WHIPPLE SUPERCHARGER INSTALLATION MANUAL

2019-2024 DODGE RAM E-TORQUE
5.7L ENGINE

WHIPPLE PN: *WK-3310-30, WK-3310-32, WK-3312-30, WK-3312-32*
****ADD -**NFT TO END OF PN FOR **NO FLASH TOOL***

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PREMIUM FUEL ONLY (91 OCTANE OR BETTER ALWAYS) RON+MON/2

CALIFORNIA AIR RESCOURCE BOARD EXECUTIVE ORDER #D-231-131

COMPETITION BASED PRODUCT MAY BE USED SOLELY ON VEHICLES USED IN SANCTIONED COMPETITION WHICH MAY NEVER BE USED UPON A PUBLIC ROAD OR HIGHWAY

INTRODUCTION

Before beginning installation, we encourage you to read this manual thoroughly before you begin any portion of the installation:

1. A quick parts check to make certain your kit is complete (see shipper parts list in packing paperwork). If you discover shipping damage or shortage, please call our office immediately.
2. Early model 300 and Chargers require subframe spacers to lower motor for hood clearance.
3. Review our limited warranty with care.
4. *2019 and up model vehicles require unlocked PCMs for PCM Calibration.*
5. *2019 and up require gateway unlock tool (included with complete kits).*
6. Always wear eye protection during installation.
7. Avoid spills, if one occurs, clean up and dispose of towels properly.
8. Never work on a hot engine.
9. Obey all traffic laws when testing the vehicle.
10. **Whipple calibrations are for stock engines, changes such as long tubes, cams and big throttle bodies are not supported. Changes such as these will require custom tuning.**
11. Having the latest OEM PCM and TCM calibration is highly recommended to eliminate potential OEM issues in calibration.

COMPETITION BASED PRODUCT MAY BE USED SOLELY ON VEHICLES USED IN SANCTIONED COMPETITION WHICH MAY NEVER BE USED UPON A PUBLIC ROAD OR HIGHWAY, UNLESS PERMITTED BY SPECIFIC REGULATORY EXEMPTION (VISIT THE "EMISSIONS" PAGE AT HTTP://WWW.SEMASAN.COM/EMISSIONS FOR STATE BY STATE DETAILS.

COMPETITION BASED PRODUCT IS LEGAL IN CALIFORNIA ONLY FOR RACING VEHICLES WHICH MAY NEVER BE USED, OR REGISTERED OR LICENSED FOR USE, UPON A HIGHWAY.

IT IS THE RESPONSIBILITY OF THE INSTALLER AND/OR USER OF THIS PRODUCT TO ENSURE THAT IT IS USED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

RECOMMENDED TOOLS AND SUPPLIES

Extra Components
Distilled water (1.5gal), approved coolant (1.5gal), 4", 8" and 12" zip-ties.

Tools
Torque wrench (1/4", 3/8", ½") Safety glasses, metric wrench set, assorted drill set, electric or air drill, ¼", 3/8", ½" assorted metric socket set, 3/8" assorted metric allen socket set, 3/8" assorted torx socket set, 8mm hex allen wrench, flat head and phillips screw drivers, pinch clamp tool, 8mm nut driver and drain pan (for coolant).

Sealants
Blue Loctite™#243 or equivalent, Red Loctite™ #271 or equivalent, Green Loctite™ #648 or equivalent. All bolts that need Loctite™ are marked with: **☞Loctite™ (#243 blue) threads, ☞Loctite™ (#271 red) threads, ☞Loctite™ (#648 green)**. Thread sealant such as pipe Teflon must be used on all pipe threads.

Chemicals and lubricants
You will need some cleaner/degreaser such as carb cleaner. Motor oil and clear automotive-type grease will be useful as a lubricant and should be readily available during installation.

You'll be required to fill your intercooler system with approx. 1 gallon of distilled water and Dodge/Chrysler/Jeep approved engine coolant. This is not supplied in the system, you can find the coolant at any local auto parts store. NEVER USE TAP WATER, as it can corrode and create poor performance.

PRE-INSTALLATION CHECKLIST

Before installing your Whipple Supercharger Kit, complete the following checklist.

1. Verify Condition of Vehicle: Before the supercharger kit is installed, ensure the engine runs smoothly and that the factory malfunction indicator light (MIL) is off. Only install the supercharger kit if the engine runs smoothly *and* the MIL is off.

2. **!! CAUTION !! This product is intended for use only on STOCK, UNMODIFIED, WELL-MAINTAINED engines. Installation on a worn-out or modified engine is not recommended without factory computer and fuel system modifications. Custom engine configurations could require custom tuning and other supporting modifications.**

3. **!! CAUTION !! Use only 91 octane fuel or higher. If fuel of less than 91-octane is present in the vehicle fuel tank, the tank must be completely drained and refilled with 91 or higher octane to 1/8th of a tank.**

4. Verify Fuel System: Superchargers systems should only be installed on vehicles that have new or clean fuel filters. **Never operate at wide open throttle when fuel level is below ¼ tank. Fuel flow cannot be maintained if the pump runs dry.**

5. Assess Cleanliness of Installation Area: Make sure your work area and the under-hood area are free from debris. This supercharger is a high-quality, close-tolerance compressor and must not be subjected to contamination by dirt or any type of foreign material. If necessary, vacuum around engine to remove any foreign material.

6. **!! CAUTION !! DO NOT remove the protective seal on the supercharger prior to installation. Foreign material entering the supercharger will automatically void all warranties.**

7. Identify Supercharger Kit Components: Before beginning installation, identify all the components of your Whipple Supercharger Kit and ensure all items are present and undamaged.

8. **!! CAUTION !! Do not attempt to start the engine before adding the supplied supercharger oil to the supercharger!**

SAFETY PRECAUTIONS

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 personally injury or death. Read each step of the installation manual carefully before starting the installation.

- Always wear safety glasses for eye protection.
- Place the ignition switch in the off position.
- Always apply the parking brake when working on vehicle.
- Block the front and rear tire surfaces to prevent unexpected vehicle movement.
- Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- Do not smoke or use flammable items near or around fuel system.
- Use chemicals and cleaners only in well-ventilated areas.
- Batteries can produce explosive hydrogen gas which can cause personal injury. Do not allow flames, sparks or flammable sources to come near the battery.
- Keep 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 be caught in rotating or moving parts.

Symbol Key

Throughout this installation guide you will see the following symbols used:

➲ NOTE

Used to indicate tips and information to aid in installation, maintenance, or use of the supercharger.

!! CAUTION !!

Used to indicate precautions that must be taken to avoid damage to the supercharger and associated components.

⚠ WARNING!!

Used to indicate precautions that must be taken to avoid bodily injury as well as damage to the supercharger and associated components.

