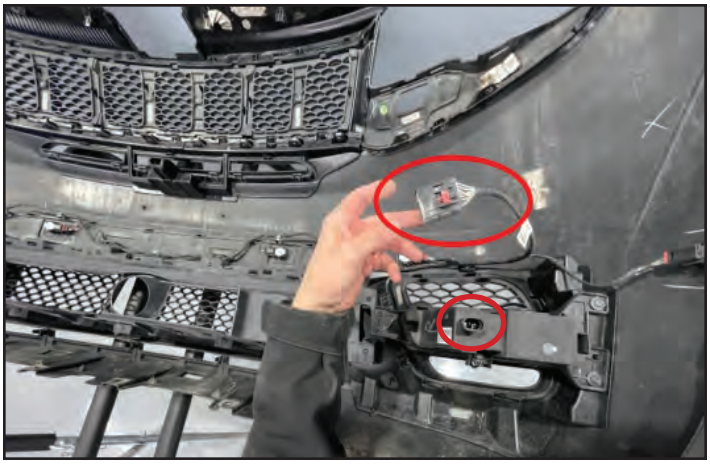
27. Working from underneath the vehicle, remove the fasteners, push pins and drill out any rivets securing the front fascia to the underbody panel.



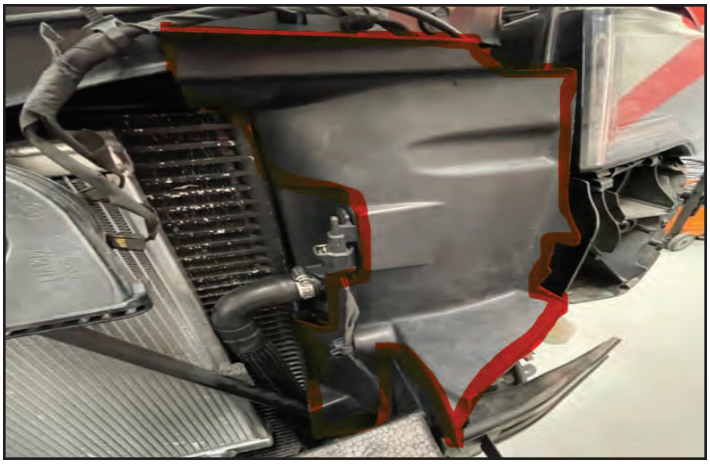
28. Remove the push pins located at the top of the fascia then pull up on the plastic panels to release them from the core support.



29. Using a helper, the front fascia can now be pulled forward slightly to gain access on both sides while a second person disconnects the main harness bundle (RH side) and fog light connectors (one on each side) as shown in photo. Set the fascia aside in a safe place.



30. Remove the ambient air temp sensor from the drivers' side plastic close out panel then remove the panel from the front of the vehicle. The panel will be modified and re-installed later. Remove the passenger side close out panel (not shown but similar)



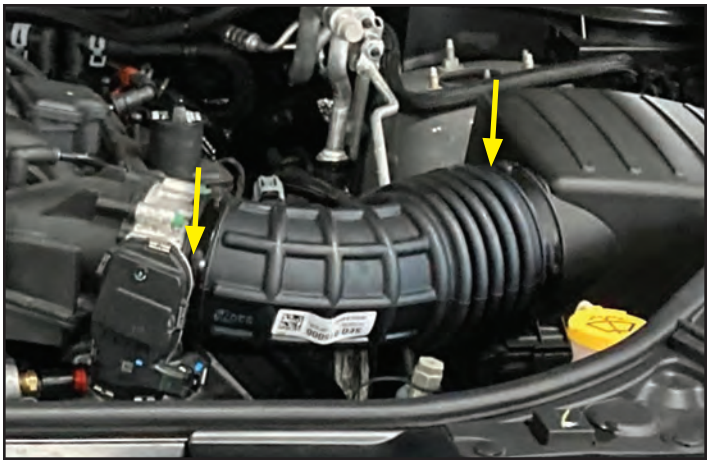
31. Remove the two engine covers shown if you have a 6.4L engine.



32. Unplug the IAT from the intake air tube.
Note: If equipped with a PCV fresh air line running to the airbox, disconnect it now.



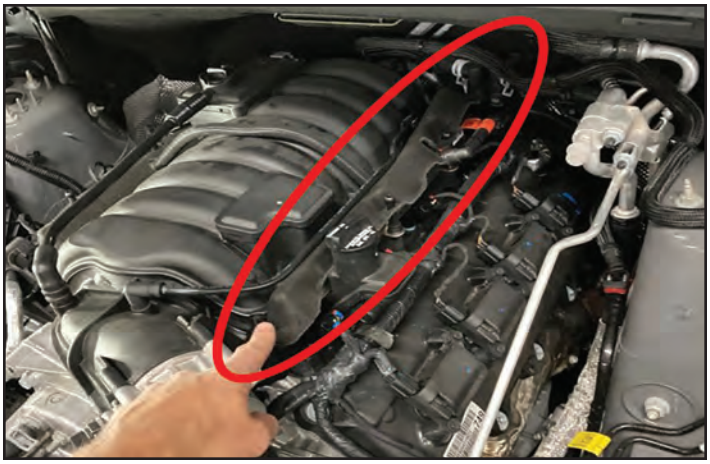
33. Loosen (2) gear clamps securing the clean air tube to the throttle body and airbox. Remove the clean air tube and airbox. Set them aside.



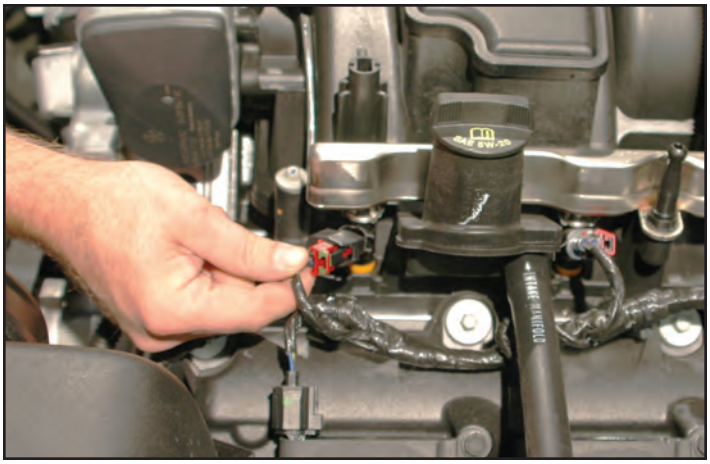
34. Unplug the Electronic Throttle Control (ETC) from the throttle body. Pull back on the white locking tab first before you unplug this connector.



35. Remove LH / RH felt injector covers from the engine. These will not be re-used.



36. Unplug the eight fuel injector connections. You will need to pull out on the red locking tab to disengage it first. Then you can push on the black side button as you pull it out.



37. On the very back of the OEM intake manifold on the passenger side is the MAP sensor. Disconnect this plug and the mounting push pin clip as well. Disconnect MAP and IMRC sensor plugs @ rear of intake.



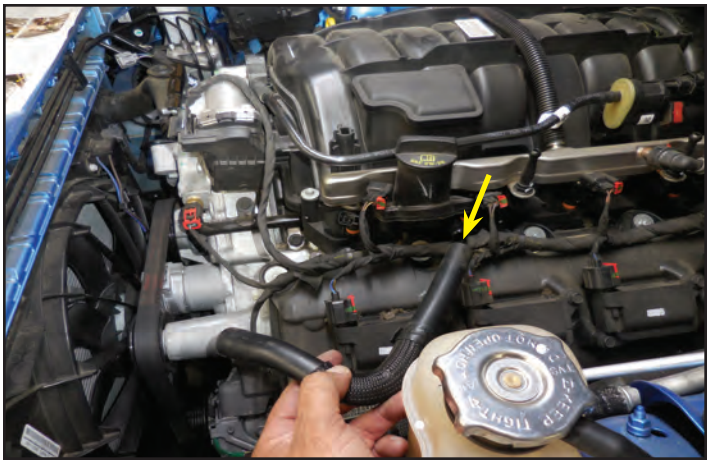
38. Disconnect the EVAP hose from the front of the driver side of the intake manifold behind the throttle body. Pull the EVAP hose clips off from along the manifold.



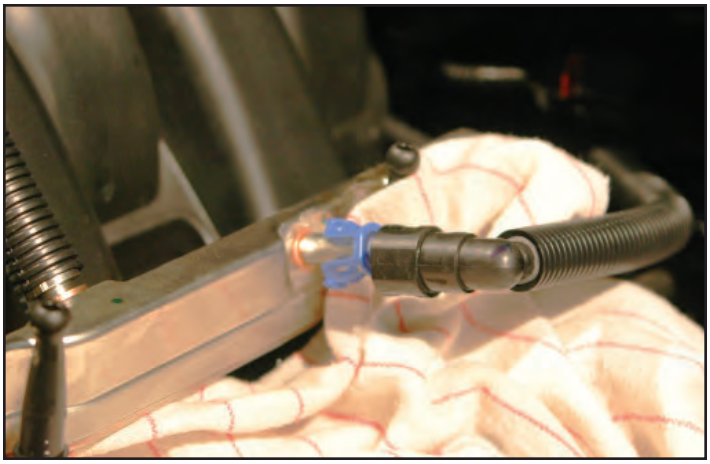
39. Slowly remove the gas cap to release fuel system pressure. Also at this time affix the Premium Fuel Only sticker to the door of your gas fill cap at the arrow location.



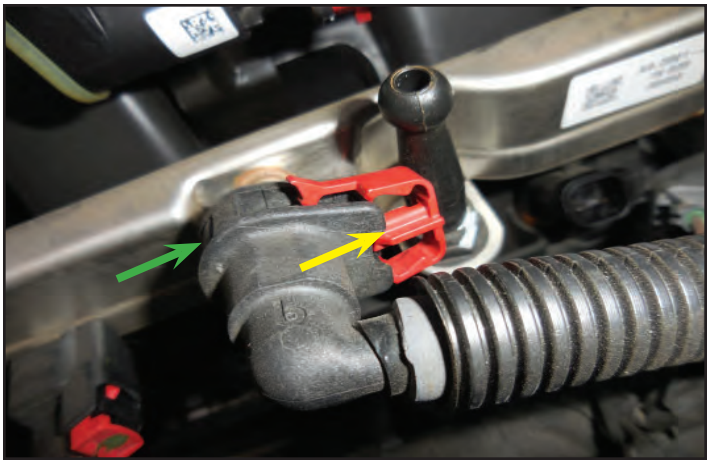
40. Disconnect the PCV vent hose from the air box and the oil fill spout extrusion.



41. CAUTION: Fuel line may hold residual pressure. Wear safety glasses to protect your eyes. Use shop towels to capture any residual fuel and dispose of it properly. Remove the fuel line from the fuel manifold on the driver side. For earlier models you will press on the blue tabs of the fuel line locking clip and then pull the line free. For late models see the step below.



42. For newer model pull on the red locking tab of the fuel line locking clip shown at the yellow arrow location and then push in the black button shown with the green arrow on the left side of the connector and pull the line free. Use shop towels to capture any residual fuel and dispose of them properly. It's a good idea to plug the end of the fuel line and cap the fuel line barb on the fuel rail.



43. Remove the ten bolts holding the intake manifold to the heads with an 8mm socket wrench.



44. Pull the OEM intake manifold forward a bit to gain access to the brake booster hose plugged into the back of the manifold. Disconnect this hose from the rear of the intake manifold. There is also a wire loom clamp located at the back of the intake manifold that needs to be pulled free or cut off.



45. Carefully lift the OEM intake assembly from the vehicle.



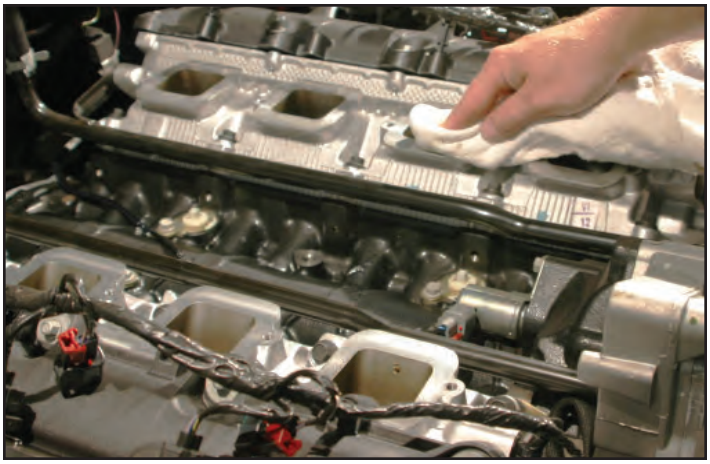
46. Remove the foam dampening pad from the valley cover if applicable. This will not be reused.



47. Use a vacuum to remove any debris from the heads and adjacent surfaces. Be careful to not allow any debris into the open ports.



48. Wipe the port surfaces clean using a shop rag and alcohol (lacquer thinner, acetone or some other non-petroleum based solvent).



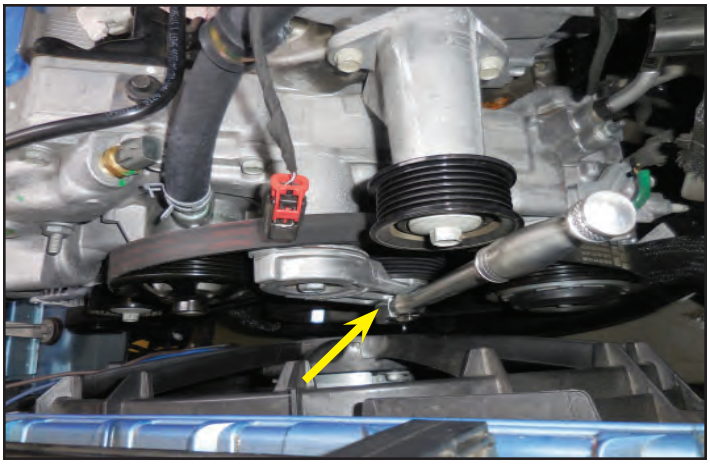
49. Use tape or shop rags to cover the exposed ports and prevent debris from entering the ports.



50. Use a 16mm wrench to remove the air box extension support bracket if applicable. Not required on 6.4L vehicles.



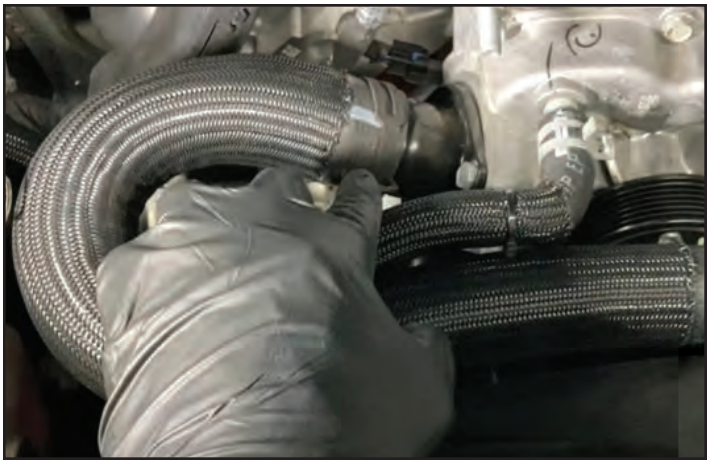
51. To facilitate the hose install, use a long 3/8” drive ratchet to spring the tensioner and remove the OEM fan belt. This belt will not be reused.



52. Remove the fir tree connector or lift and slide the tab securing the upper radiator hose bracket to the shroud.



53. Disconnect the upper radiator hose from the water pump and move the hose out of the way to gain access to the front of the engine.



54. Disconnect the fan electrical power connection on the passenger side of the fan shroud assembly.



55. Remove the 10mm bolt securing the A/C line bracket to the vehicle in the location shown. Rotate the bracket out to way to provide additional access to remove the fan shroud.



56. Remove (2) screws securing the radiator shroud extension. Move the extension out of the way. Cycle the tabs securing the fan shroud, lift it up and out of the vehicle, then set it aside.



Section 4: Crank Pinning

57. Place the two provided dowels in two of the existing crank pulley ring holes.



58. Use a pry-bar or long heavy duty screwdriver to anchor the pulley using alternate sides of the dowels you pushed in the pulley holes as shown. This will give you a lever to stop the pulley from turning. Now, use a 21mm wrench to remove the crank harmonic balancer pulley bolt. Set aside for later use along with the two provided dowels.



59. Install the crank pin drill guide with the provided bolt and a 22mm wrench. It's convenient to align the two holes for the crank pins in the drill guide horizontally for ease of access. Torque the temporary bolt holding the drill guide to 40 ft-lbs.



Wear safety glasses for the drilling, reaming and compressed air steps.

