MAGNUSON SUPERCHARGERS

Installation Instructions for:

01-26-53-019-BL (2019-2026 5.3L Truck / 2021-2026 SUV)

01-26-62-019-BL (2019-2026 6.2L Truck / 2021-2026 SUV)

- **5.3L Kits need 6.2L Throttle Body**



*** PREMIUM GASOLINE FUEL REQUIRED ***

ATTENTION!
Your MAGNUSON SUPERCHARGER kit is sensitive to corrosion!
Use only the vehicle manufacturer recommended coolant for your engine in the intercooler system as well.

Magnuson Products LLC
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89-89-60-043 Rev.U

Important Note: Before installing the Magnuson Supercharger kit, read through the installation procedure completely.

LIMIT OF LIABILITY STATEMENT

The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. Magnuson Performance Products reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

SAFETY PRECAUTIONS

STOP! CAREFULLY READ THE IMPORTANT SAFETY PRECAUTIONS and WARNINGS BEFORE PROCEEDING WITH THE INSTALLATION!

Appropriate disassembly, assembly methods and procedures are essential to ensure the personal safety of the individual performing the kit installation. Improper installation due to the failure to correctly follow these instructions could cause personal injury or death. Read each step of the installation manual carefully before starting the installation.

• Always wear safety glasses for eye protection.

• Place ignition switch in the OFF position.

• Always apply the parking brake when working on a vehicle.

• Block the front and rear tire surface to prevent unexpected vehicle movement.

• If working with a lift, always consult vehicle manual for correct lifting specifications.

• Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.

• Do not smoke or use flammable items near or around the fuel system.

• Use chemicals and cleaners in well-ventilated areas.

• Batteries produce explosive gases, which can cause personal injury. Therefore, do not allow flames, sparks or flammable substances to come near the battery.

• Keeps hands and any other objects away from the radiator fan blades.

• Keep yourself and your clothing away from moving parts when the engine is running.

• Do not wear loose clothing or jewelry that can get caught in rotating parts or scratch surface finishes.

• Allow the engine, cooling system, brakes and exhaust to cool before working on a vehicle. WORK SAFELY! Perform this installation on a good clean level surface for maximum safety and with the engine turned off.

INSTALLATION MANUAL

Magnuson Products
Intercooled Supercharger System
GM 5.3L, 6.2L DI Engines

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 your dealer 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.

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

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. **DO NOT add octane booster to existing fuel in your vehicle.**

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 oil filter change using the vehicle manufacturer’s specified products

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.
- Engine coolant system pressure test, flush and refill.

NOTE: YOU MUST USE THE GM SPECIFIED COOLANT MIXTURE!

You may have some additional hardware left over after you have completed this installation due to updates.

Tools Required

- Safety glasses
- Metric wrench set
- 1/4”, 3/8”, and 1/2” drive metric socket set (standard and deep)
- 3/8” and 1/2” drive foot pound and inch pound torque wrenches
- 1/2” breaker bar (for tensioner)
- Phillips and flat head screwdrivers
- Pliers, and cutters

Parts Required

- **If you have a 5.3L engine you will need to purchase a 6.2L GM throttle body shown below:**
  2019-2021 require GM part number: 12740727
  2022+ require GM part number: 12746422
  ***5.3L vehicles that installed a new throttle body may require a throttle body relearn. This can be done with some aftermarket service tools or the GM factory service tool.

IMPORTANT

NOTES:

1. For the purpose of these instructions, all references to left hand side or right hand side shall be interpreted as if being seated in the driver seat of the vehicle.

3. It is IMPORTANT to utilize 91 Octane gasoline or better with your supercharger system. Before starting this installation, on an empty tank, fill your tank to full with 91 Octane gasoline or better.

4. Never add Octane booster to your fuel. If you have used Octane Booster in the past, replace your spark plugs and check your O2 sensor before completing your supercharger install.

5. Your supercharger system is sensitive to corrosion. Use only the OEM recommended coolant mixture for your supercharger system as well as your engine.

6. Please remember to follow all safety rules that apply when working, including:
   - Wear eye protection at all times
   - Do not work on a hot engine
   - Be careful around fuel – use shop towels to catch any spills and dispose of towels properly

Contact Information:

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Table of Contents

Section 1: Tuning your Vehicle Computer and ECM Unlock 6
Section 2: Prepare for LTR Install 12
Section 3: Install LTR and Intercooler Pump 20
Section 4: OEM Manifold Removal 24
Section 5: Radiator Hose Modification 30
Section 6: Rotate Alternator and Install Tensioner and Reservoir 34
Section 7: Intercooler Pump Wiring 40
Section 8: Supercharger Preparation and Install 50
Section 9: Throttle Body, EVAP Solenoid and PCV Hose Install 63
Section 10: Intercooler Hose Install 74
Section 11: Leak Test and Final Reassembly 80

Section 1: Tuning your Vehicle Computer and ECM Unlock

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



2. Your system requires the use of minimum 91 Octane gasoline fuel. This system is not compatible with E85 fuel.



3. **Important: HP Tuners ECM Unlock Procedure**

Prior to beginning this process, you must take your vehicle to an authorized GM dealer and request that they update all vehicle modules with the latest software. Failure to have the latest updates installed on your modules may result in Loss of Communication trouble codes after your ECM has been unlocked and returned.

Disconnect and remove the ECM from the vehicle as shown in the following steps. Your ECM will need to be sent to HP Tuners to be unlocked. It is strongly recommended that you wait to install your supercharger kit until AFTER you have received your unlocked ECM back from HP Tuners. When you receive the unlocked ECM back, install it into the vehicle, then start and drive the vehicle to ensure proper functionality of all vehicle systems in stock configuration. Verify that there are no DTC's present using the HP Tuners VCM Scanner software and your MPVI3 interface tool. These steps are discussed in subsequent steps.You can then begin installation of your supercharger kit, request your new calibration file and use the HP Tuners MPVi3 cable and software to flash the Magnuson calibration to the vehicle. The file request process and flashing instructions will be covered in subsequent steps of this manual.

IMPORTANT: You MUST flash a revised calibration file to the ECM after your supercharger has been installed. Severe engine damage could occur if you attempt to drive the vehicle on the factory calibration.

4. **ECM Removal Process**

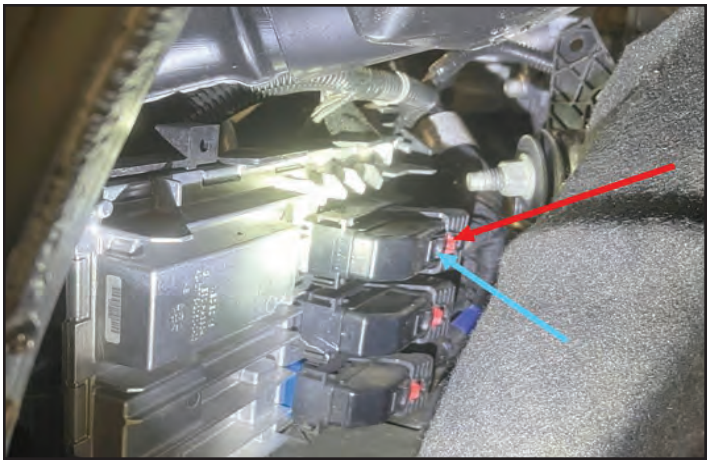
Remove the fasteners in the locations shown which secure the LH front inner fender panel to the body.



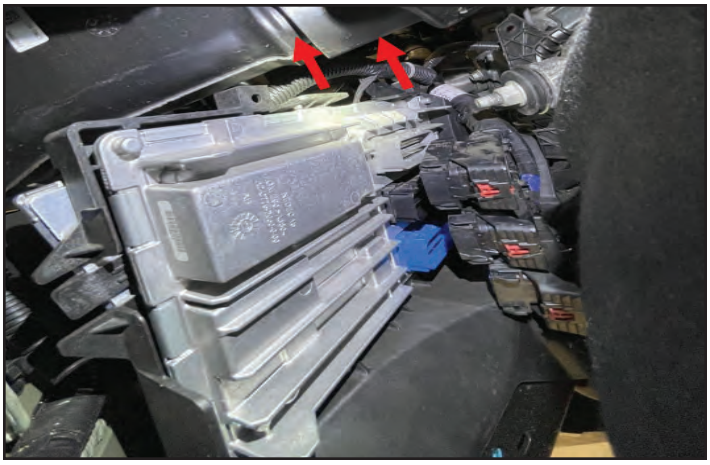
5. Remove the fastener in the location shown which secures the LH front inner fender panel to the body.



6. Push the inner fender liner out of the way to expose the PCM.
Slide the red locking tab on each of the connectors, then press down on the black secondary tab. While holding the black tab down, cycle the grey disconnect toward you to disconnect the harness from the ECM. Repeat the process for the other 2 connectors.



7. Push up on the two tabs at the top of the ECM bracket and remove the ECM from the vehicle.



8. **ECM Unlock Process**

Go to the HP Tuners website and purchase the following 3 items:
1) Appropriate unlock service for your specific application / model year vehicle. The HP Tuners site lists the GM part numbers for each ECM type. Match the part # for the appropriate unlock service with what is printed on your ECM.
2) MPVI3 OBD-II Interface.
3) HP Tuners MPVI credits (purchase the appropriate number for your specific application and model year).
Follow the HP Tuners instructions, carefully package your ECM and mail it to HP Tuners to be unlocked.
After you receive your unlocked ECM back, re-install it into the vehicle, re-connect the battery and perform the following steps using the HP Tuners VCM Scanner software and your MPVI3 interface.

Note: the HP Tuners VCM Suite software can be downloaded from the HP Tuners website. Install it onto your laptop.

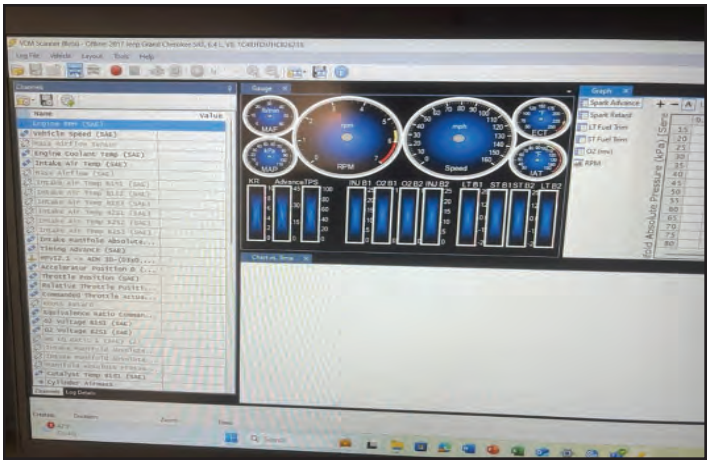


9. **ECM Verification Process**

Connect your HP Tuners MPVI3 interface to the OBDII port on your vehicle.

Connect the supplied USB cable between the MPVI3 and your laptop.

10. Open the HP Tuners VCM Scanner software on your laptop.

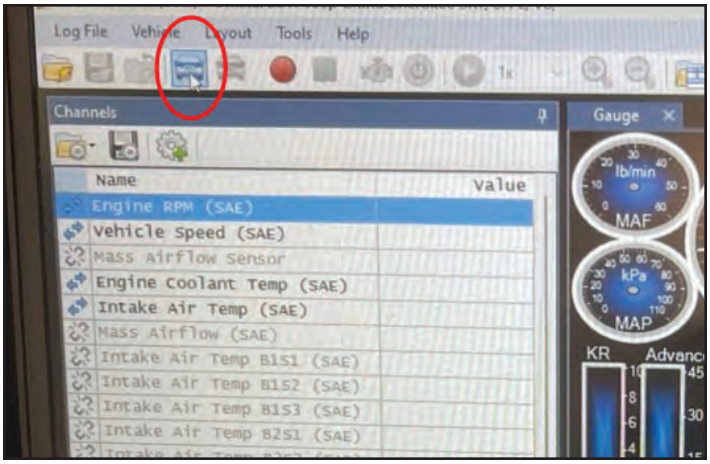


11. DO NOT press on your brake pedal.

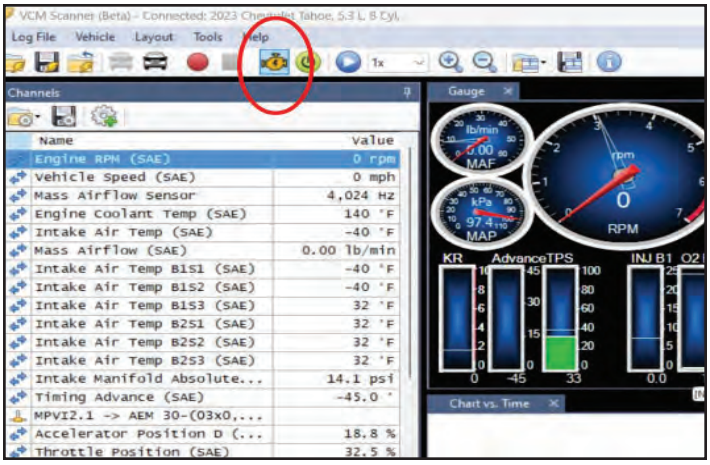
Press and HOLD the Start button on the dash until the instrument cluster powers up.



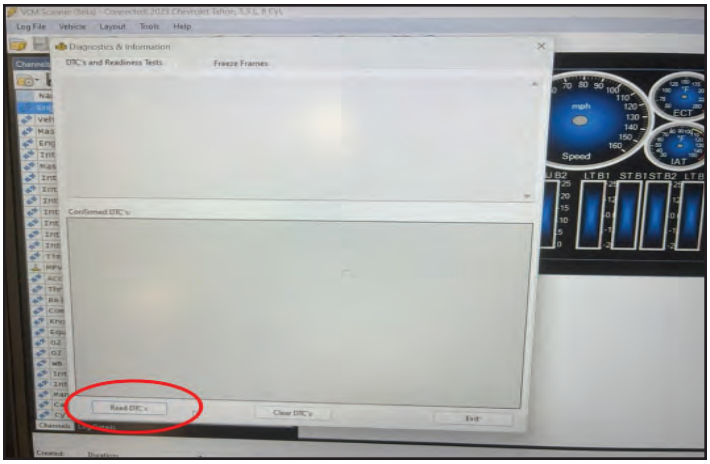
12. Using the HP Tuners VCM Scanner software, click the icon labelled Connect to Vehicle (see photo).



13. Click the Diagnostics and Information icon (circled).

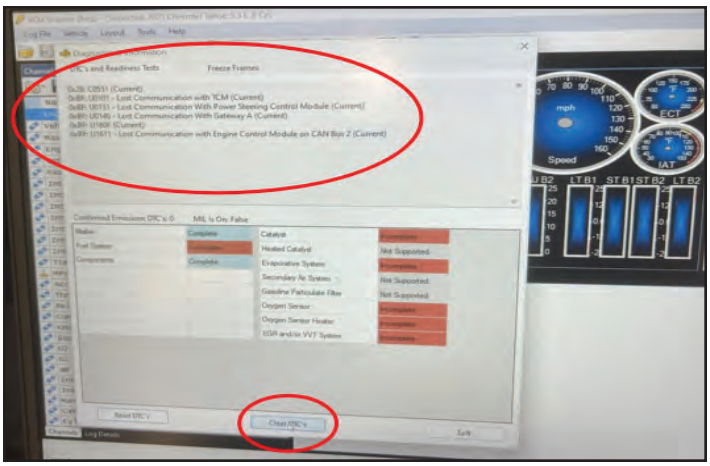


14. At the bottom left of the Diagnostics and Information window, click the Read DTC's button.

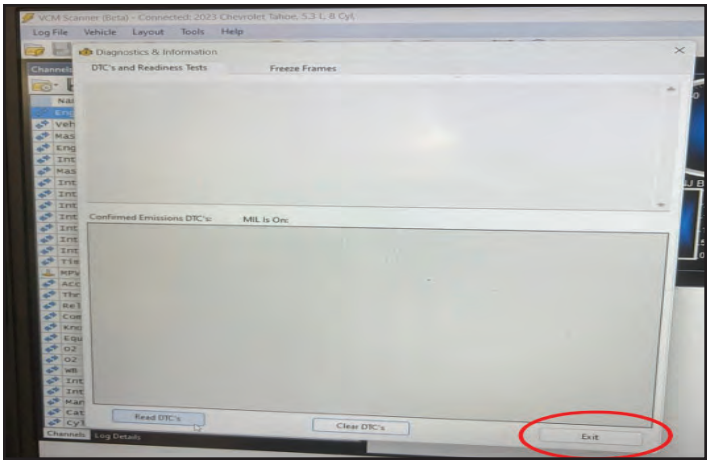


15. There may be a number of initial DTC's present. Take a screen shot or photo of the DTC's that show up in case they are needed for future reference.

Now click the Clear DTC's button.



16. After all the trouble codes have cleared, click the exit button.



17. You can now start the vehicle. Perform three brief drive cycles, shutting the engine off and re-starting it between each cycle. This will ensure the unlocked ECM is functioning normally on the factory calibration. Re-verify there are no DTC's after the drive cycles.
Note that if you are data logging using HP Tuners you may see a warning on the dash for the vehicle anti-theft system.
This is normal and will clear after the MPVI3 is disconnected from the OBD-II port.



18. **Read the stock file from the ECM**

Open the HP Tuners VCM Editor software.

Do NOT press the brake pedal.

Press and HOLD the Start button until the instrument cluster illuminates.

Click on the Flash tab, then click Read Vehicle.

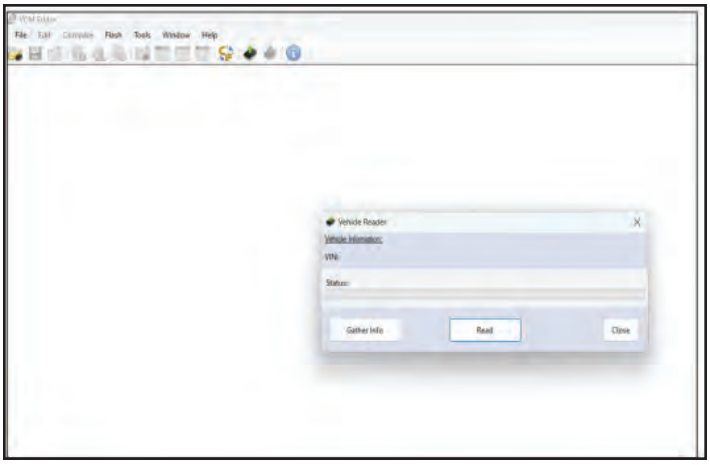


19. Follow the prompts as directed to read the stock cal file from the vehicle.

Have your VIN # available.

Save the stock cal file on your laptop with the following file naming convention.

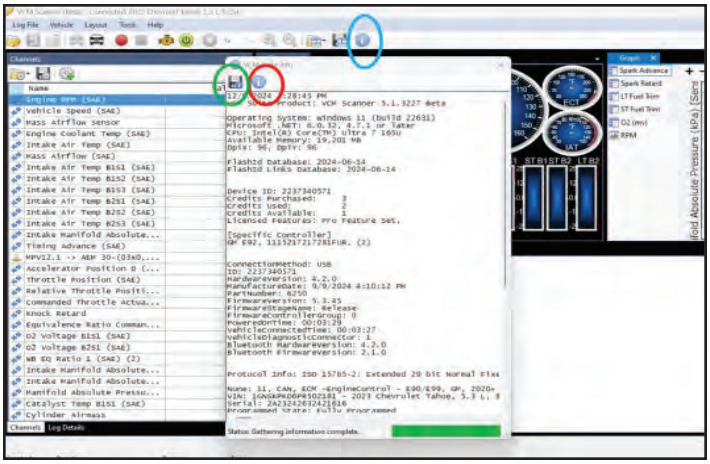
Last_8_of_VIN_stock.HPT



20. Click on the Info button (blue circled icon) at the top right of the tool bar.

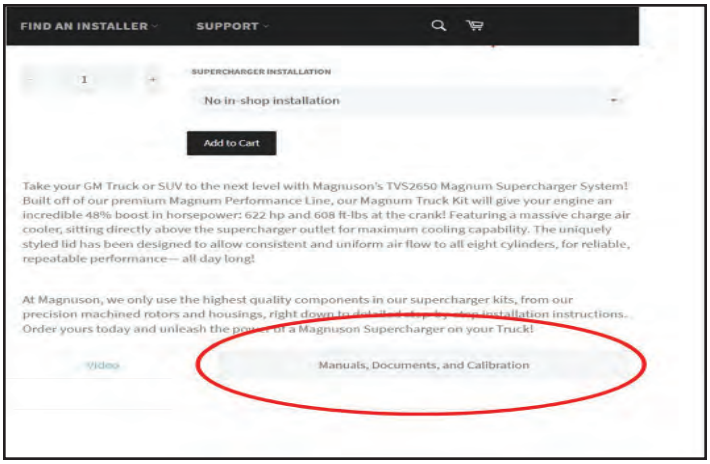
When the VCM Suite Info window pops up, click on the Info button that is located in the pop-up window (red circled icon).

Hit the Save button (green circle). Save the Info file in the same folder as your cal file is located.



21. Go to the Magnuson website and locate your kit part #. At the bottom right of the webpage, click the link titled “Manuals, Documents and Calibration”.

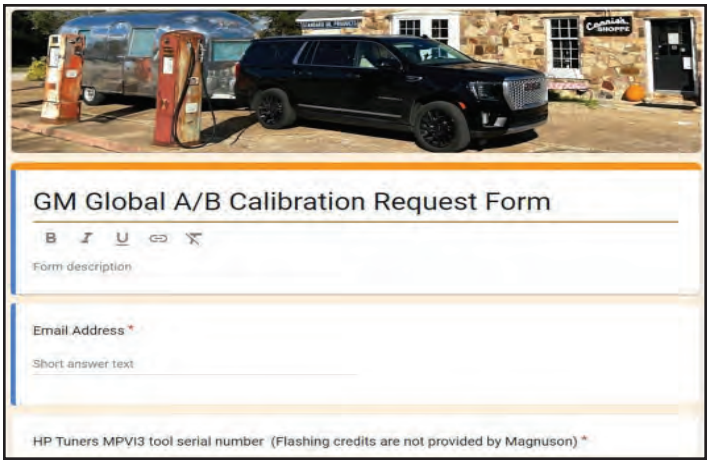
Click the Global A/Global B Calibration Page.



22. Click the Form link and enter the information requested, including your Info file and your stock cal file.

You will receive an updated calibration file to the email address you provide in the form within 24 hours (excluding weekends and holidays).

Once you receive your new cal file, you can now proceed with installation of your supercharger kit, as detailed in the following steps.



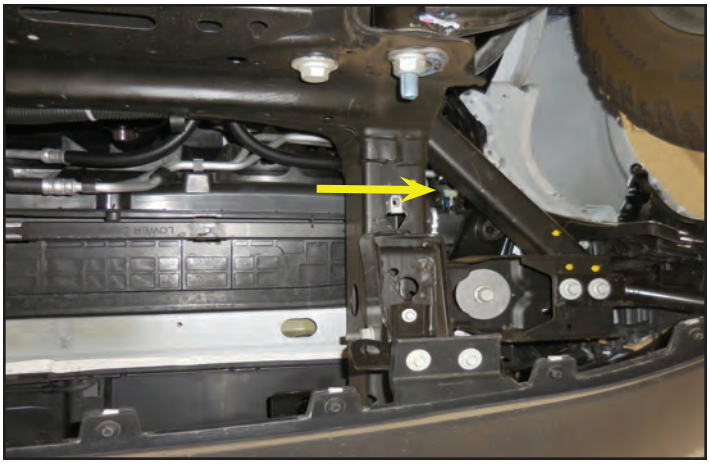
23. Loosen the nut shown with an arrow using a 10mm socket wrench to disconnect the negative battery terminal. Cap or cover the terminal to protect against accidental contact with the battery post.



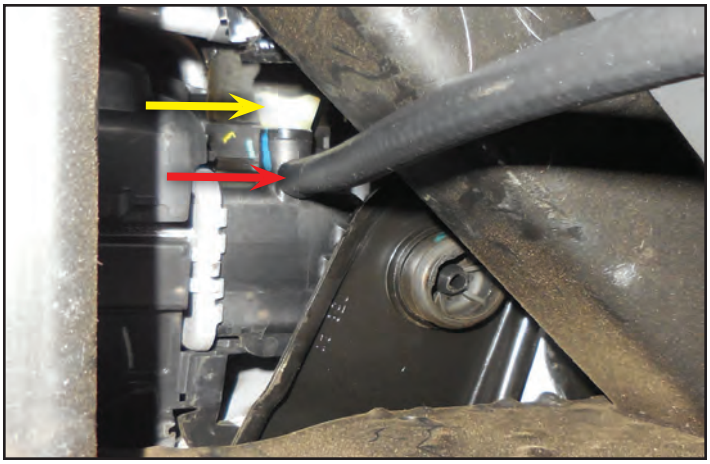
24. Ensure that the engine is cool before proceeding. Remove the radiator cap to help the coolant drain faster in the following steps.



25. Raise the vehicle using a lift to access the radiator drain plug on the passenger side.



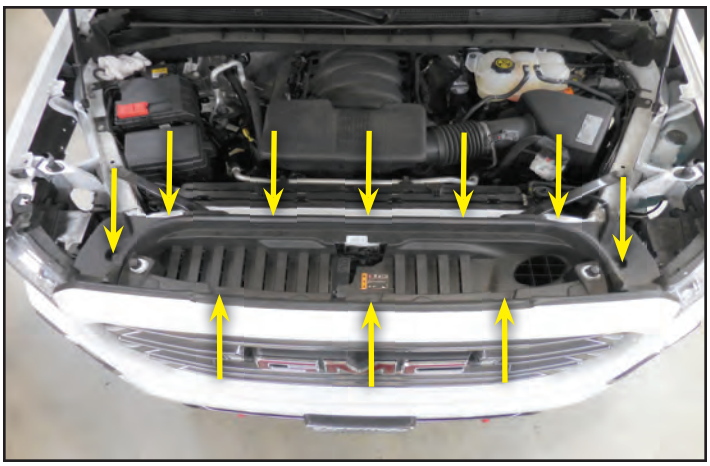
26. Attach a hose at the red arrow and loosen the drain plug at the yellow arrow. Drain the coolant into a clean pan as shown below so it can be reused if the coolant is still in good condition.





Section 2: Prepare for LTR Install

27. If you would rather remove the grill, shutters, and horn to gain more access when installing the LTR you will have to follow a GM service manual. We did not find it necessary to remove those components. Remove the 10 plastic rivets holding the radiator cover.



28. Remove the inner portion of the rivet first and then extract the outer portion.



29. Remove the two T15 Torx bolts that hold the hood lever, and remove the lever.



30. Remove the radiator cover.



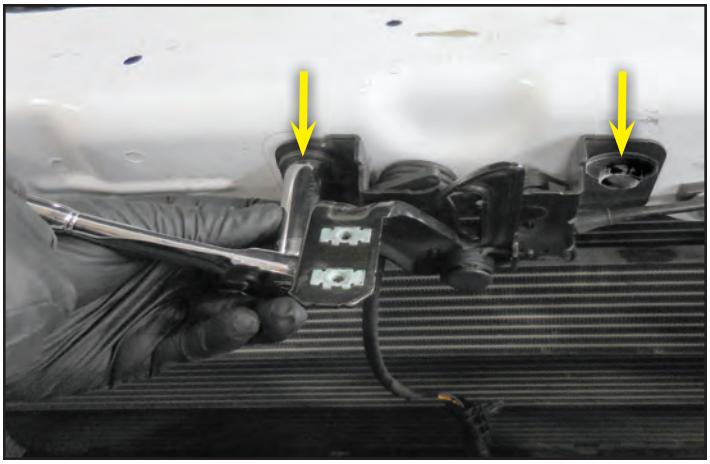
31. Locate the electrical connector for the hood latch shown that is on the underside of the cross support for the radiator.



32. Disconnect the electrical connection for the hood release and at the same time remove the anchor holding the connector to the frame.



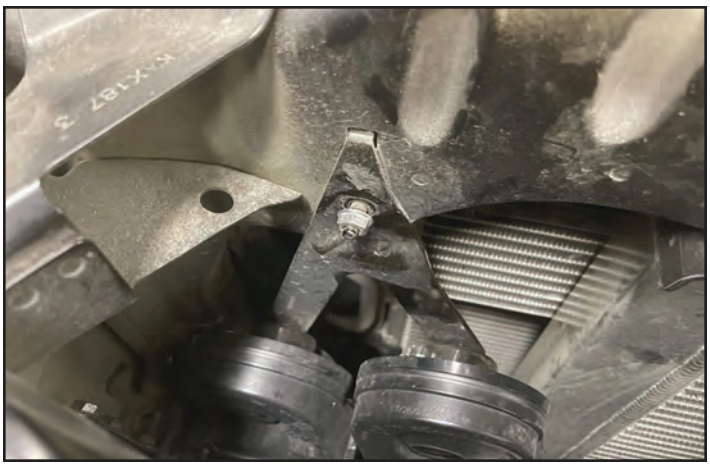
33. Trace around the bracket with a pencil to aid in re-alignment later. Remove the two bolts holding the hood latch assembly with a 13mm socket wrench.