COMMON ABBREVIATIONS

ABBREVIATION	DESCRIPTION
DTC	Diagnostic Trouble Code
ECT	Engine Coolant Temperature
EGR	Exhaust Gas Recirculation
ETC	Electronic Throttle Control
EVAP	Evaporative emissions system
FHSCS	Flat Head Socket Cap Screw
IAT	Inlet Air Temperature
IC	Intercooler
ID	Internal Diameter
IN/LB	Inch pounds
LB/FT	Foot pounds
MAF	Mass Air Flow
MAP	Manifold Absolute Pressure
MY	Model Year
OBD	On Board Diagnostics
OD	Outside Diameter
PCV	Positive Crankcase Ventilation
PSI	Pound per Square Inch
SC	Supercharger
SHCS	Socket Head Cap Screw
TPS	Throttle Pressure Sensor
TRQ	Torque

Make sure you have done the following:

1. ☐ Verified the Condition of the Vehicle.
2. ☐ Verified the fuel octane is 91 (RON + MON)/2 or higher. Do not mix low and high octane!
3. ☐ Verified that the fuel system is clean.
4. ☐ Assessed the cleanliness of the installation area.
5. ☐ Identified the supercharger kit components.
6. ☐ Read and understand the instruction manual.

➲ NOTE

*****NOTICE:** Installation of Whipple Supercharger products signifies that you have read this document and have agreed to the terms stated within.*

It's the purchaser's responsibility to follow all installation instruction guidelines and safety procedures supplied with the product as it's received by the purchaser to determine the compatibility of the product with the vehicle or the device the purchaser intends to install the product on.

Whipple Superchargers assumes no responsibility for damages occurring from accident, misuse, abuse, improper installation, improper operation, lack of reasonable care or all previously stated reasons resulting from incompatibility with other manufacturer's products.

There are no warranties expressed or implied for engine failure or damage to the vehicle in any way, loss of use or inconvenience or labor reimbursement. This includes merchantability and fitness.

NEVER SMOKE DURING THE INSTALLATION OF THE SC, THERE WILL BE FLAMMABLE FUMES AND LIQUID AROUND THE VEHICLE

ILLUSTRATED INSTALLATION GUIDE

It is strongly recommended that you read through this guide before you begin installing the Whipple Supercharger.

⚠ WARNING!! Batteries normally produce explosive gases. Therefore, do not allow flames, sparks or lighted substances to come near the battery. When charging or working near a battery, always shield your face and protect your eyes. Always provide ventilation. Failure to follow these instructions may result in personal injury.

⚠ WARNING!! Keep out of the reach of children. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Also, shield your eyes when working near the battery to protect against possible splashing of the acid solution. In case of acid contact with the skin or eyes, flush immediately with water for a minimum of 15 minutes and get prompt medical attention. If acid is swallowed, call a physician immediately. Failure to follow these instructions may result in personal injury.

1. (**Complete kits only**) **DO NOT START INSTALLATION UNTIL PCM IS UNLOCKED (2015 AND UP) AND CALIBRATION HAS BEEN SUPPLIED.** Follow the included flash tool, read/write Whipple instructions included. Note: Make sure your battery is fully charged before installing, if not, install a battery charger to maintain 14volts. Modified engines such as long tubes, camshafts or oversized throttle bodies are not supported. Calibrations take 24-48 hours to build, make sure to do this before installation. Flash the PCM prior to starting installation. In rare cases, a PCM strategy may not be supported.

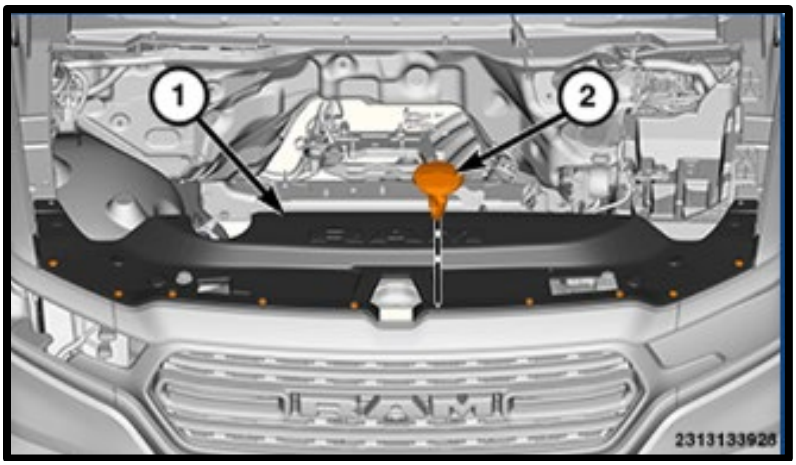
2. Using an air hose, blow off any loose dirt or debris from engine compartment. If dirty, steam clean the engine compartment before proceeding to the next step.

3. Access to the bottom of the radiator and front end is required, if the vehicle does not have adequate access or is lowered, raise the front of the vehicle with a service lift or equivalent. On the lower driver side of radiator, use a 16mm socket, carefully loosen the petcock bolt to drain the coolant into a coolant reservoir. Tighten petcock bolt.

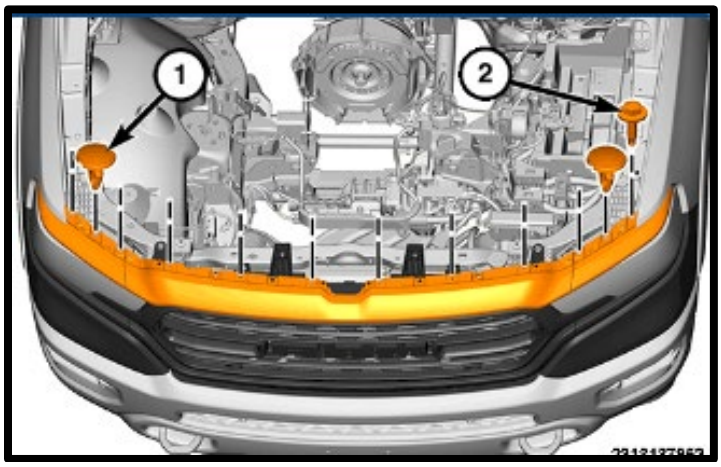
4. Slowly remove the factory gas cap to relieve any excess pressure.

5. With a 10mm wrench disconnect the (-) negative battery cable. Make sure the cable is far enough away from the battery that it does not accidentally touch the battery and make connection during the installation.