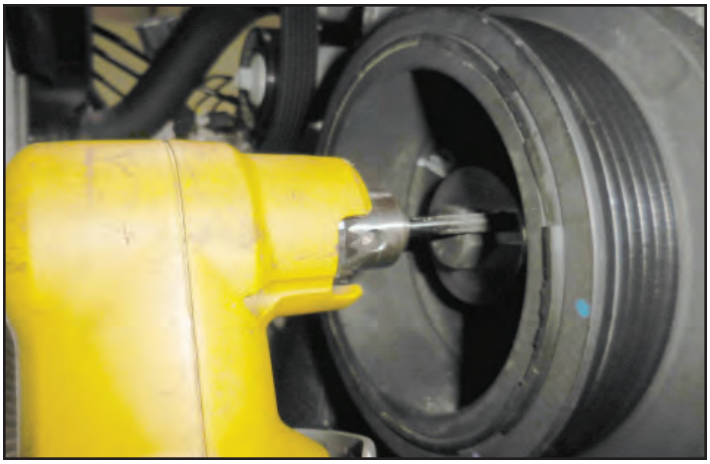
60. Use the provided drill bit to drill the two holes using the pin guide holes. Before beginning, inspect the drill bit: You will notice there are two small 'steps' in the diameter of the bit. The second step, closest to the shank is your stopping point at the drill guide. If you put a piece of tape around the high point of that step you will have a visible stopping point as it touches the drill guide. Be sure to drill the holes completely to the second step of the drill bit.



61. Blow out the holes using compressed air. Use safety glasses and be careful of your eyes!



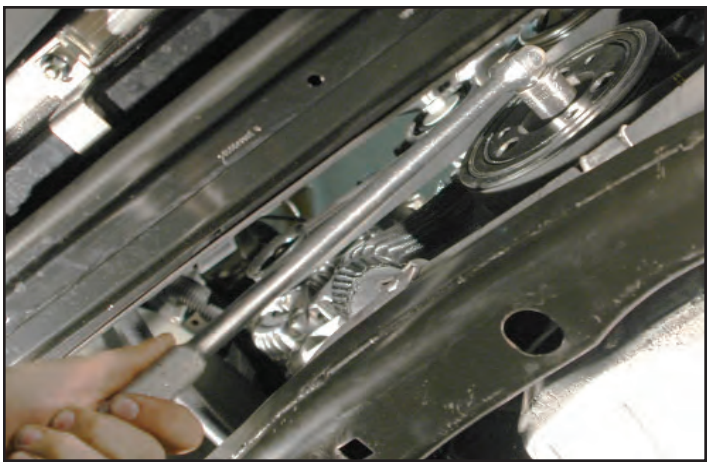
62. Install the provided reaming bit into the drill motor and ream the holes you just made out.



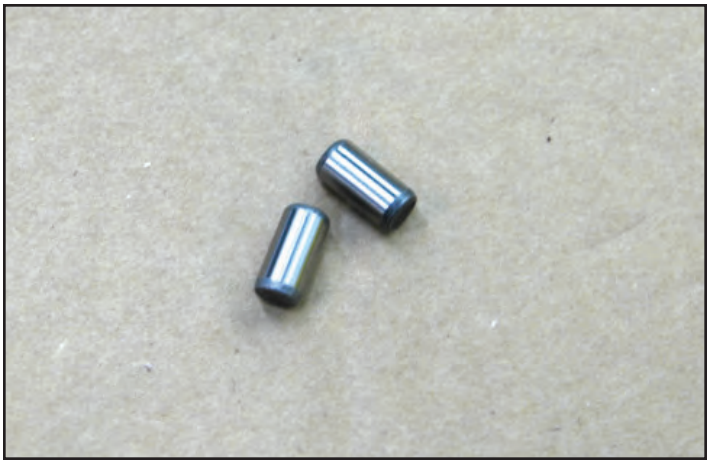
63. When you're finished with the ream bit, blow the holes out again with compressed air watching out for your eyes.



64. Remove the drill guide kit using a 22mm wrench.



65. Gather the two provided crank pins.



66. Put a generous bead of provided green Loctite 680 on the pins and press one into each of the two holes you just prepared.



67. Use a hammer and drift-pin or nail-set to tap the crank pins in completely. Ensure that they are in completely, and will not touch the surface of the crank bolt directly when installed.

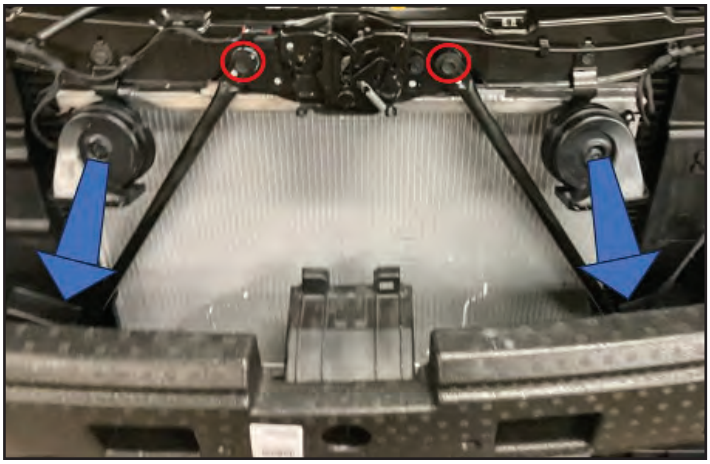


68. Re-install the removed OEM crank bolt and torque to 129 ft-lbs. Verify your torque wrench settings. Use the two supplied dowels in two of the pulley face holes again as an anchor, and a 22mm wrench to tighten the pulley bolt.

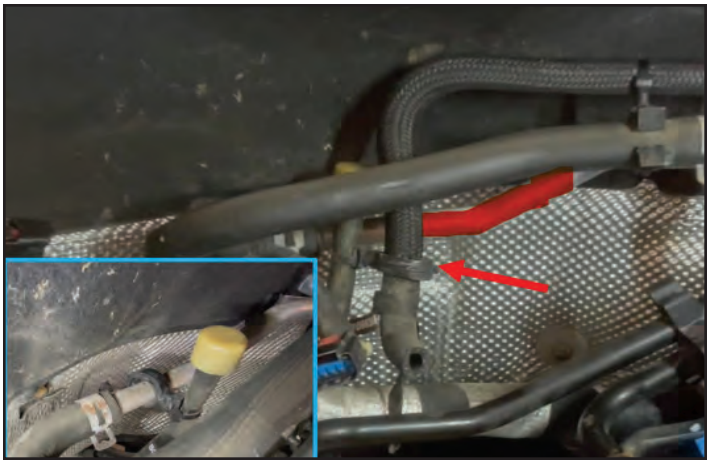


Section 5: Low Temperature Radiator (LTR) Install

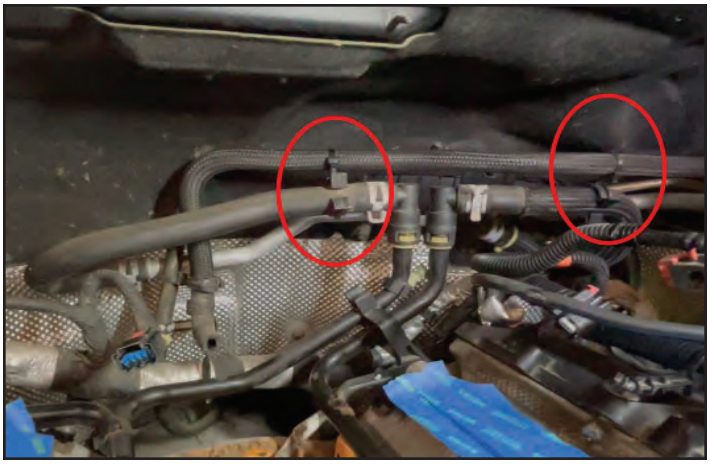
69. Working from the front of the vehicle, remove the fasteners securing the 2 horns to allow temporary additional access for low-temp radiator (LTR) installation. Remove the upper (2) radiator cradle support fasteners at the locations shown. Pull the support rods forward slightly to allow temporary additional access for LTR installation.



70. Relocate the transmission vent support clip from the brake booster hose onto the heater hose (highlighted red). Inset photo shows the revised clip location.



71. Remove the brake booster hose support clips from the heater hose (2 places) then cut the zip ties and discard the clips from the hose.



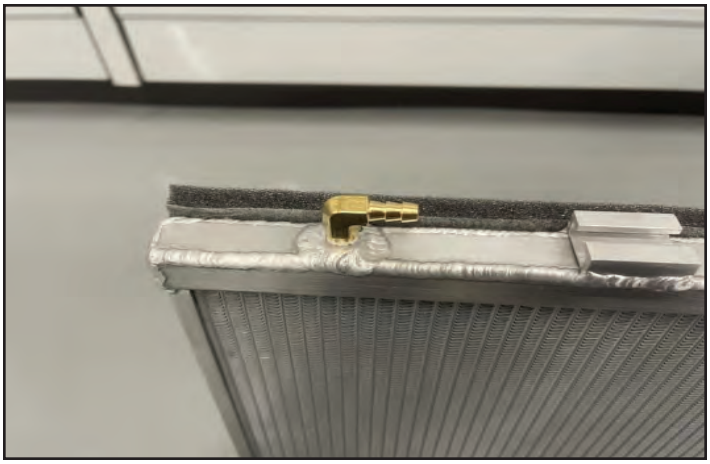
72. Temporarily stow the brake booster hose along the LH side of the engine bay. It will be connected in the later step.



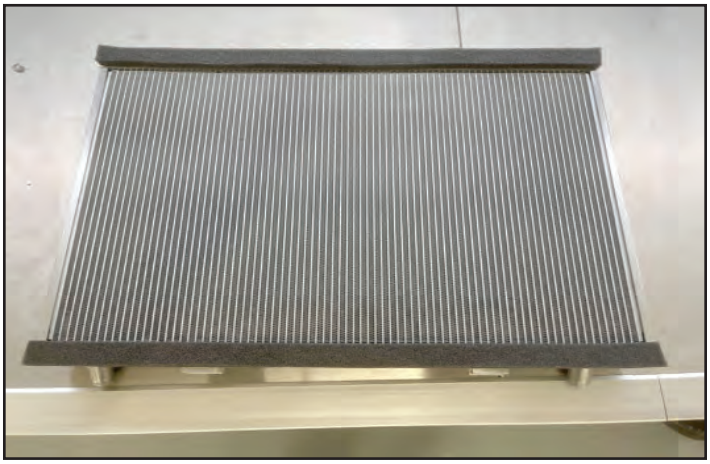
73. Remove the push pin that secures the black plastic bracket to the RH cylinder head in the location shown.



74. Select the low temp radiator (LTR) from the kit. Remove the Allen head plug from the top of the LTR. Select the 90-degree brass fitting from the kit. Apply thread sealant to the fitting threads. Install the fitting into the LTR by hand until slight resistance is felt. Then tighten it an additional turn followed by additional clockwise rotation to orient it as shown in the photo.



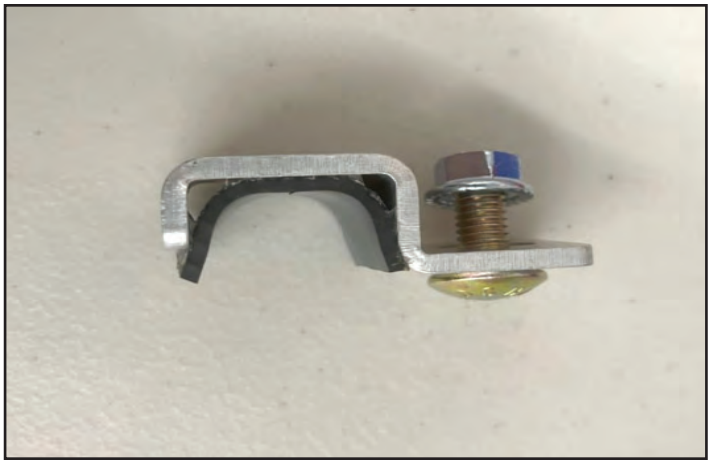
75. Select the self-adhesive foam tape from the kit. Cut the foam in two 23-inch lengths so it spans across the back of both the upper and lower tanks of the LTR. Apply acetone or brake cleaner to a rag and clean the tank surfaces so the adhesive will stick. Peel and affix the foam strips to the back side of the LTR on the upper and lower tanks as shown. Note: 2 extra inches of foam should be left over. This will be used in a later step.



76. Cut and install adhesive-backed rubber isolators PN 68-01-00-049 onto the (2) short brackets PN 65-23-64-009 as shown.



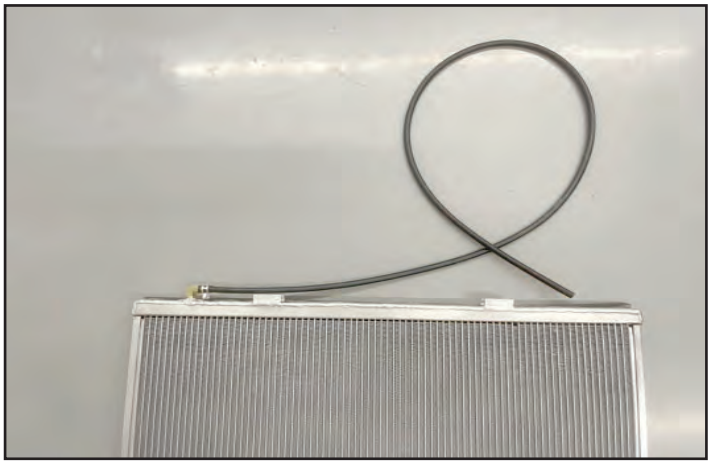
77. Pre-install (1) round-headed square-neck mounting bolt PN 72-08-12-016 and (1) M8 flanged nut PN 77-10-08-010 into each bracket as shown.



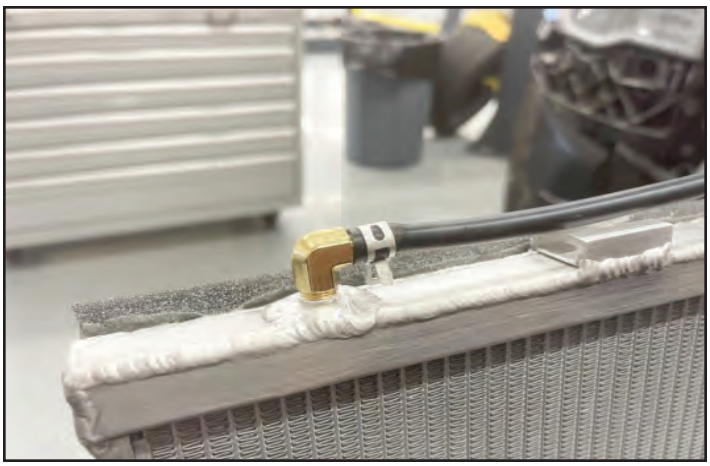
78. Pre-install both bracket sub-assemblies over the top of the A/C condenser core in the locations shown.



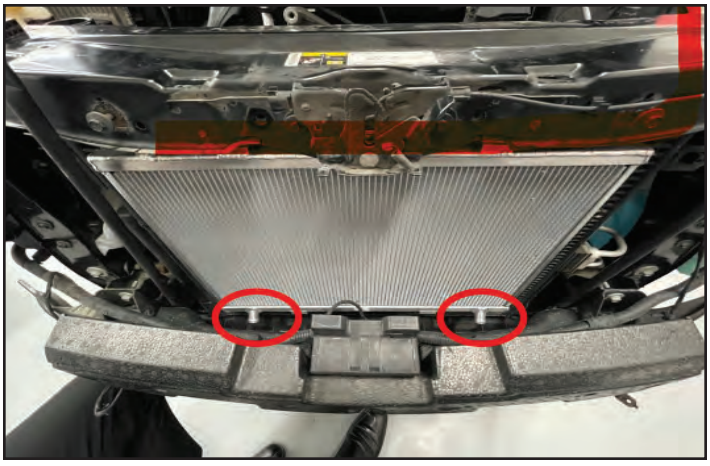
79. Pre-install a 3/16” constant tension clamp from the kit over the 3/16” bulk hose then install the hose onto the 90 degree brass fitting on the LTR as shown.