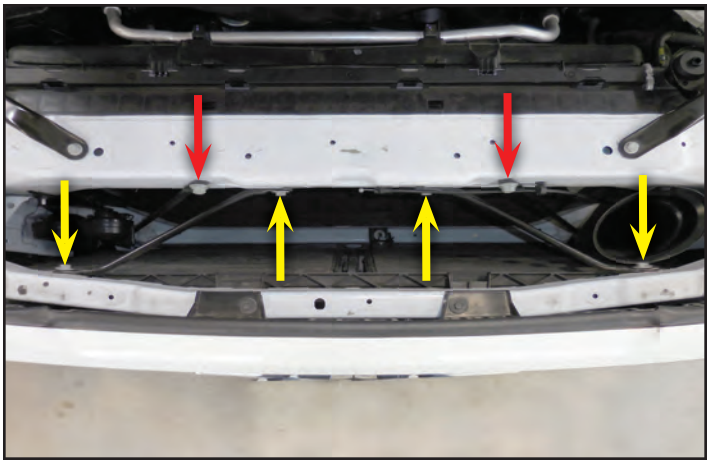
34. Disconnect the release cable from the hood latch.



35. SUV: Loosen but do not remove the nut securing the horn bracket to the vehicle. This will provide additional clearance to install the LTR in a subsequent step.



36. Remove the 4 bolts holding the two small diagonal braces in place shown with yellow arrows using a 13mm socket wrench. Remove the two bolts holding the longer diagonal brace shown with red arrows with a 15mm socket wrench.



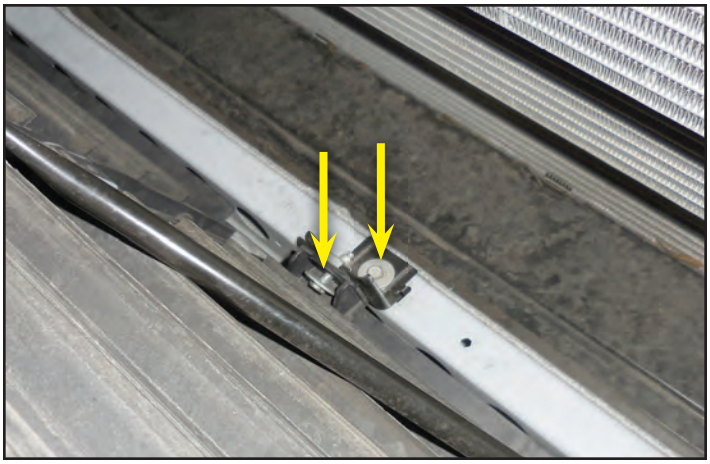
37. Loosen the bolt on the opposite side of the long diagonal brace from the last photo. Use a 15mm closed end rachet wrench if available to loosen 1/4 to 1/2 turn. You do not need to remove this bolt. The passenger side bolt is below the horns at the red arrow location.



38. Once loosened, pivot the brace inward and down until it touches the back of the shutters. Here you can see the passenger side long diagonal brace moved out of the way. Repeat this process on the driver side long diagonal brace. This will give the necessary room to install the Low Temperature Radiator (LTR) for the intercooler system.



39. Remove the two bolts shown from the center bracket at the bottom of the grill.



40. Here is the bracket from the last step being removed.



41. Clean the lower cross brace shown here in white with a cleaning product like Simple Green followed by rubbing alcohol to prepare it for the provided lower LTR bracket.



42. Gather the provided lower LTR bracket, two grommets and two double sided adhesive strips. The two double sided adhesive strips will be installed in the green highlighted areas.



43. Clean the lower surface of the bracket using rubbing alcohol.



44. Peel the white cover off the double sided adhesive strip.



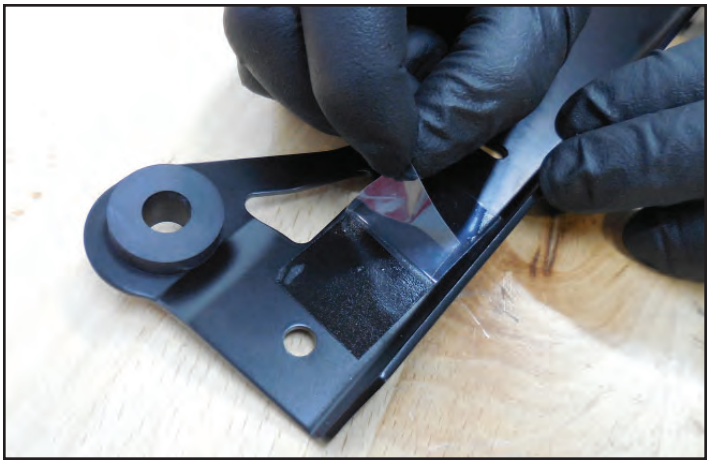
45. Place the double sided adhesive strip in the location shown highlighted in green. Repeat this installation process on the opposite side.



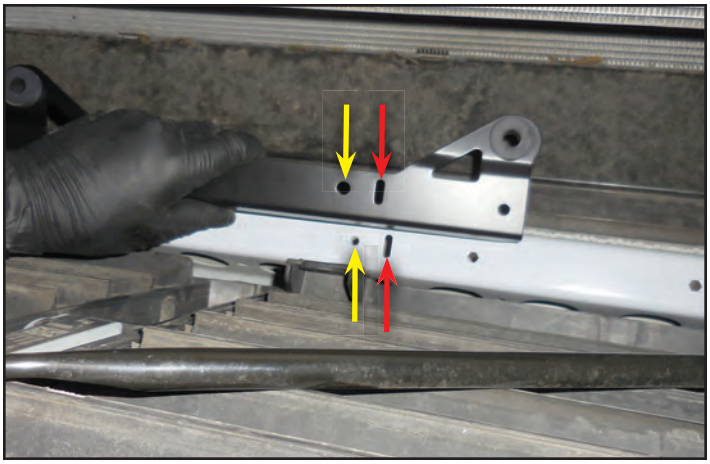
46. Install the two rubber grommets in the large holes of the bracket.



47. Remove the clear cover for the adhesive strips on both sides.



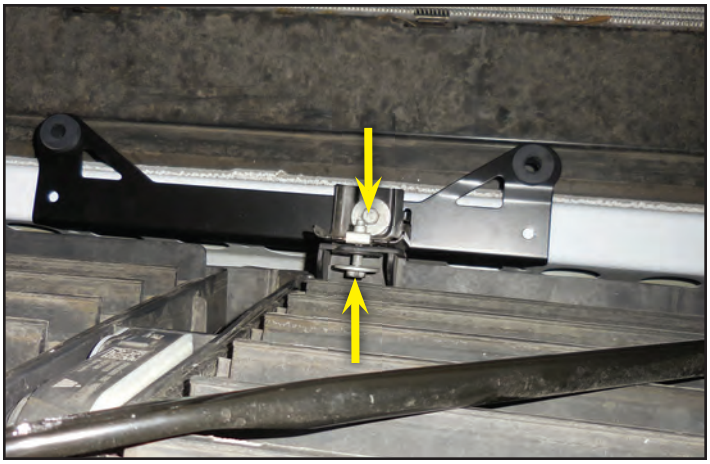
48. Use the hole and slot in the bracket to line up with the matching hole and slot in the frame rail as shown.



49. Install the bracket as shown here.



50. Reinstall the OEM center bracket that was removed earlier.

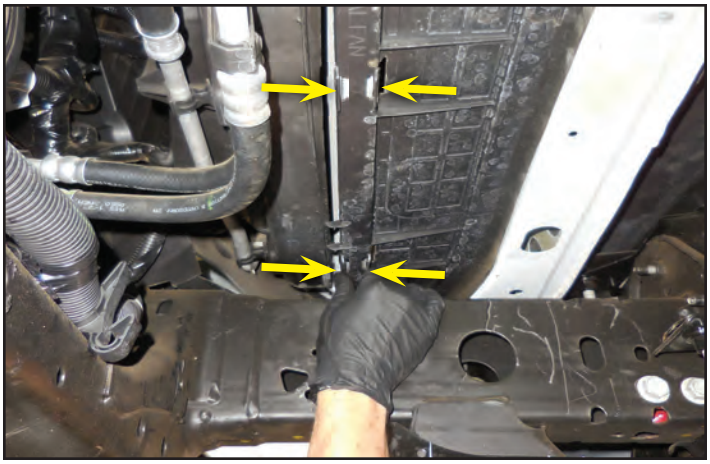


51. Remove the front skid plate, if equipped.

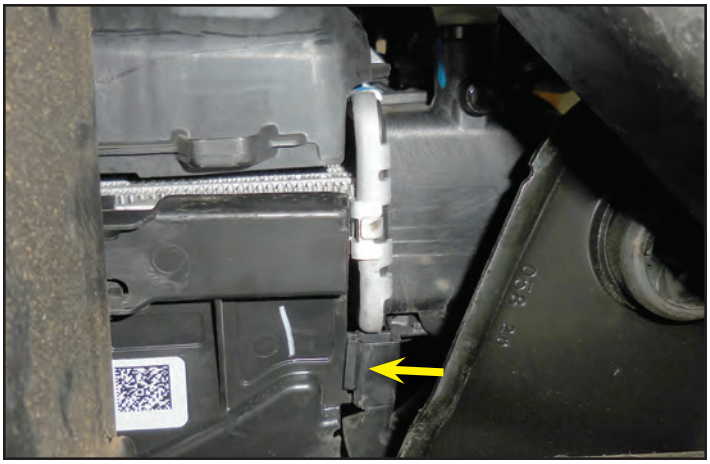
Set the skid plate and fasteners aside. They will be re-installed later.



52. Raise the vehicle and remove the plastic cover shown by pinching at three areas, and pulling down. Two of the areas are shown here with pairs of arrows.



53. Release the tab on the passenger side shown for the cover from the last step.



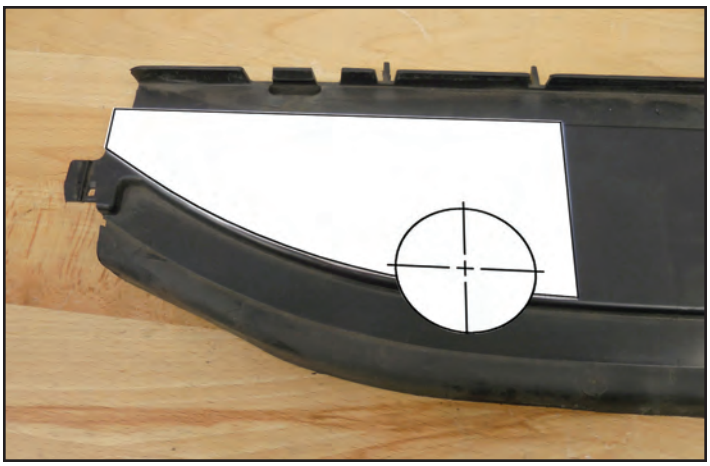
54. Tilt the cover at an angle and pull it free. The small photo shows the tab on the passenger side.



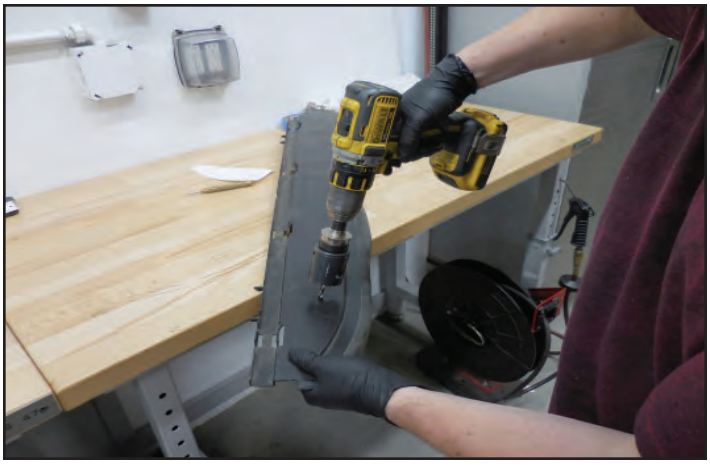


55. Use the template provided at the back of this manual to determine the location for the 1.75” diameter hole. Ensure that you choose the “Actual Size” option when printing the template. Measure the 7.25” dimension to ensure the scaling is correct.

Line up the template as shown here on the smooth underside of the passenger side. Use a center punch to transfer the hole location.



56. Use an electric drill with a hole saw to drill out the 1.75” diameter hole. Debur the hole after drilling.





57. Reinstall the cover. Ensure that the tabs are lined up and the clips are locked in place.





Section 3: Install LTR and Intercooler Pump

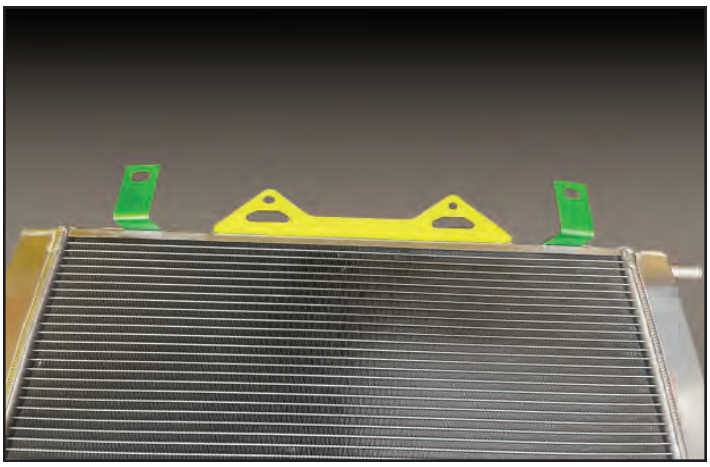
58. Gather the provided Low Temperature Radiator (LTR) shown.



59. The LTR includes brackets for both truck and SUV variants.

The INNER bracket (highlighted yellow) is used for TRUCK applications.

The OUTER brackets (highlighted green) are used for SUV applications.

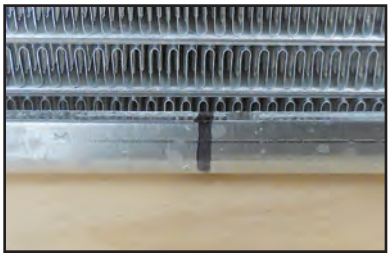


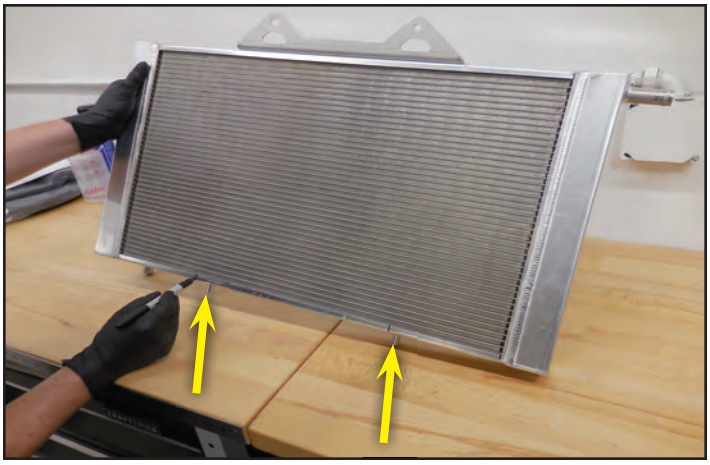
60. Use a cut-off wheel or saw to carefully remove the bracket(s) that do not apply to your application.

After cutting, use a file or die grinder to metal finish any sharp edges.

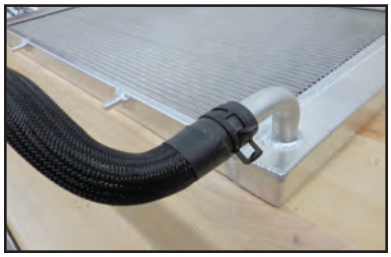


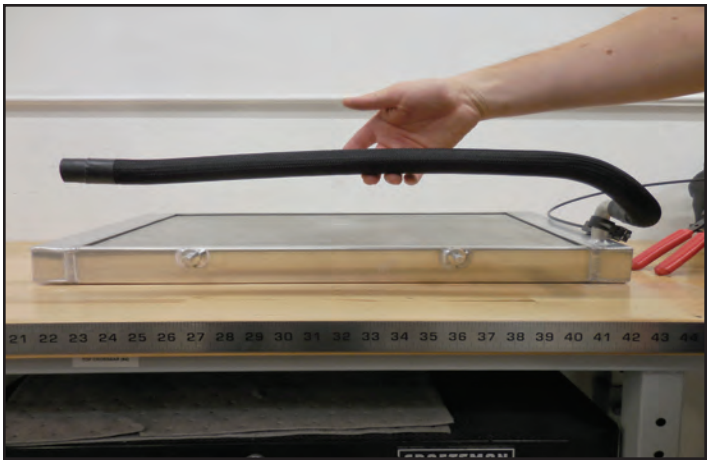
61. Mark the LTR on the front side to show the pin locations that are on the bottom side. Ensure that you mark over the top of the flange as shown in the photo below. This will aid in aligning the LTR later.





62. Select the hose shown in the photo. Install the hose onto the lower LTR inlet pipe and secure it with a constant-tension clamp from the kit.

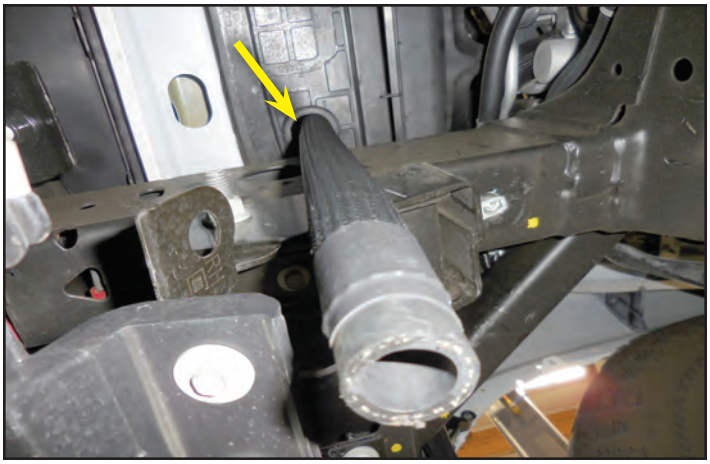




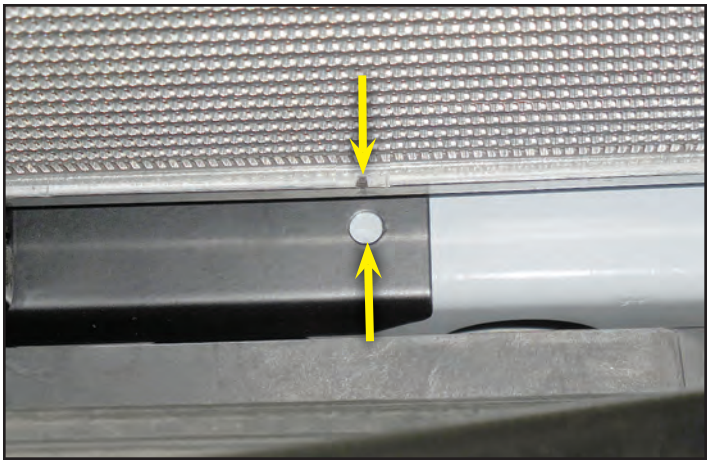
63. Insert the LTR in front of the radiator with the lower inlet pipe facing down and to the passenger side as shown with the arrow. At the same time have someone help you run the hose from the last step through the hole you made in the lower radiator panel earlier.



64. Here you can see the LTR hose installed through the radiator panel hole.

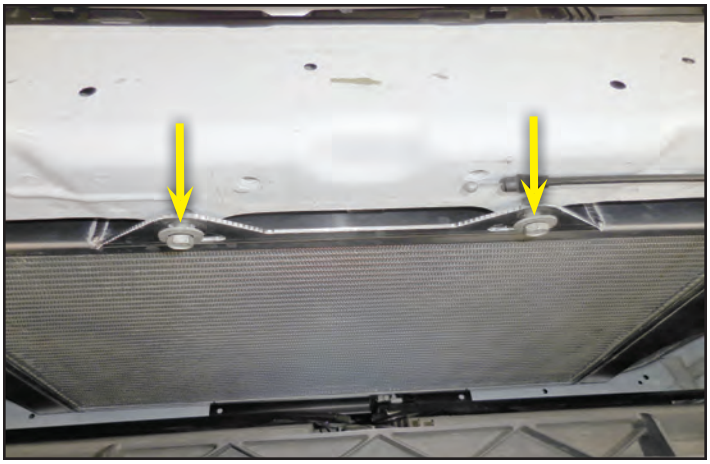


65. Line up the LTR using the marks that you made earlier with the holes in the bracket. This will allow you to line up the pins with the holes in the bracket. Verify the pins have aligned in the grommets by feel or with an inspection mirror.



66. Temporarily install the OEM bolts loosely to maintain the LTR position while performing other operations. You will need to pull up on the LTR to align these bolts. The LTR is not designed to rest on the lower bracket. Double check on the grommet alignment.

Note: Truck application shown, SUV similar.



67. Gather the provided pump mounting bracket, two M8 x 20mm long flange bolts and M8 panel nuts shown.



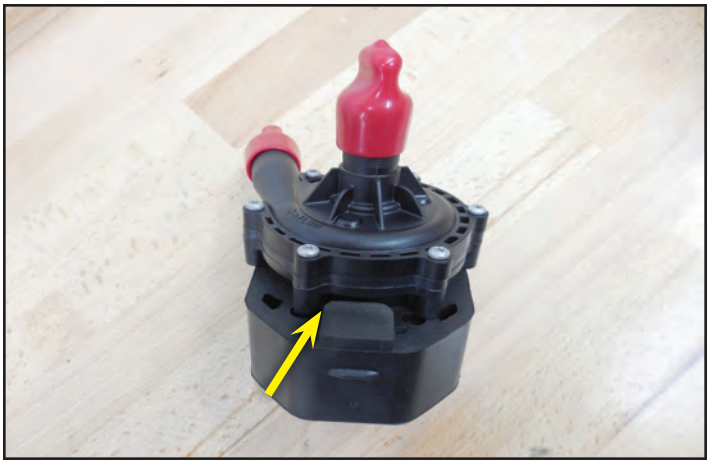
68. Install the two panel nuts in the locations shown.



69. Mount the bracket with the two bolts as shown.



70. Install the pump in the rubber insulator with the orientation shown with the pump bolt location close to the rubber boss at the arrow.



71. Install the rubber insulator on the bracket as shown. Ensure that it is fully engaged in the bracket.

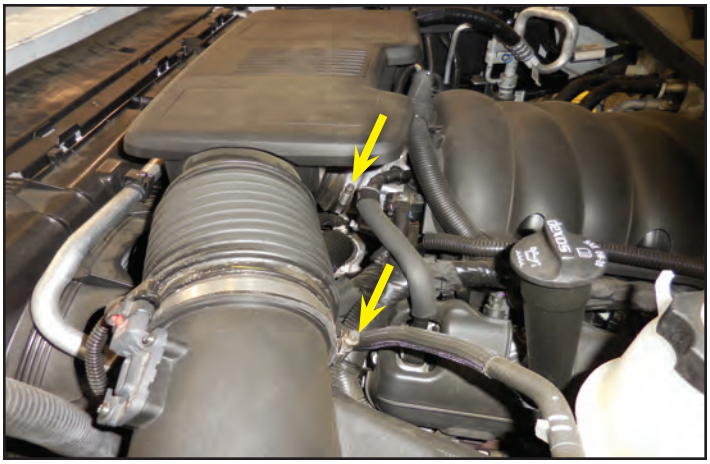


Section 4: OEM Manifold Removal

72. Depress the gray locking tab to release the PCV vent hose coming from the valve cover at the air plenum on the passenger side of the engine.



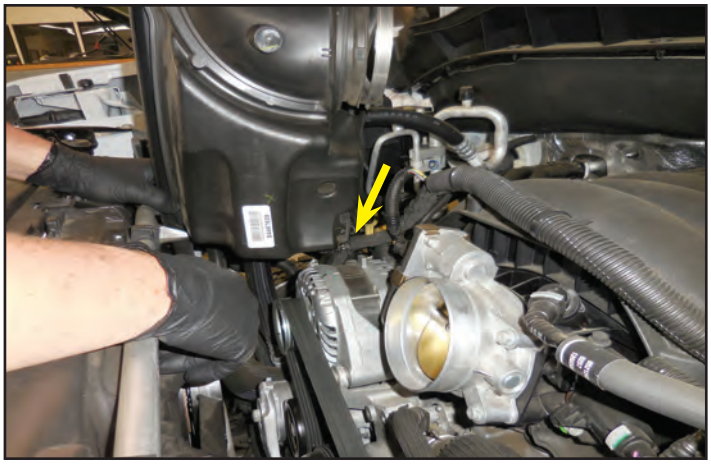
73. Using a 7mm nut driver or a flat blade screwdriver, loosen the clamps at the two arrow locations.



74. Rotate the air intake plenum as shown to reveal the final mounting location.



75. Pull the air intake plenum to the passenger side to remove it from the vehicle. This will not be reused.



76. Acquire a belt removal tool like the one shown. Alternatively you could cut the main serpentine belt out.



77. If using the tool shown in the last step you can rotate the crank with a 1/2” breaker bar and socket to allow the main serpentine belt to ride up the ramp and derail itself.

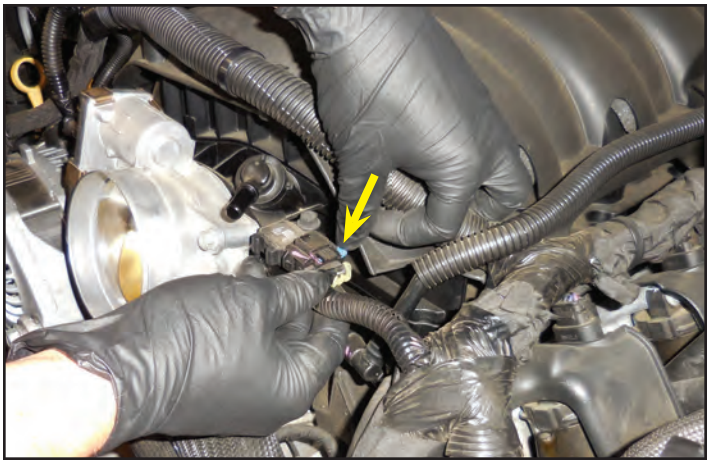




78. Remove the driver side PCV hose at the valve cover. This hose will be reused.



79. Release the blue locking tab, shown at the yellow arrow, on the MAP sensor electrical connection and unplug it.



80. Press the release button on the EVAP hose connector and unplug it from the EVAP solenoid.



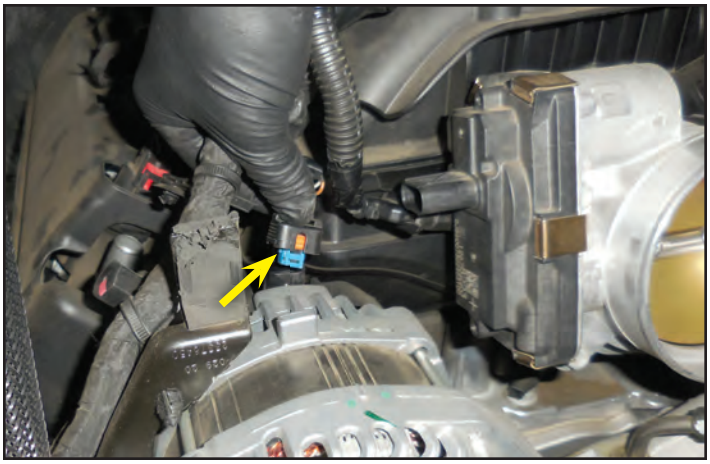
81. Remove the EVAP solenoid electrical connection by pressing the release tab and unplugging.