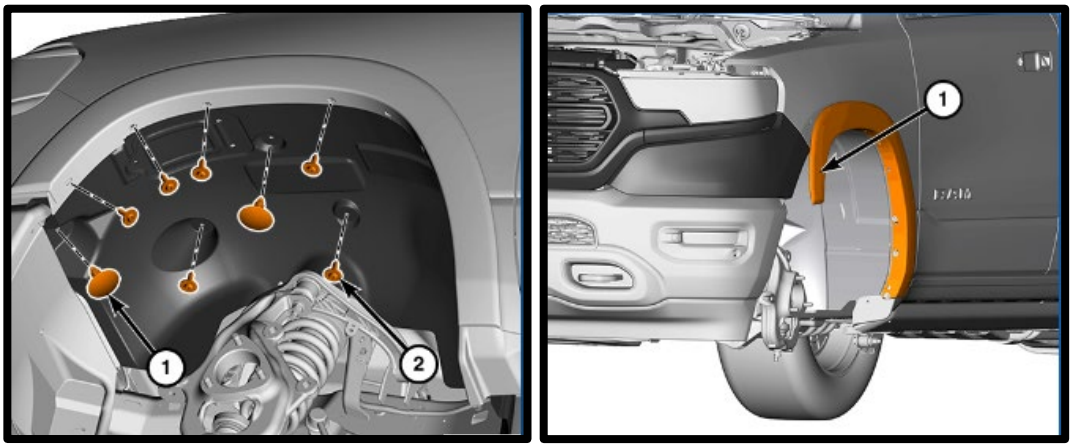
6. Using a panel puller, remove (12) body pins securing radiator cover.



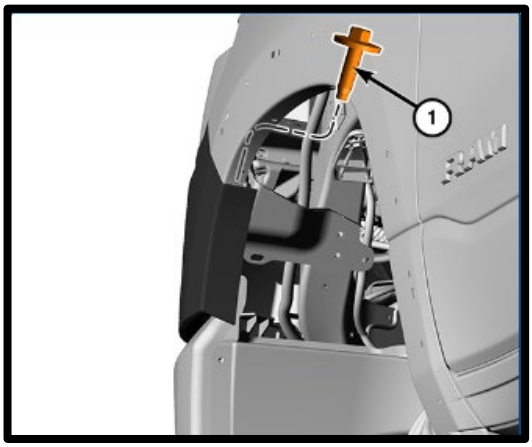
7. Remove the upper grill section, use a 10mm socket for the (12) bolts. Use a flat head screwdriver or panel pulley to remove the (2) push pins. Remove the (4) bolts from grill upper brackets.



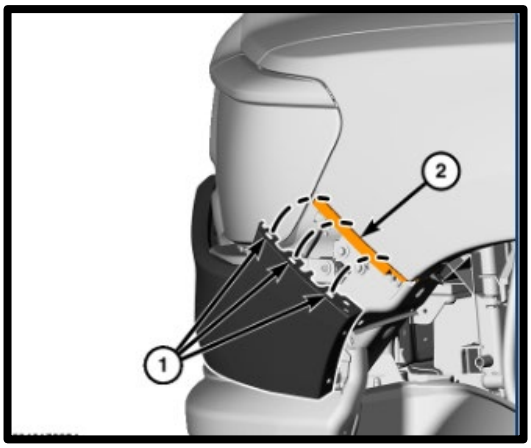
8. Remove the (6) screws and (2) push pins and position aside the wheelhouse splash shield. Reach behind the backside of the fender and squeeze the wings of the W-clip together using 8 or 9 mm socket or pliers to release flare from fender one clip at a time.



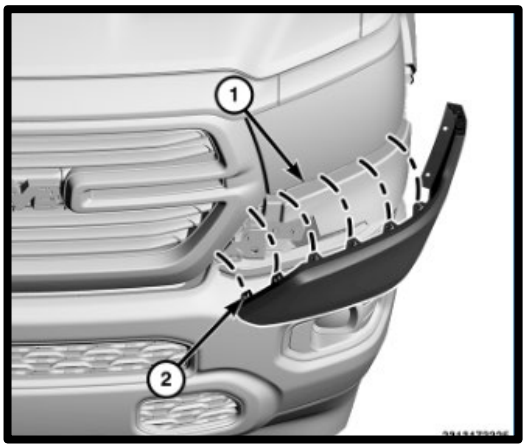
9. From inside the wheel wells, remove the bolt attaching the fascia trim to the fenders.



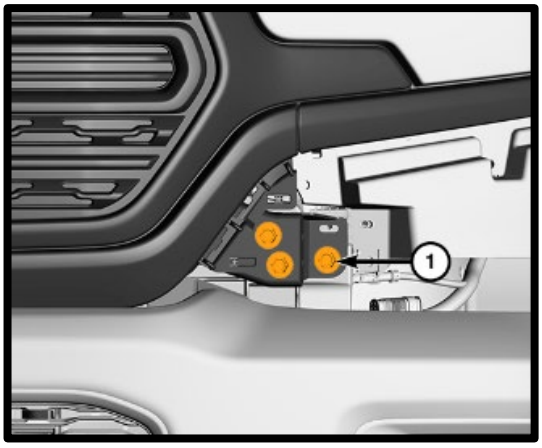
10. Using a trim stick or other suitable tool such as picks, gently release tab from support clip (2) and separate the panel from the fender.



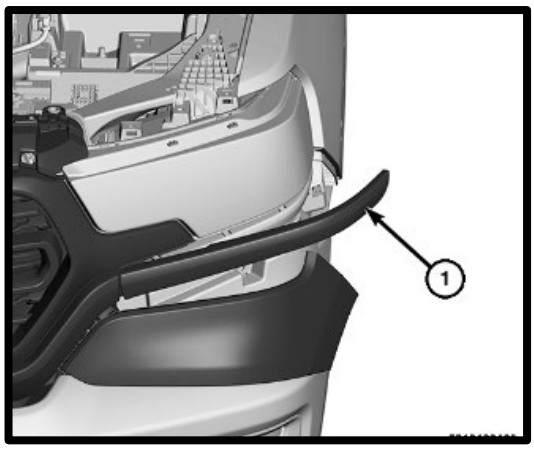
11. Starting at the top and using a wiggling motion, as well as a trim stick, carefully release the clips (2) fro the headlamp support and working toward the grille.



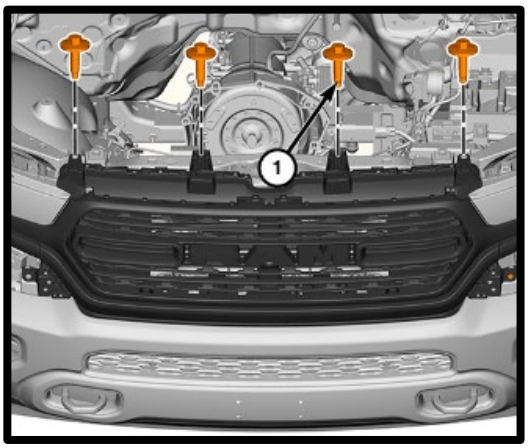
12. Remove the (3) lower fasteners from each side of the grille assembly.