80. Secure the hose with the clamp from the kit. Orient the clamp so the tabs face downward as shown.



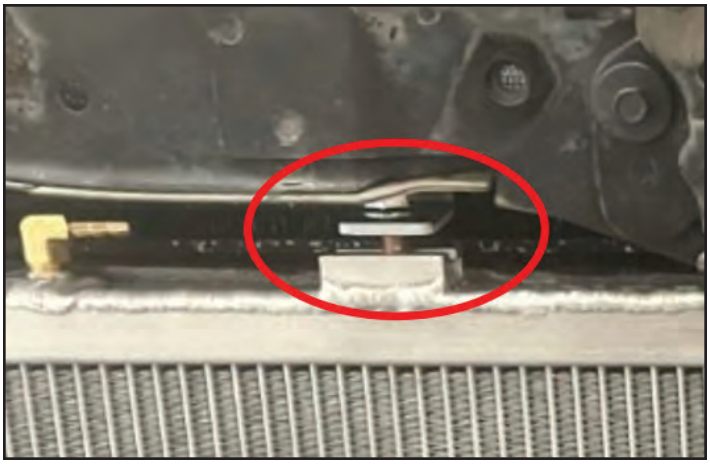
81. Orient the LTR so that the inlet and outlet tubes face the front of the vehicle and point down. As you install the LTR, route the piece of 3/16” hose under the core support, toward the LH side of the vehicle, then rearward by the upper radiator hose as shown highlighted in red.



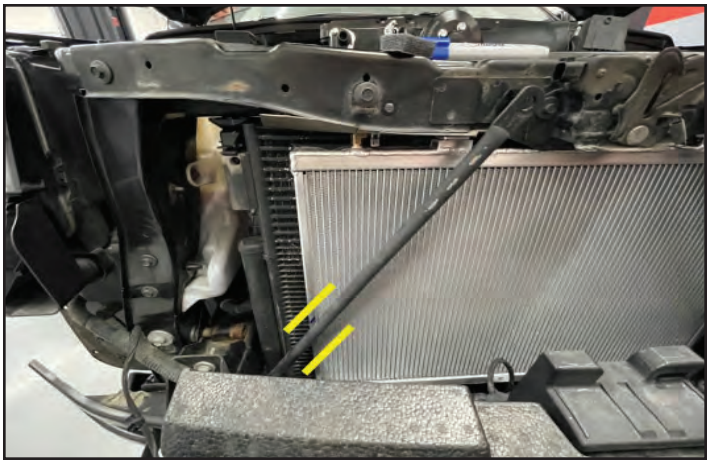
82. The 3/16” hose from the last step will continue in the direction shown highlighted in green. This hose will be routed to the intercooler fill bottle in a later step.



83. Slide the top mounting brackets over so that the flange bolts engage into the slots in the LTR (RH side shown, LH side similar). Secure the brackets by tightening the nuts.



84. Rotate the factory pencil braces back into position so the upper holes align with the weld nuts. Mark the position on the LTR where the pencil braces intersect (RH side shown, LH side similar).



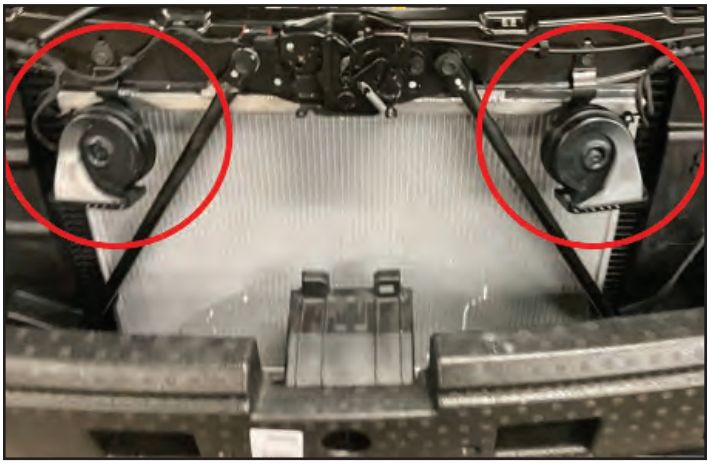
85. Temporarily move the pencil brace out of the way then apply a 1-inch-long piece of foam tape to these locations (RH side shown, LH side similar).



86. Select a thick spacer PN 75-00-08-021 from the kit. Install the spacer behind each pencil brace as shown. Secure the top of the pencil braces using the factory bolts.



87. Re-install the horns into their factory locations and secure them using the factory bolts. Ensure the horns and horn harnesses do not touch the LTR after installation. The horn brackets can be bent slightly as required. Reconnect the electrical connections for the horns.

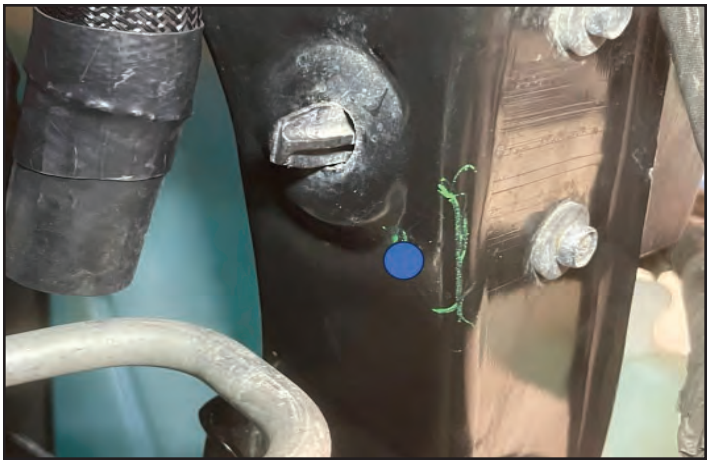


Section 6: Grand Cherokee / Durango Intercooler Pump Installation

88. There are minor differences in the installation process depending on the model you are working on. The following slides detail the appropriate steps to follow. Grand Cherokee is noted first, followed by Durango.



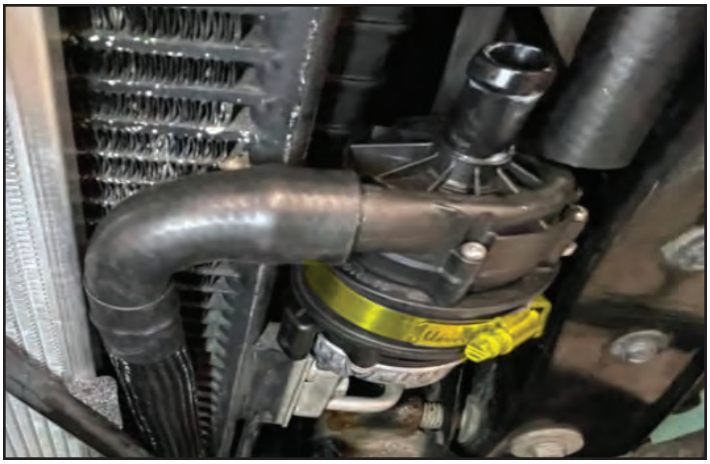
89. **Grand Cherokee** Intercooler Pump Installation: Drill a ¼" hole into the inside vertical face of the LH radiator cradle at the location shown with the blue dot. The following photo shows a zoomed-out view of the location.



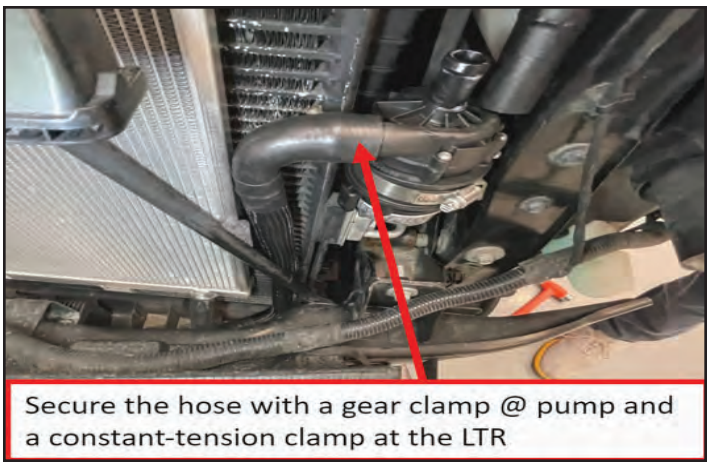
90. **Grand Cherokee** Intercooler Pump Installation: Select a short bracket PN 65-23-64-009 and (1) ¾" long self-tapping fastener PN 74-74-31-075 from the kit. Secure the bracket to the radiator cradle (highlighted in yellow) using the self-tapping fastener as shown.



91. **Grand Cherokee** Intercooler Pump Installation: Secure the intercooler pump to the bracket in the orientation shown using the supplied #48 gear clamp.



92. **Grand Cherokee** Intercooler Pump Installation: Select the 003B hose. Install it between the intercooler pump and RH side of the LTR. A ¾" constant tension clamp secures the hose to the LTR and a gear clamp secures the hose to the intercooler pump.



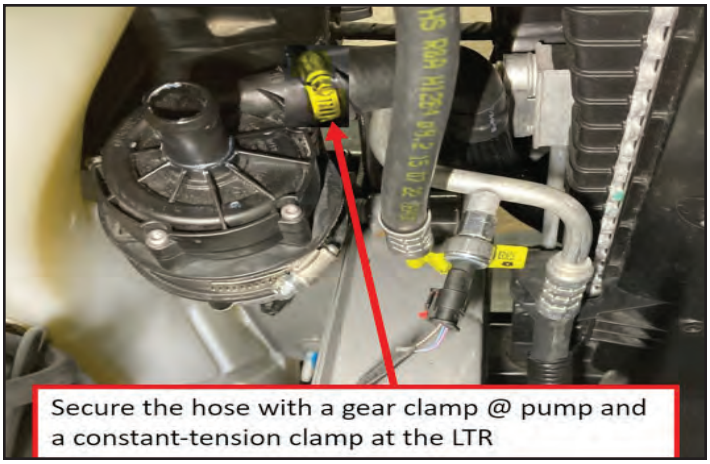
93. Durango Intercooler Pump Installation: Drill a ¼" hole into the back of the radiator cradle in the location shown. Select a short bracket PN 65-23-64-009 and (1) ¾" long self-tapping fastener PN 74-74-31-075 from the kit. Secure the bracket to the back of the radiator cradle using the self-tapping fastener as shown. Pre-install a #48 gear clamp from the kit over the bracket.



94. Durango Intercooler Pump Installation: Select the intercooler pump. Lower it into place through the #48 clamp, in the orientation shown. Hold the pump in place and tighten the clamp to secure the pump to the bracket in the orientation as shown.

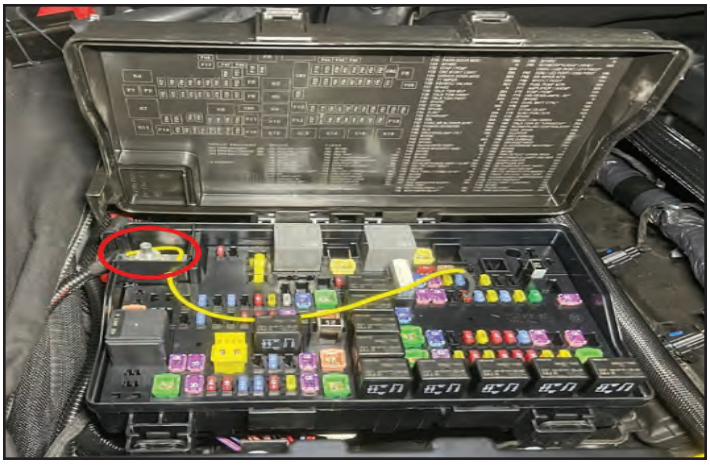


95. Durango Intercooler Pump Installation: Select the 003B hose. Route it between the radiator and the radiator cradle then install it onto the intercooler pump and RH side of the LTR. A ¾" constant tension clamp secures the hose to the LTR and a gear clamp secures the hose to the intercooler pump.



Section 7: Intercooler Pump Relay Wiring

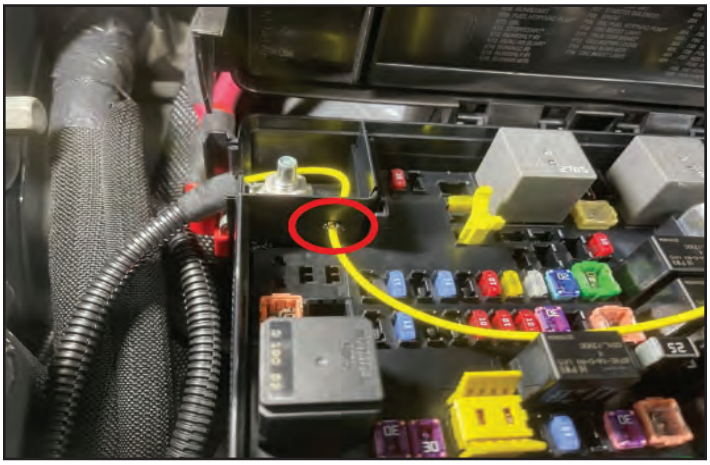
96. Open the fuse box on the RH side of the engine bay. Ensure the battery is disconnected. Remove the B+ cable nut at the location shown.



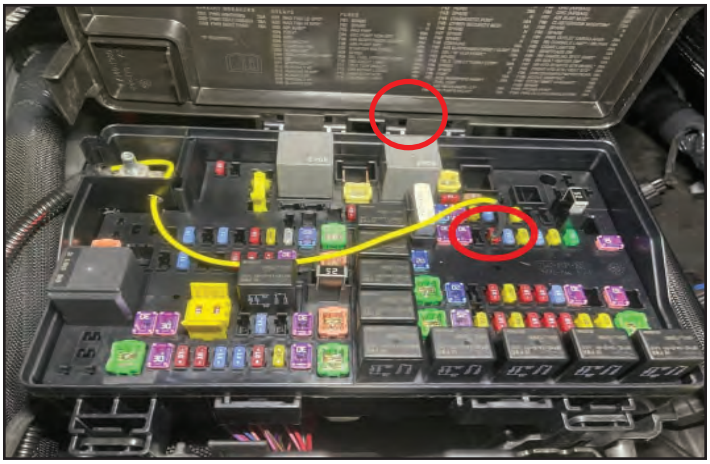
97. Select the relay harness assembly from the kit. Install the RED wire with the ring terminal on the end over the B+ terminal inside the fuse box then secure it with the original nut. Notch the fuse box cover as necessary for clearance to the red wire.



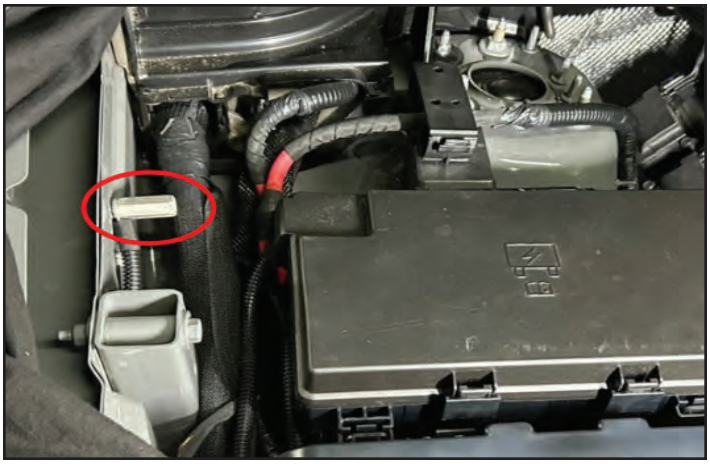
98. Drill a hole in the box in the location shown to allow the yellow fuse tap wire to pass through into the main area. Route the yellow wire through the hole.



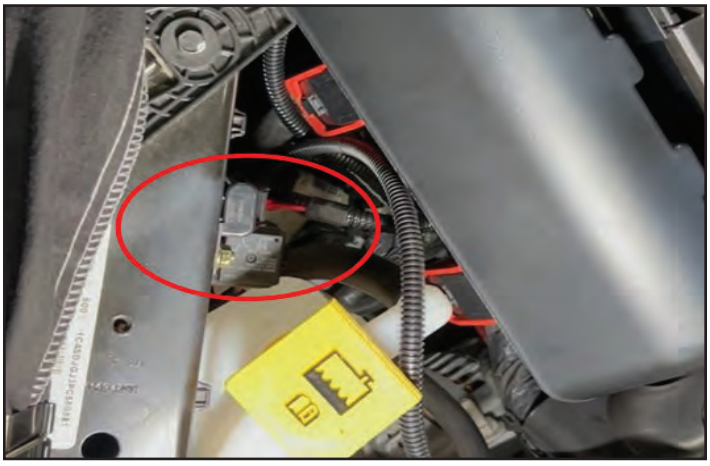
99. Remove the fuse from location F66 and install the copper tap that is crimped onto the end of the yellow wire. Re-install the fuse back into location F66.



100. Remove the 13mm ground post and connect the BLACK ground wire to the base of it. Re-install the post and tighten it securely.