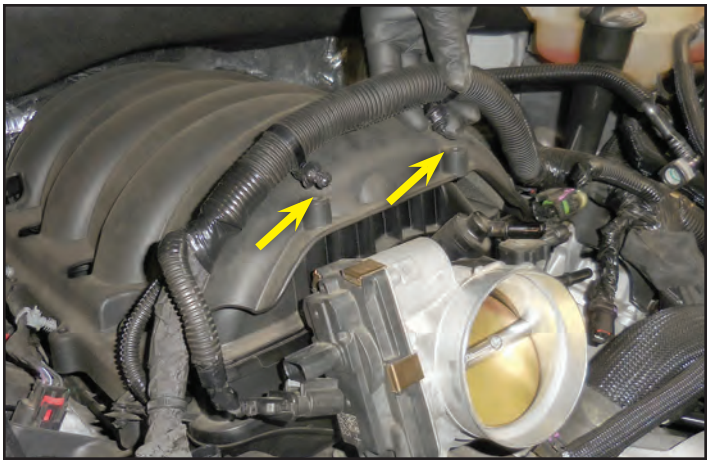
82. Disconnect the ETC connector from the throttle body. Depress the locking tab and pull the connector free.



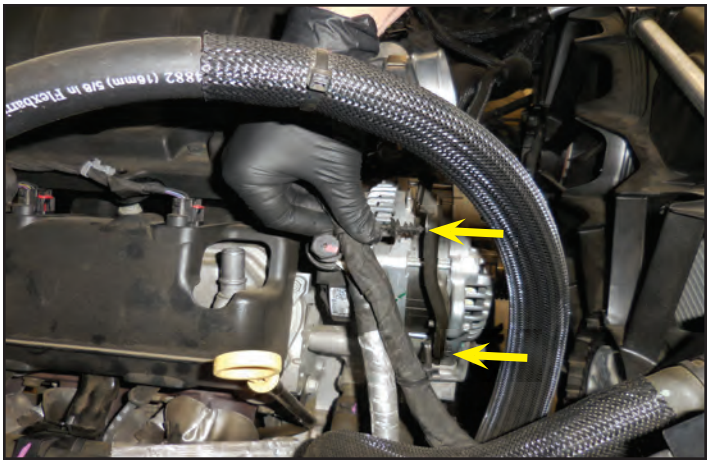
83. Unplug the alternator electrical connection shown with the arrow.



84. Remove the two cable tie fasteners shown with the arrows using a plastic pry bar.



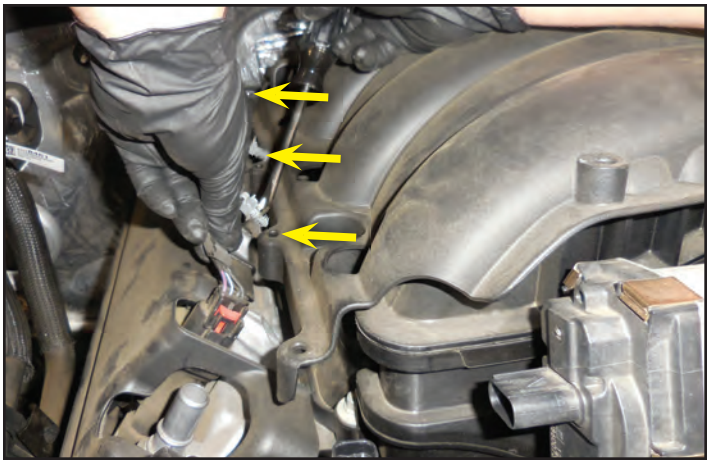
85. Remove the two cable tie fasteners shown with the arrows using a plastic pry bar.



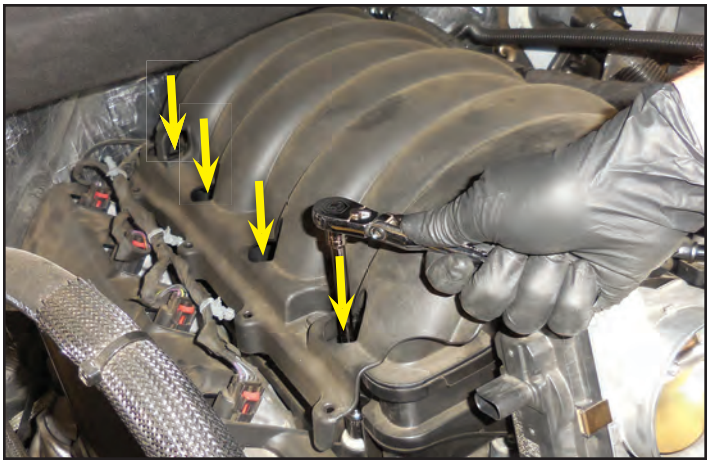
86. Pull the electrical wiring away from the throttle body to give room for intake manifold removal clearance.



87. Remove the cable tie fasteners from the arrow locations. Repeat this process on the opposite side of the intake manifold.



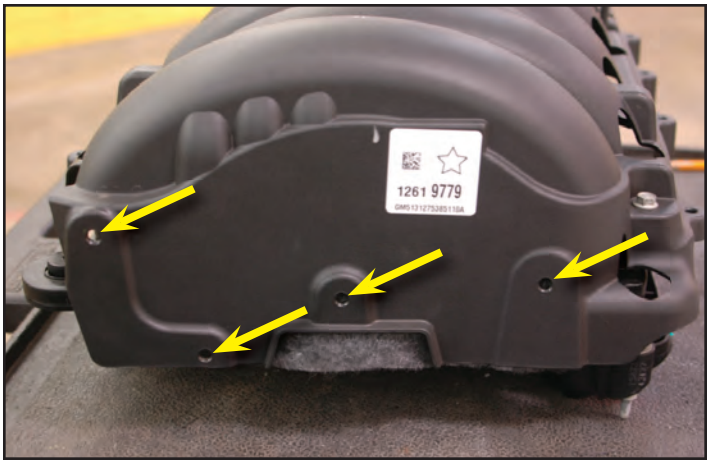
88. Remove the 10 bolts holding the intake manifold in place using a 10mm socket wrench.



89. Be careful when pulling the manifold forward because the bolts can scratch the cylinder heads. Pull the intake manifold forward a bit to gain access to the wiring harness “tree” anchors that hold the harness to the back of the intake manifold. Use a screwdriver or tree clamp remover to unplug these trees from the OEM intake manifold.



90. This image shows the location of the four tree connectors on the back of the intake manifold.



91. Carefully remove the intake manifold from the engine bay. Be careful not to drag the bolts across the sealing surfaces.



92. Clean the sealing surfaces on the heads using a cleaner like Simple Green.



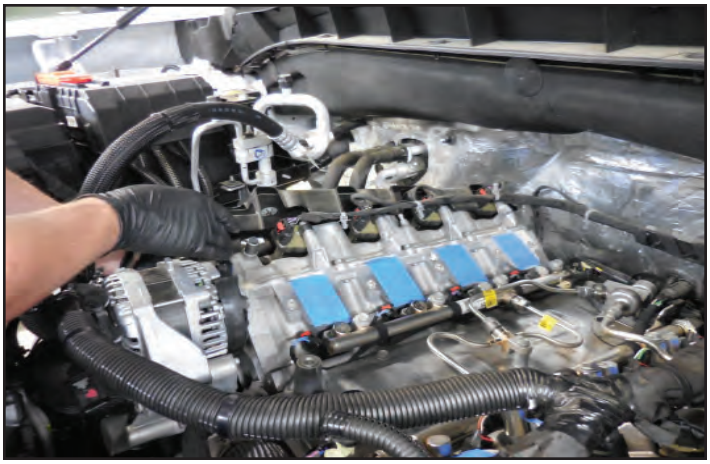
93. Seal the intake ports with tape (Shown here in blue).



94. Remove the insulation pad from the engine valley. This will not be reused.

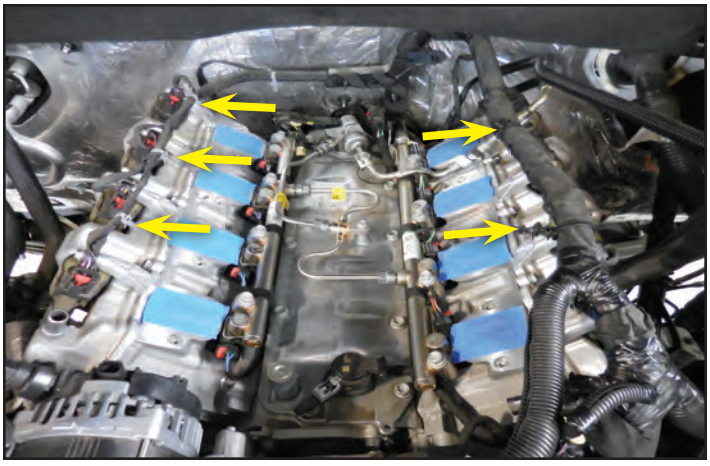


95. Remove the two plastic coil covers on the valve covers.

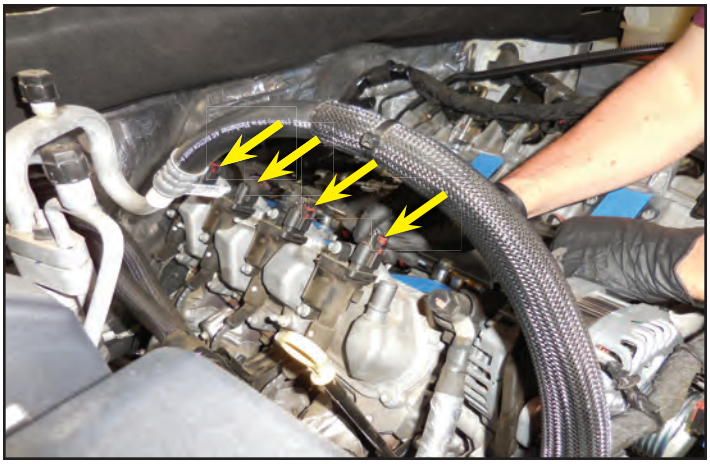


96. Remove the cable ties that are on the electrical harnesses. Several of these cable ties are shown below.





97. Unplug the top connection to all eight coil packs. Four coil packs are shown with arrows. Pull the red locking tab prior to unplugging.



98. Unplug the spark plug wires for the back two coils on both sides of the engine. Mark the two rear coils on each side to ensure that they are installed in the original locations later. Remove the two bolts holding each of the two rear coil packs on both sides of the engine using a 10mm wrench.

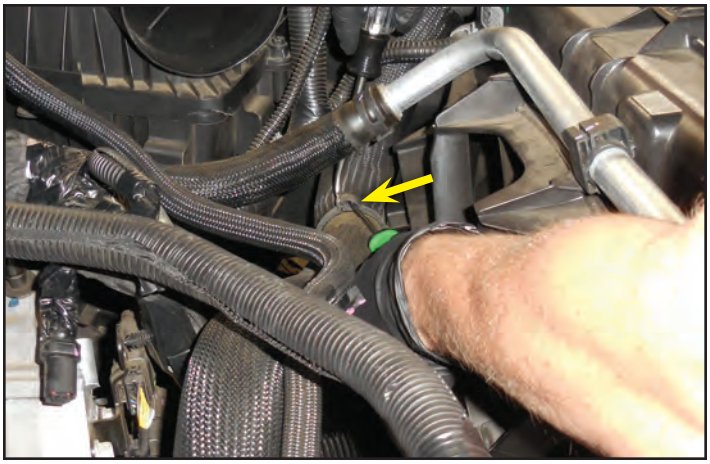


Section 5: Radiator Hose Modification

99. Pull up on the smaller hose that is connected to the upper radiator hose to disconnect it at the location shown with the arrow.



100. Remove the fastener holding the upper radiator hose at the arrow location. Try not to damage this plastic tie because it will be reused.



101. Cut the cable tie shown at the arrow. This will be replaced with a new one.



102. Pull the mesh away from the end of the hose connection. This will allow room for the hose to be cut. Also wrap the connection location with rags as shown to catch any coolant.



103. Mark the hose at two inches away from the end.



104. Release the clamp at the hose connection and pull the hose off.



105. Cut the hose at the 2” mark that was made earlier.





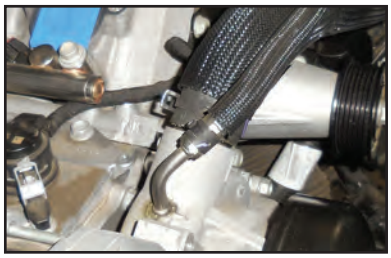
106. Reinstall the hose with the tabs for the clamp facing to the rear.



107. Slide the mesh down close to the clamp.

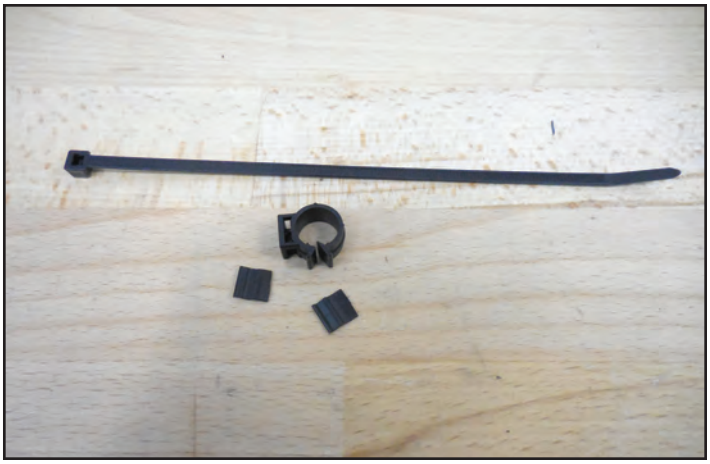


108. Rotate the clamp for the smaller hose so that the tabs face to the rear as you did with the other clamp.

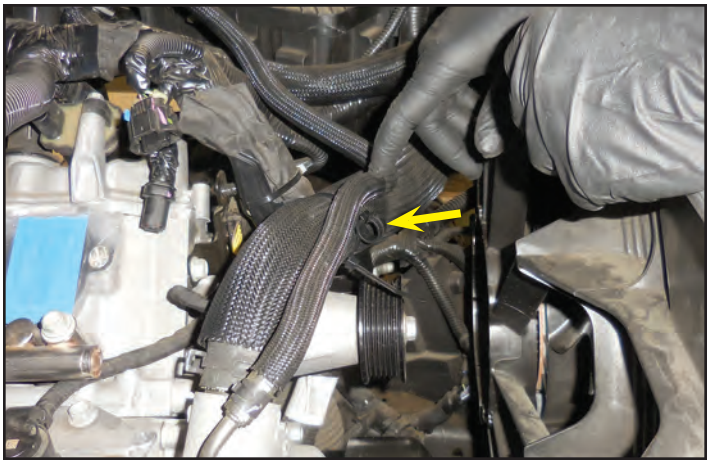




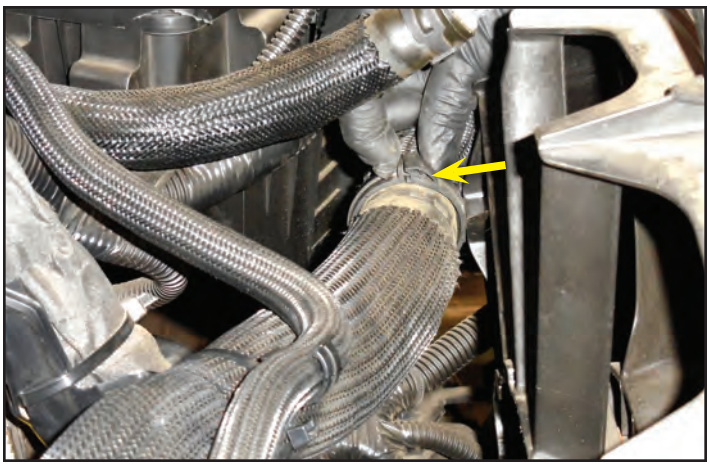
109. Gather the provided cable tie and clip shown. Remove the two tabs inside the clip.



110. Install the cable tie with the clip from the last step around the mesh on the upper radiator hose in the same location the OEM clip was and secure the smaller hose to it.

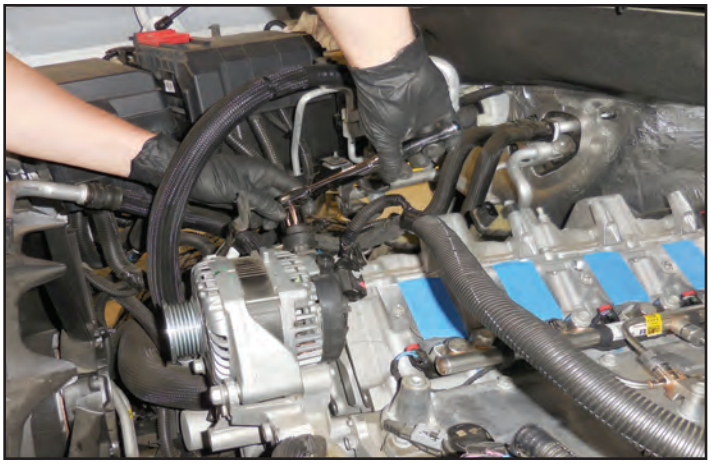


111. Reinstall the clamp that was removed earlier.



Section 6: Rotate Alternator and Install Tensioner and Reservoir

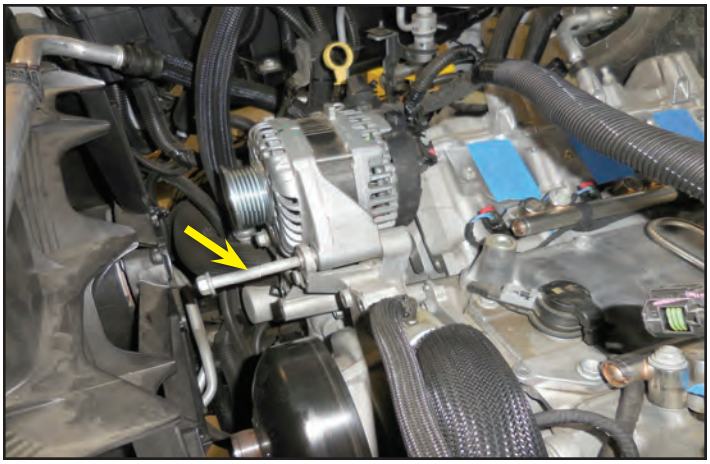
112. Loosen the nut holding the alternator positive cable with a 17mm socket wrench.



113. Remove the alternator positive cable terminal.



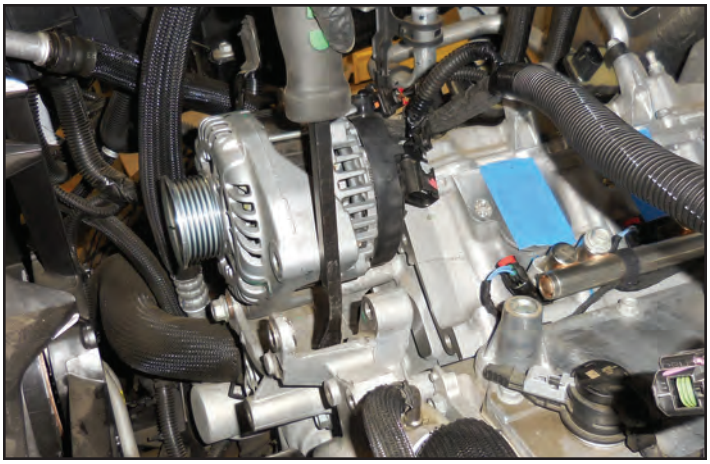
114. Remove the alternator bolt shown at the arrow using a 15mm socket wrench.



115. Loosen but do not remove the alternator mounting bolt on the opposite side with a 15mm socket wrench.



116. Use a prybar to lever the alternator up as shown.

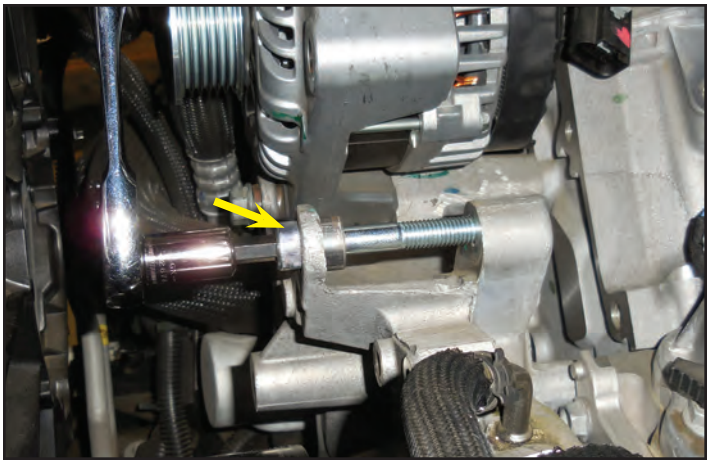


117. Remove the bolt at the water pump. The smaller photo below shows the location better with an arrow.



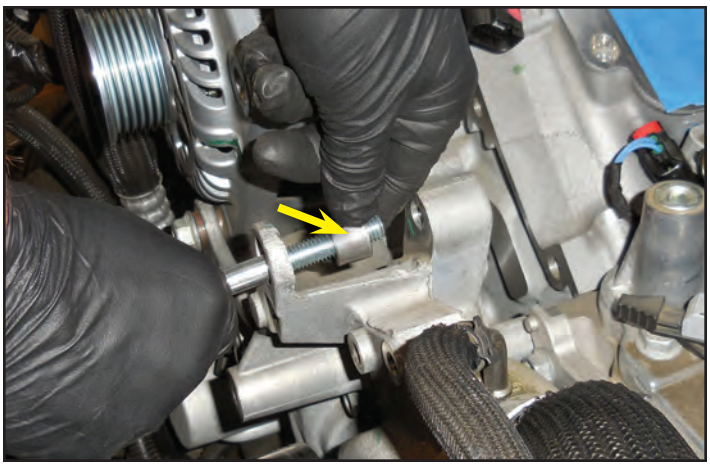


118. Use the provided bolt shown below to press out the bushing at the arrow.



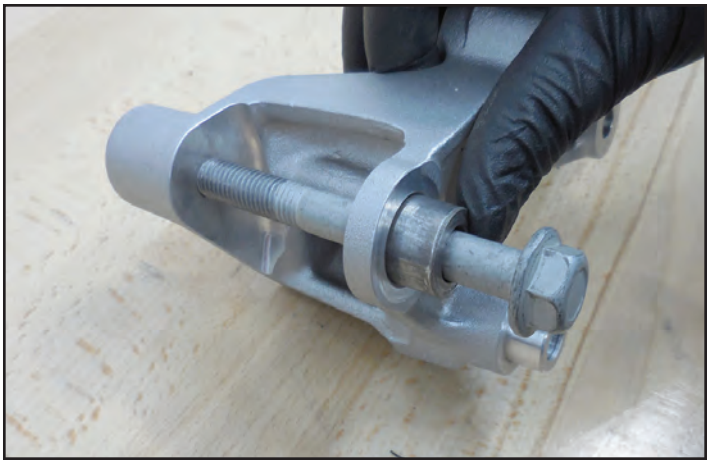


119. Remove the bolt from the last step after the bushing is pressed out and remove the bushing. This bushing will be used in the provided idler bracket assembly.

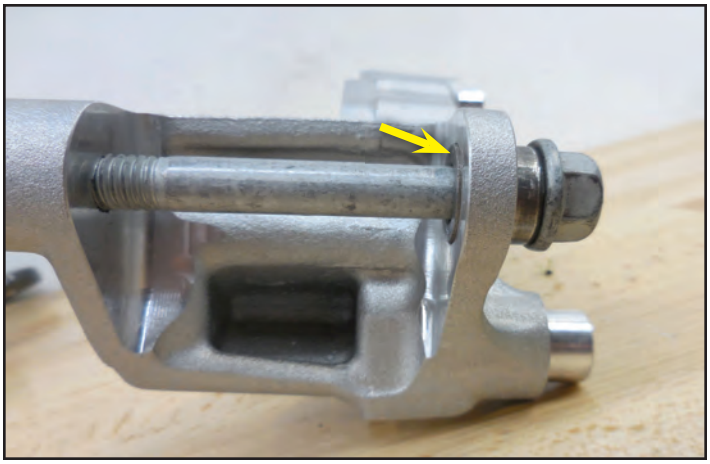


120. Gather the OE alternator bolt shown below along with the bushing that was removed in the last step. Insert the bushing into the provided bracket and tighten it in place with the bolt. See the next step for the bushing depth.





121. Ensure that the bushing is flush or less than 1mm past the arrow location.

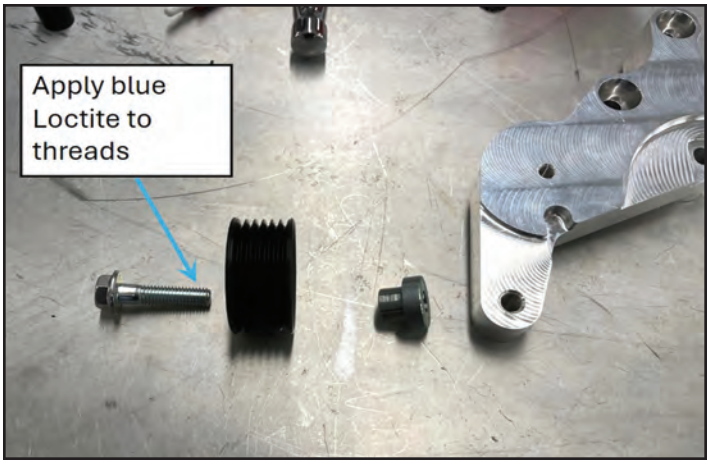


122. Select the following parts from the kit:

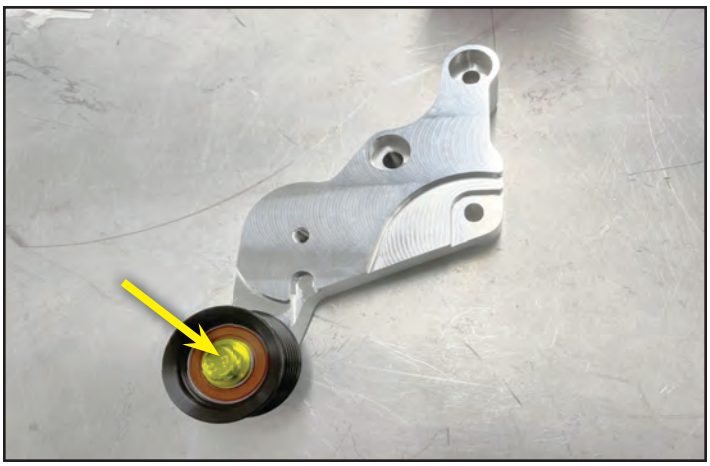
Billet Bracket PN 65-26-53-007
Bolt (M10X40mm) PN 71-10-15-040
Ribbed idler PN 56-06-02-052
Spacer PN 69-90-57-023

Install the spacer onto the idler.

Apply blue Loctite 242 to the fastener prior to installation into the billet bracket.



123. Torque the idler bolt to 44 ft-lbs.



124. Pre-install (3) black anodized spacers PN 69-05-00-011 into the bracket locations shown.



A small dab of superglue can be used to temporarily hold the spacers in place while the bracket sub-assembly is being installed onto the engine.

If using superglue, ensure the spacers are immediately installed and are held in place so that they seat flush in their pockets until the superglue cures.

125. Select the following hardware from the kit:
(2) M8X140mm long socket head cap screws
M8X130mm long socket head cap screw (highlighted blue)
(3) M8 flat washers.



Pre-install one washer onto each of the fasteners. Apply blue Loctite 242 to the threads of each fastener. Note: the photo shows the location of the fasteners for installation purposes only. The billet bracket will have to be held in place against the engine while the fasteners are installed one at a time.
Note the location of the SHORT fastener as highlighted in blue in the photo.



126. Remove the (3) highlighted fasteners that secure the water pump to the engine block. They are located to the RH side of the water pump pulley.

These will not be reused.

127. Install the bracket sub-assembly onto the front of the engine in the location shown.

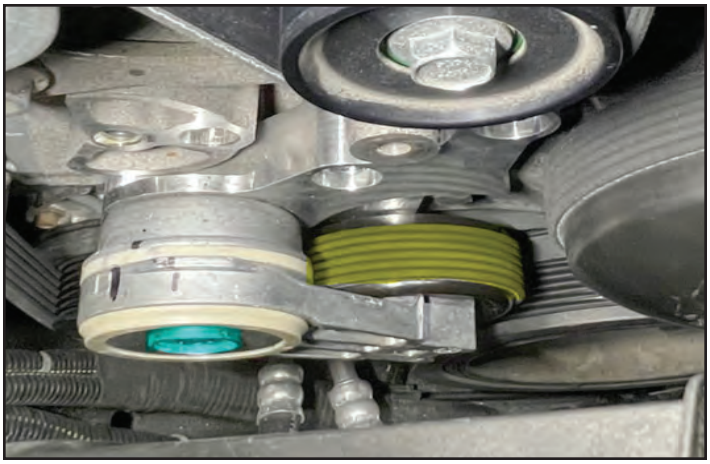


Apply blue Loctite 242 to 3 fasteners and install them through the billet bracket/spacer assembly into the engine. Note the location of the shorter 130mm long SHCS as shown in the photo.