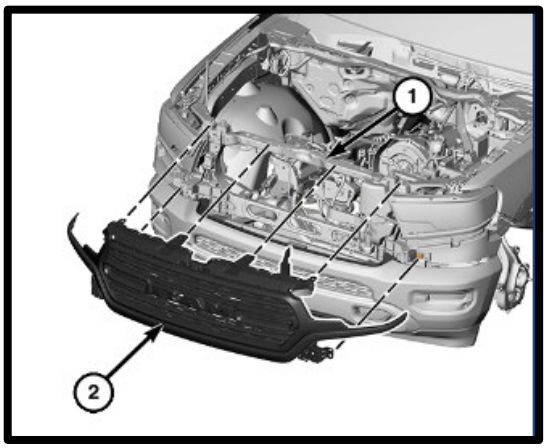


13. Release the moldings from the front lamp units if equipped.

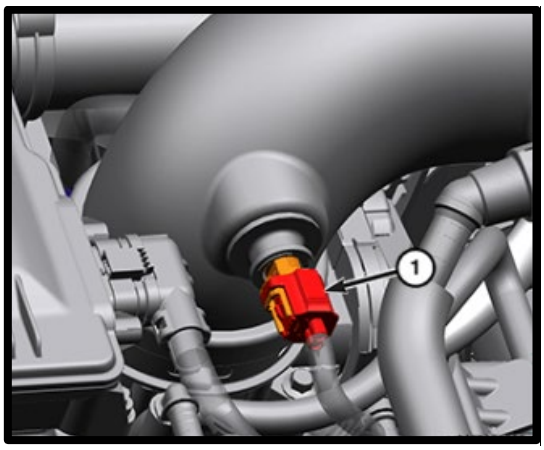


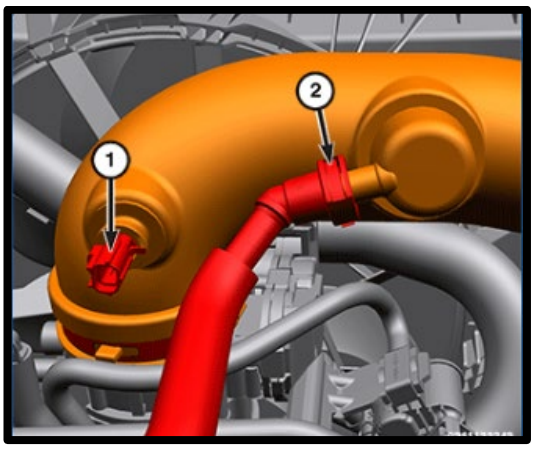
14. Remove the (4) upper fasteners. Disconnect the front camera wire harness if equipped and remove grille assembly.

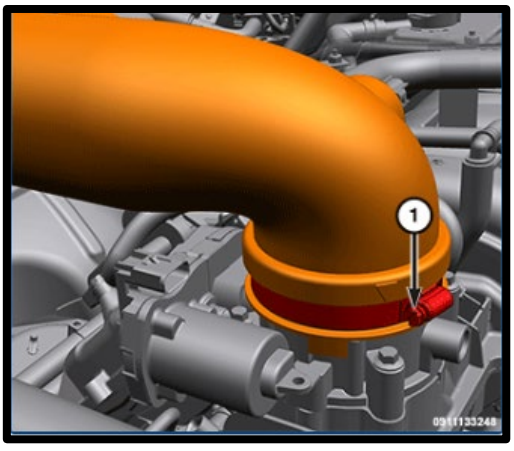


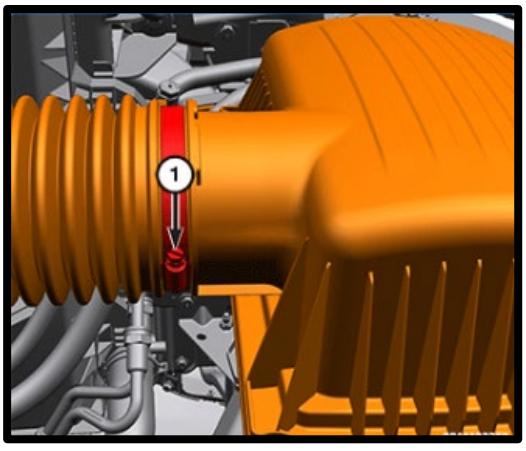


15. Disconnect air intake temp sensor and make-up air quick connect fitting from the intake tube. Remove the intake tube from the throttle body and airbox using a flathead screwdriver or 5/16" nut driver.

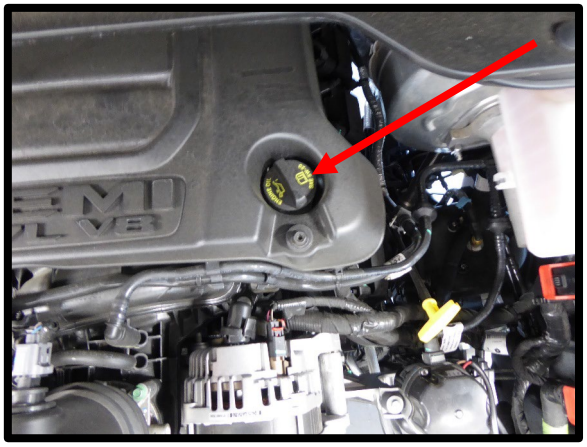
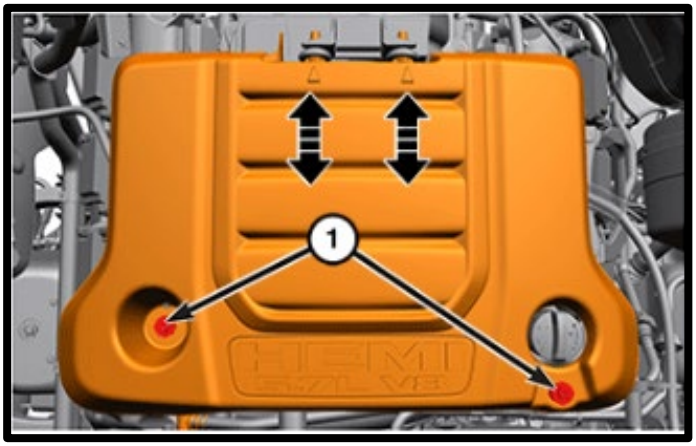