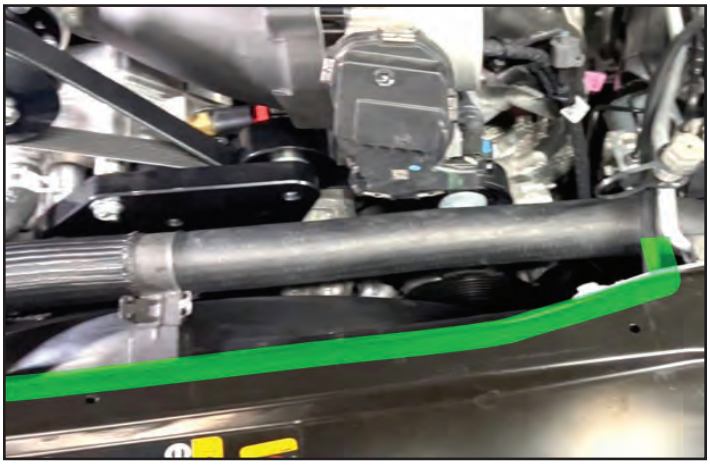
101. Install the provided 15 amp fuse into the fuse holder. Route the fuse and relay around to the RH front corner of the vehicle by the windshield washer bottle. Locate a suitable hole along the RH frame rail. Using an M6 X 16mm long fastener and a nut, secure the relay and fuse to the frame rail.



102. Route the intercooler pump harness from the relay, behind the RH headlight and up under the upper radiator cradle in the green highlighted area. Zip ties are provided in the kit to secure it in place as needed. Ensure it will not become caught in the fan or pinched anywhere.

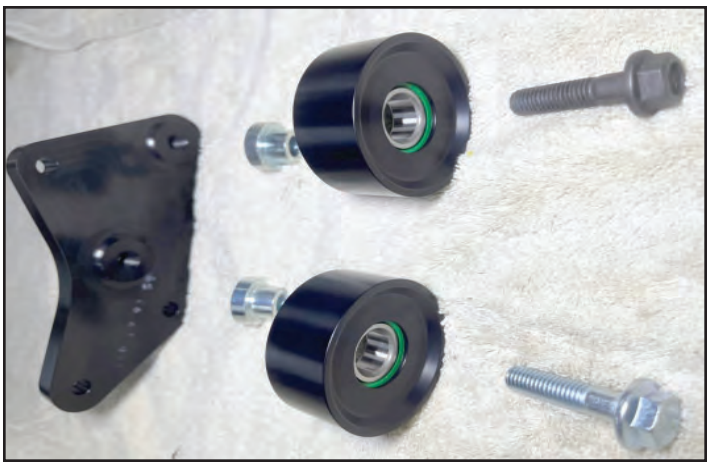


103. Continue routing the harness under the radiator cradle, toward the upper radiator hose connection to the radiator (highlighted in green), then down toward the intercooler pump. Connect the harness to the pump. Bundle any excess wire together by the pump using zip ties. Secure the harness with zip ties along the route as required.



Section 8: FEAD Bracket Sub-Assembly

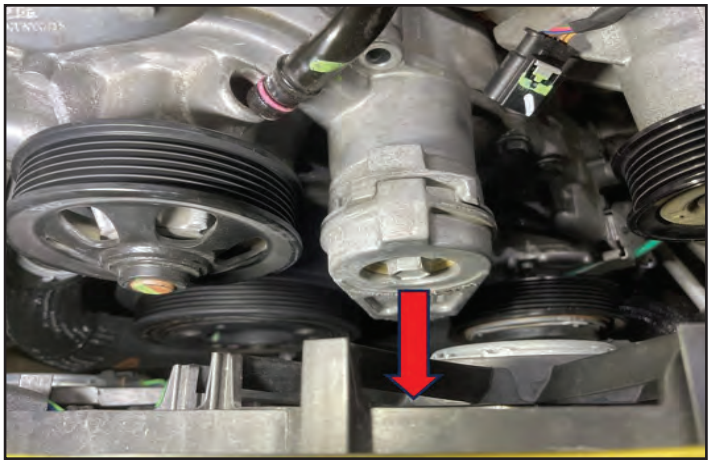
104. Sub-assemble (2) spacers PN 69-90-57-023, (2) idlers PN 56-06-01-060-BL and (2) M10X1.5X40mm long fasteners PN 71-10-15-040 onto bracket PN 65-26-61-023. Review the bracket sub-assembly drawings at the back of this manual for your applicable model year.



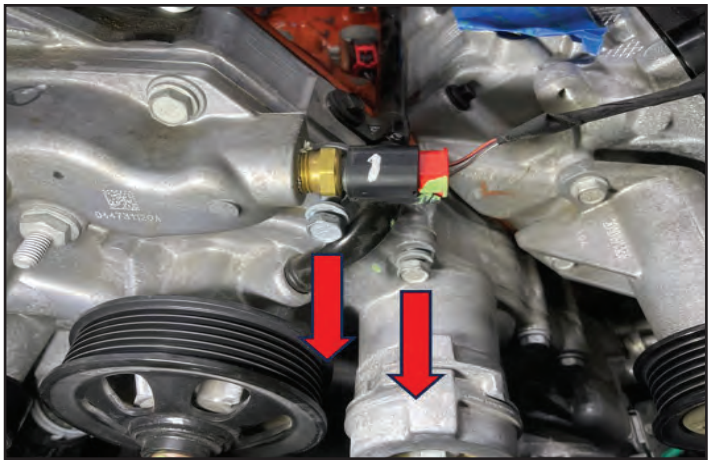
105. Idlers must be installed with the snap ring facing the stand-off on the idler bracket. Clamp the idler and bracket sub-assembly in a vice to secure it then torque the fasteners to 27 ft-lbs.



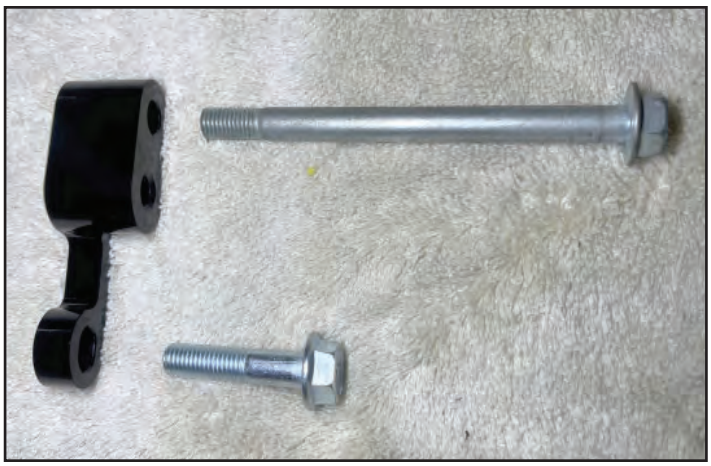
106. Remove the tensioner from the front of the engine using a 16mm socket.



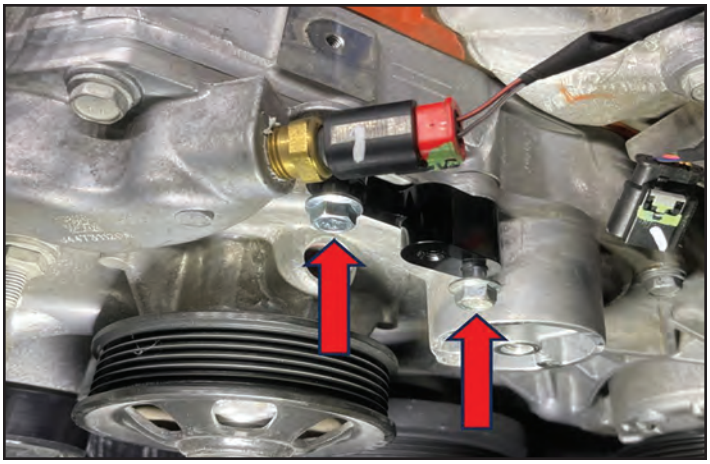
107. Remove the 2 fasteners in the locations shown on either side of the heater tube.



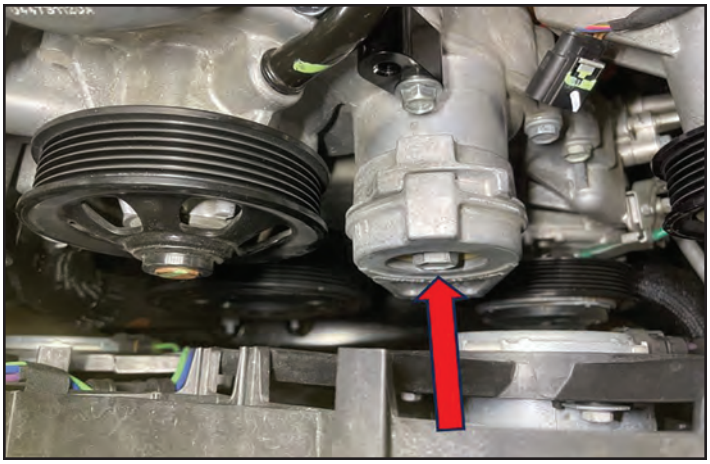
108. Select the following parts: Bracket (PN 65-26-61-025), M8X1.25X110mm long fastener (PN 71-08-12-110), and M8X1.25X40mm long fastener (PN 71-08-12-040).



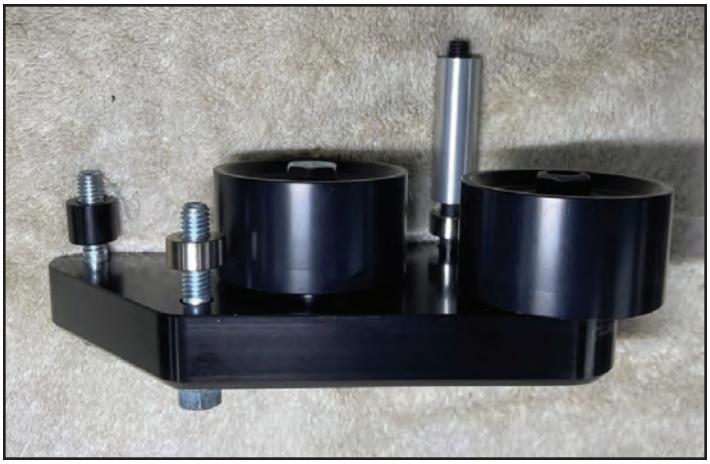
109. Install the bracket assembly into the location shown on the water pump housing. Torque the fasteners 18 ft-lbs.



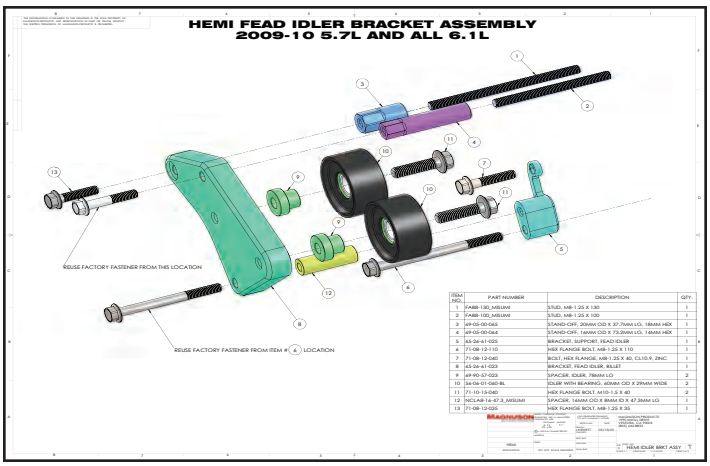
110. Re-install the factory tensioner using a 16mm socket. Torque the tensioner to 33 ft-lbs.



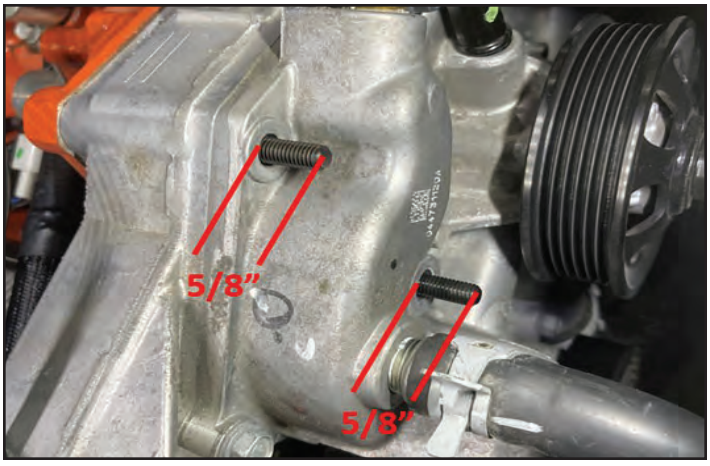
111. Sub-assemble the large billet idler bracket PN 65-26-61-023 with the components shown in the drawing applicable to your model year vehicle (late-model 6.4L version shown, early version similar).



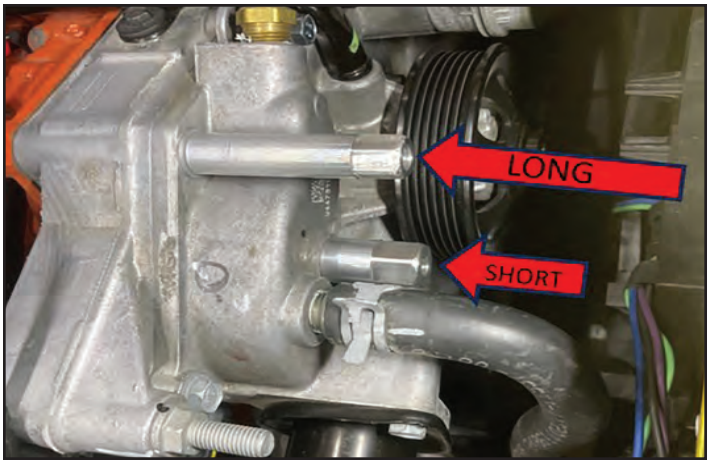
112. You will find an assembly drawing of the FEAD Idler bracket assembly at the back of this manual. There is one for 2009-2010 model years and another for 2011+. Torque the idler fasteners 18 ft-lbs.



113. Install the threaded studs through the water pump housing until approximately 5/8” remains protruding from the housing.



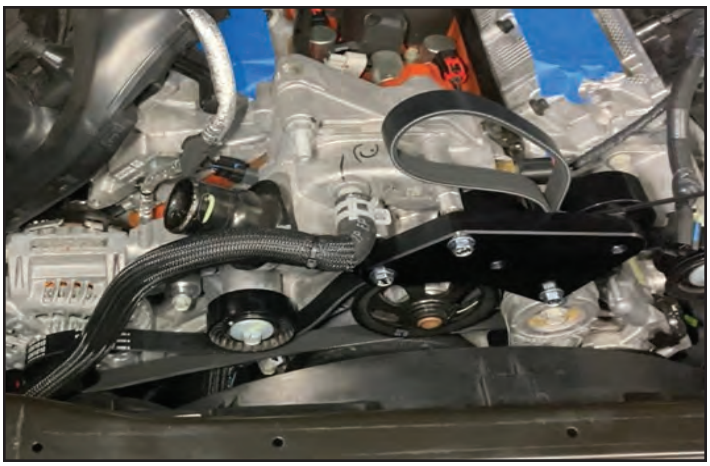
114. Install the short and long aluminum stand-offs in the locations shown. Torque the stand-offs to 18 ft-lbs.



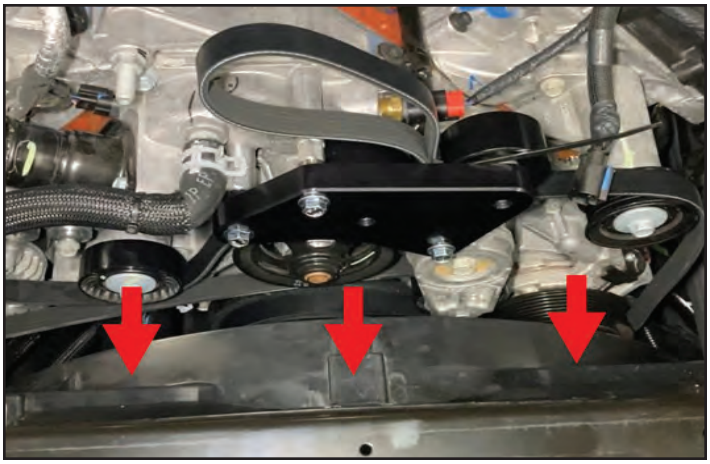
115. Select the appropriate serpentine belt for your application: Gates # K061010 for 2013+ cars and K061020 for Pre-2013 cars.
Pre-install the new serpentine belt over all the factory pulleys and zip tie it to secure it in place temporarily as shown. A bungee cord can also be used to hold it out of the way during supercharger installation. A belt routing diagram is provided in the Appendix at the back of the manual.