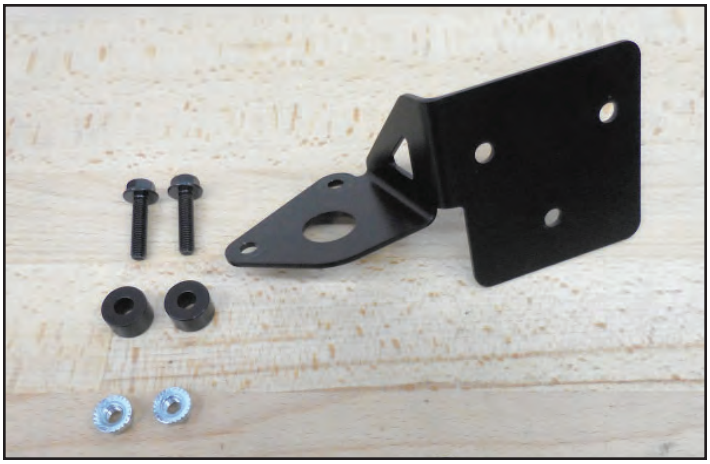
Rundown and zero torque the fasteners to ensure the bracket is fully seated.

Final torque all three fasteners to 25 ft-lbs.

128. The belt routing diagram is located in Appendix B at the back of this manual.
Select the Dayco 89281 tensioner from the kit.
Pre-install belt K060910 (for 6.2L engines) or belt K060923 (for 5.3L engines) around the tensioner pulley with the ribs facing out as shown.
Install the supplied tensioner onto the billet bracket using a M8 X 55mm long bolt (PN 71-08-12-054) from the kit. Apply blue Loctite 242 to the bolt.
Ensure the locator pin in the back of the tensioner engages into the hole in the bracket.
Torque the tensioner bolt to 22 ft-lbs.
The belt will be final installed in subsequent steps.



129. **Truck Applications Only:**
Gather the provided reservoir bracket, M6x25mm bolts, spacers, and M6 serrated flange nuts shown. Reservoir bracket installation for SUV applications will be detailed in subsequent steps, after the supercharger is installed.



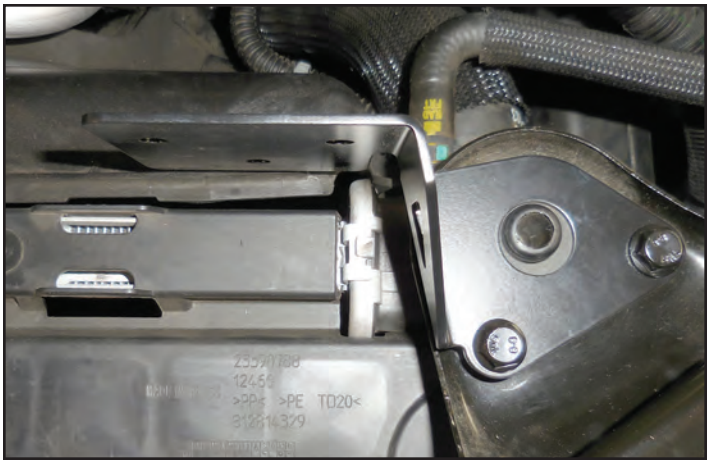
130. **Truck Applications Only:**
Place the two spacers from the last step at the location shown on the driver's side of the engine compartment.



131. **Truck Applications Only:**
Place the bracket on top of the spacers, and install the two M6x25mm bolts from two steps ago through the top and secure them with the M6 serrated flange nuts from below. Use a 10mm socket wrench on top and a 10mm open end wrench on the bottom.



132. **Truck Applications Only:**
Ensure that the bracket is lined up with the radiator as shown.



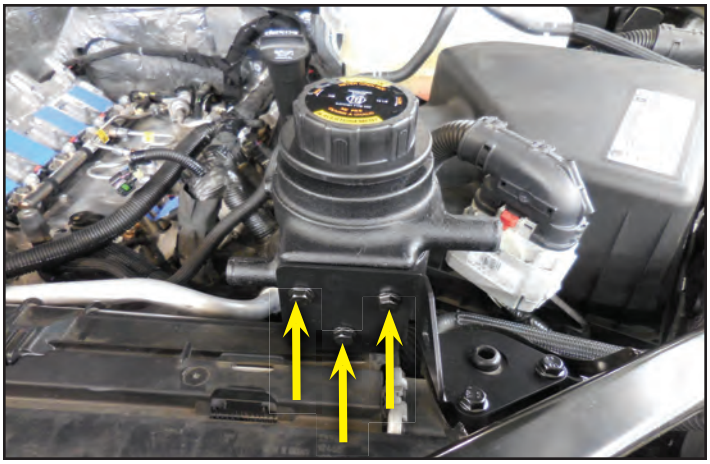
133. **Truck Applications Only:**
Torque the two M6x25mm bolts to 108 in-lbs.



134. **Truck Applications Only:**
Gather the provided reservoir, cap, and three M6x12mm bolts shown.

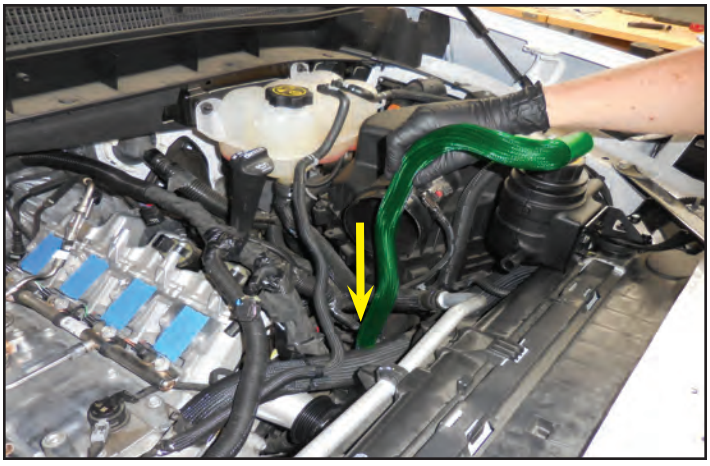


135. **Truck Applications Only:**
Install the cap on the reservoir, and secure in place with the three M6x12mm bolts by hand.

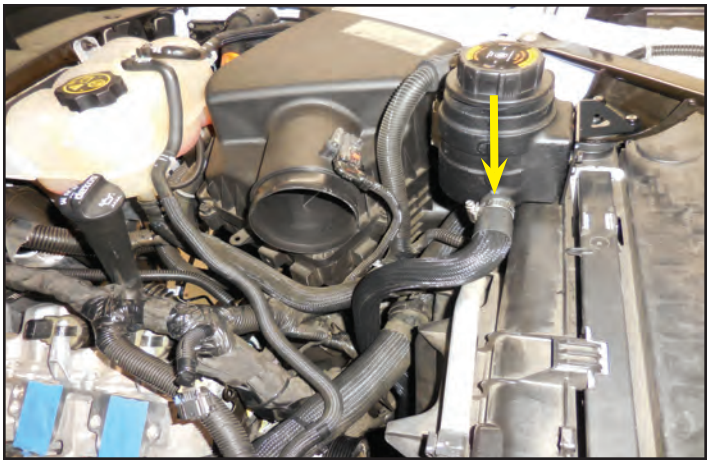


136. **Truck Applications Only:**
Gather the hose assembly shown below. This will be installed on the lower output pipe on the reservoir. Guide the hose (highlighted in green) behind the upper radiator hose at the arrow.





137. **Truck Applications Only:**
Install the hose from the last step onto the lower outlet pipe of the reservoir and secure in place with a provided worm gear clamp. A worm gear clamp must be used to provide a proper seal.



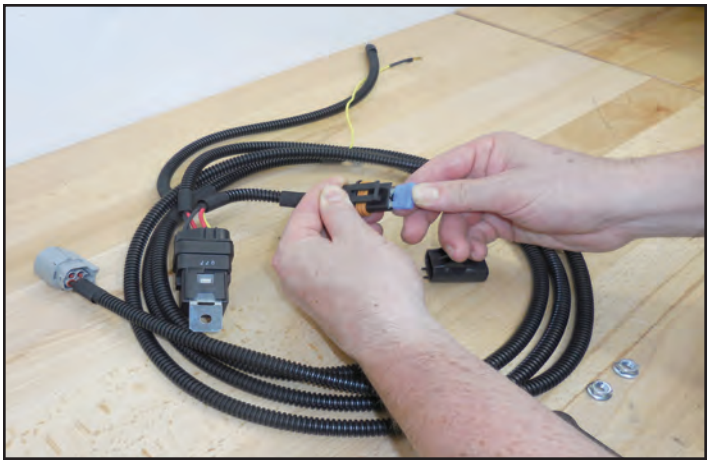
Section 7: Intercooler Pump Wiring

138. Gather the provided intercooler electrical harness assembly, bracket, two serrated nuts and fuse shown. The relay bracket is used for Truck applications only. SUV applications will be shown separately.



139. Insert the provided fuse into the electrical assembly and reinstall the cap.





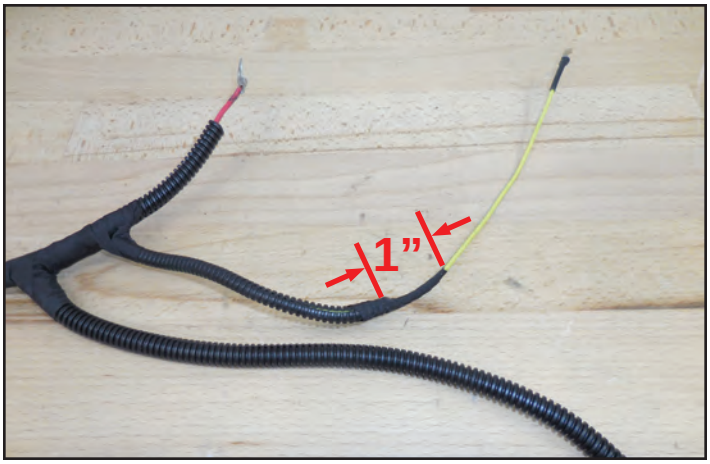
140. Remove the tape from the positive terminal side and remove one inch of the slit loom as shown.



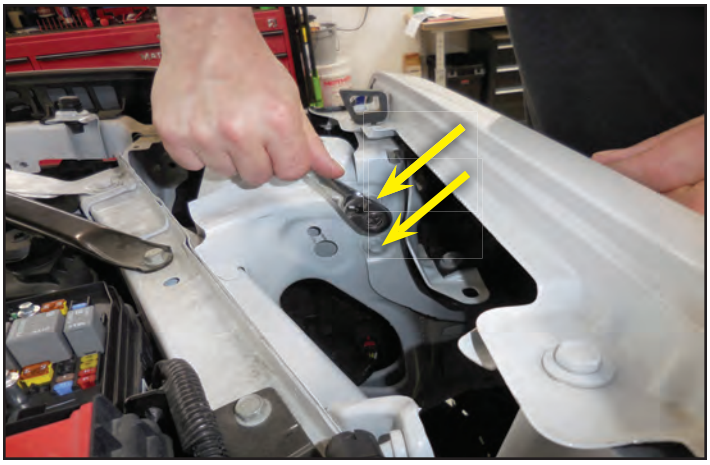
141. Gather the provided 1/8th inch diameter slit loom that is 6 inches long.



142. Peel back the yellow trigger wire through the OEM slit loom until it reaches the next tape junction. Cover the yellow wire with the wire loom from the last step and tape it in place at both ends. Continue the tape roughly 1” along the yellow wire.



143. **Truck Applications Only:**
Remove the two bolts at the arrows that are located in the passenger side fender well, near the fuse box.

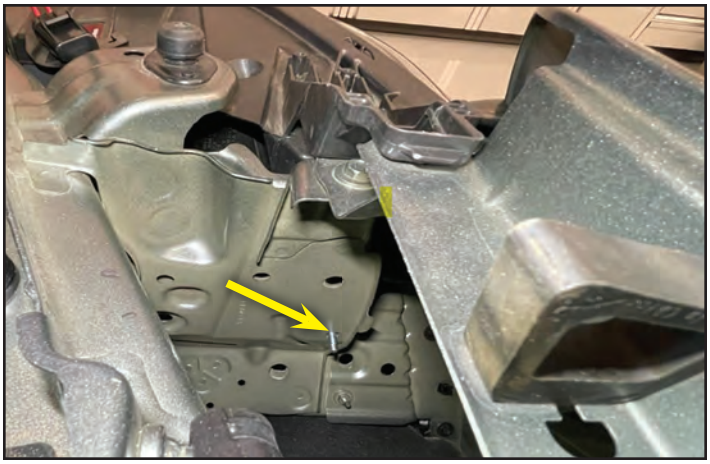


144. **Truck Applications Only:**
Place the intercooler electrical harness bracket in the location from the last step using the two OEM bolts that were just removed. SUV application relay mounting instructions are in the following steps.



145. Select an M6X20mm fastener and a serrated nut from the kit.

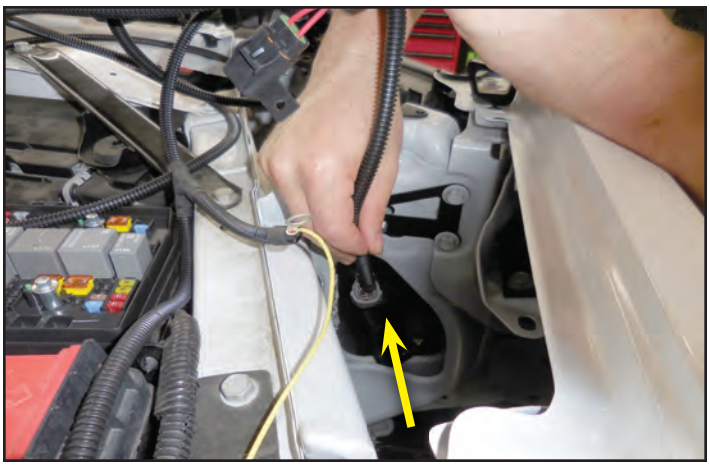
Install the fastener from the front of the hole in the inner RH fender at the arrow location shown.



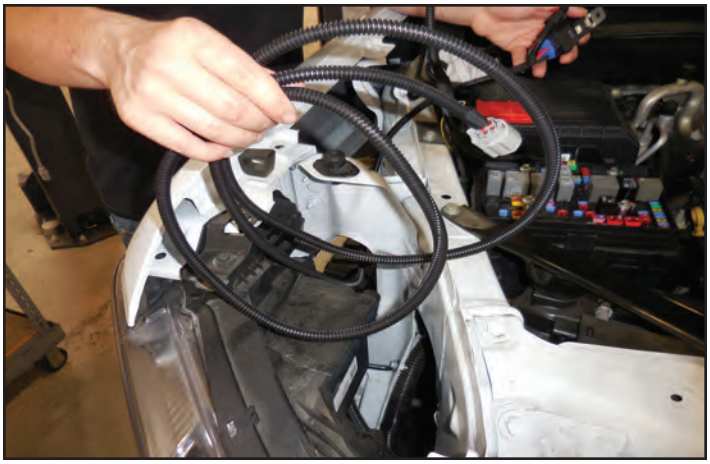
146. Slip the relay and fuse over the fastener then install a serrated nut and tighten to secure them in place as shown.



147. Run the gray plug from the intercooler pump harness through the opening shown with an arrow.



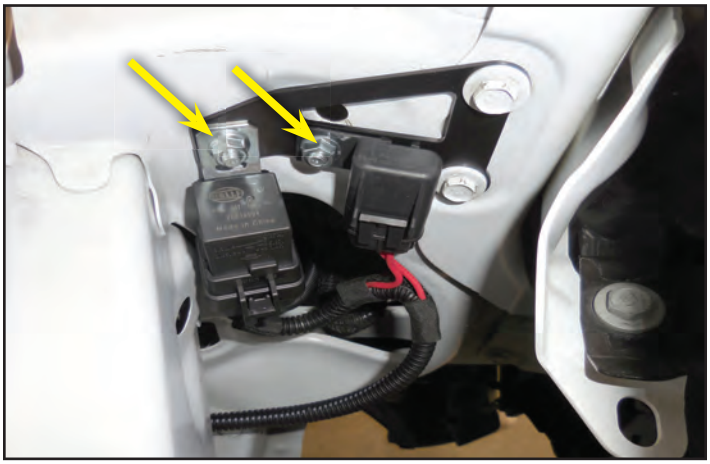
148. Continue to feed the gray plug and associated wiring through the hole in the last step until you have it near the headlight as shown.



149. Run the other length of wire with the in-line fuse through the triangular hole shown with the arrow. This will be fed under the fuse box.



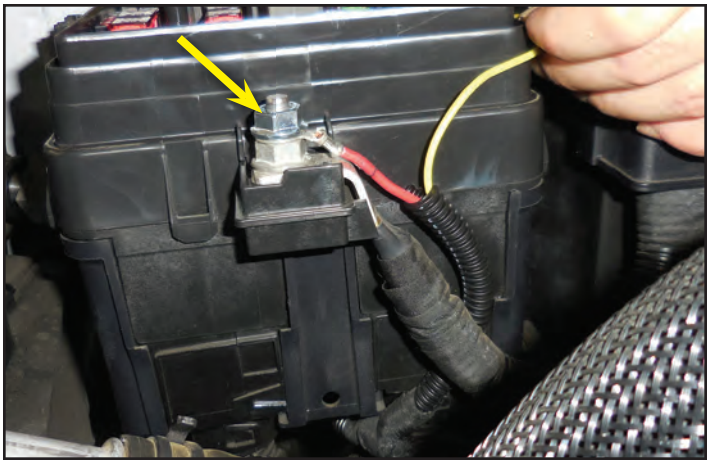
150. Secure the relay and fuse holder to the bracket with the provided serrated flange nuts.



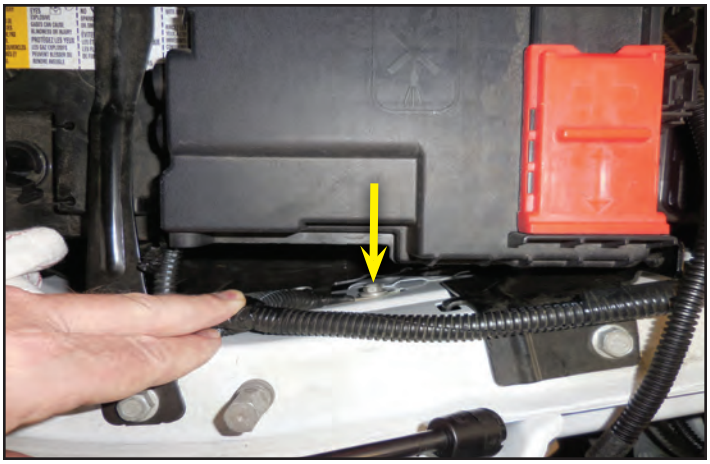
151. Route the red positive wire, and yellow trigger wire under the fuse box.



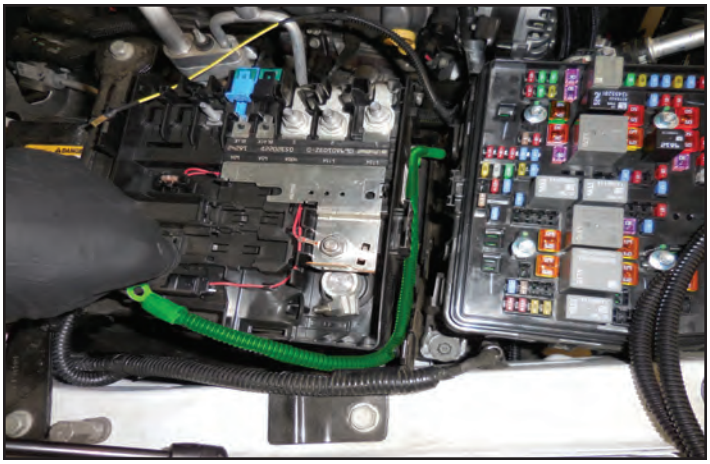
152. Place the red positive wire's eyelet terminal over the main supply nut and secure with a provided serrated flange nut. Once the nut is tight, gently press down on the eyelet until it stops on the eyelet underneath.



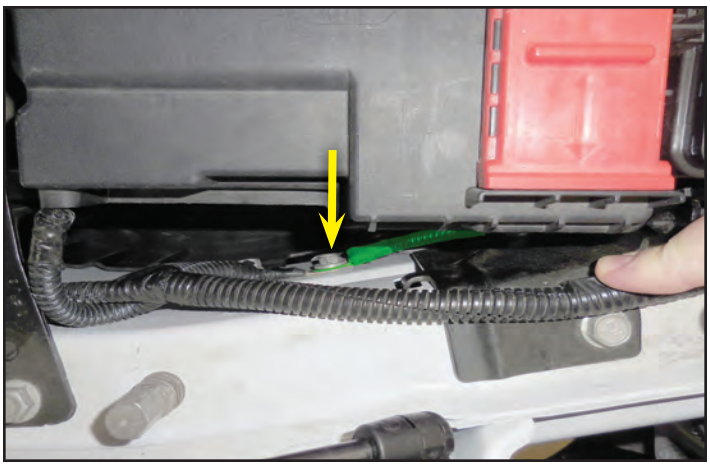
153. Remove the grounding bolt at the arrow location.



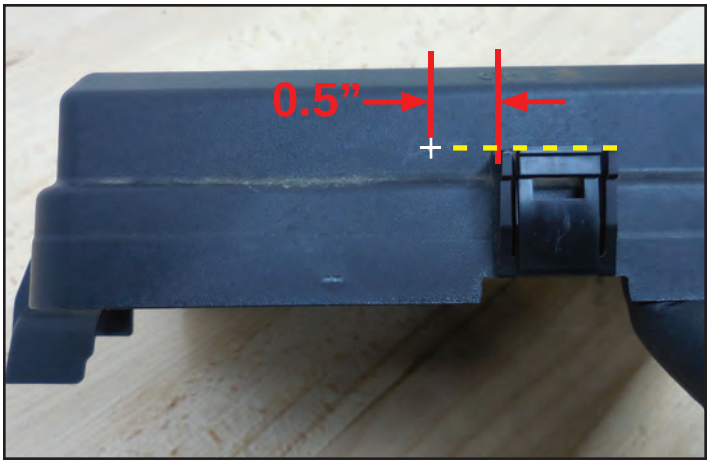
154. Route the ground wire for the intercooler pump harness as shown highlighted in green towards the bolt location from the last step.



155. Place the ground wire eyelet from the intercooler harness on top of the OEM ground and reinstall the bolt from two steps ago.



156. Make sure you are referencing the locktab/side that faces the rear of the vehicle.
Mark a cross on the back of the fuse box lid indicating a location 0.5” from the release lever and level with it as shown here.



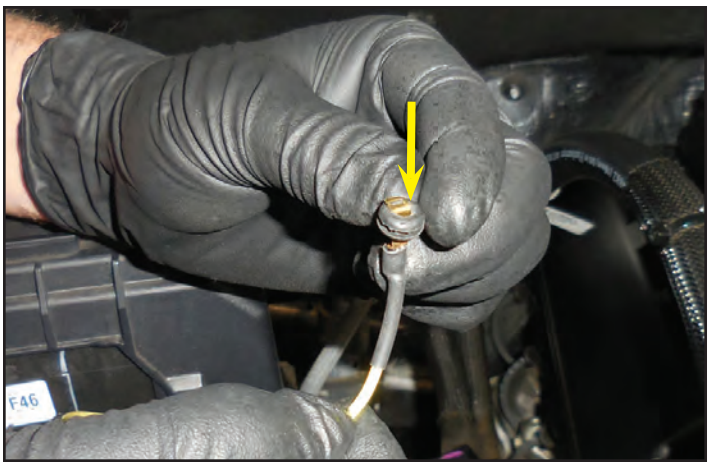
157. Use a center punch to indent the cross location from the last step. Use a 1/8” drill to start the hole location.



158. Use a step drill to open the hole up to 1/4” in diameter.



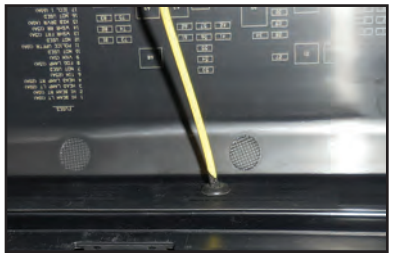
159. Place the supplied grommet over the yellow trigger wire.



160. Slide the provided grommet from the last step over the yellow trigger wire just above the tape that was added in a previous step at the arrow.



161. Route the yellow trigger wire though the hole that was made in the fuse box cover. Make sure the grommet is fully seated on both sides.





162. Remove the fuse at location #47 (TCM IGN). Note that this fuse may be either a 10A or a 15A depending on your application.



163. Install the “#47 TCM IGN” fuse on the metal terminal at the end of the yellow trigger wire.



164. Reinstall the fuse at its original location.



165. You will have to use some needle nose pliers to press the fuse in tight.



166. Route the end of the cable with the gray connector down from the top of the engine compartment as shown highlighted in green. This view is from under the vehicle on the passenger side with the wheel well cover removed. It is not necessary to remove the wheel well cover.



167. Route the end of the cable with the gray connector above the electrical harness shown at the arrow.



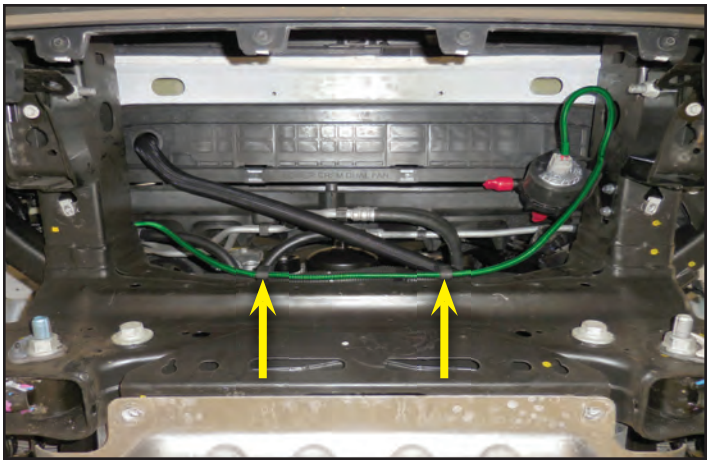
168. Route the gray connector over to the intercooler pump. Look at the next step to see how to attach a cable tie to the wire loom.



169. Ensure that there is enough slack to connect the cable from the previous step to the intercooler pump as you attach a provided cable tie with a tree connector on it (highlighted in green) at the location shown with the arrow here. This will provide a stress relief at the cable connection.



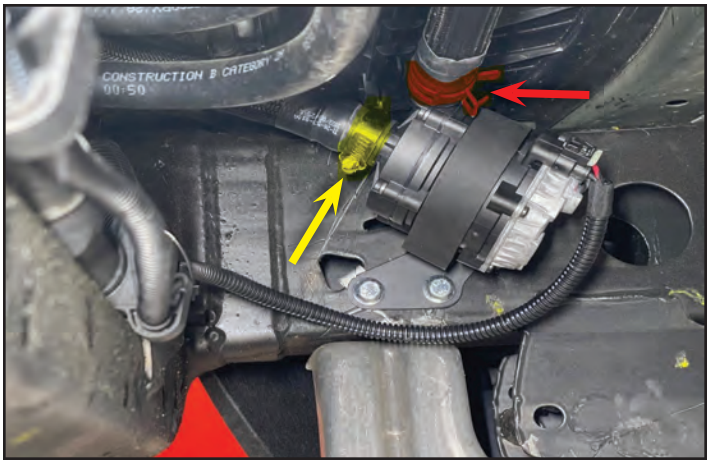
170. Hook the intercooler pump wire loom onto the two OEM connections shown with arrows if they are present. If these hooks are not present use some provided cable ties to secure this cable.