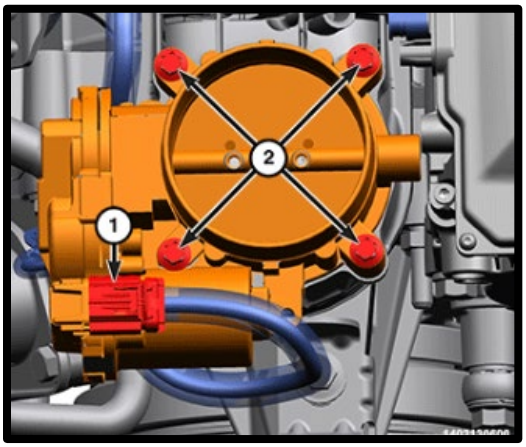


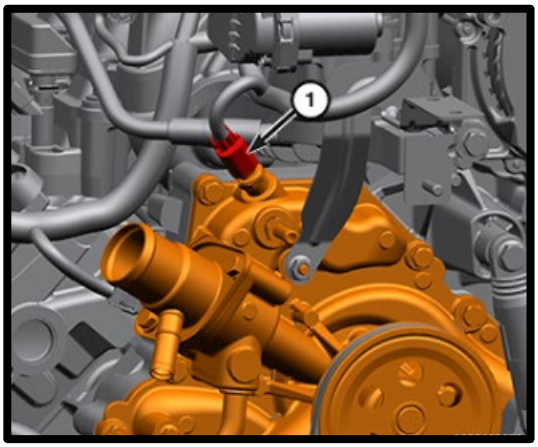


16. Remove the oil cap from engine cover. Using 10mm socket, remove the (2) engine cover bolts. Lift up and away. Reinstall oil cover to oil fill tube.

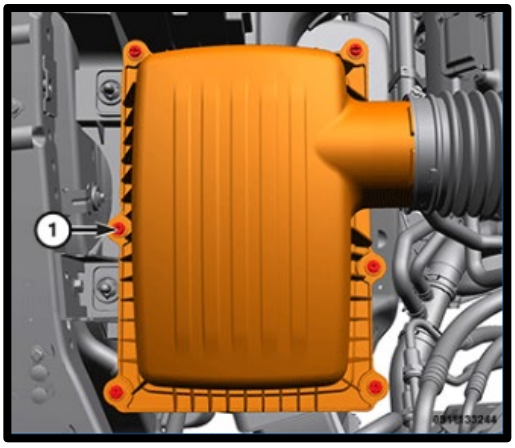



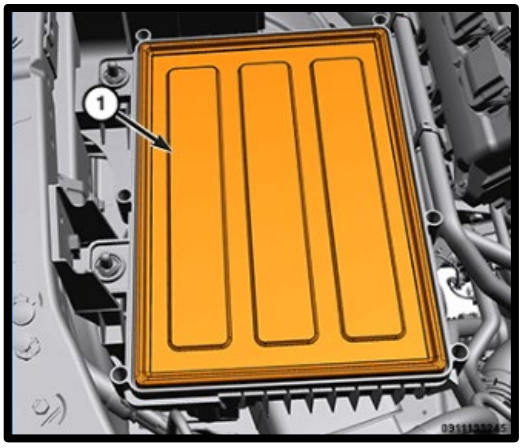
17. Disconnect the throttle body electrical connector and the coolant temp sensor below it.



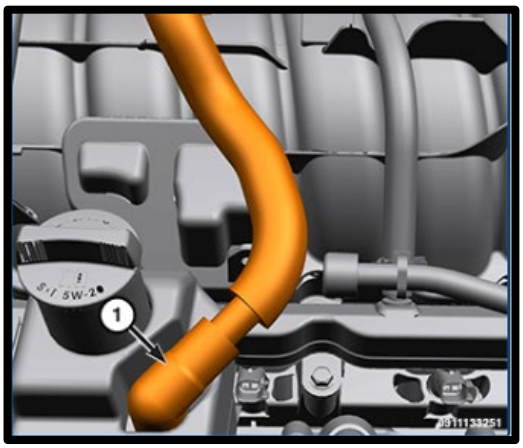


18. Remove the (6) air cleaner bolts and remove lid and filter from airbox.

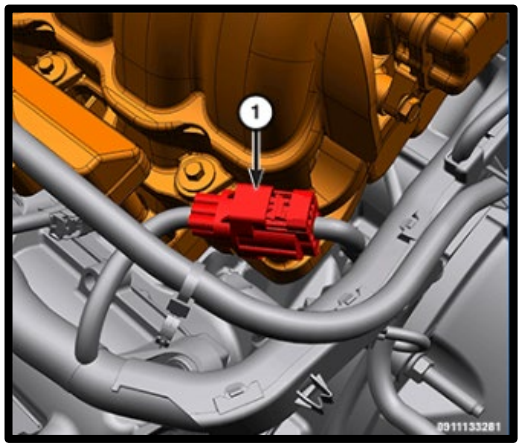




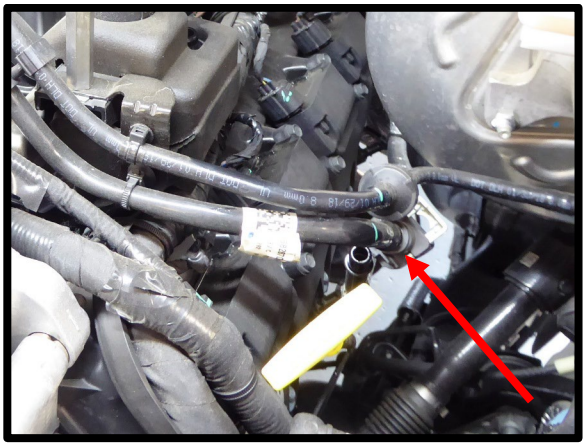
19. Remove the makeup air hose from oil fill port, LH side.



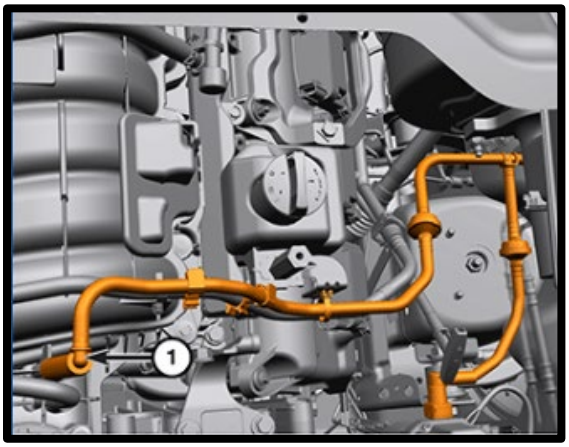
20. Remove the wire harness connector from rear of intake manifold.