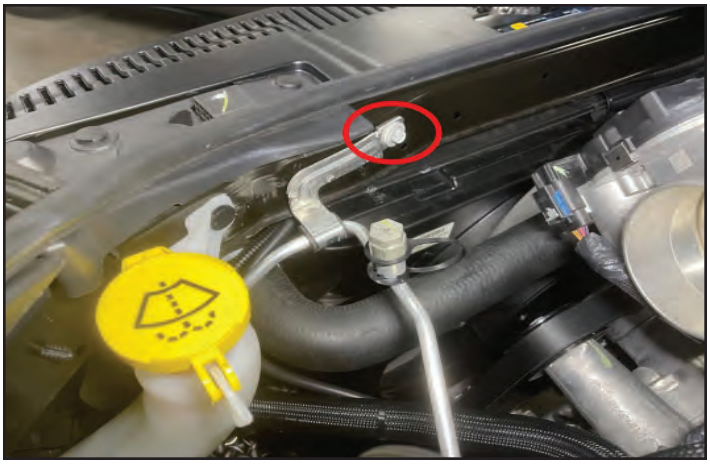
116. Install the bracket sub-assembly onto the front of water pump housing, ensuring the spacers stay on the fasteners. Ensure the belt is routed below the LH stand-off and in between the two idler pulleys as shown. Torque (3) bracket bolts to 18 ft-lbs.



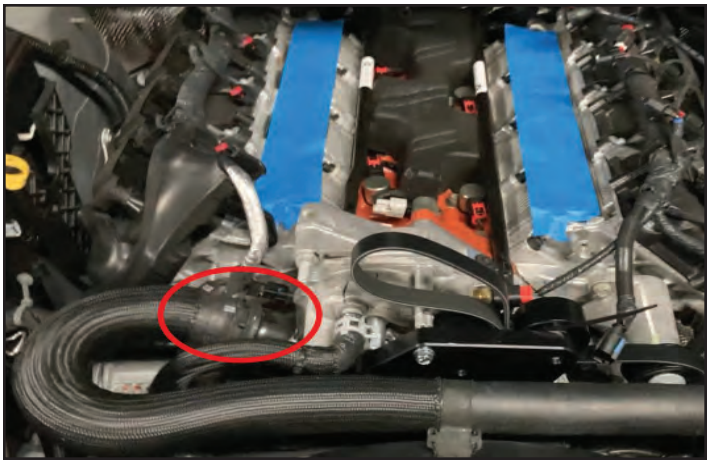
117. Re-install the radiator shroud, ensuring it engages back into the factory retention locks.



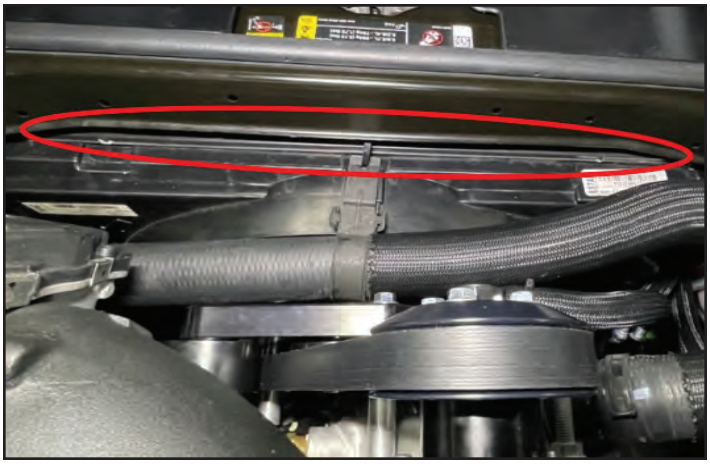
118. Re-fasten the A/C line bracket using the original bolt. Torque it to 7 ft-lbs.



119. Re-install the upper radiator hose.



120. Re-install the radiator shroud closeout panel, securing it with the factory screws.

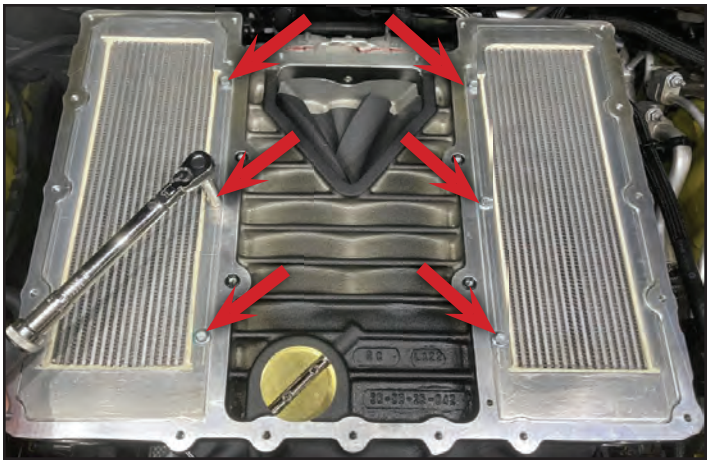


Section 9: Supercharger Preparation

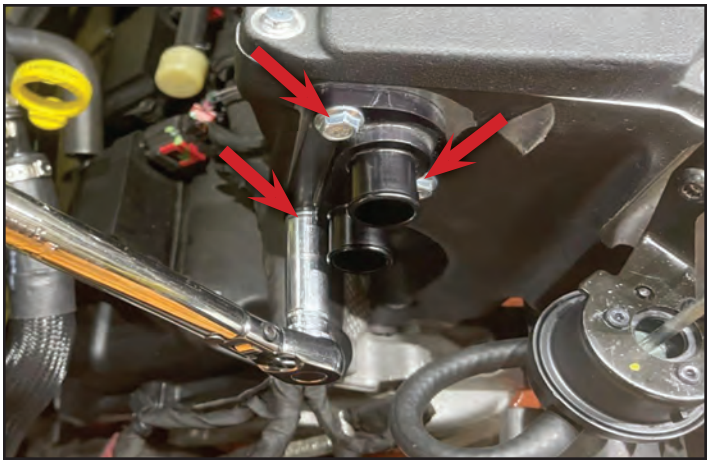
121. The supercharger must be partially disassembled prior to installation in the vehicle. Remove all the fasteners securing the upper lid to the base.



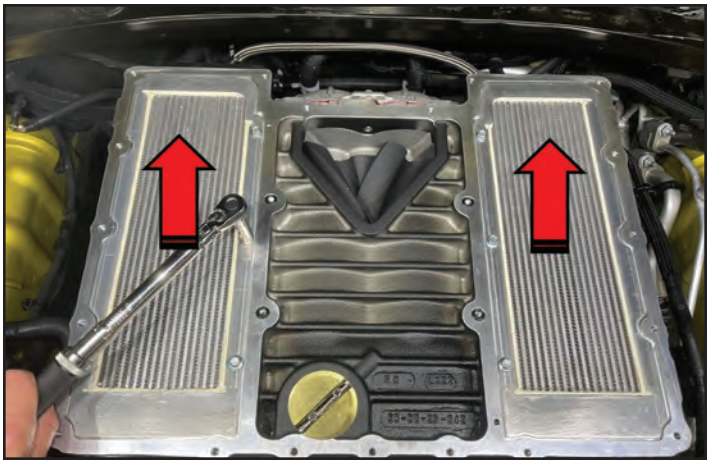
122. Remove (6) internal fasteners securing the CAC's to the base.



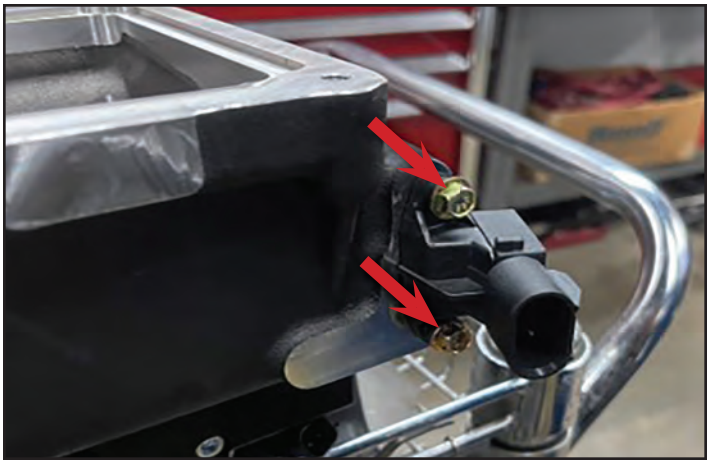
123. Remove (6) turret fasteners from the front securing the turrets to the base. Three fastener locations are shown here.



124. Carefully remove the LH and RH CAC's out of the intake and set them aside.



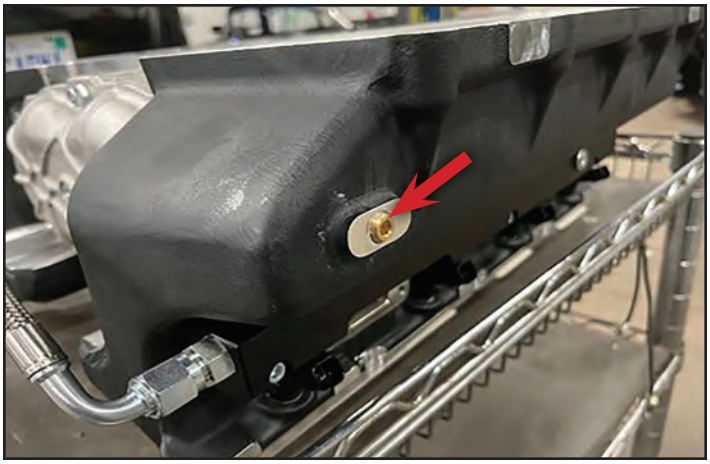
125. Install the new MAP sensor into the LH rear corner of the supercharger PN 82-55-57-009. Secure the MAP sensor to the supercharger using (2) M5X0.8X20mm long bolts PN 72-05-08-020. Torque to 70 in-lbs.



126. Orient and install (2) supercharger to intake gaskets, ensuring the ports for the PCV and oil fill align with the holes in the casting. Secure the gaskets to the supercharger using (4) nylon push pins PN 69-99-05-004 at the 4 green circles.



127. If you are installing a boost gauge, there is a spare 1/8” NPT plug on the RH rear corner of the supercharger for this provision.



128. Select the throttle body spacer PN 35-26-61-041 and gasket 80-99-01-064. Install the gasket and spacer onto the supercharger inlet using (4) M6X1.0X20mm socket head cap screws PN 72-00-06-020. Torque the fasteners 89 in-lbs.



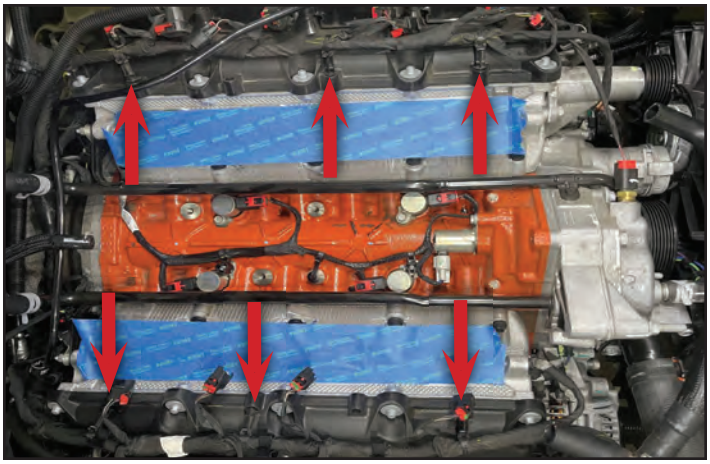
129. Remove the stock throttle body from the factory intake. Harvest the factory throttle body gasket from the intake and install it onto the inlet adaptor on the supercharger.



130. Select the supercharger pulley PN 57-03-06-090-BL and (4) fasteners PN 71-06-10-016. Apply blue Loctite 242 to the fasteners then install the pulley onto the front of the supercharger. Torque the fasteners to 106 in-lbs.



131. Remove the fir tree connectors securing the wiring harness to the valve covers (6 places).



132. Carefully cut and remove the zip tied connections from the harness at all (6) locations.



133. Remove any material covering the intake ports. Ensure they are wiped clean and no foreign material has entered the engine.



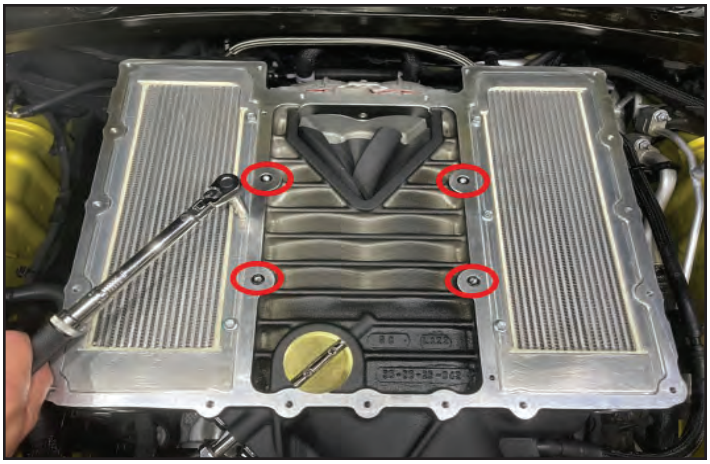
134. With the aid of a helper, install the supercharger onto the engine.



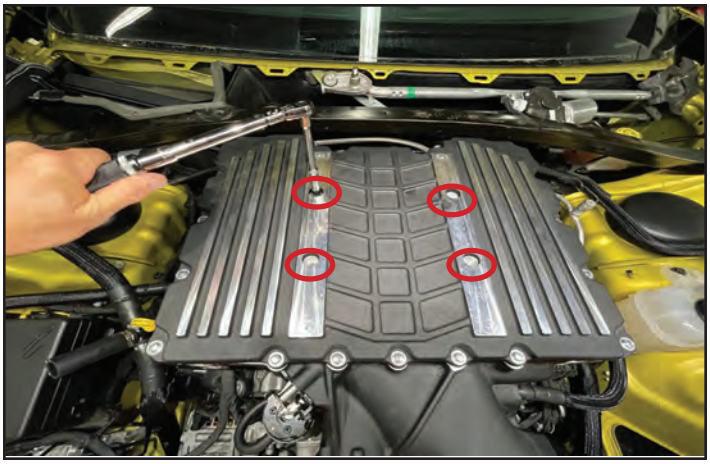
135. Apply blue Loctite 242 to the (10) M6X1.0X40mm long fasteners and install them into the supercharger mounting locations. Hand-start and zero-torque all fasteners as shown in the diagram at the back of this book. Pre-torque all 10 fasteners to 53 in-lbs in sequence. Final torque all 10 fasteners to 106 in-lbs in sequence.



136. Re-install the charge air coolers into the supercharger ensuring the coolant ports line up with the holes in the front of the housing. Apply blue Loctite 242 to (6) inboard CAC fasteners and re-install them. Torque them to 84 in-lbs. Ensure the (4) black O-rings are in place as shown in the photo.



137. Re-install the supercharger lid onto the housing. Re-install all the lid fasteners. Make sure to remove the Magnuson badges to allow access to the four center bolt (M6x30mm) locations circled in red here. These M6x30mm bolts are located in a supplied bag. Follow the sequence for the lid bolts shown at the back of this manual. Zero torque the fasteners first before applying the final torque. **Final torque the lid fasteners to 106 in-lbs.**



138. Select the charge air cooler turrets. Apply Lubriplate to the O-rings as shown below then re-install them to the appropriate sides of the supercharger. **Re-install the original turret fasteners, run them down then final torque them to 106 in-lbs**.





139. Re-connect the wiring harness take-outs for all 8 fuel injectors. Ensure the locks are engaged on all 8 connectors. RH shown, LH side similar.



140. Route the factory fuel vapor line toward the left front corner of the supercharger. Remove the 90-degree rubber elbow from the end of the fuel vapor line. **Select the length of 3/8" bulk hose from the kit. Cut a 3" long piece of hose off one end.** Secure the hose to the fuel vapor line using a constant tension clamp from the kit at the red arrow. Install the fuel vapor line onto the lower port on the supercharger inlet as shown with another constant tension clamp at the yellow arrow.



141. Re-connect the fuel line to the fuel rail on the LH side of the supercharger. Ensure the connector is fully seated, you will hear it click into place. Cycle the red lock on the connector. Pull back on the connector ensuring it does not come off.



142. Route the factory brake booster hose around the LH side of the supercharger. Install it to the upper port on the supercharger behind the throttle body. Secure the hose with a 3/8” constant tension clamp at the circled location. Secure with a Zip tie the hose as required to secure it in place.