171. Remove the two red caps from the intercooler pump.

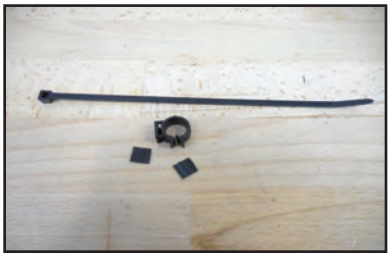


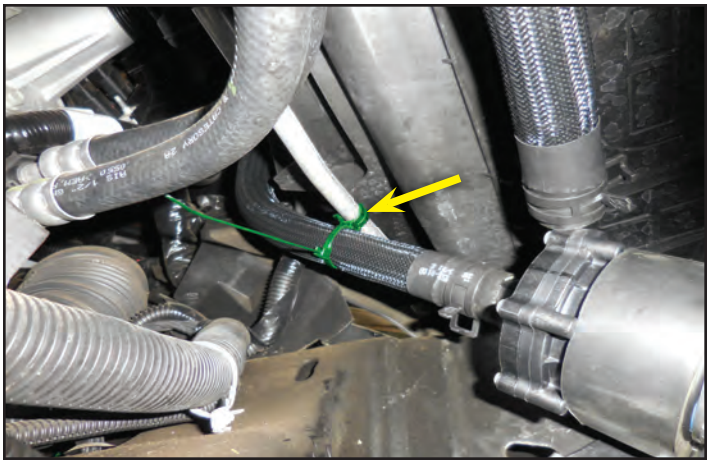
172. **Truck Applications Only:** Attach the hose from the reservoir at the intercooler pump inlet (yellow arrow location) and secure with a provided gear clamp. Note: SUV applications will make this connection at a later step.



All applications: Attach the hose that comes from the lower LTR inlet pipe to the output of the intercooler pump at the red arrow and secure with a provided spring clamp.

173. Remove the inner tabs from another cable tie with clip as shown below. Attach this clip at the tube shown and lightly secure the cable tie at the arrow location. The cable tie and clip are highlighted in green. Trim the excess cable away. SUV applications: hose from reservoir will be attached in a later step

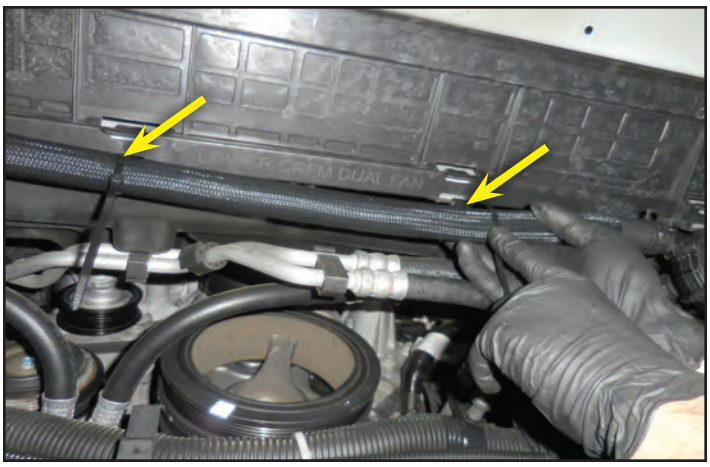




174. Gather two of the provided edge mount cable ties shown.



175. Lightly secure the “LTR to Pump Hose” with two edge mount cable ties that were shown in the last step to the lower plastic radiator panel that was removed earlier at the arrow locations.



176. Here is a photo of the completed routing of hoses and cable ties.

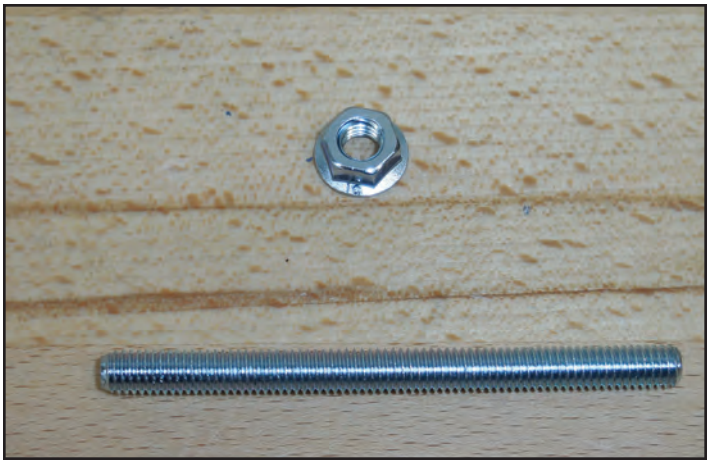


177. Use two cable ties (highlighted in green) to secure the slack of the wire harness that goes to the intercooler pump in the passenger fender well, behind the headlight bucket.

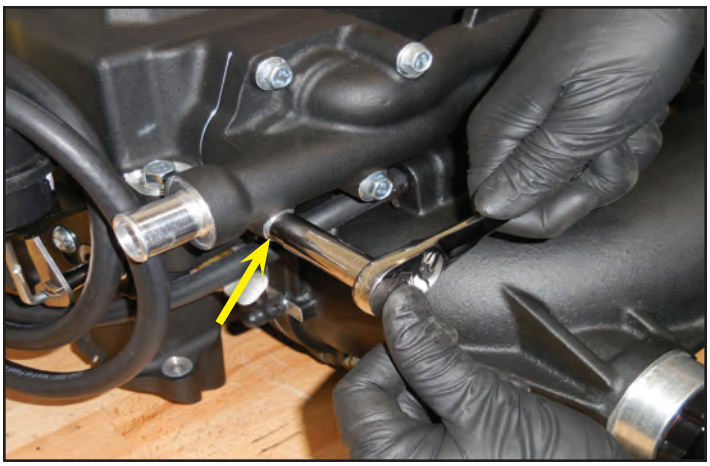


Section 8: Supercharger Preparation and Install

178. The next four steps are not necessary if you are planning to route your electrical harness under the supercharger as shown in a later step. Gather the provided M6x75mm stud and M6 serrated flange nut shown here.



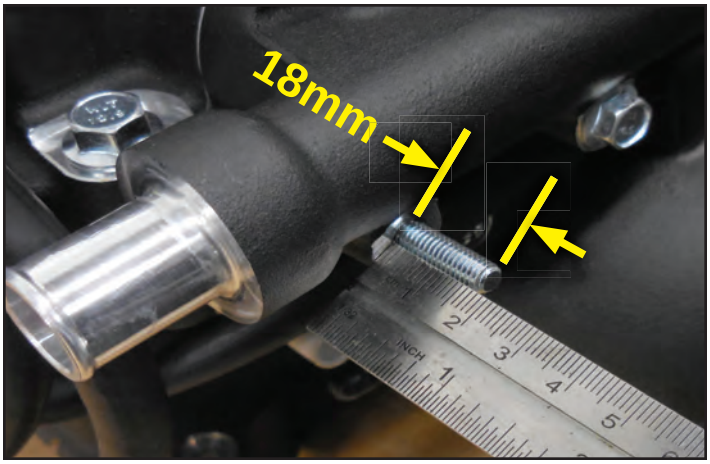
179. Remove the bolt at the arrow location from the supercharger with a 10mm socket wrench..



180. Apply some provided blue Loctite 242 to the stud from two steps ago as shown and install it at the location where the bolt was removed in the last step. It should thread in and bottom out by hand.



181. Ensure that 18mm of thread is protruding.

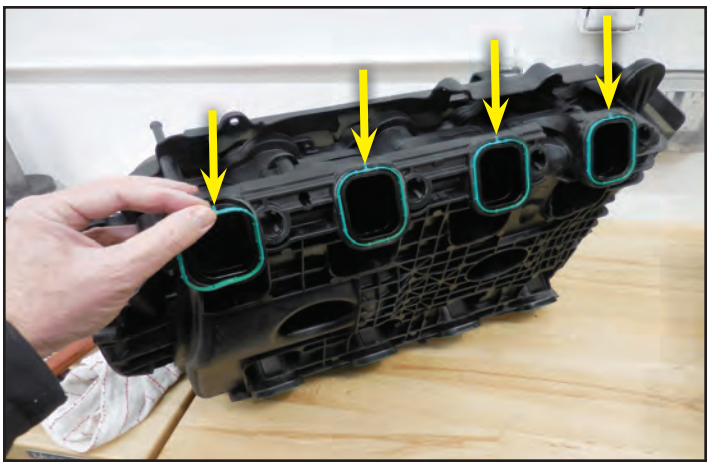


182. Install the provided M6 serrated flange nut on the stud and torque it to 108 in-lbs.

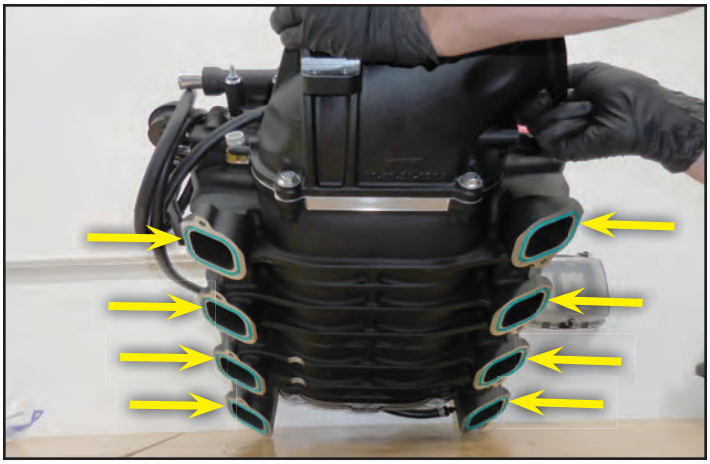




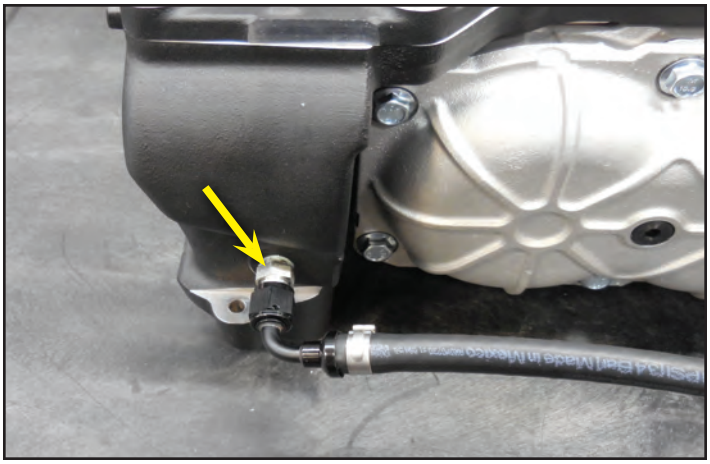
183. Remove the 8 intake manifold gaskets at the bottom of the intake manifold by first pulling at the tabs shown at the arrow locations. These will be installed on the supercharger housing. Replace any damaged gaskets with GM part# 12626354. Wipe the gaskets with a clean dry shop towel.



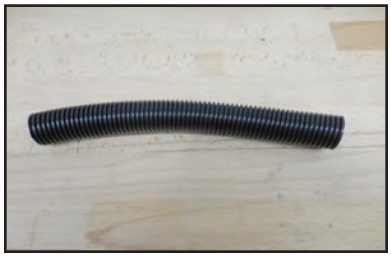
184. Install the 8 gaskets from the last step into the bottom of the supercharger as shown here. Ensure that the tab lines up with the notch in the top edge at the locations shown with yellow arrows.



185. If you need to install a boost reference port you should do so now at the rear left of the supercharger shown at the arrow.



186. Cut 10 inches of the provided 1” diameter slit loom shown below and install it over the wire harness at the driver’s side rear head location.



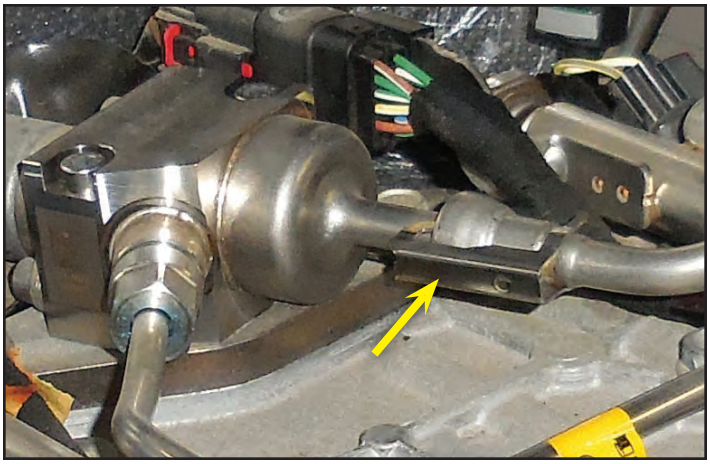


187. Use a small screwdriver to lever the security clip from the fuel line at the red arrow location. Then push the clip in the green arrow direction to remove it. Remove the plastic tether from the securing clip. This will not be reused.



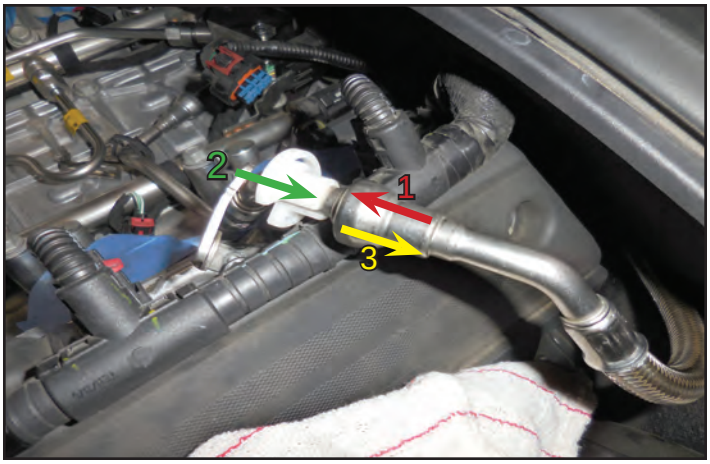


188. Reinstall the securing clip ensuring that it is now oriented to the side as shown with the arrow. This will allow the necessary clearance for the supercharger.

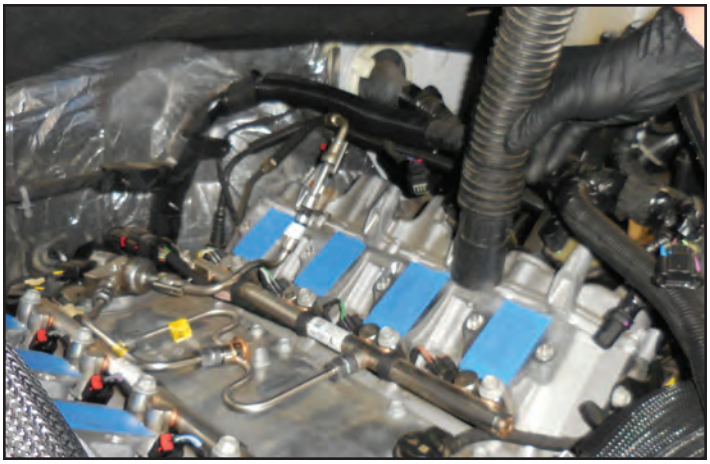


The following step is optional. It will help you access the supercharger mounting bolts in a later step.

189. **Relieve fuel pressure prior to removing this fuel line. Eye protection is necessary**. Place a 3/8” plastic fuel line tool (not provided) at the green arrow location shown. Place rags under the fuel line connection. Push the fuel supply line in towards the engine. Now pull the plastic tool towards the fuel supply line. This will release the connection, causing fuel to leak. Properly dispose of any fuel soaked rags after the fuel line is removed. **(Note: This image is from a Corvette, but the process is the same.)**



190. Vacuum around the intake ports and the engine valley to remove any loose debris.



191. Remove the tape from the intake ports and vacuum them out to remove any debris.





192. Use Simple Green or some other equivalent cleaner to wipe away any left over adhesive or debris. Apply some Lubriplate grease or equivalent lubricant to a clean rag and wipe down the sealing surfaces.



193. Use an engine hoist to hook the installed strap and slowly lower the supercharger in place. You should have a couple of people to help you with this process. Be extra vigilant around the fuel line to ensure that it does not get damaged. Start with the back end of the supercharger pointing down as shown here and gradually work it to a level orientation once it gets closer to its resting spot.

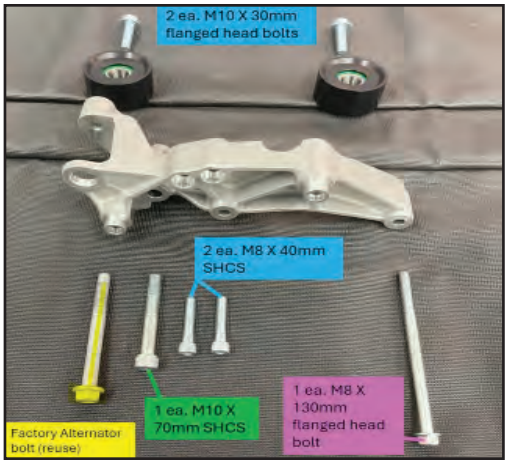


194. Ensure that the bolt holes on the supercharger line up with those on the heads. Make sure the electrical harness lays over the top of the supercharger inlet as shown. (Alternatively you can route the electrical harness under the supercharger for a cleaner look, but this will create more tension on these wires) Verify that the supercharger is fully seated on the heads and not hung up on anything.



195. Gather the provided idler bracket, idlers, and bolts shown.

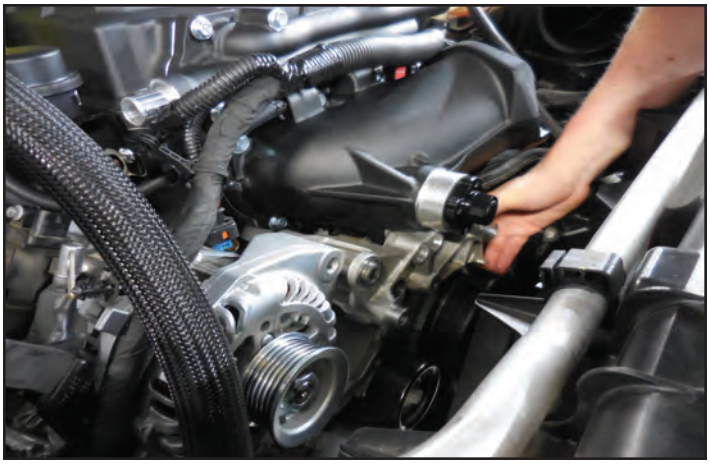
Note: Highlighted fastener shown at bottom left of photo is the original bolt that was removed from the alternator in a previous step.



196. Lift the front of the supercharger to place the idler bracket from the last step into position. You will have to align the bracket down in the pocket the alternator used to sit in. Gently lower the supercharger back down and verify that the bracket moves freely.

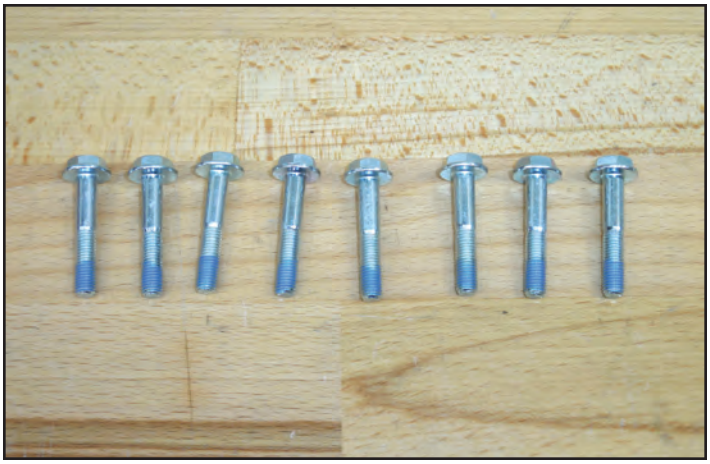


197. Here you can see the idler bracket placed in position.



198. Gather the 8 provided M6x35mm bolts and apply blue Loctite 242 to the ends as shown. Gather the provided swivel socket shown below.



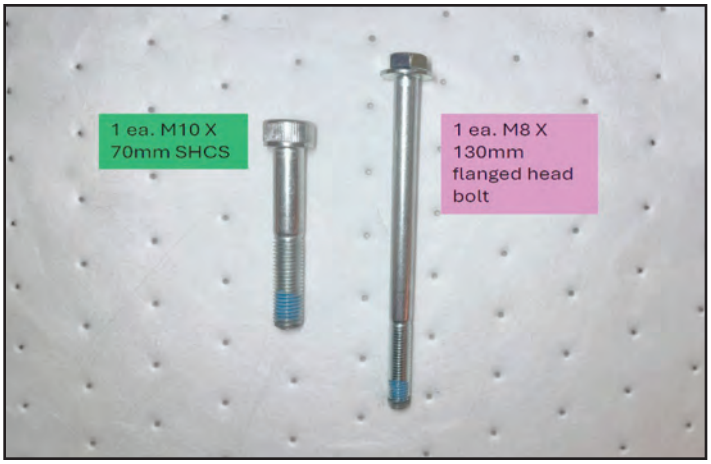


199. Use a magnetic telescoping pick up tool to install the 8 supercharger mounting bolts from the last step starting from the driver's side front.



200. Select the M10 X 70mm long socket head cap screw and M8 X 130mm long hex bolt.

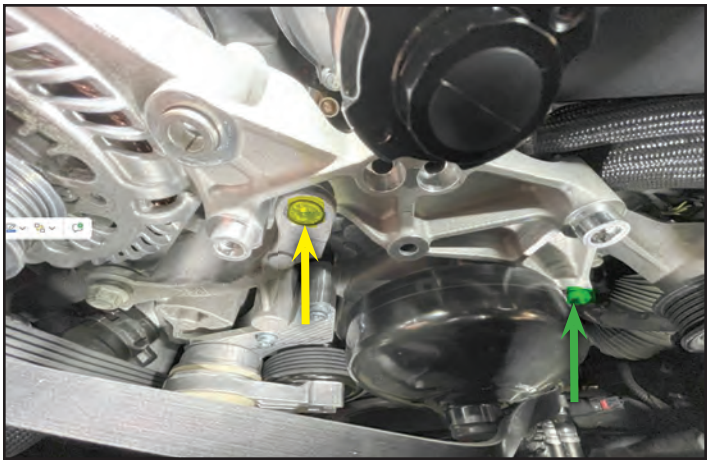
Apply Loctite 242 to the threads of each fastener.



201. Install the M10 X 70mm socket head cap screw in the location shown with the yellow arrow.

Install the M8 X 130mm long bolt in the location shown with the green arrow.

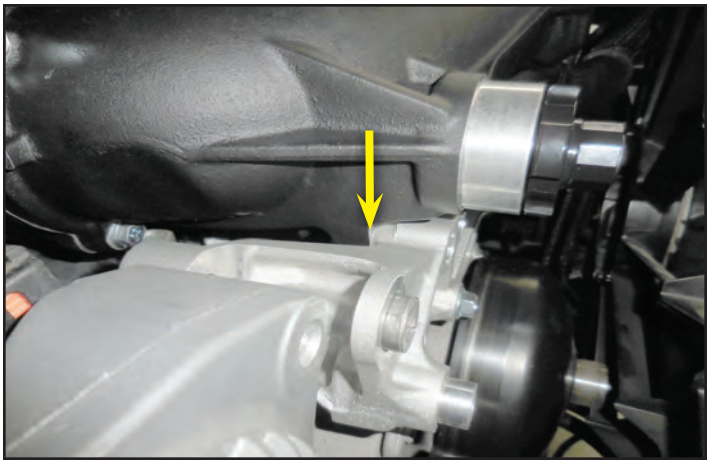
ONLY HAND TIGHTEN THESE FASTENERS FOR NOW.



202. Use socket from three steps ago with a 1/4" drive long extension to tighten the 8 bolts that were just installed. Start out by spinning these bolts in place by hand without a wrench. Follow the torque order given at the back of this manual and gradually work your way up to the final torque of 120 in-lbs. Spin the supercharger at the input shaft to ensure that it is rotating freely after torquing the bolts. (Note: Ensure that you reconnect the fuel supply line once the supercharger is torqued to the engine.)



203. Ensure that the idler bracket sits flush with front of the supercharger at the arrow location.

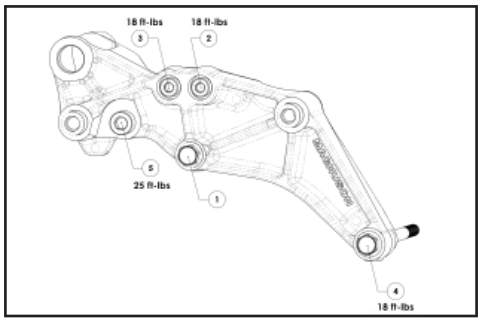


204. Gather the provided M8x40mm bolts shown below and apply blue Loctite 242 to the ends. Install these two bolts at the locations shown with arrows below the supercharger input shaft. You may need to loosen the other 2 slightly to get these to align.





205. Torque all the bolts at the idler bracket according to diagram at the back of this manual.





206. Rotate the alternator into the new idler bracket and insert the stock bolt.

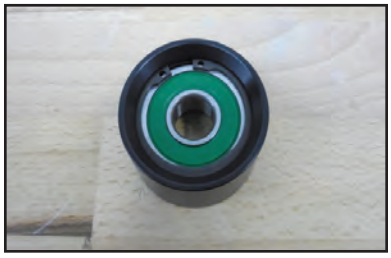


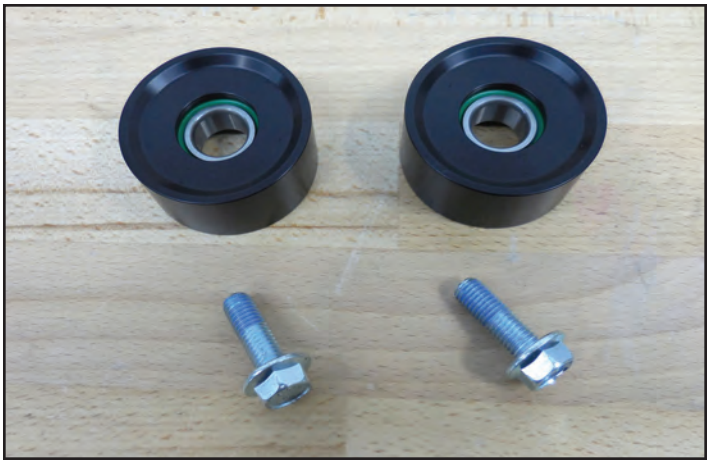


207. Torque the two alternator bolts shown in the last step with arrows to 25 ft-lbs.



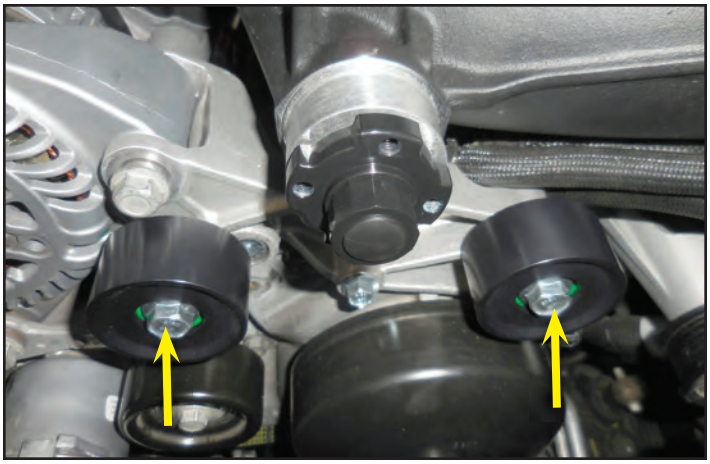
208. Gather the two provided idler pulleys shown along with the two M10x30mm bolts. Apply blue Loctite 242 to the bolts. Ensure that the side with the bearing surface and clip shown below is facing towards the engine when installed.