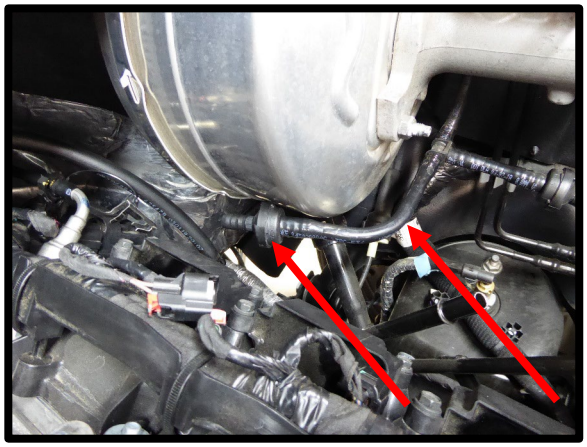


21. Remove the plastic retaining clips securing EVAP hose to motor. Remove the connector/hose from EVAP solenoid and junction near brake booster (fittings will be reused later). Unplug the 2-way EVAP connector from solenoid. Remove the 3/8" EVAP rubber hose from the intake manifold and EVAP solenoid. Remove the EVAP solenoid from the manifold and set aside as it will be reused later.

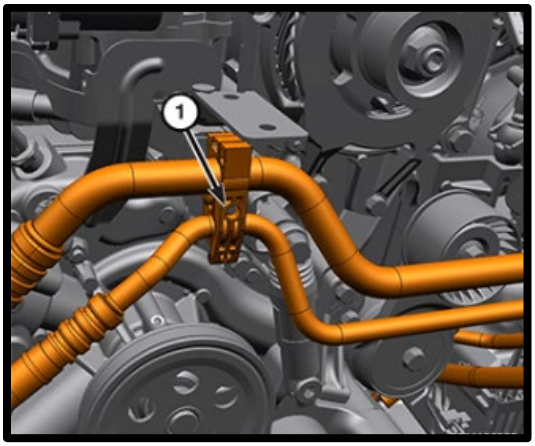


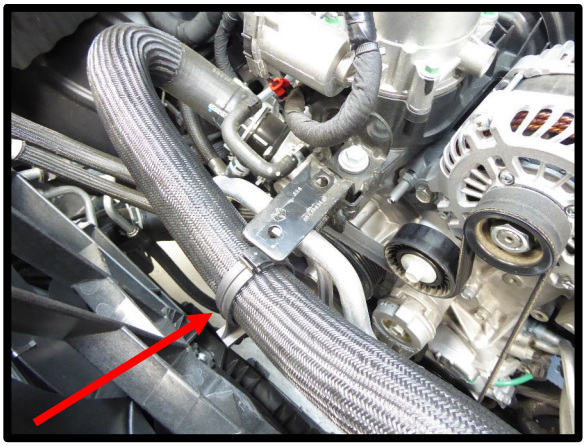
22. Remove the plastic retaining clips securing brake booster hose to motor. Remove brake booster hose from intake manifold and from connection @ factory check valve. Rotate 90deg hose and check valve to face towards the back of the engine for later routing to SC inlet.



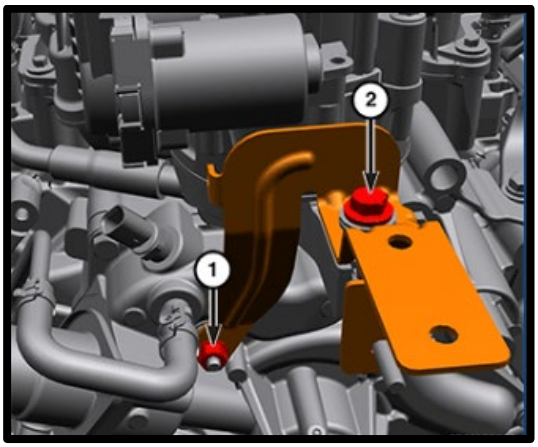


23. Pull the AC support bracket (leave assembled) away from support stud. Using a panel puller, release the (2) push pins securing radiator hose to support bracket.

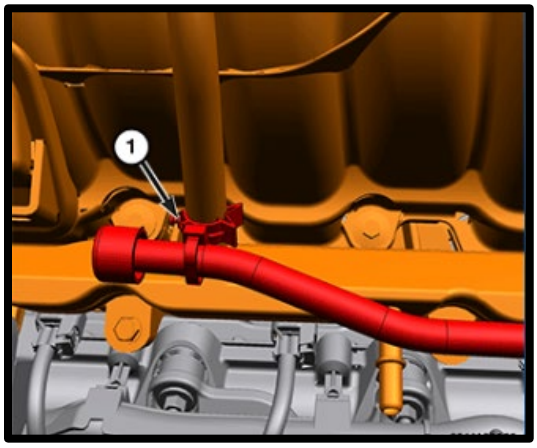




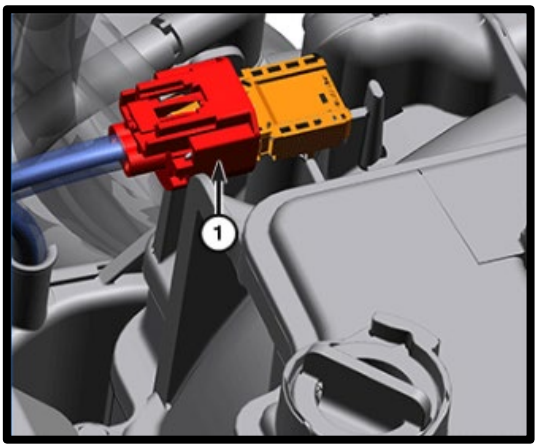
24. Using a 13mm socket, remove the bolt and nut securing the A/C line support strap to engine.

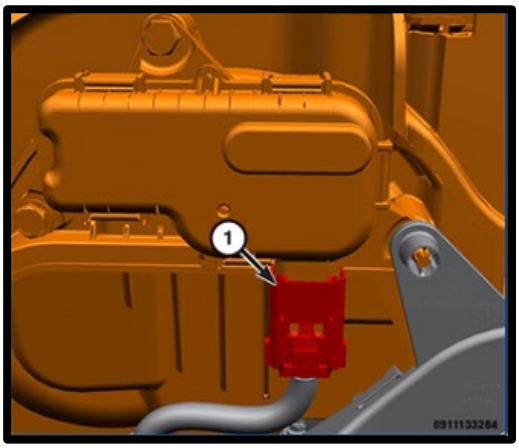


25. Remove transmission vent line plastic retaining straps from manifold and fuel feed line.

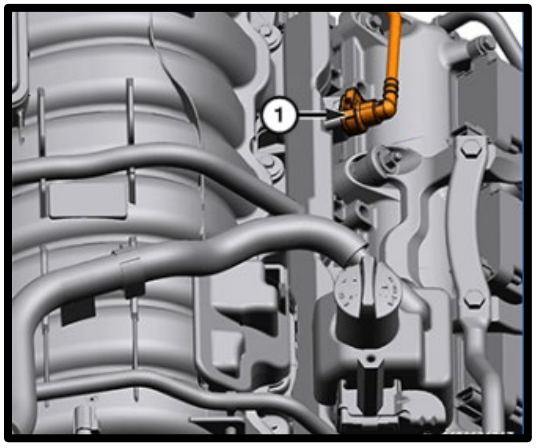


26. Unplug the active runner connector at the back of the intake manifold (when applicable). Disconnect (2) harness clips from firewall to relieve wiring harness. Unplug the factory MAP sensor connector at the back/top of the intake manifold.