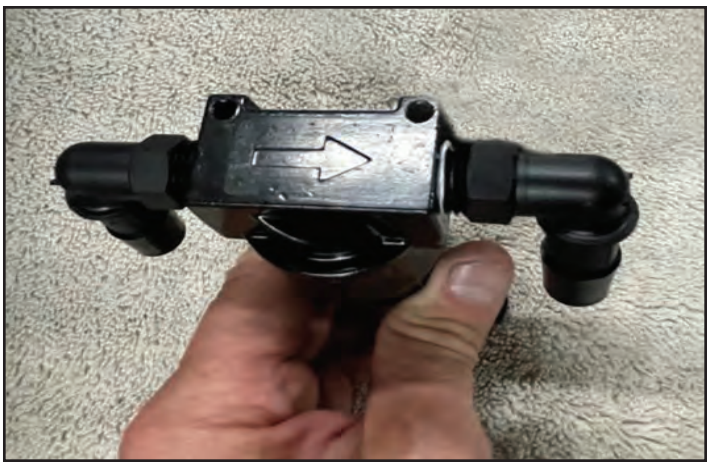


143. Select the coolant reservoir mounting bracket PN 65-26-61-029 and (2) M8X1.25X16 fasteners PN 71-08-12-016. Install the bracket to the LH side of the supercharger using the 2 fasteners as shown. Torque the fasteners to 11 ft-lbs.

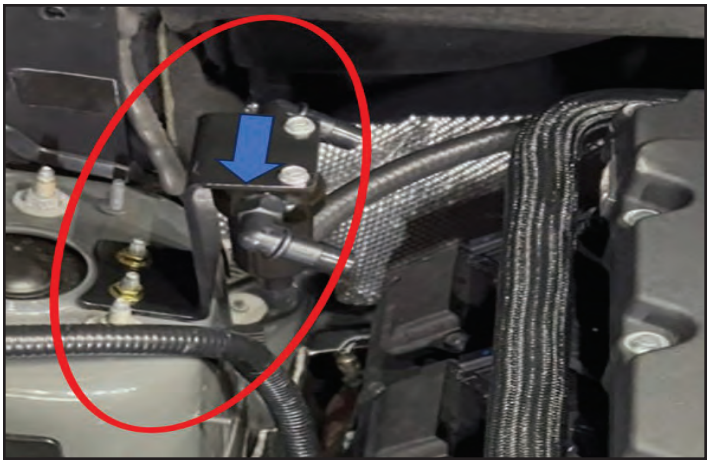


Section 10: Oil Separator Installation

144. Select the oil separator assembly from the kit. Note the airflow direction on the top of the separator.



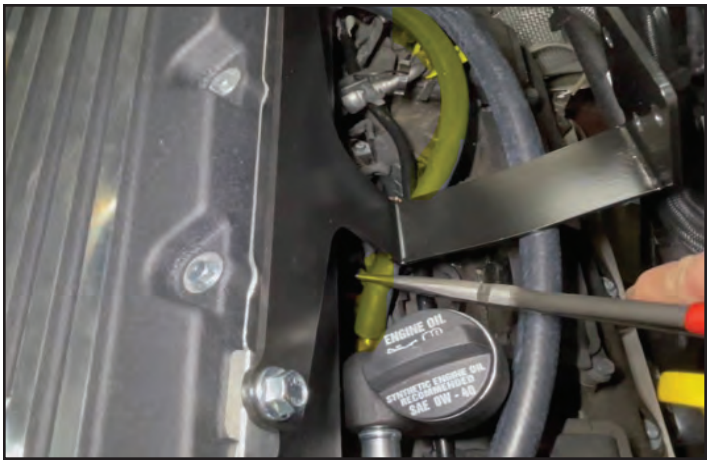
145. Mount the oil separator to the supplied bracket (arrow faces toward the front of the vehicle) using 2 self-tapping fasteners PN 74-74-08-038 then install the bracket onto the (2) factory studs on the top of the RH shock tower at the location shown. Secure it using (2) M6 nuts from the kit.



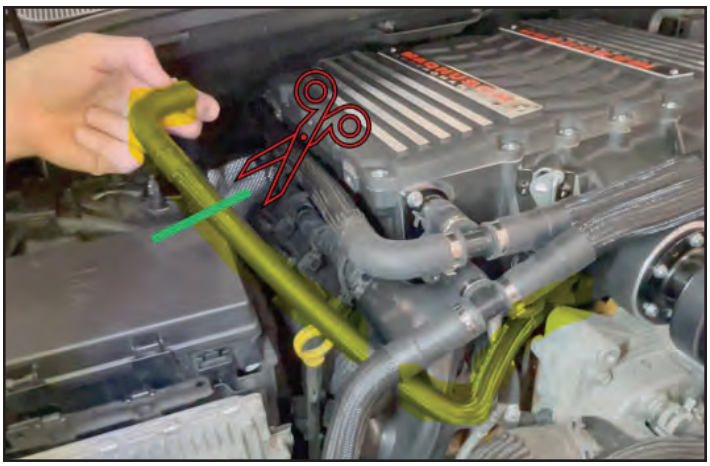
146. Select the 3/8” bulk hose from the kit. Install one end onto the drain port at the bottom of the oil separator.



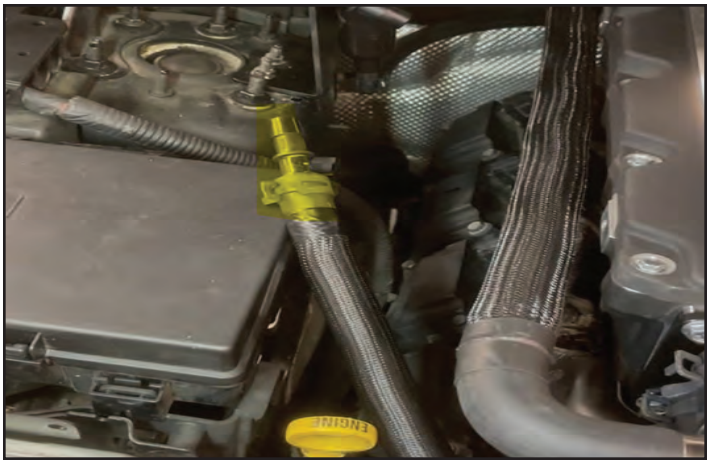
147. Route the opposite end of the hose around the back of the supercharger and over to the barbed fitting at the back of the oil fill adaptor as shown. Cut the hose to length and install it onto the fitting.



148. Select the U-shaped PCV hose shown in the photo. Install the long end onto the port below the bypass actuator. Cut the opposite end in the approximate location shown.



149. Install a ½" mender and 21mm constant tension clamp onto the end of the PCV hose as shown.



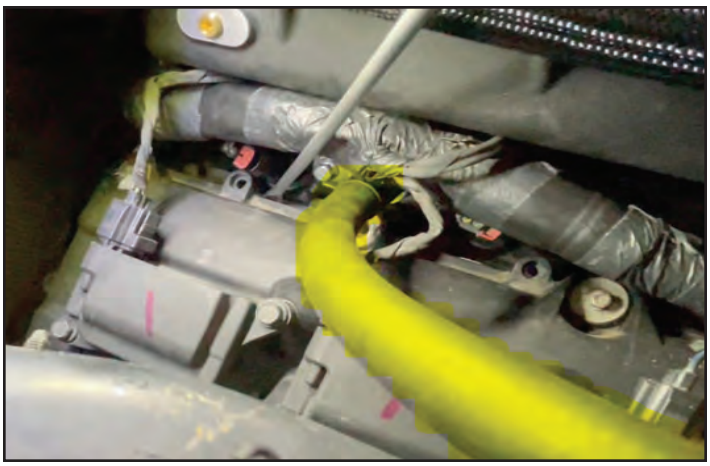
150. Select the ½" I.D. bulk hose from the kit. Install it onto the mender and secure it with another 21mm constant tension clamp.



151. Route the length of bulk hose toward the front port on the oil separator, cut it to the appropriate length and install it, ensuring it is fully seated. A clamp is not required. Zip tie the hose against the wiring harness to secure it..



152. Install a 21mm constant tension clamp onto the end of the remaining ½" bulk hose. Install the end of the hose onto the PCV valve at the RH rear corner of the supercharger. Secure the hose using the clamp.



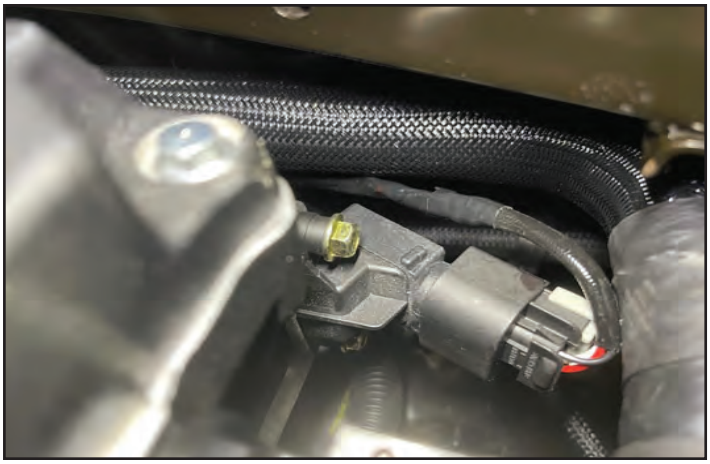
153. Cut the hose to length and install it onto the rear port of the oil separator. A clamp is not required.



154. Install the OE oil fill cap into the threaded hole at the LH front corner of the supercharger



155. Install the MAP sensor jumper harness PN 82-55-80-042 between the new sensor at the LH rear of the supercharger and the factory connector at the RH rear of the engine compartment.



Section 11: Intercooler Hose Routing

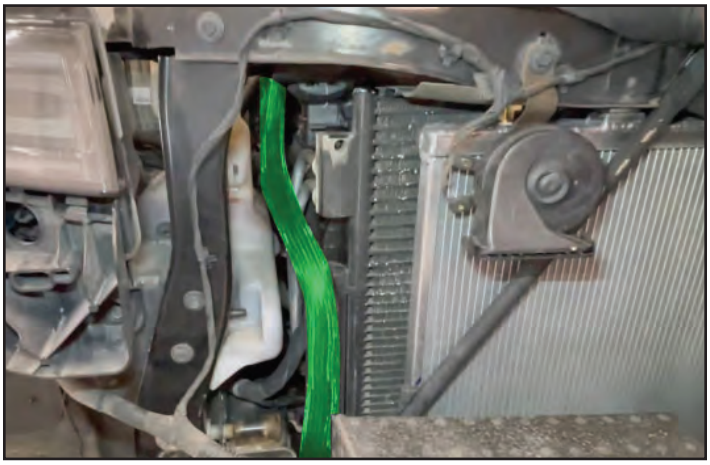
156. Select the 003C hose from the kit.



157. Install the 003C hose (highlighted in green) to the LH and RH LOWER ports on the supercharger, securing it with 3/4" constant tension clamps from the kit as shown.



158. Route the opposite end of the 003C hose down in between the coolant reservoir and RH side of the radiator, then behind the pencil brace as shown highlighted in green.



159. Install a ¾" constant tension clamp over the hose then install the 003C hose (highlighted in green) onto the RH side of the LTR. Secure the hose using the clamp.

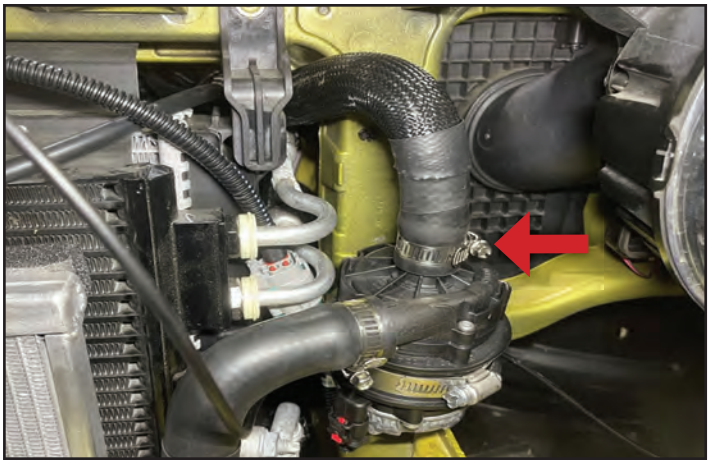


160. Gather the supercharger coolant reservoir. Use (3) M6X1.0X16mm long fasteners PN 71-06-10-016 to secure it to the bracket on the LH side of the supercharger.



161. Select the pre-formed hose shown from the kit shown below. Install the end with the 90 degree bend through the front cradle beside the radiator and onto the coolant pump as shown. Secure the hose with a constant tension spring clamp.





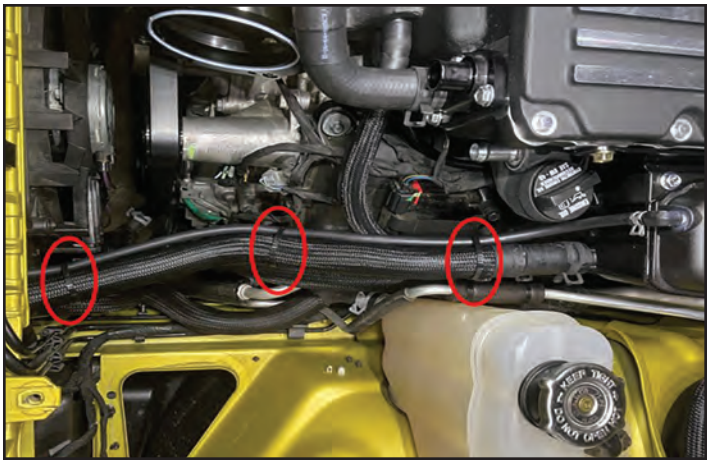
162. Route the opposite end of the pre-formed hose (highlighted in green) from the last step toward the intercooler reservoir. Install the hose to the front of the reservoir and secure it with a ¾" constant tension clamp.



163. Find the ¼" hose previously installed to the low temp radiator. Route the ¼" hose along side the ¾" hose installed in the previous slide. Trim the hose to length as necessary then apply Lubriplate to the hose barb on the reservoir and install the ¼" hose, securing it with a ¼" constant tension clamp.



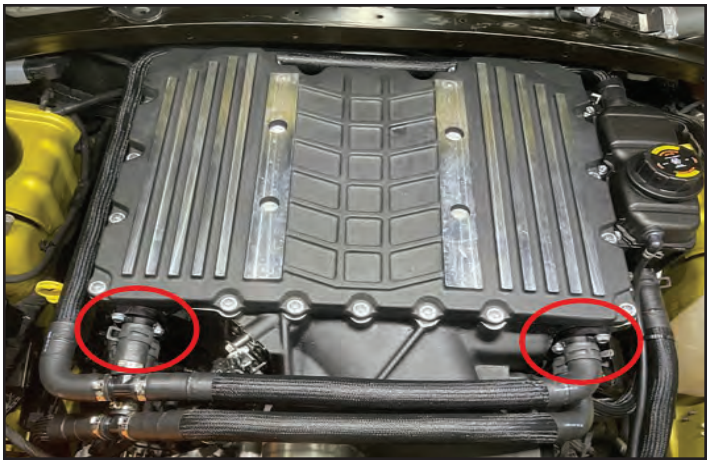
164. Use zip ties to secure the ¼" hose beside the ¾" hose as necessary.



165. Select the hose assembly shown in the attached photo.



166. Install the hose assembly onto the charge air cooler upper ports as shown. Secure the hose using ¾” constant tension clamps.



167. Route the opposite end of the hose around the back of the supercharger, over to the fitting on the back of the coolant reservoir. Select a 3/4” constant tension clamp, install it over the hose then install the hose onto the fitting at the back of the reservoir.



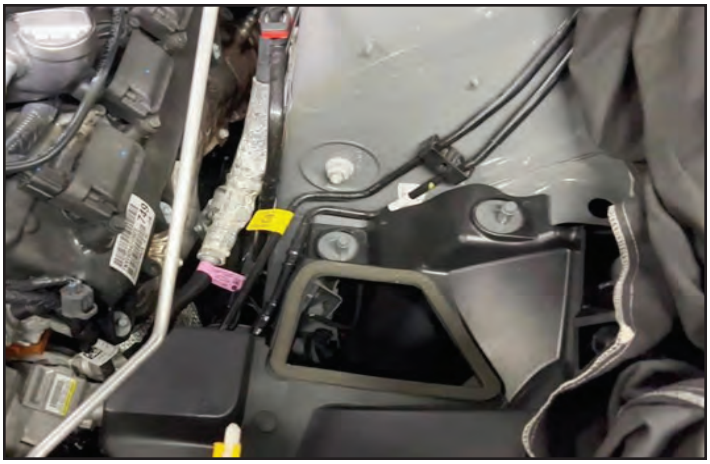
Section 12: Final Connections

168. Install the factory throttle body using (4) M6X1.0X40mm long fasteners PN 71-06-10-040. Tighten the throttle body fasteners in a criss-cross pattern. Install the throttle body electrical connection and cycle the lock on the connector. Torque the fasteners to 106 in-lbs.

Note: 5.7L applications will require an 18” extension harness for the throttle body (available from Caspers Electronics, PN 109272R-18).