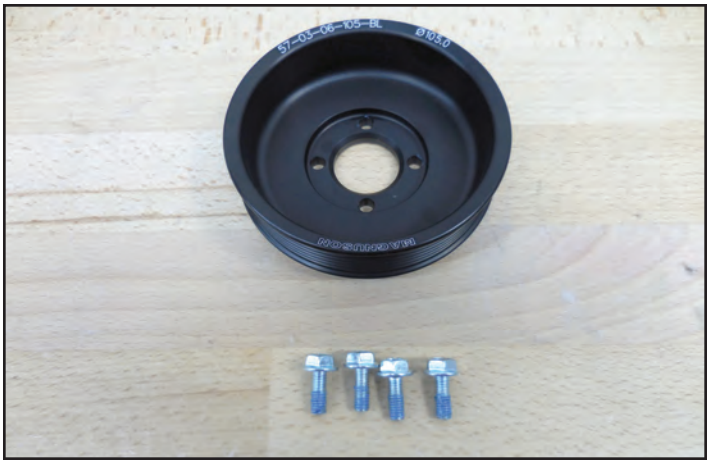


209. Torque these two bolts to 25 ft-lbs after installing the idlers at the arrow locations.

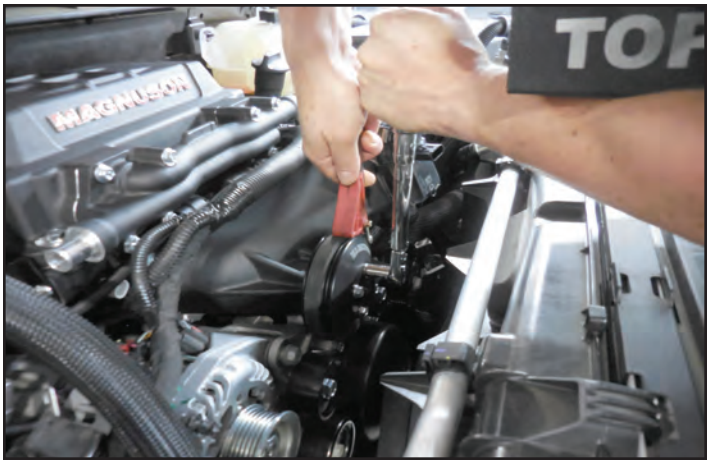




210. Gather the pulley and bolts shown. Apply blue Loctite 242 to the four bolts.



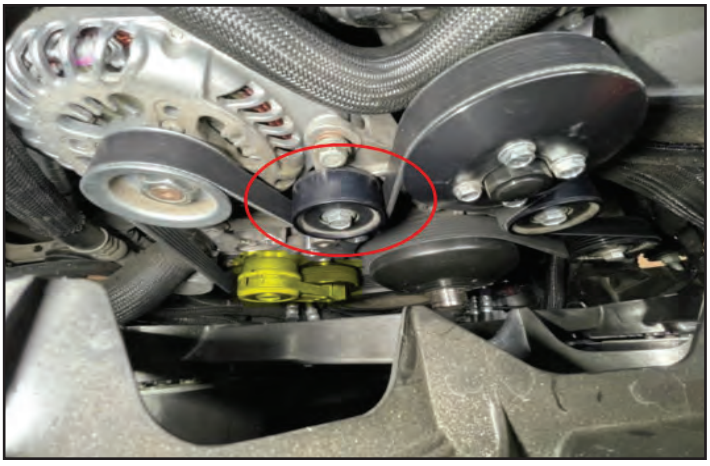
211. Use a strap wrench to hold the supercharger pulley in place while you torque it to 108 in-lbs using a 10mm socket wrench.



212. Route the belt around all the pulleys except for the one circled, as per the diagram in Appendix B at the back of this manual.

Cycle the highlighted tensioner using a 3/8” breaker bar and fully install the belt around the last pulley.

Ensure the belt is seated properly around each pulley.

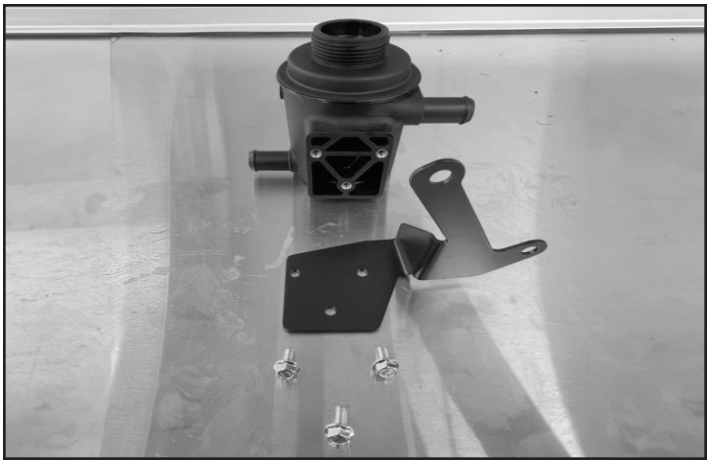


213. Remove the four supercharger lid bolts that are holding the two metal brackets that are securing the lift strap using a 12mm socket wrench. The 4 bolts will be reinstalled in the next step. Save the strap and brackets in case you ever need to remove the supercharger.



214. **SUV Applications ONLY:**
Install the reservoir and bracket to the supercharger.

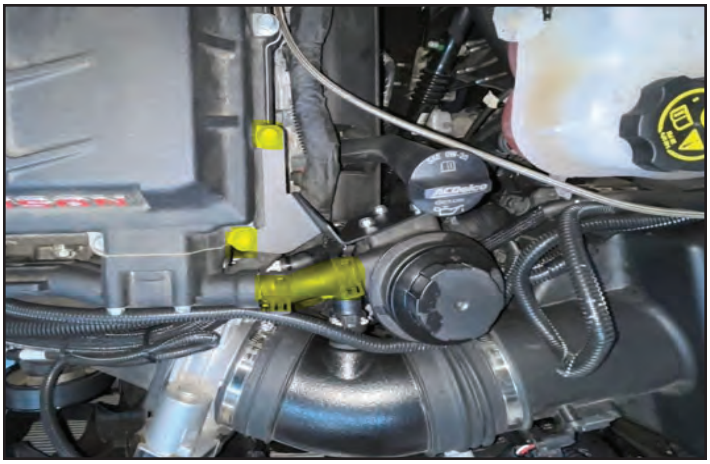
Select the SUV reservoir bracket PN 65-26-53-016, reservoir PN 68-01-03-019 and (3) M6 X 12mm long fasteners from the kit.



215. **SUV Applications Only:**
Sub-assemble the bracket to the reservoir using the (3) M6X12mm long fasteners as shown. Apply Loctite 242 to the fasteners then install and torque them to 50 in-lbs.



216. **SUV Applications Only:**
Remove (2) fasteners from the supercharger lid in the locations shown.



Cut a 3” long piece of ¾” bulk hose from the kit, install it onto the upper reservoir tube and secure it using an MU27 constant tension clamp.

Install a second MU27 clamp to the opposite end of the hose, then install the hose over the tube at the LH front corner of the supercharger. Rotate the reservoir and bracket assembly into place so the 2 holes in the bracket sit over top of the supercharger lid in the location shown.

Re-install the 2 lid fasteners and run them down. They will be torqued together with the others that were removed in the next step.

Secure the hose to the supercharger using the clamp.

217. **All Applications:** Apply Loctite 242 to any lid fasteners that were removed. Rundown and torque the lid fasteners to 18 ft-lbs.





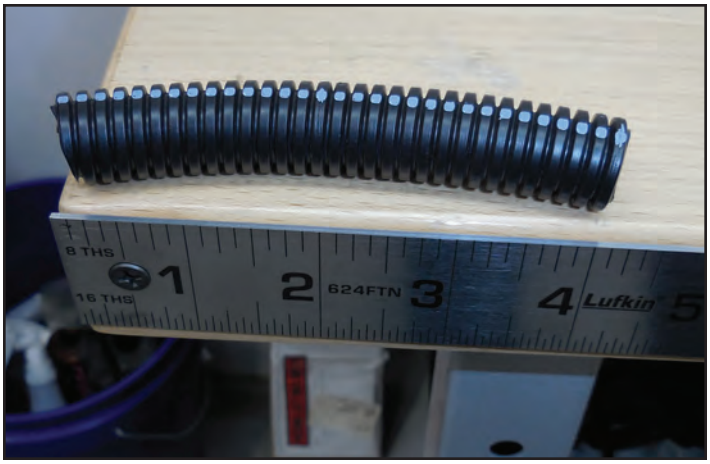
218. Reinstall the 4 rear coils in their original locations. Torque the 8 bolts to 108 in-lbs.



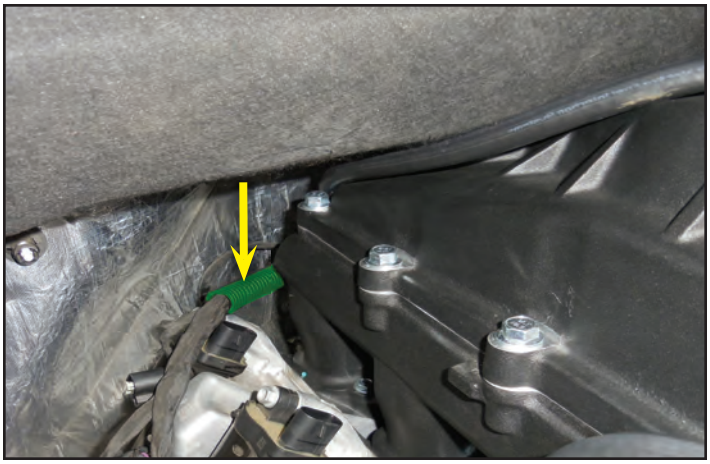
219. Reconnect the spark plug wires to the coils.



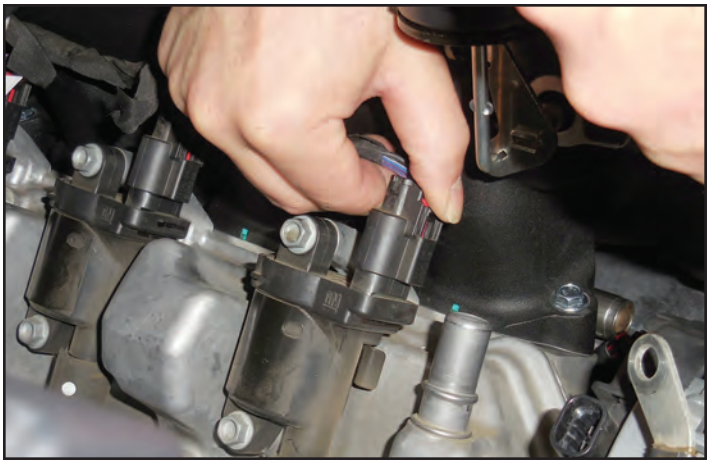
220. Cut the provided 3/4” slit loom to 4” long.



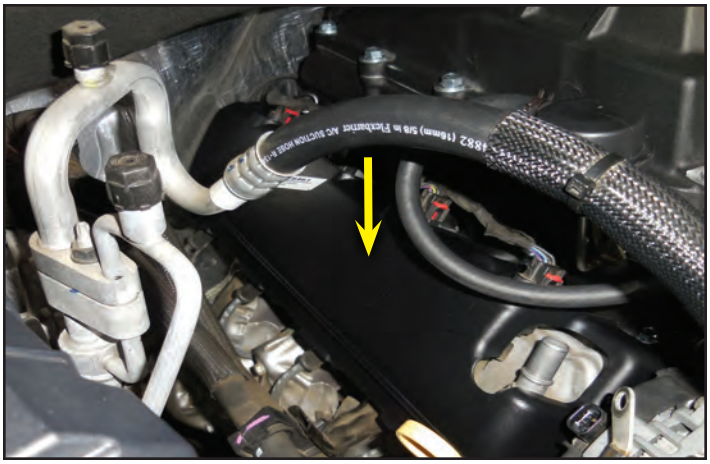
221. Install the slit loom from the last step (highlighted in green) over the wiring harness at the arrow location.



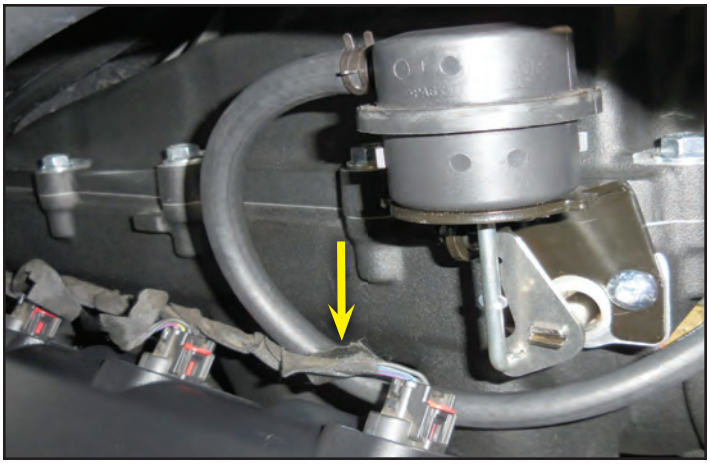
222. Plug in the electrical connections for all the coil packs on both sides.



223. Reinstall the coil covers on the passenger side.



224. Route the vacuum line for the supercharger bypass behind the wiring for the coils as shown at the arrow.



225. Mark the driver's side coil cover at the silver lines shown here. The area to be removed is highlighted in red.





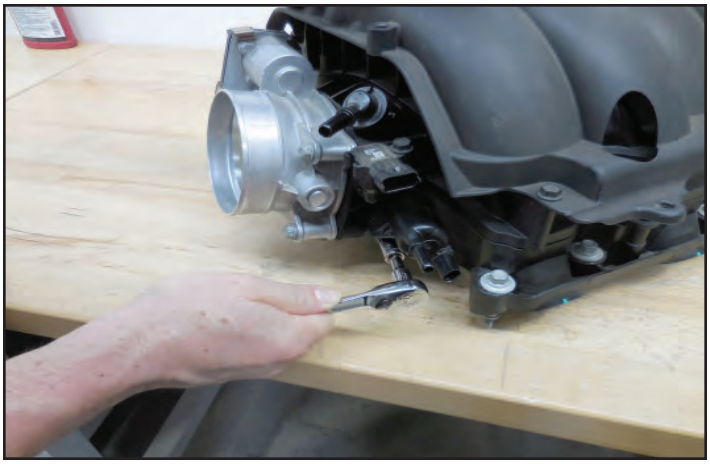
226. Trim the driver's side coil cover at the lines that were made in the last step.



227. Reinstall the driver's side coil cover.

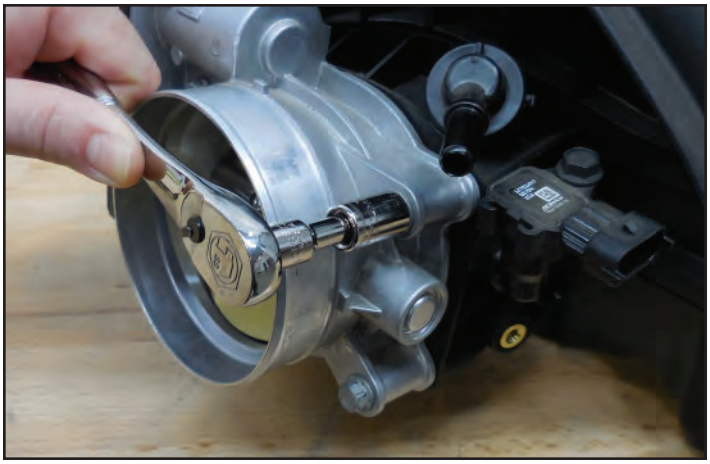


Section 9: Throttle Body, EVAP Solenoid and PCV Hose Install

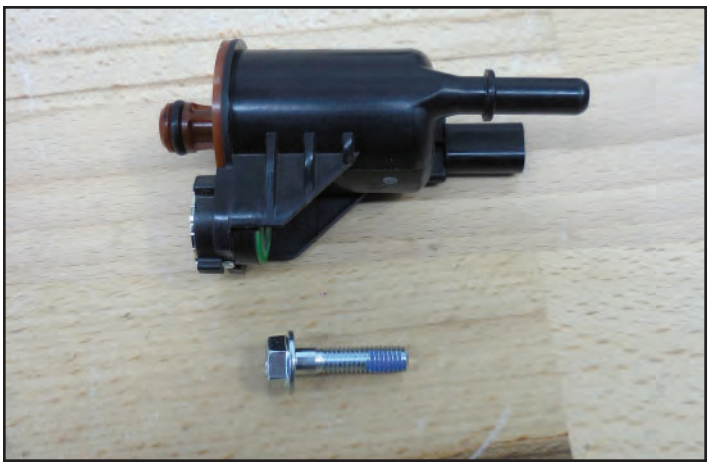


228. Remove the bolt holding the EVAP solenoid. Pull the EVAP solenoid out for installation in the supercharger. This bolt will not be reused.

229. You will be using your OEM throttle body if you have a 6.2L engine. Remove the four bolts holding the throttle body to the OEM manifold. These bolts will not be reused. If you have a 5.3L engine you will need to purchase a GM 6.2L throttle body shown below:
2019-2021 require GM part number: 12740727
2022+ require GM part number: 12746422



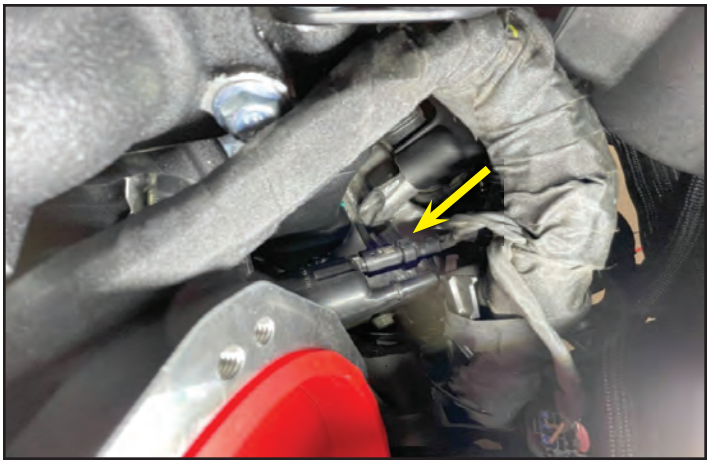
230. Gather the EVAP solenoid that you just removed and the provided M6x25mm bolt shown. Apply blue Loctite 242 to the bolt before installation.



231. Install the EVAP solenoid in the location shown with the arrow using the provided M6x25mm bolt from the last step.

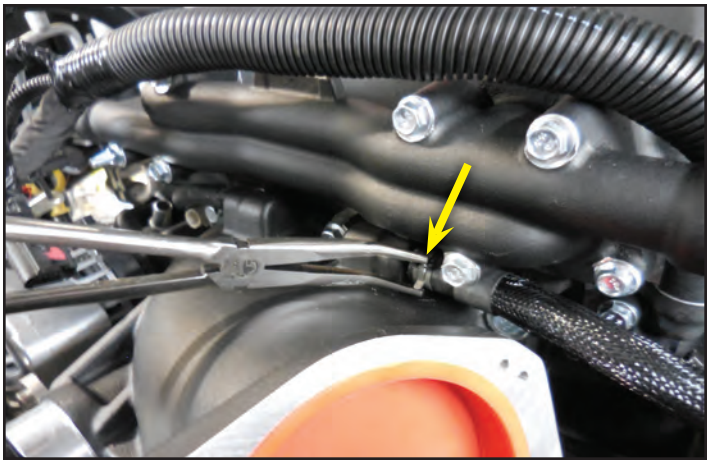


232. Plug the factory harness into the EVAP solenoid (yellow arrow).

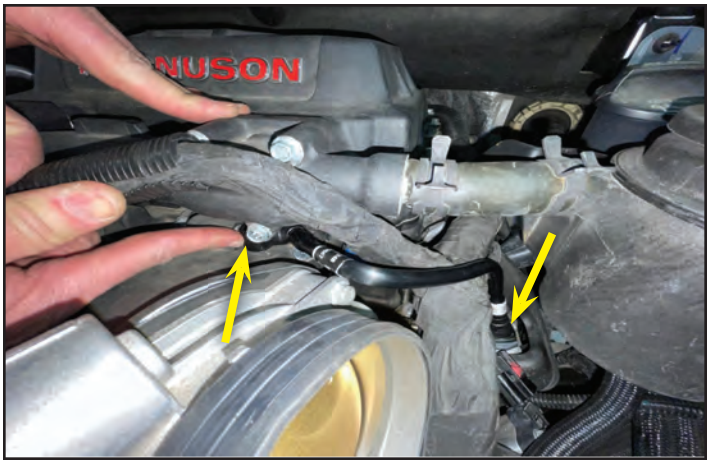


233. Preinstall the provided spring clamp shown below on the side of the hose from the last step without the fitting and secure that end on the supercharger at the arrow location.





234. Re install the factory dirty air PCV line as shown.



235. Install the EVAP hose line at the arrow location.



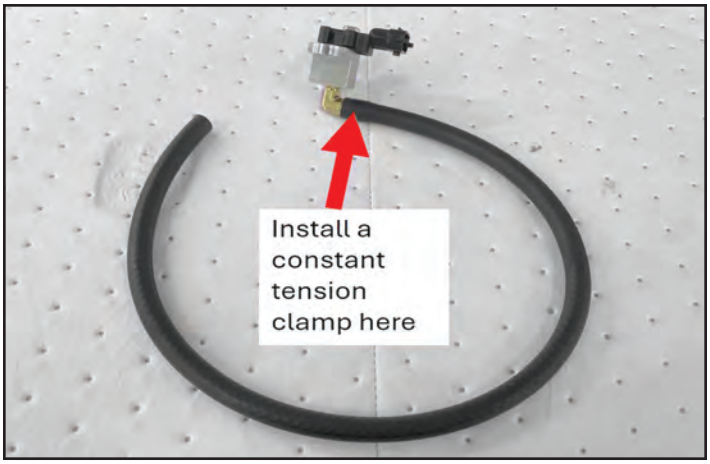
236. Select the billet aluminum adaptor, 90-degree elbow, GM MAP sensor PN 12711681 and M6X20mm long fastener from the kit.

Sub-assemble the fitting and sensor to the billet adaptor. Secure the MAP sensor using the M6 fastener.



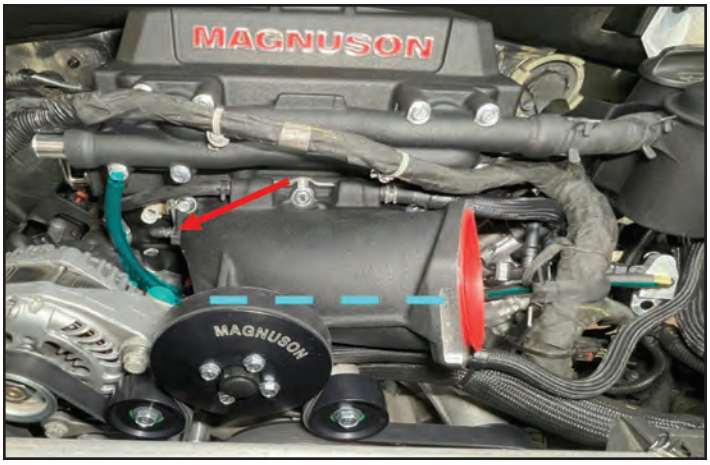
237. Install a 2-foot long piece of ¼" I.D. rubber hose from the kit onto the barbed fitting.

Install a small constant tension clamp from the kit over the hose at the fitting.

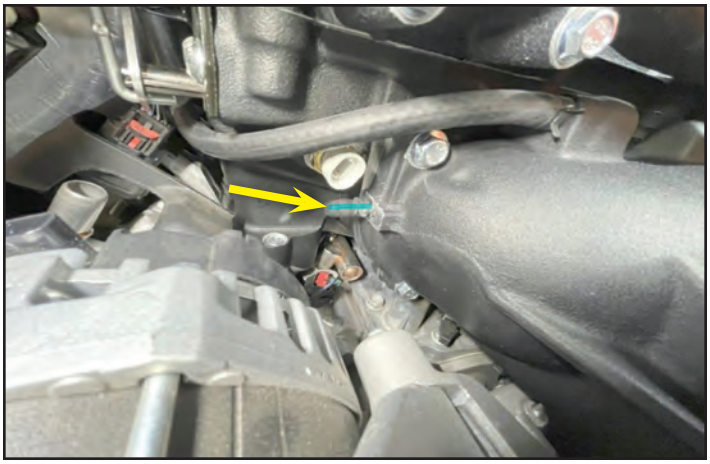


238. Prepare to install the MAP sensor sub-assembly.

Route the ¼" hose under the main wiring harness bundle and the supercharger inlet, then over to the fitting shown. The following step shows the location in more detail.



239. Remove the clamp and rubber plug from the location highlighted on the RH side of the supercharger inlet.



240. Install a second constant tension clamp onto the ¼" ID hose then install the hose to the fitting and secure it with the clamp.



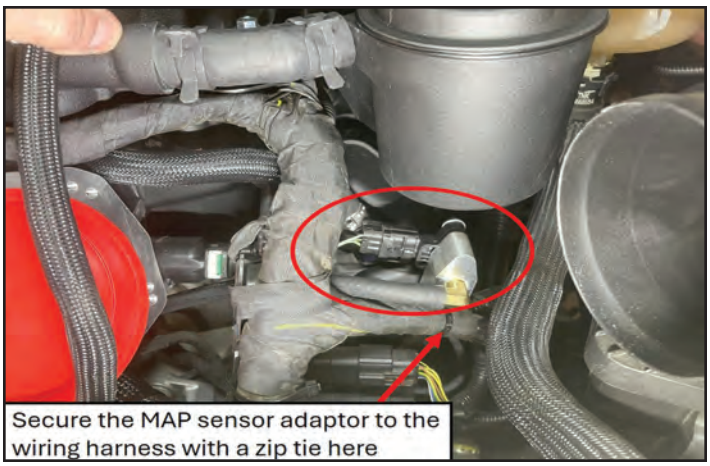
241. ½" I.D. rubber hose shown installed onto fitting and routed under the inlet at blue highlighted area.

Note: ensure a constant tension clamp is installed at this location.



242. Plug the MAP sensor into the factory connector in the location shown.

Secure the MAP sensor sub-assembly to the factory wiring harness bundle using a zip tie in the location shown.



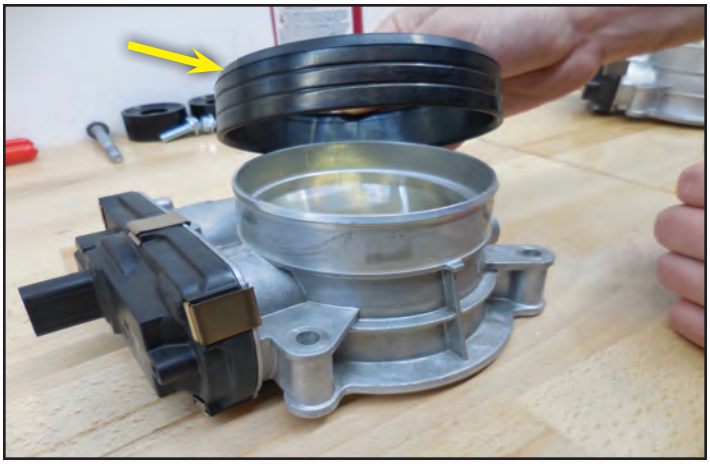
243. Remove the red cap at the supercharger inlet.



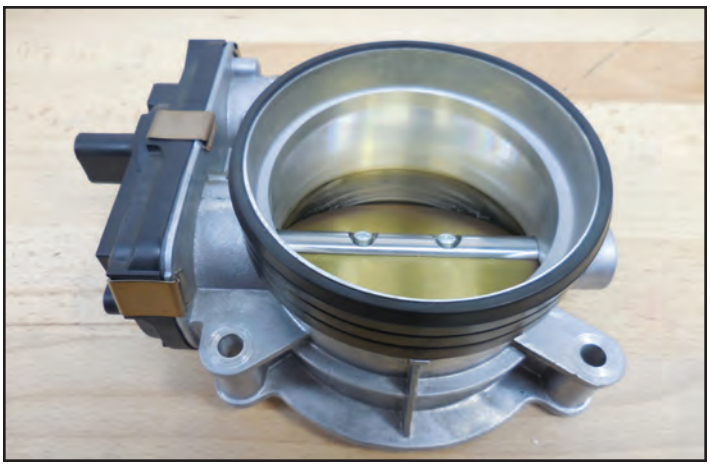
244. Remove the rubber adaptor from the end of the provided inlet duct.



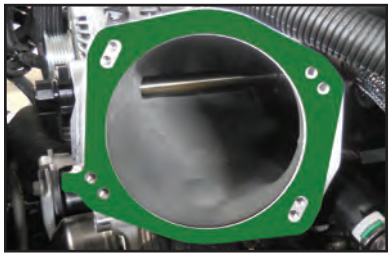
245. Install the rubber adaptor over the throttle body in the orientation shown, with the large external chamfer (arrow location) facing UP.

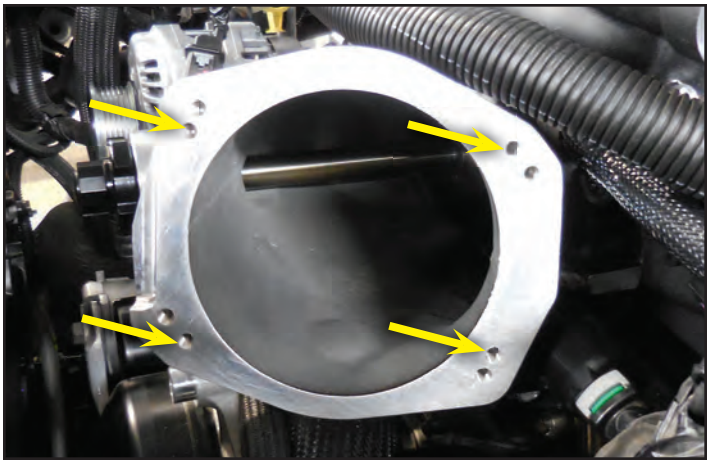


246. Here is the adaptor in its final location with the large chamfer facing up.



247. The factory throttle will use the 4 holes shown with arrows. Install the provided gasket oriented as shown below highlighted in green.