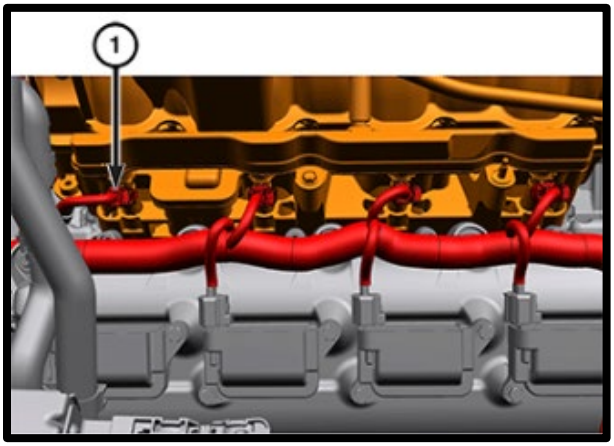




27. **WARNING!!** Disconnect factory fuel feed line from fuel rail. remove the fuel safety clip from the fuel feed line then disconnect the fuel feed line from the fuel rail using a 3/8" fuel line removal tool. Cap the fuel rail to avoid excess fuel spillage.

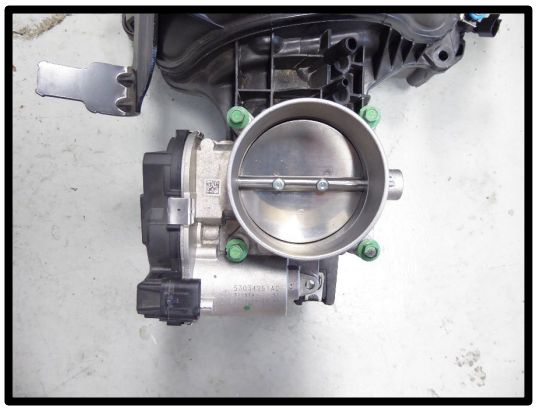


28. Disconnect (8) fuel injector electrical connectors by releasing the red secondary lock, then depressing tab and pulling up and away.

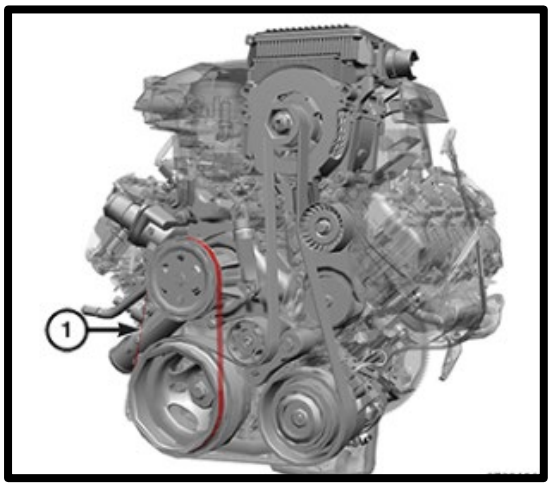


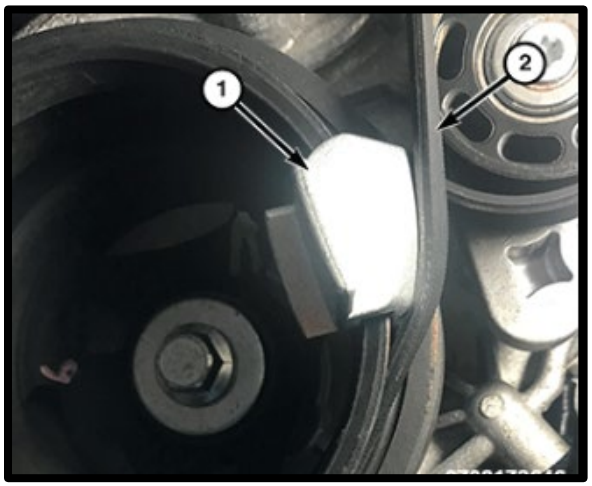
29. Using an 8mm socket, remove the (10) manifold bolts. Carefully lift the manifold from the engine. Use a clean shop rag and acetone or other cleaner and clean the intake manifold to cylinder head surface. Apply masking tape to the head ports to prevent dirt and debris.

30. Using a 10mm socket, remove the (4) bolts securing throttle body to intake manifold for later use.

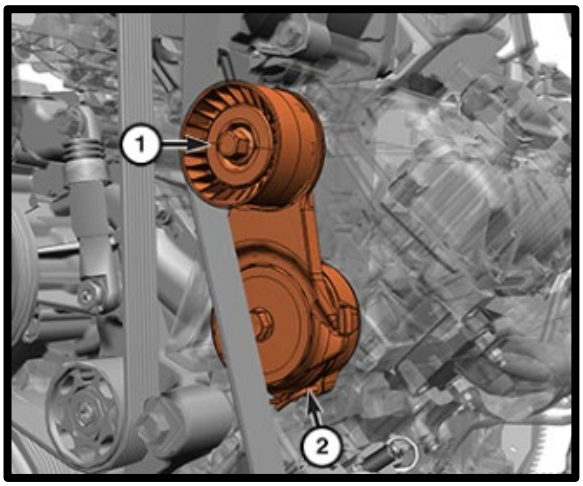


31. Using the LIL59370 Stretchy Belt Removal/Installer (1) available from Mopar Service Equipment or equivalent, and using a suitable tool rotate the vibration damper the remove water pump belt.