169. Re-install the lower airbox tray back into the factory location.



5.7L vehicles: It is recommended to install a quality high-flow cold-air induction system for maximum performance. If you wish to retain the stock airbox assembly, holes should be drilled through the lower airbox tray to minimize inlet restriction. See the following step for more information.

170. Skip this step if you have a 6.4L engine.

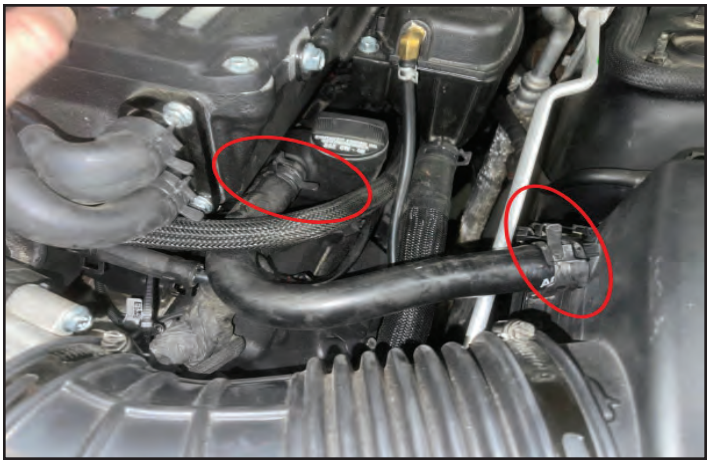


5.7L vehicles with stock air box: Use a hole saw to cut additional holes into the lower air box to reduce inlet restriction. Locations are shown for reference only – the holes can be made in any convenient location.

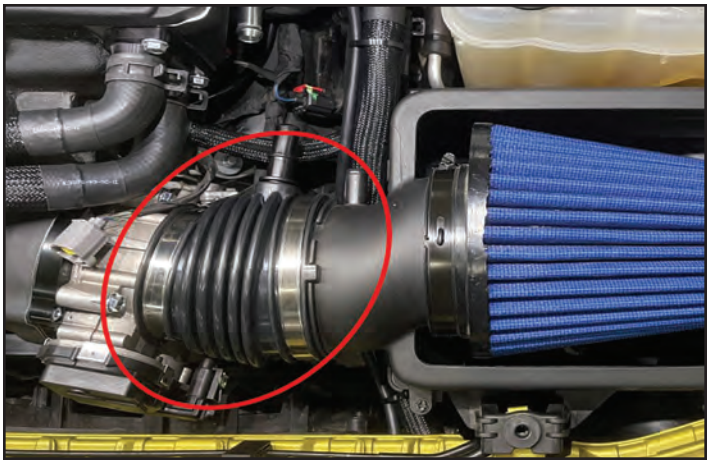
171. Re-install the factory air box



172. Connect the rubber hose from the airbox lid to the oil fill adaptor as shown. Secure both sides of the hose with a constant tension clamp at the circled areas.



173. Install the new clean air tube onto the throttle body. Install the air box back into the vehicle and re-secure it using the factory bolts. Secure the clean air tube to the throttle body and air box using the provided constant tension clamps. Durango /Grand Cherokee clean air tube PN 35-20-53-063. USES factory clamps NOT C/T clamps.

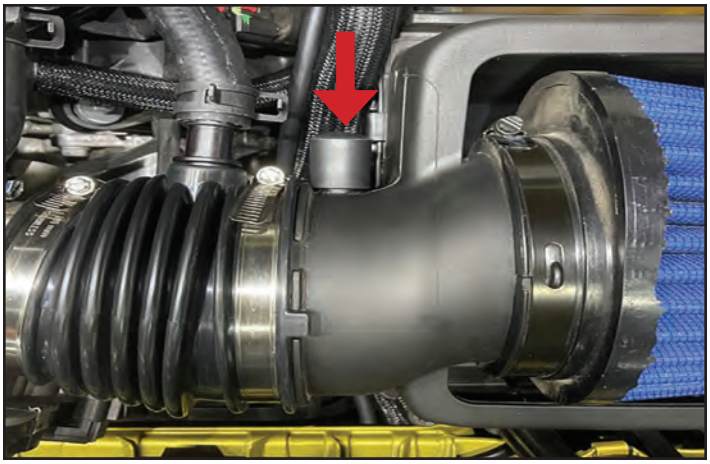


174. Install the 6 inch long piece of 5/8” I.D. rubber hose between the clean air tube and the oil fill adaptor for Mopar cold air intake. Secure the rubber hose using (2) 5/8” constant tension clamps as shown.

Note: 5.7L applications using the stock air box will use the #10 gear clamps supplied in the kit to fasten both ends of the hose.



175. If your vehicle has a Mopar cold air intake kit installed, install the ½” rubber plug onto the air box fitting in the location shown. Note: Cold air kit upper lid that fastens to the underside of the hood must be removed (insufficient clearance to supercharger)



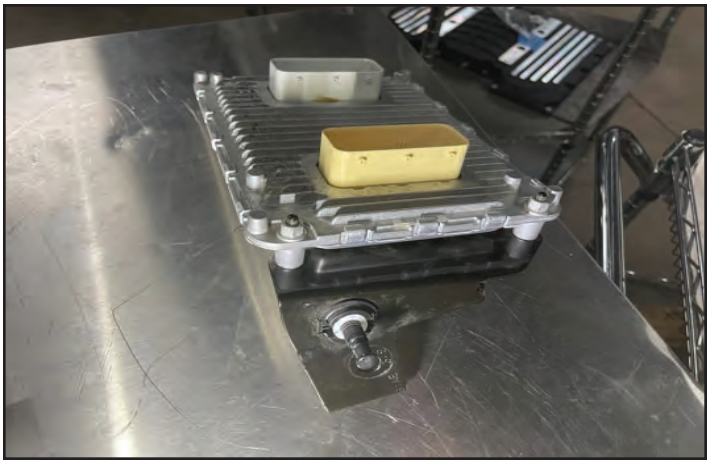
176. Install the intake air temp jumper harness PN 82-55-53-009 to the factory connection at the LH front of the engine.



177. Route the jumper harness under the front of the supercharger and over to the sensor located on the RH front corner, under the bypass valve. Plug the harness into the sensor ensuring it locks into place.



178. Re-install the bracket to the PCM in the orientation shown. Secure the bracket using the (2) factory nuts.



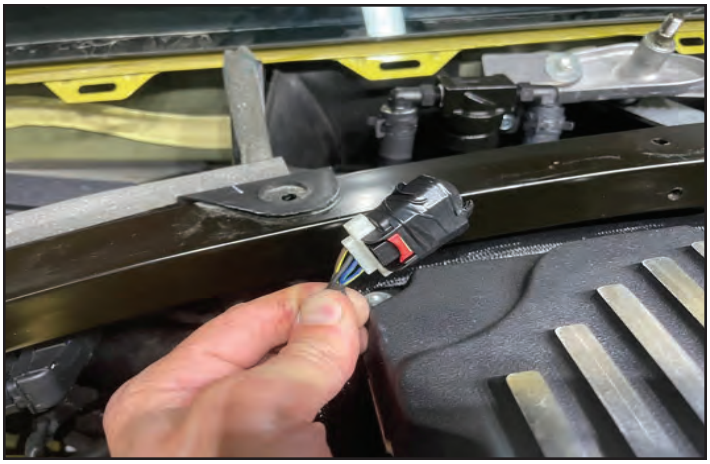
179. Re-install the PCM / bracket sub-assembly back in the RH side of the cowl. Re-attach both PCM connectors and the hood latch sensor connector.



180. Secure the PCM bracket to the cowl using the factory bolt.



181. Tape up the factory CMCV connector with electrical tape.



182. Trim the drivers' side plastic close out panel in the location shown to provide clearance for the intercooler pump hose. Re-install the closeout panel then re-attach the ambient air temp sensor. Re-install the passenger side close out panel (not shown but similar to drivers side.)



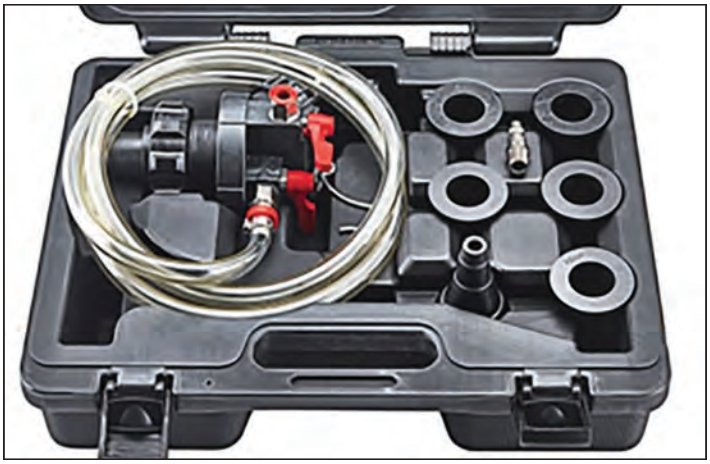
183. Re-install the front fascia reversing the steps found at the front of the manual. Push pins are provided to secure it in place where the original factory rivets were used.



184. Re-fill both coolant systems with Mopar antifreeze PN 68163849AB Use of a vacuum bleed tool is highly recommended. The intercooler pump will shut down automatically if it detects excessive air in the system.
Consult your owners manual and ensure you purchase the correct coolant for your vehicle.



Section 13: Engine Radiator and Intercooler System Filling



185. **If air is present in the system, the intercooler pump will automatically shut off leading to excessively high intake air temperatures which can cause engine damage. Therefore we highly recommend using a cooling system vacuum purge and refill kit as shown here to properly fill the system.**



186. Note: The photos shown are of a different supercharger kit but the process is the same. Your tool may be slightly different from ours so make sure to read all the documentation that came with it prior to use. Remove the cap from the degas bottle and using the correct adapter, connect the “Evac” tool to the filler neck.



187. Consult your owner’s manual and select the correct coolant for your vehicle. Failure to select a compatible coolant may cause contamination of the coolant system and potentially lead to overheating issues. Connect the shop air to the tool, and submerse the fill hose into the fill coolant container.



188. Pull a partial vacuum on the system and close the vacuum line.

189. Refill BOTH the intercooler AND engine coolant systems. Slowly open the fill valve and purge all the air out of the fill hose to avoid any air being introduced during the fill process, and once the coolant gets to the valve close it.



190. Pull a vacuum until all of the air is out of the system. All of the intercooler system hoses will be fully collapsed and the needle will stop rising. Close the vacuum valve and let the system sit for a few minutes and make sure the vacuum holds. This will help insure that the system has no leaks. If the gauge loses vacuum, YOU HAVE A LEAK somewhere in the system. This leak must be found and repaired as it could be a rolled O-Ring on the extension tubes from the coolant manifold to the CAC (Charge Air Cooler). If an O-Ring is leaking then the coolant from this system can leak into the engine and cause damage.



191. If the system is found to be leak free you can open the fill valve to allow coolant to enter the system. Once all the vacuum is gone, remove the tool from the tank, but do not install the cap yet. At this point start the engine and make sure the coolant is flowing vigorously through the bottle. (The pump takes a few seconds to ramp up so be patient). Once the coolant is flowing, shut the engine off and let the coolant settle. Once the coolant has settled, fill the bottle so that the level is just above the inlet to the tank.



192. If you are unable to use a vacuum purge and refill kit you can follow the directions in the next step to fill your system manually.

193. Option #2: Manual filling.

a. Using a coolant funnel attach the correct adaptor to the intercooler reservoir.
b. Connect the funnel to the adaptor.
c. Fill the funnel to the ½ way mark with a 50/50 mixture of the same coolant approved by the OEM. If you don't have the funnel shown make sure the reservoir tank is full.
d. Remove the trigger wire from the fuse in the fuse box and touch it directly to a 12 volt source. While the pump runs you need to massage the 31-19-36-011C hose to try and force the air up out of the system. Repeat touching the trigger wire to the 12V source for the duration of the pump running.
e. As the level drops in the tank, make sure that you pause and refill the tank to prevent any air from getting back into the system.
f. Once coolant starts flowing keep the trigger wire to the 12V supply, add coolant as needed until the coolant flows consistently.
g. Remove the trigger wire from the 12V source. Fill the tank back up to above the inlet port to the tank, put the cap on, and re-connect the trigger wire to the fuse in the fuse box.
h. Start the vehicle and verify the intercooler system is running.



194. Start the vehicle for 5 seconds and shut it off. Check for fuel leaks and supercharger belt alignment. Check the intercooler reservoir level. Now start your engine and let it run for a few minutes to let it get to operating conditions. Let the engine cool down, and check all your levels again.



195. Re-connect the battery.





Make sure that you have followed step #2 in this manual to load the proper supercharger calibration to your vehicle's PCM.

Section 14: Testing

196. Start the vehicle and check for leaks. Verify the coolant levels in both reservoirs.



197. Test drive your vehicle for a while taking care to not get into boost immediately. **Do not perform any wide open throttle tests at this time.** 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.



198. 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 questions about your vehicles performance, please check with your installation facility.

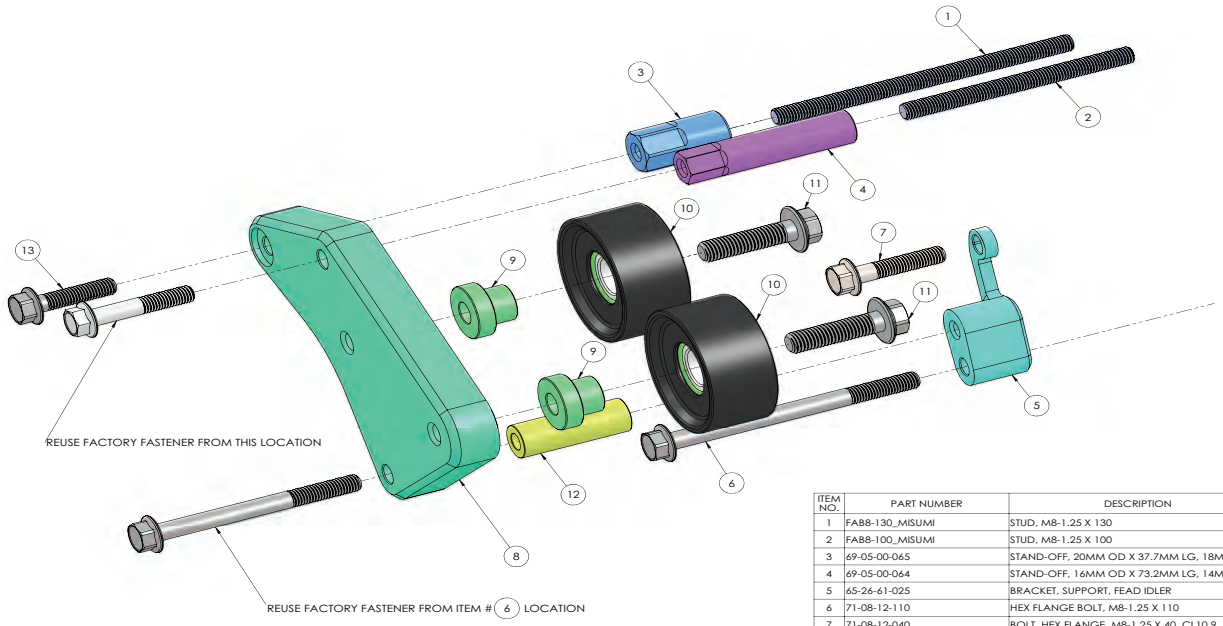


After you finish your installation and road test your vehicle, please fill out the warranty registration. This can be found on our website.