248. Select (4) M6X40mm fasteners from the kit. Apply blue Loctite to the fasteners as shown in the photo below.

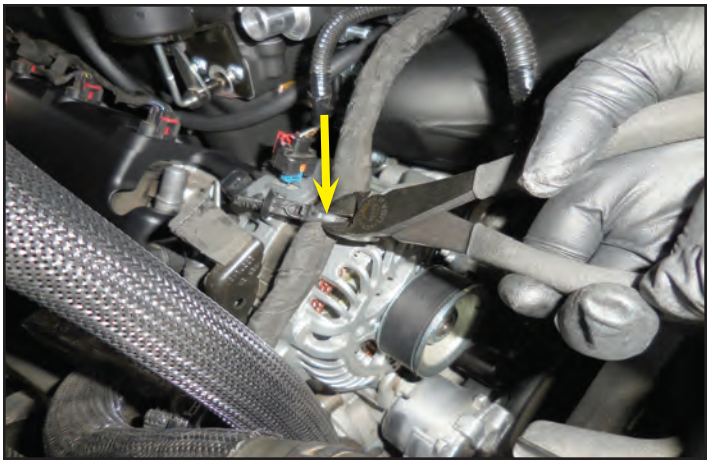




249. Torque the four M6x40mm bolts in two stages with the final torque of 130 in-lbs.



250. Cut the cable tie for the electrical harness shown at the arrow. It will not be reused.



251. Install the power wire back onto the alternator and retighten the nut with a 17mm socket wrench.

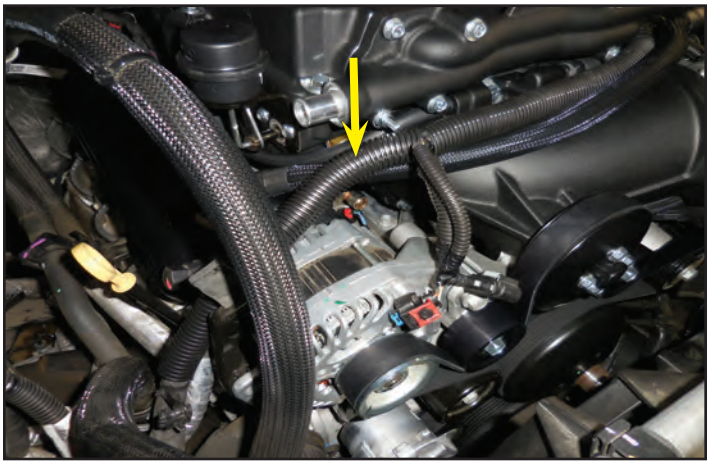


252. Unwrap the tape at the electrical harness junction shown.

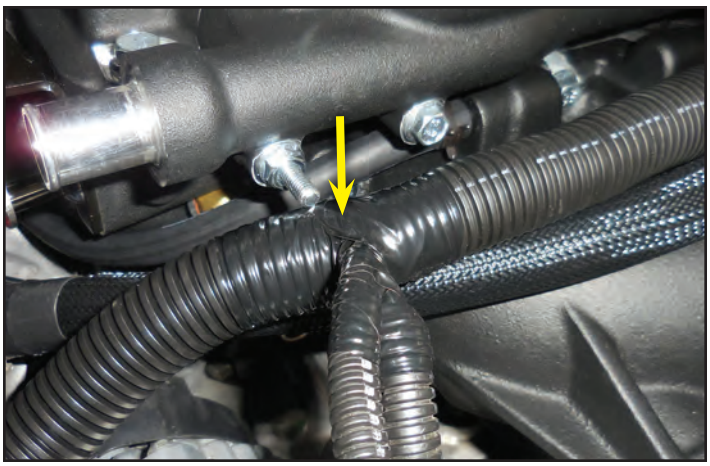


253. Cut 10 inches of 3/4” slit loom and install it at the arrow location.

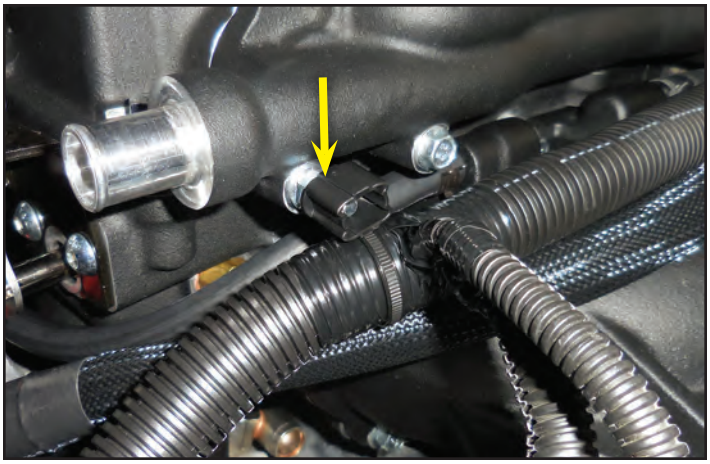




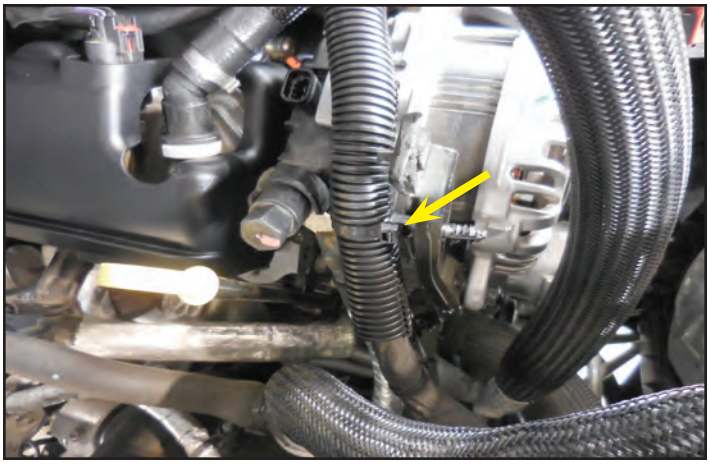
254. Rewrap the junction with electrical tape as shown.



255. Install the provided cable tie with the M6 thread connection at the arrow location. Make sure the tie wrap does not pinch the wires at the junction.



256. Install a provided tree style cable tie at the arrow location.

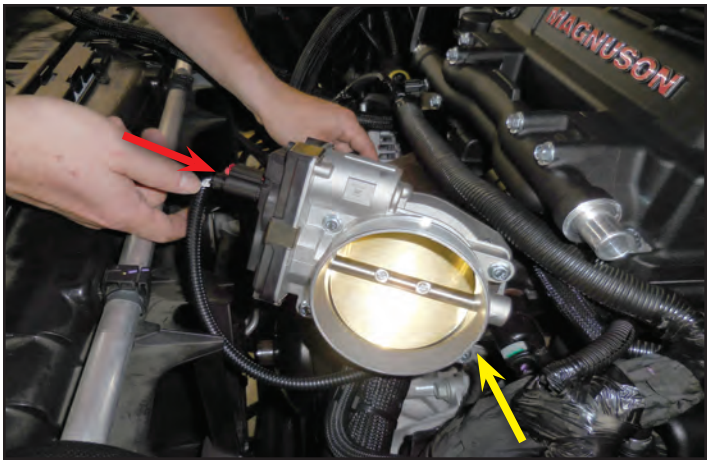


257. Plug in the electrical connection for the alternator and engage the lock.



258. Gather the provided electronic throttle control (ETC) cable extension shown below. Route the cable end under the supercharger inlet at the yellow arrow. Plug it into the throttle body and engage the lock.



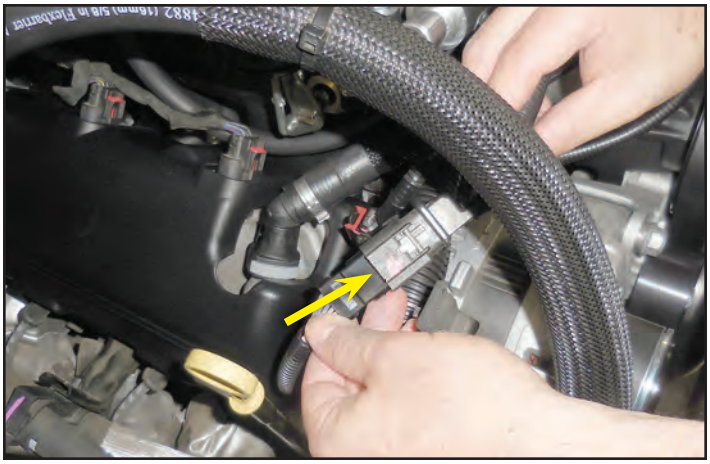


259. Verify the ETC cable doesn't come into contact with any pulleys.

Use a cable tie to secure it as needed.



260. Connect the ETC extension to the OEM plug and engage the lock.



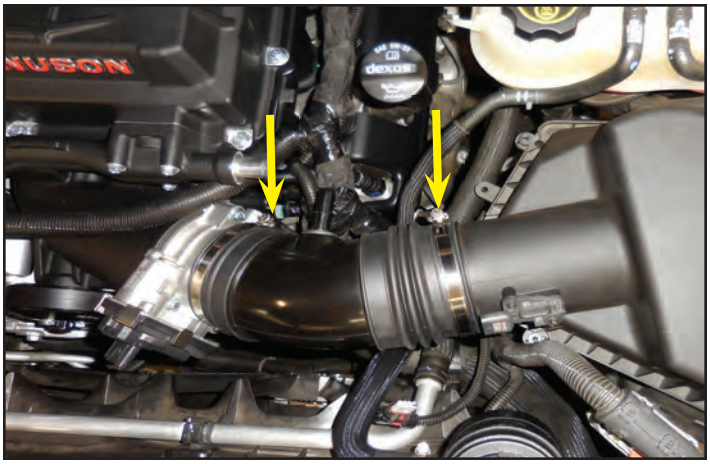
261. Remove the bolts holding the air filter lid with an 8mm nut driver. Inspect the filter and replace as necessary. The lid will remain loose for now to install the provided air inlet duct.



262. Gather the provided air inlet duct and the two hose clamps shown attached at the ends.



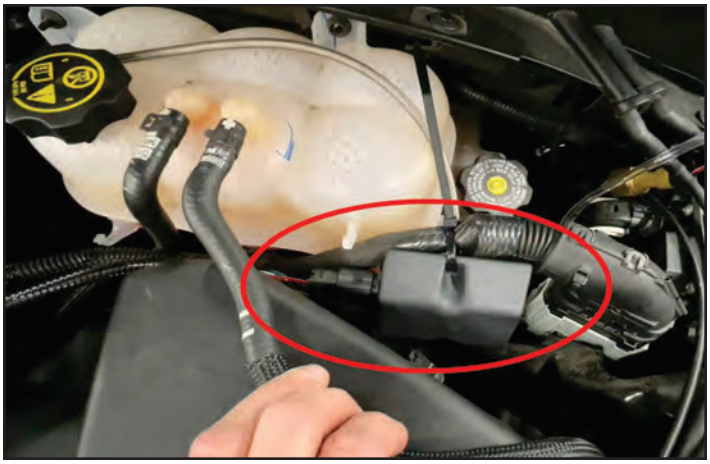
263. Install the air inlet duct between the throttle body and the airbox lid. Secure in place with the two hose clamps. Install first on the air box lid and then lower the lid/duct assembly down, sliding the duct onto the throttle body.



264. Select the 82-55-80-107 break-out box/ wiring harness assembly from the kit.



265. Use a zip tie from the kit and secure the break-out box to the factory wiring harness bundle in the location shown.

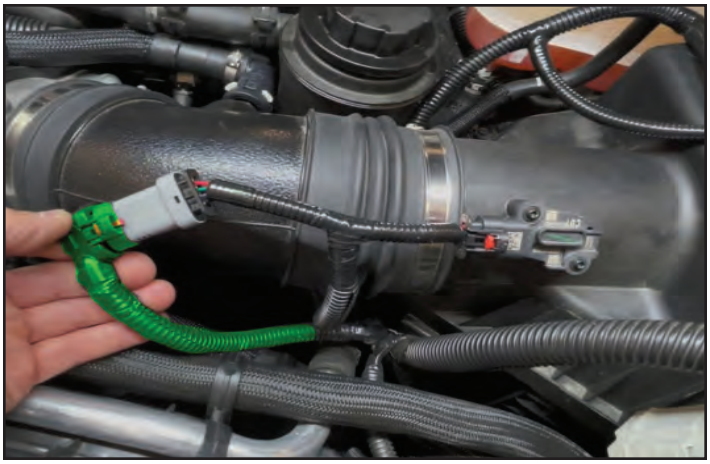


266. Select the harness takeout shown with the T-shaped end. Route it under the clean air tube as shown in the following step.



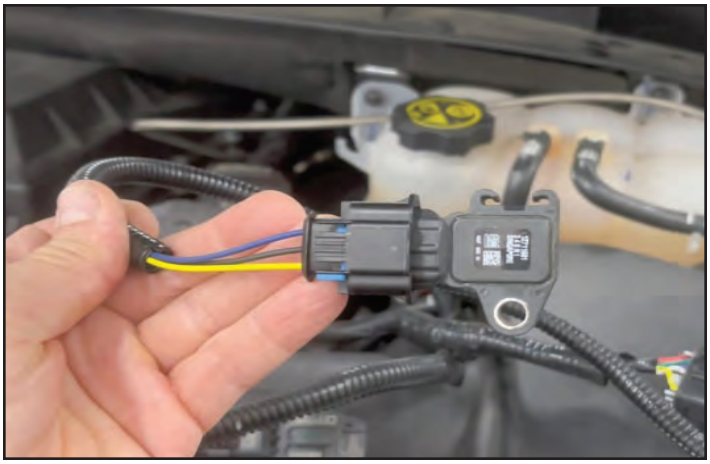
267. Plug the black connector into the factory MAF sensor at the airbox and secure it by cycling the red tab on the connector.

Find the factory MAF sensor wire (highlighted in green) and connect it into the grey plug. Secure it by cycling the red tab on the connector.



268. Remove the GM Baro sensor PN 12711681 from the front of the factory intake and install it into the 82-55-80-107 wiring harness takeout with the blue/brown/yellow leads.

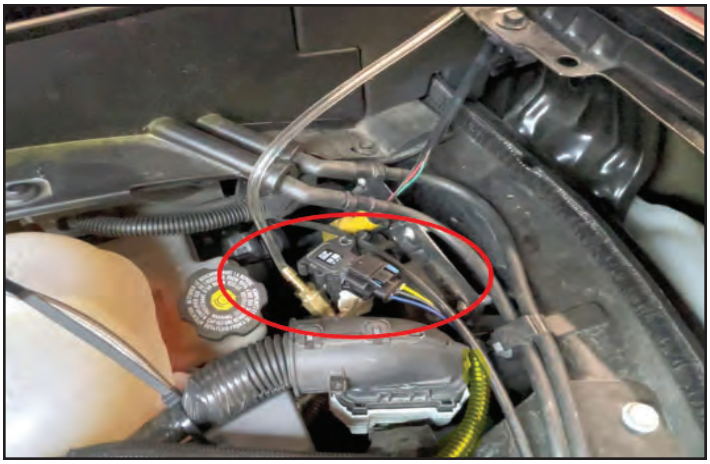
Ensure the connector fully seats onto the sensor.



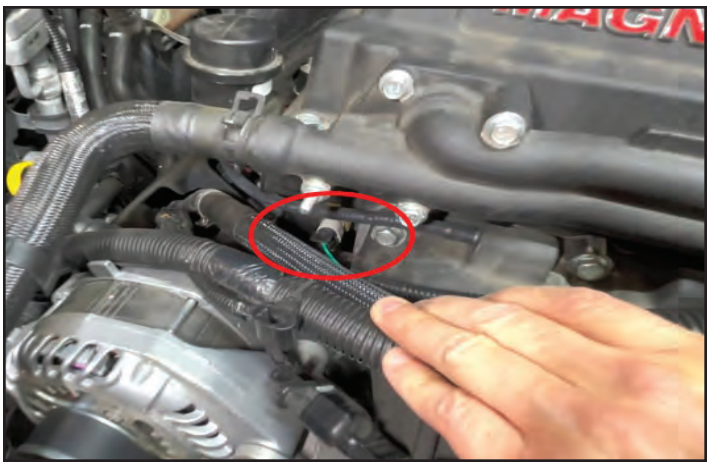
269. Zip tie the baro sensor with the port facing down, to the hood latch cable in the location shown.

Carefully route the wiring harness around the large factory connector and tuck it down behind the air box.

Ensure the baro sensor port faces down so that water is not allowed to enter inside the port.

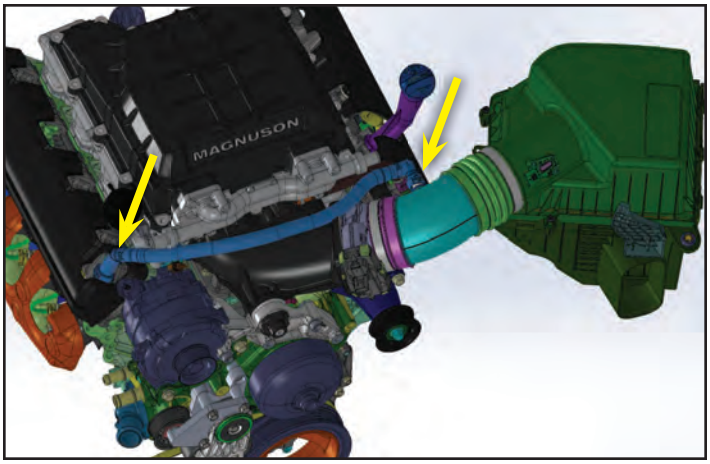


270. Route the last harness take out (with the 2-pin connector) from the break-out box, under the supercharger inlet and toward the RH front corner of the supercharger. Connect the harness to the IAT sensor in the location shown.

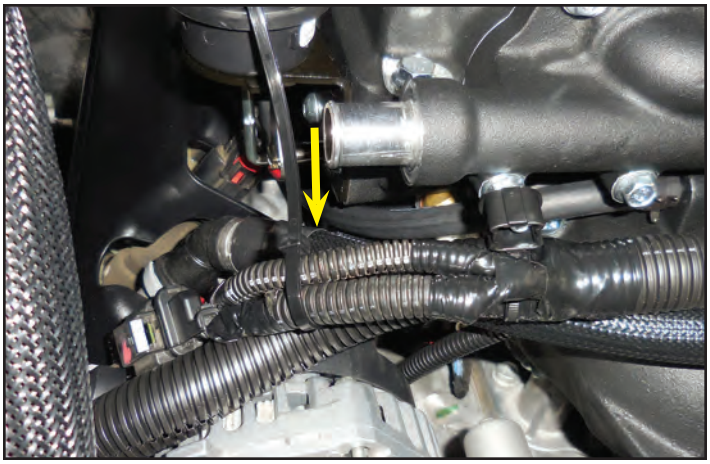


271. Install the provided PCV hose (35-26-53-010) in the arrow locations. Ensure that the connections lock securely.



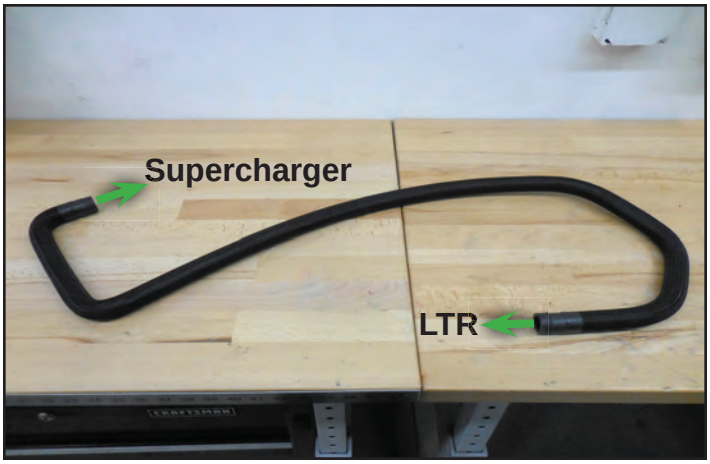


272. Secure the electrical harness to the PCV hose with a cable tie at the arrow location.

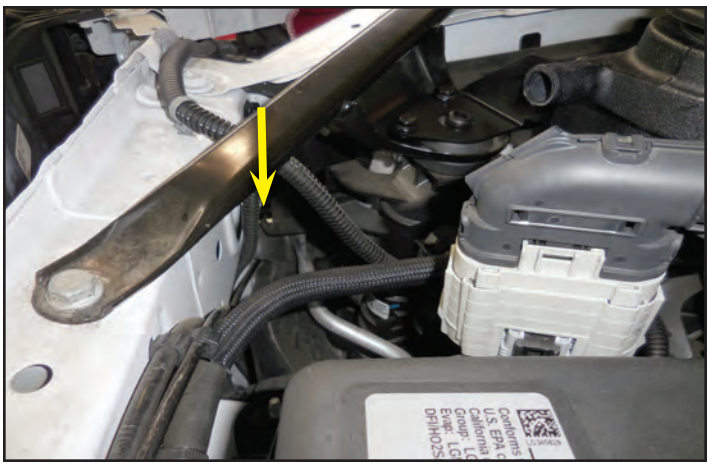


Section 10: Intercooler Hose Install

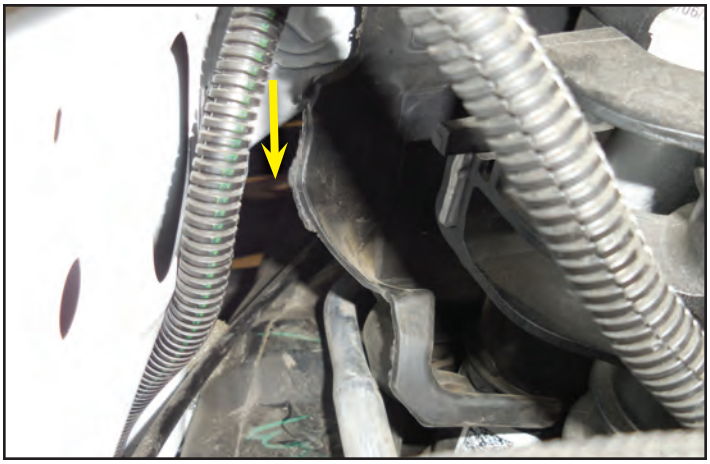
273. Gather the provided hose assembly. Ensure that the hose is connected as labeled here.



274. The hose from the last step will pass through the location shown with the arrow. There is a rubber shield that will be bent out of the way. A close up of this location is shown in the next step.



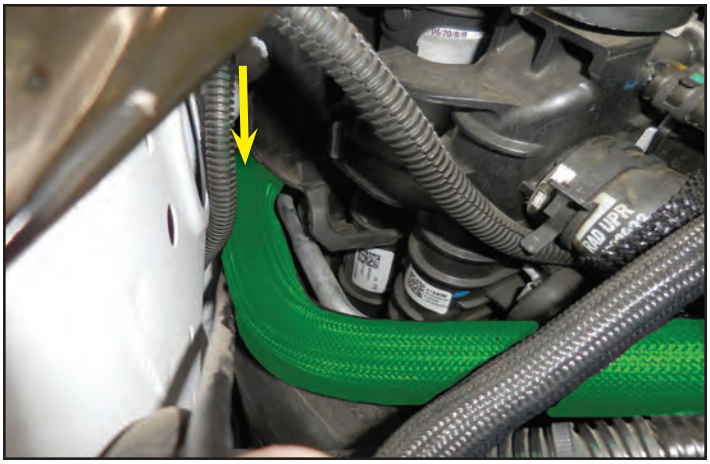
275. The arrow shows the area where the hose from two steps ago will pass through to the LTR.



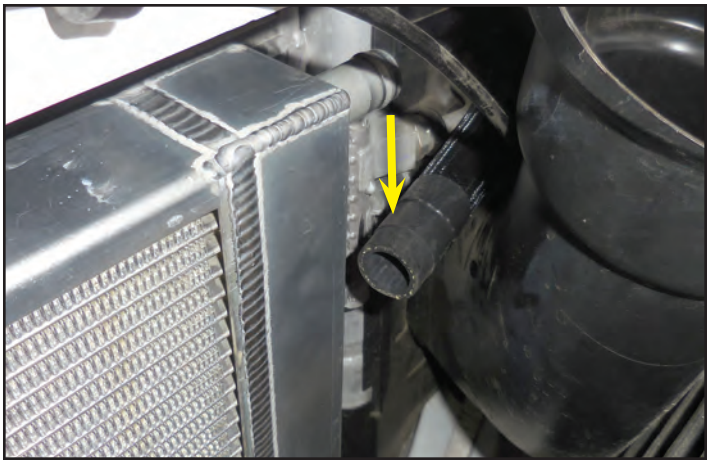
276. Route the hose from three steps ago as shown highlighted here.



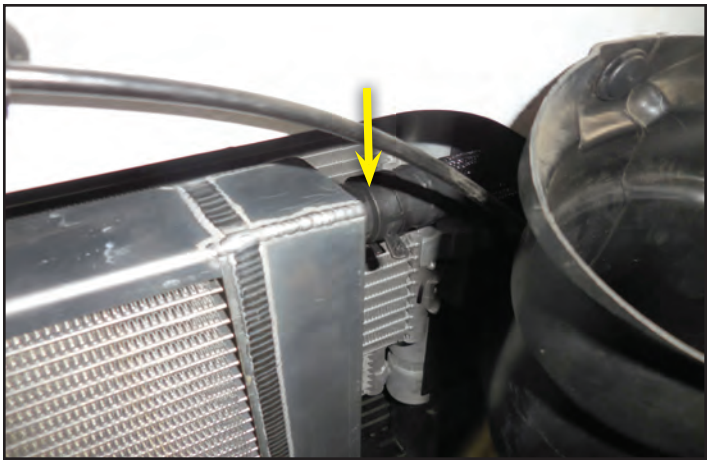
277. Here you can see the hose assembly from the last step being passed by the rubber shield.



278. After the hose passes through the rubber shield it will be seen through the front like this.



279. Attach the hose to the outlet pipe of the LTR at the arrow location with a provided spring clamp.



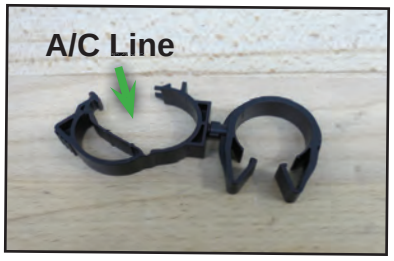
280. Attach the opposite end of the hose from the last step onto the inlet of the supercharger charge air cooler pipe at the arrow location and secure with a provided spring clamp.

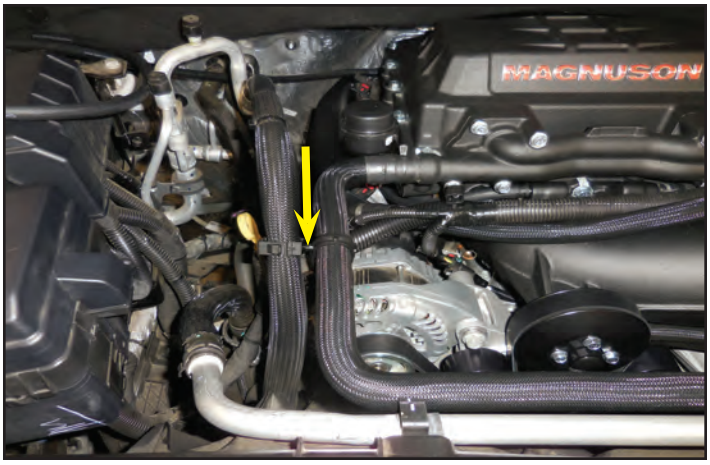


281. Here is a close-up of the inlet pipe hose connection to the supercharger charge air cooler.



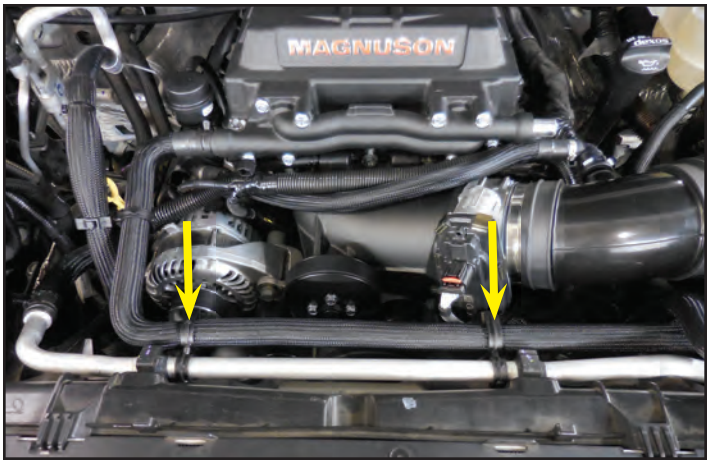
282. Gather the swivel hose connector shown below and install it at the arrow location.





283. Gather the two hose clips shown and install them at the arrow locations.





284. Gather the provided hose assembly.

Installation of this hose is slightly different depending on Truck or SUV applications.

Truck installation will be shown first, followed by SUV installation.



285. **Truck Applications Only:**
Route the hose from the last step as shown here. This hose will go around the air box.



286. **Truck Applications Only:**
Install the hose from the last step at the supercharger charge air cooler outlet pipe with a provided hose clamp at the arrow location.



287. **Truck Applications Only:**
Here is a top view of the hose routing highlighted in green.



288. **Truck Applications Only:**
Secure the opposite end of the hose to the reservoir with a worm gear clamp. A worm gear clamp is necessary for proper sealing at the reservoir.

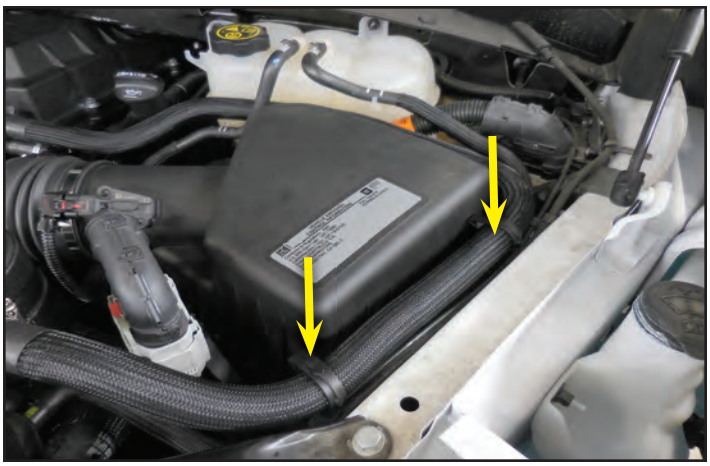


289. **Truck Applications Only:**
Gather the two clamps shown below. They will be used to connect the hose from the last step to a wiring harness behind the air box at the arrow locations.





290. **Truck Applications Only:**
Here you can see the to clamps from the last step at the arrow locations.

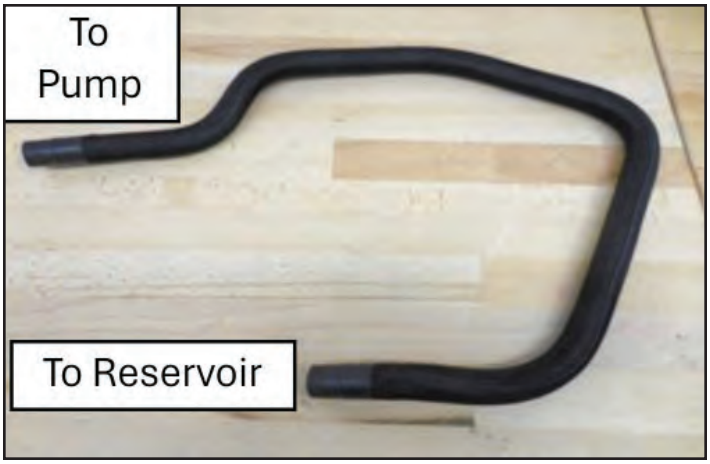


291. **Truck Applications Only:**
Here is a view of the completed hose installation.



292. **SUV Applications Only:**
SUV applications also use the same hose between the reservoir and the pump, however the routing is slightly different. The following steps will detail the routing.

Orient the hose so that it is installed as shown in the photo.

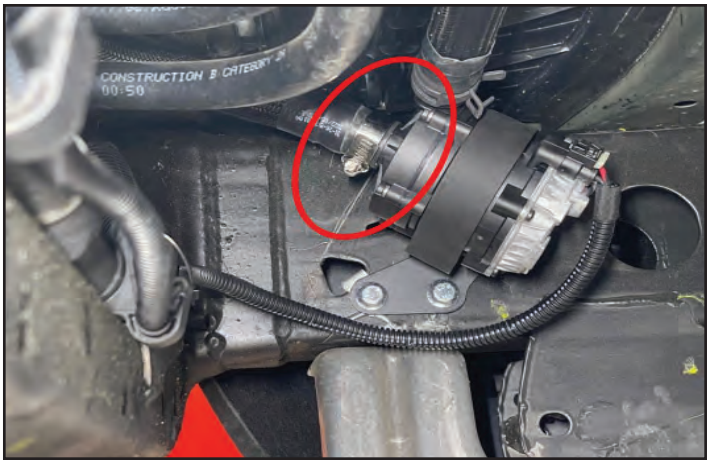


293. **SUV Applications Only:**
Route the hose between the reservoir and pump in the orientation shown per the previous photo.
Trim the hose as necessary for proper fitment.
Ensure the hose remains as far away from the exhaust system as possible.
Use zip ties to secure it as needed.
Install a constant tension clamp onto the end that will connect to the reservoir.
Fully seat the hose onto the reservoir and secure it with the clamp as shown.



294. **SUV Applications Only:**
Select a gear clamp from the kit and install it over the opposite end of the hose.

Install the hose onto the pump and secure it with the gear clamp as shown.



295. **SUV Applications Only:**
Completed view of the SUV hose routing.



Section 11: Leak Test and Final Reassembly



296. It is highly recommended that you use a vacuum tool to bleed your coolant system. Follow the tool manufacture's directions for performing the bleeding process. Ensure that you use the same coolant mixture recommended by GM for the engine coolant in your intercooler system. Once the system has been filled and verified leak free, proceed to the next steps.

297. Re-secure the inner wheel well liner using the factory fasteners.



298. Re-install the front skid plate, if equipped. Tighten all fasteners securely.



299. Remove the two bolts holding the LTR in place to allow the reinstallation of the hood latch.



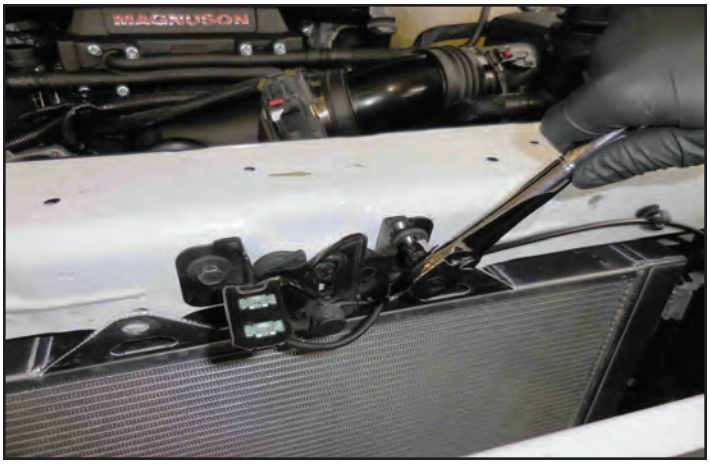
300. Reconnect the cable to the hood latch.



301. Plug in the electrical connector for the hood latch shown that is on the underside of the cross support for the radiator.



302. Align the hood latch using the pencil marks that you made earlier and torque the original bolts to 108 in-lbs.

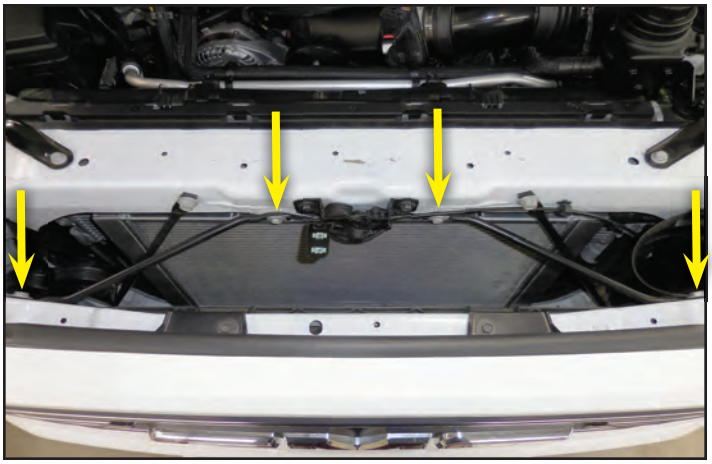


303. Reconnect the two large diagonal braces shown here with a 15mm socket wrench. Torque the two upper bolts to 25 ft-lbs and hand tighten the two lower bolts (one is shown below with the arrow.)





304. Reconnect the two small diagonal braces as shown here. Sandwich the LTR behind the two braces, you may need to pull up on the LTR again to align them.



305. Torque the four bolts from the last step to 18 ft-lbs.



306. Reverse steps in section #2 for installing the radiator cover.



307. Install the supplied EO sticker in a location near the factory “Tune-Up” sticker, or it can be installed on the core support (arrow location), or in a location under the hood that is easily visible for the technician. Once the location for installation is identified, be sure to clean the area thoroughly with wax and grease remover, denatured alcohol or similar cleaning solution in order to remove all contaminates and insure the sticker is firmly affixed to the body.



308. Re-secure the negative battery terminal. Secure the terminal by tightening the nut using a 10mm socket.



309. **Prepare to flash the new Magnuson calibration file to the vehicle.**

It is strongly recommended to connect a battery charger to the vehicle whenever flashing a cal file.

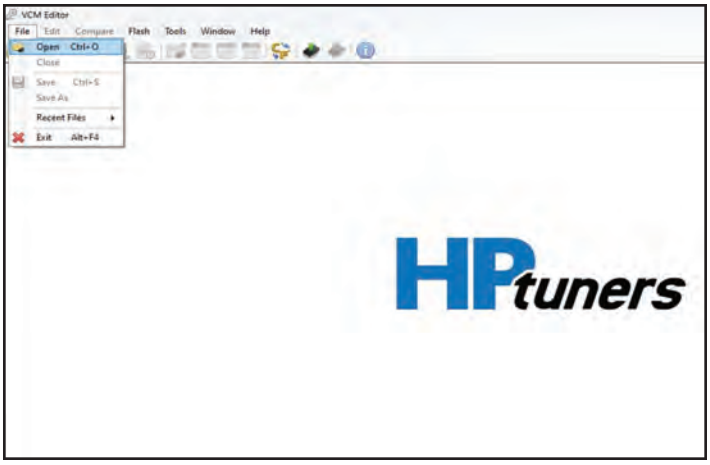
If the flash process is interrupted at any point, you could permanently damage your ECM.

Connect your MPVi3 to the OBDII port on your vehicle. Connect the USB cable between the MPVi3 and your laptop.

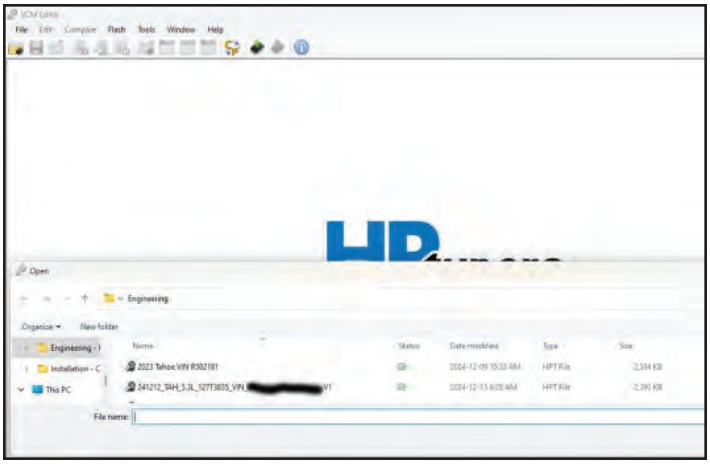


310. Launch the HP Tuners VCM Editor software.

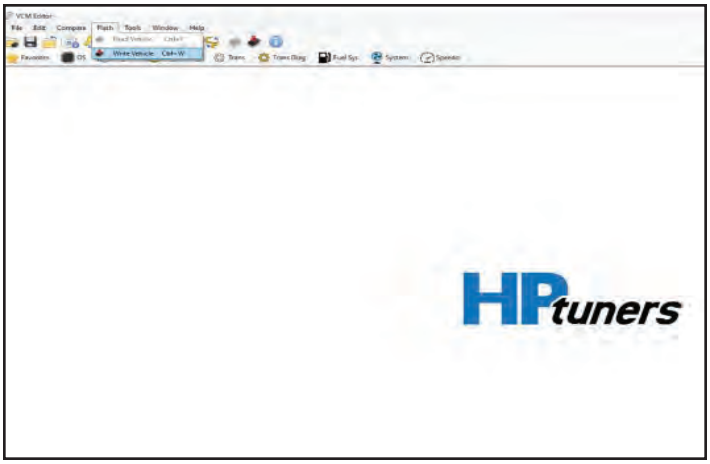
Click the File tab, then Open.



311. Navigate to the file folder where you saved the cal file that you have received from Magnuson for your specific application.



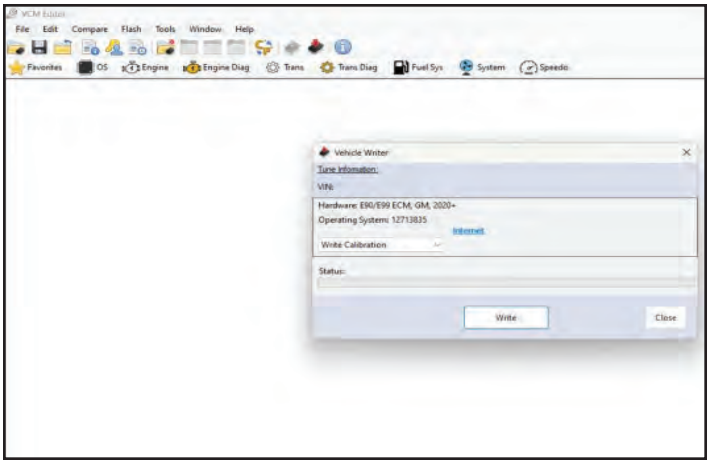
312. Click the Flash tab, then Write Vehicle.



313. When the pop-up appears, click Write to begin flashing the vehicle.

* At this point, HP Tuners will ask you to license the VIN. You are responsible to purchase the credits required to flash the calibration file to your vehicle.

Do not disturb the laptop or cables while the file is being uploaded to the vehicles' ECM. Allow the software to finish the process. Follow the on-screen prompts to cycle the ignition as requested.



At this point your ECM should now have the revised calibration file loaded and the vehicle should be ready to start.

Make one final inspection of the entire under hood area, ensuring you have completed all steps of this manual, all tools have been cleared away and both coolant systems have been filled.

Vehicle Testing

Ensure that you have the installed an appropriate calibration for the engine management system prior to starting the vehicle. Failure to properly calibrate will result in engine damage.

***5.3L vehicles that installed a new throttle body may require a throttle body relearn. This can be done with some aftermarket service tools or the GM factory service tool.

Start the vehicle for 5 seconds and shut off, once again check for fuel leaks and fan-supercharger belt alignment. Check radiator and charge air cooler reservoir and top off as necessary.

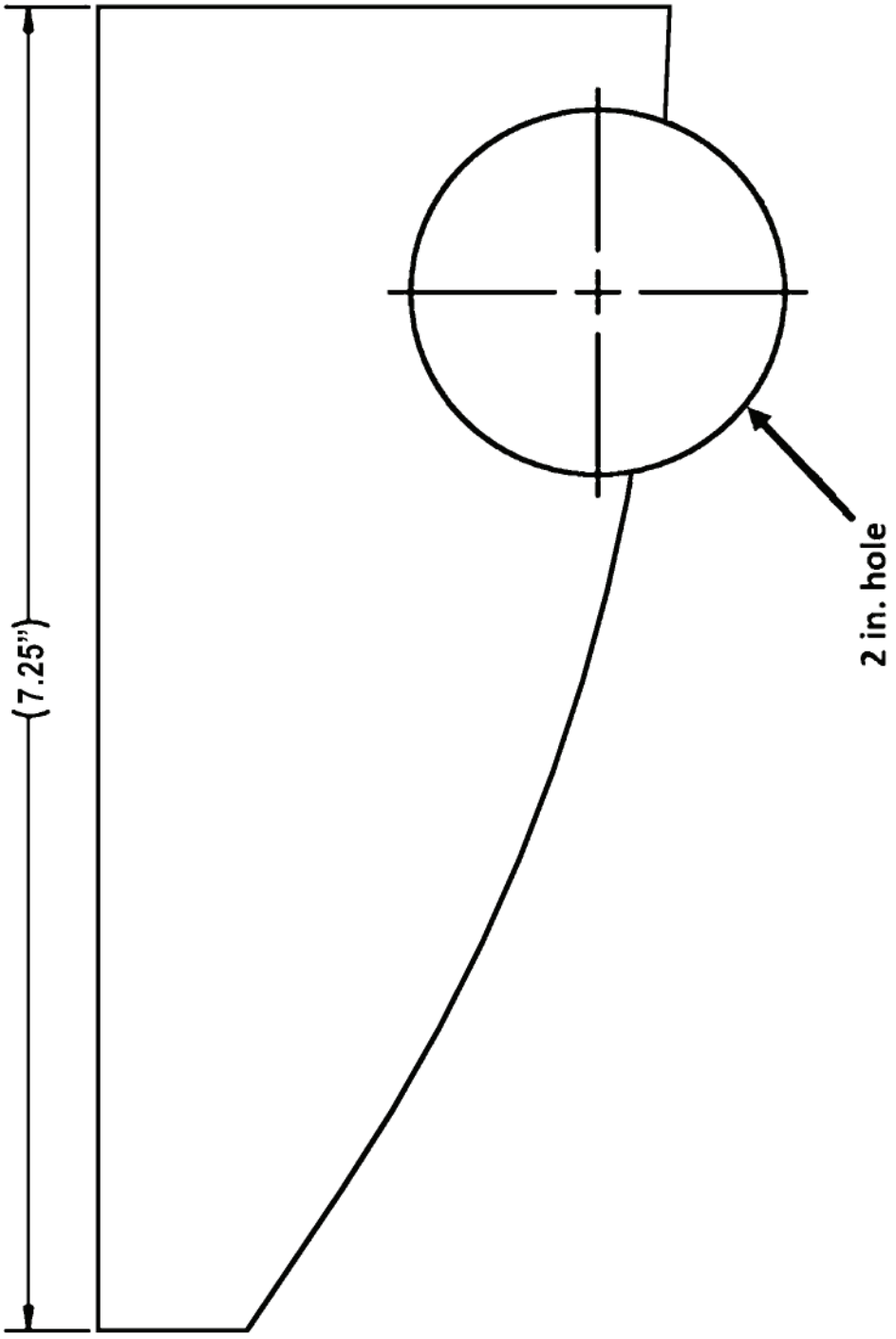
Test drive vehicle for the first few miles under normal driving conditions. Do not perform any wide open throttle runs. Listen for any noises, vibrations, engine misfire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal. Check & bleed charge air cooler reservoir as needed.

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 gasoline still in the tank.

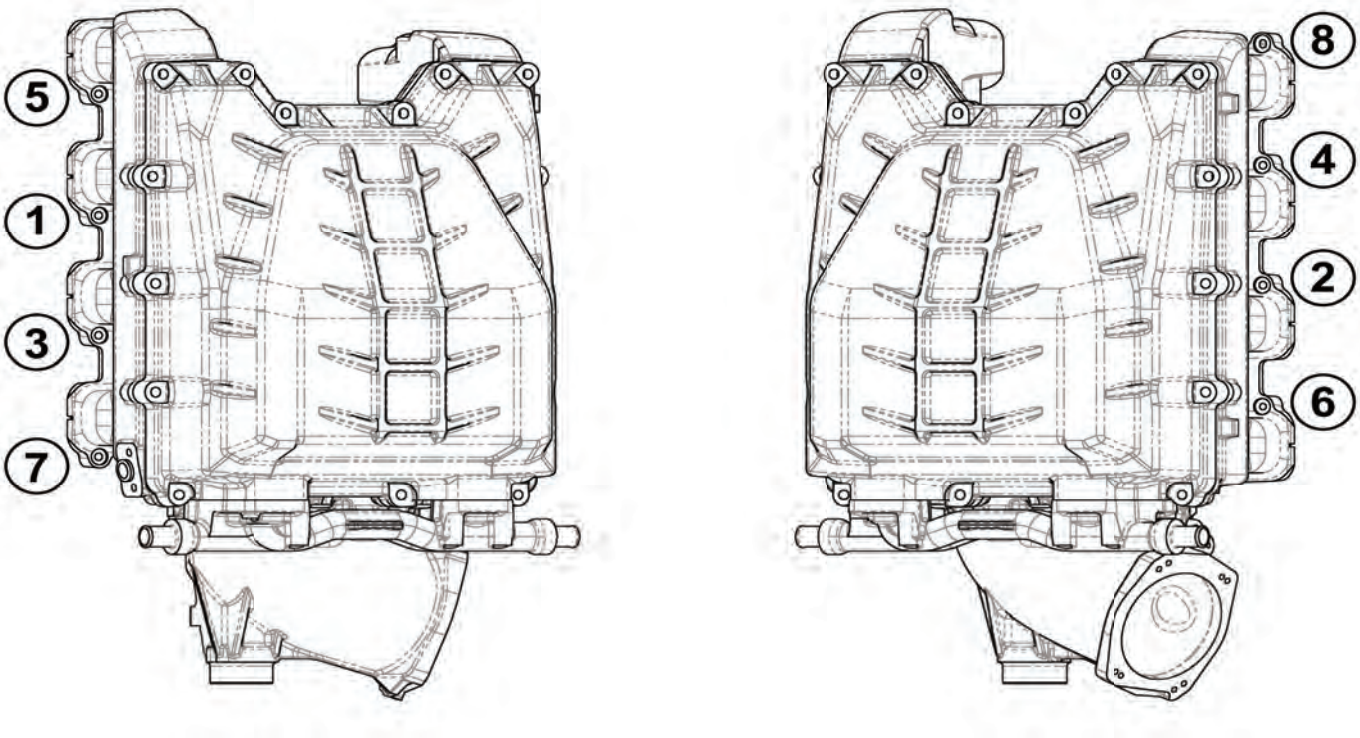
If you have questions about your vehicles performance, please check with your installation facility.

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

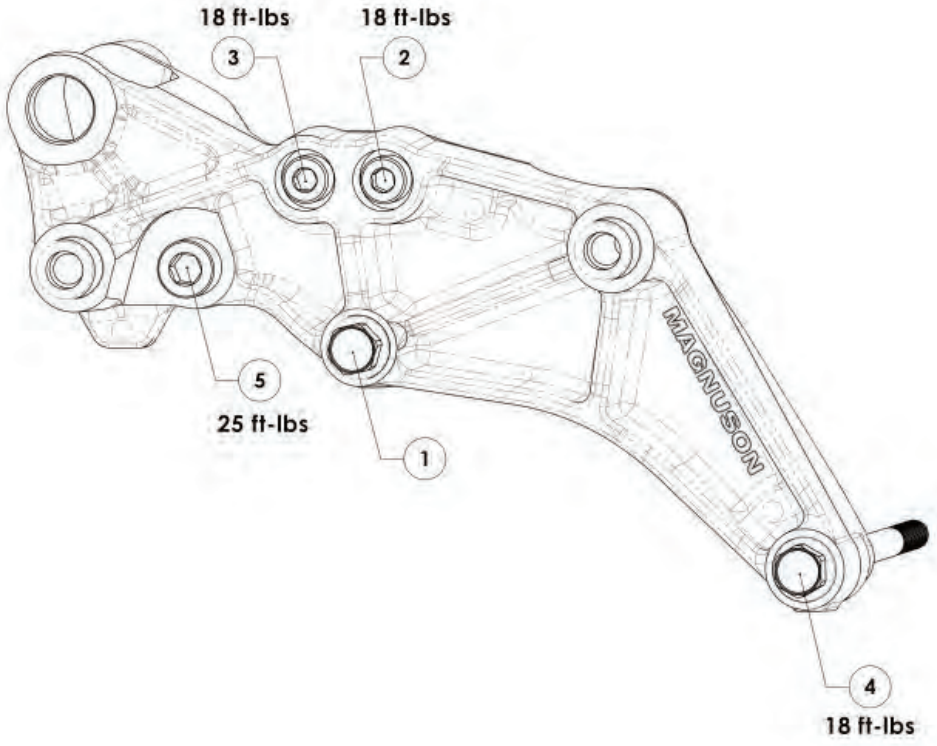
APPENDIX A: GM TRUCK / SUV HOLE TEMPLATE



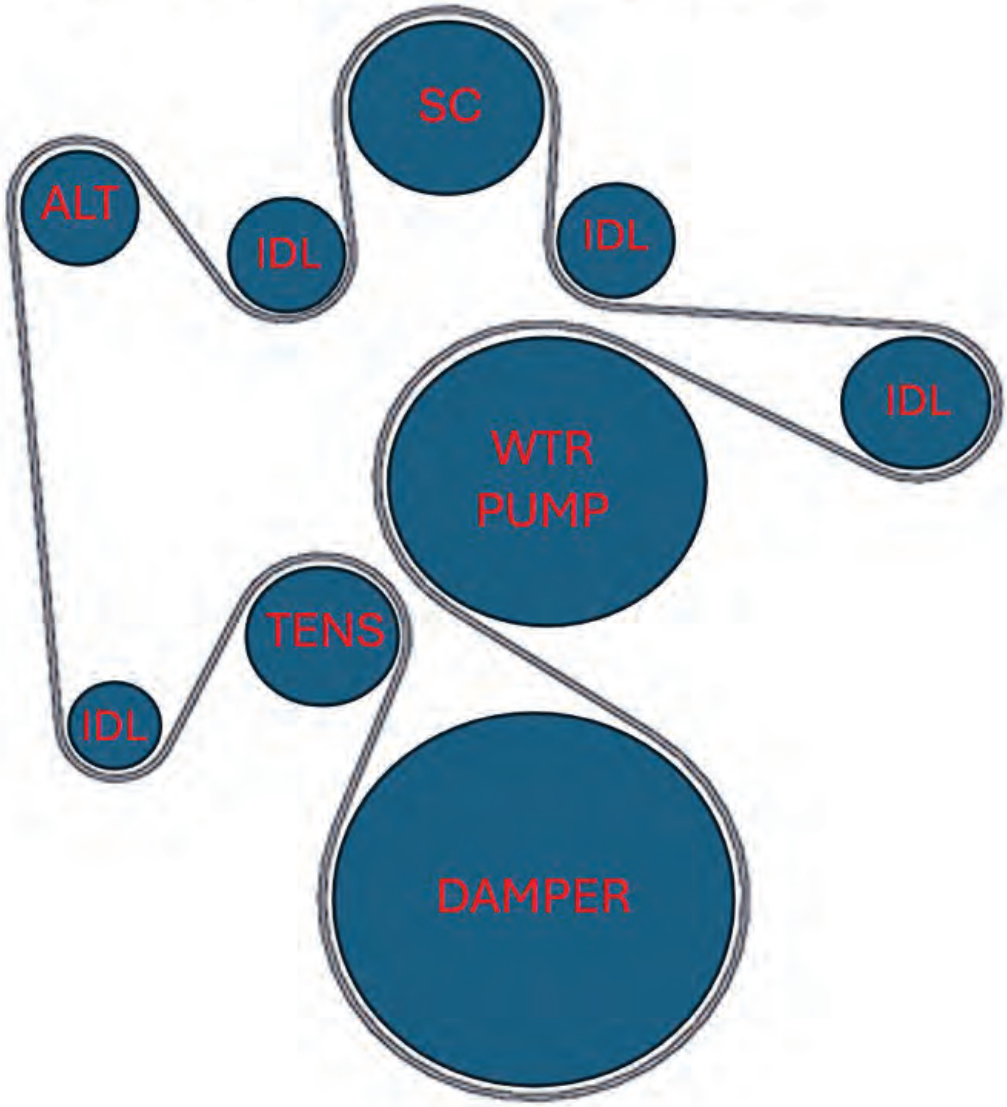
GM Truck / SUV
Torque Sequence



GM Truck / SUV
Idler Bracket Torque Sequence



APPENDIX B: GM TRUCK / SUV SERPENTINE BELT ROUTING





MAGNUSON
SUPERCHARGERS