Appendix

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HEMI FEAD IDLER BRACKET ASSEMBLY
2009-10 5.7L AND ALL 6.1L



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FA88-130_MISUMI	STUD, M8-1.25 X 130	1
2	FA88-100_MISUMI	STUD, M8-1.25 X 100	1
3	69-05-00-065	STAND-OFF, 20MM OD X 37.7MM LG, 18MM HEX	1
4	69-05-00-064	STAND-OFF, 16MM OD X 73.2MM LG, 14MM HEX	1
5	65-26-61-025	BRACKET, SUPPORT, FEAD IDLER	1
6	71-08-12-110	HEX FLANGE BOLT, M8-1.25 X 110	1
7	71-08-12-040	BOLT, HEX FLANGE, M8-1.25 X 40, CL10.9, ZINC	1
8	65-26-61-023	BRACKET, FEAD IDLER, BILLET	1
9	69-90-57-023	SPACER, IDLER, 78MM LG	2
10	56-06-01-060-BL	IDLER WITH BEARING, 60MM OD X 29MM WIDE	2
11	71-10-15-040	HEX FLANGE BOLT, M10-1.5 X 40	2
12	NCLA8-16-47.3_MISUMI	SPACER, 16MM OD X 8MM ID X 47.3MM LG	1
13	71-08-12-035	HEX FLANGE BOLT, M8-1.25 X 35	1

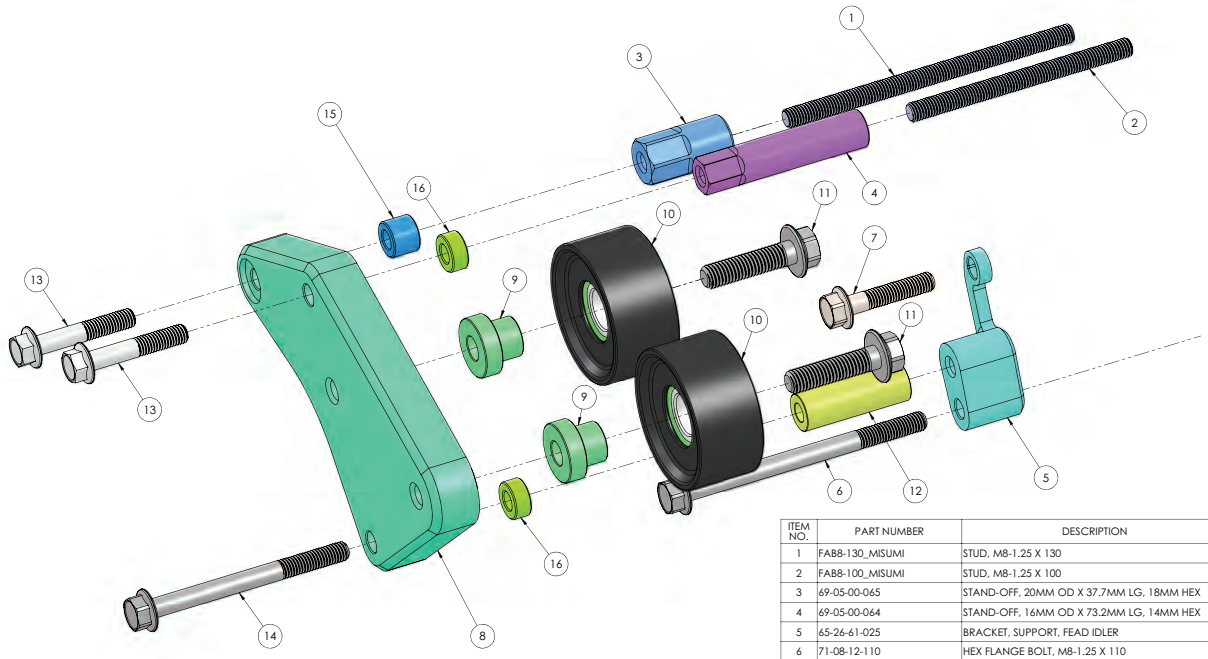
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VENTURA, CA 93003
(805) 642-8833

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Appendix

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HEMI FEAD IDLER BRACKET ASSEMBLY
2011+5.7 AND ALL 6.4L



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FAB8-130_MISUMI	STUD, M8-1.25 X 130	1
2	FAB8-100_MISUMI	STUD, M8-1.25 X 100	1
3	69-05-00-065	STAND-OFF, 20MM OD X 37.7MM LG, 18MM HEX	1
4	69-05-00-064	STAND-OFF, 16MM OD X 73.2MM LG, 14MM HEX	1
5	65-26-61-025	BRACKET, SUPPORT, FEAD IDLER	1
6	71-08-12-110	HEX FLANGE BOLT, M8-1.25 X 110	1
7	71-08-12-040	BOLT, HEX FLANGE, M8-1.25 X 40, CL10.9, ZINC	1
8	65-26-61-023	BRACKET, FEAD IDLER, BILLET	1
9	69-90-57-023	SPACER, IDLER, 78MM LG	2
10	56-06-01-060-BL	IDLER WITH BEARING, 60MM OD X 29MM WIDE	2
11	71-10-15-040	HEX FLANGE BOLT, M10-1.5 X 40	2
12	NCLA8-16-47.3_MISUMI	SPACER, 16MM OD X 8MM ID X 47.3MM LG	1
13	71-08-12-045	BOLT-HEX FLANGE 8mm X 1.25 X 45mm ZINC	2
14	71-08-12-090	HEX FLANGE BOLT, M8-1.25 X 90	1
15	69-05-00-012	SPACER, 0.600" OD X .323" ID X .470", BLACK	1
16	FWSSM-D16-V8-T7.3_MISUMI	SPACER, 16MM OD X 8MM ID X 7.3 LG	2

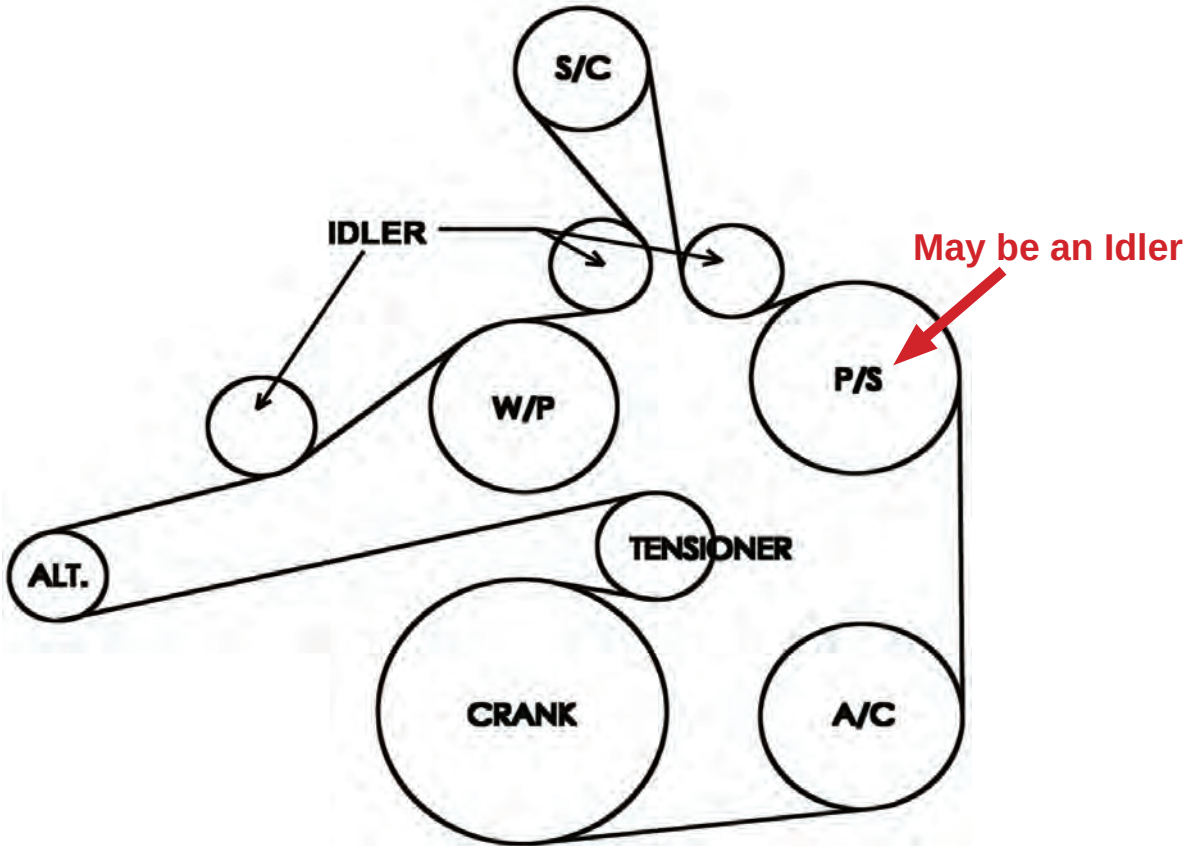
MAGNUSON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE:
DECIMALS ANGLES
.X ±.5 ±1°
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SPECIAL CHARACTERISTIC
MATERIAL
FINISH
HEMI
APPLICATION
DO NOT SCALE DRAWING

CAD GENERATED DRAWING. DO NOT MANUALLY UPDATE
APPROVALS DATE
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REF ENG
MFG ENG
QUAL ENG

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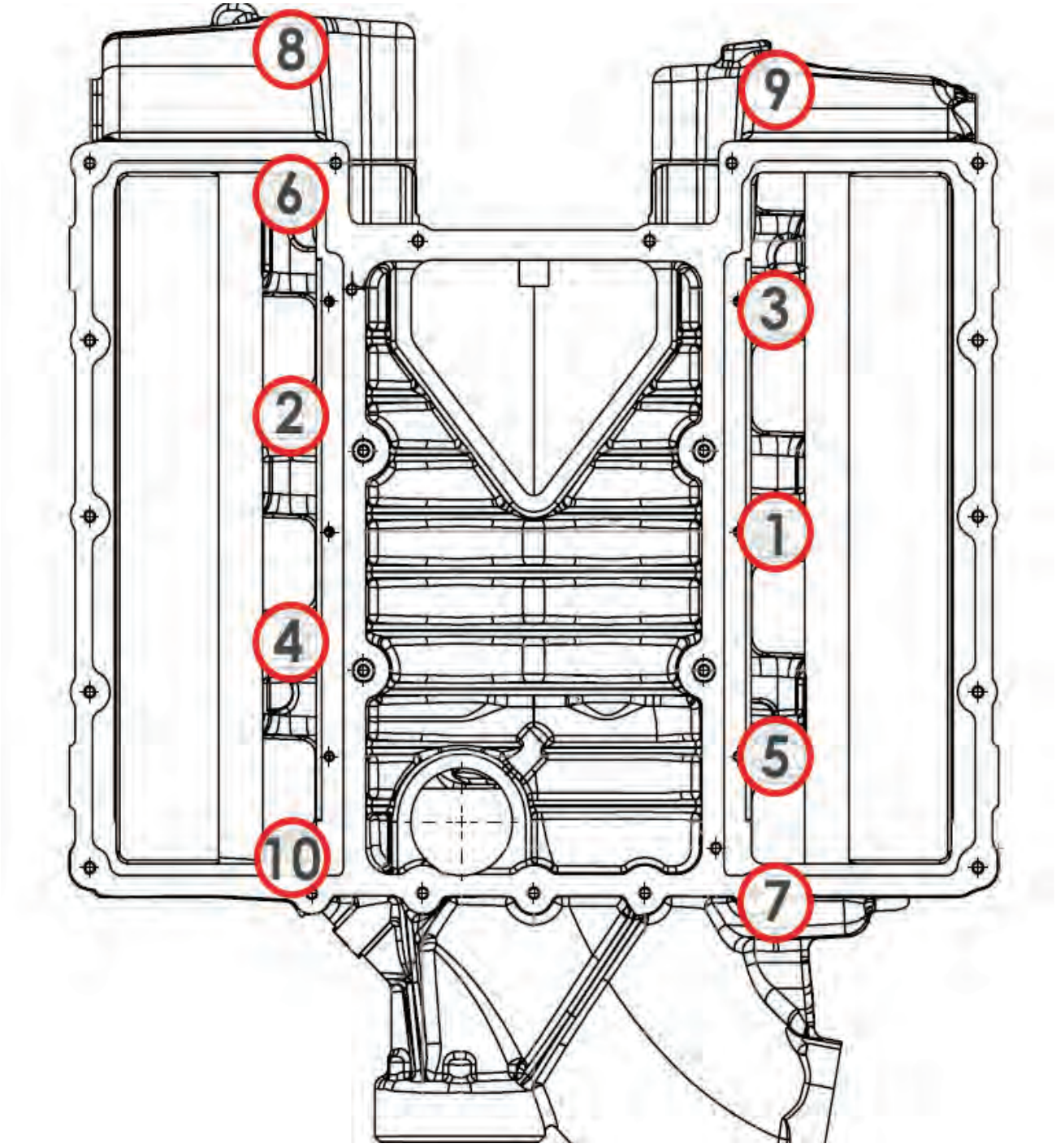
SIZE C | DRWG. NO. HEMI IDLER BRKT ASSY | REV. 1
SCALE 1:1 PRINT DATE 11/15/2023 SHEET 1 of 2



HEMI Belt Routing Diagram
(Note: An idler replaces the power steering pulley (P/S) for 2013+ vehicles with electronic power steering)

Appendix

392 Jeep Supercharger Torque Sequence

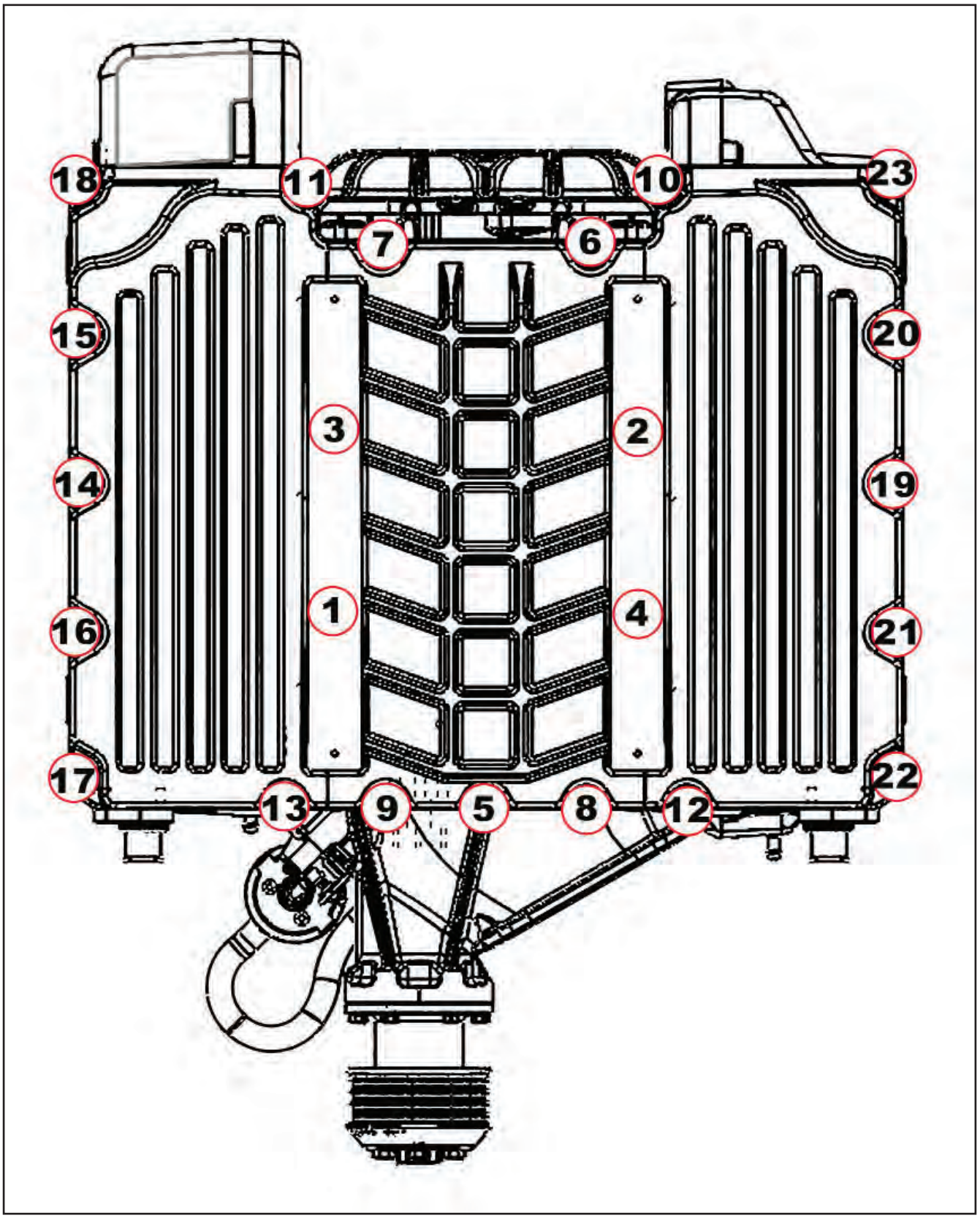


Supercharger Housing To Engine:

- **Zero Torque all 10 fasteners**
- **Pre-torque all 10 fasteners to 53 in-lbs in sequence.**
- **Final torque all 10 fasteners to 106 in-lbs in sequence.**

Appendix

392 Jeep Supercharger Lid Torque Sequence



Lid to Supercharger Housing: 106in-lbs
(This image is from our LT1 kit but the sequence is the same)



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

This supercharger system requires the use of only premium gasoline fuel, 91 octane or better. It is NOT compatible with E85, Ethanol, Flex Fuels.

NOTE: Your supercharger system is sensitive to corrosion. You must use the vehicle manufacturer specified coolant mixture in the intercooler system as well as your radiator.

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SUPERCHARGERS