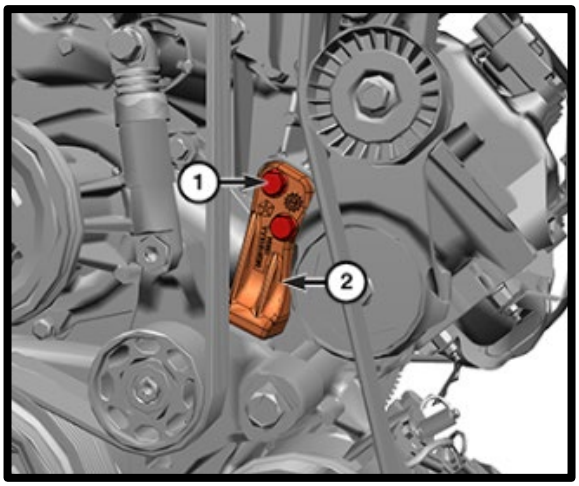




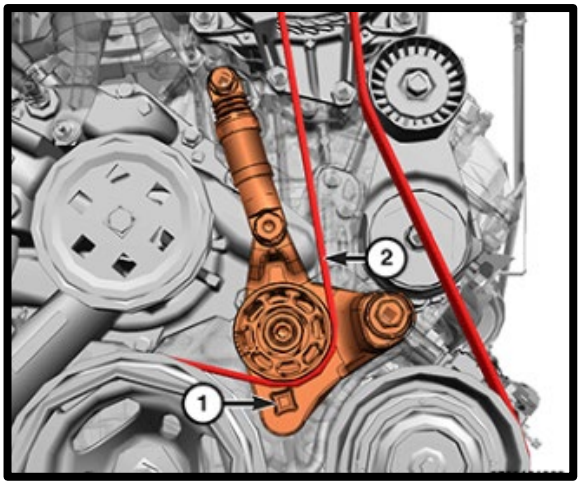
32. Using a breaker bar and 15mm socket, release the tension from the belt tensioner by rotating clockwise (2) to unload tensioner. Install a locking device such as a 5/32" drill bit or 9/64 allen hex in the belt tensioner (1).



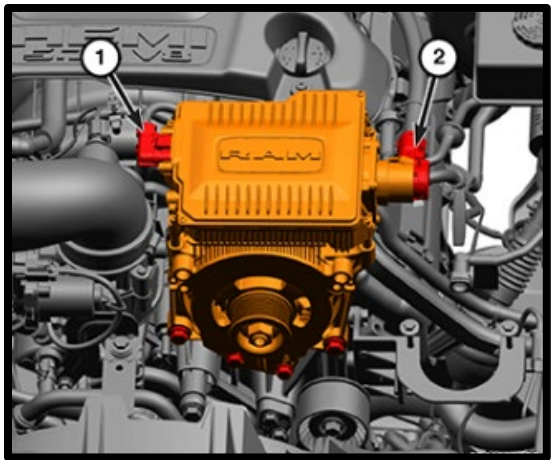
33. Remove the bolts (1) and the belt tensioner stop bracket (2).



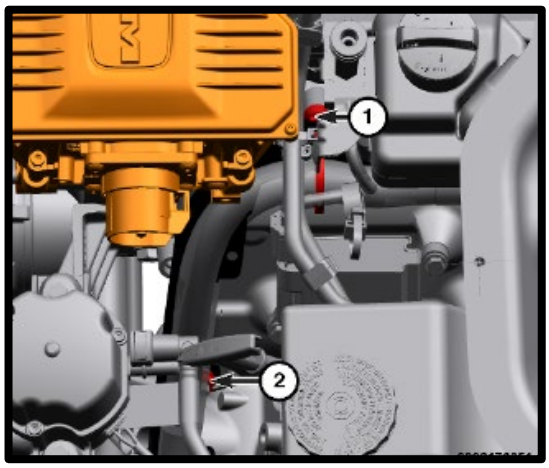
34. Using a ½" drive ratchet or breaker bar on the hydraulic tensioner (1), rotate tensioner clockwise and remove belt.



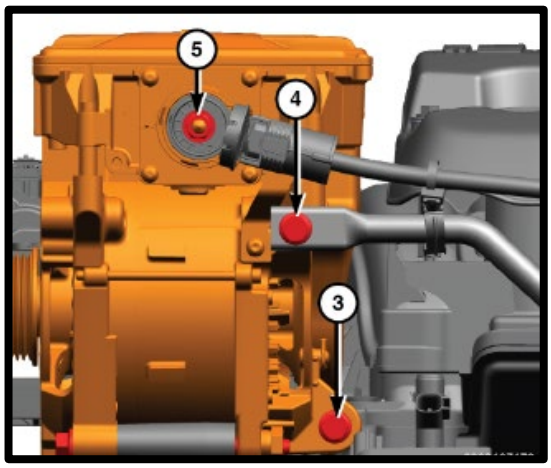
35. Disconnect the Motor Generator unit (MGU or E-Torque) wire harness connector (1) by disengaging the locking tab, then pushing down to disengage the connector before pulling connector body. Using suitable tools, open 48 volt positive cable connector cover (2) to allow access to the M8 nut.



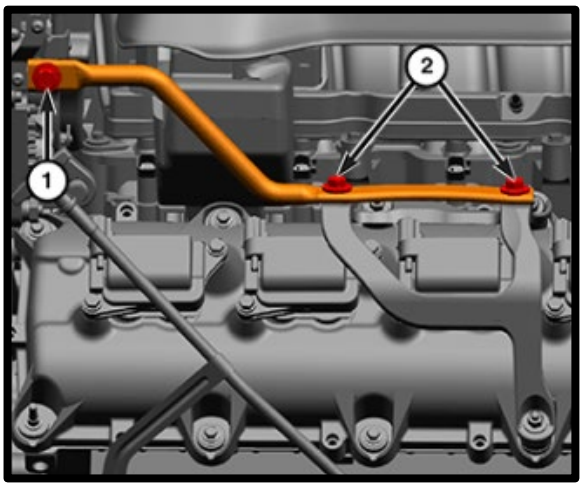
36. Pull the wire harness clip (1) out of the intake manifold to the valve cover. Remove the fastener (2) securing the engine waring harness to the valve cover.



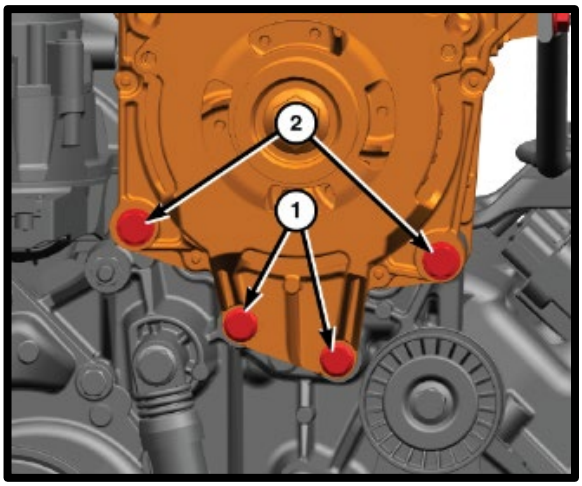
37. Remove the M8 nut from 48-volt cable (5). Remove the 48-volt cable from the MGU by grabbing the connector sleeve behind the connector cap and pull straight out in the same direction as the threaded stud and the position the cable aside. Remove the M8 bolt (3) from the MGU. Cover wire for protection.



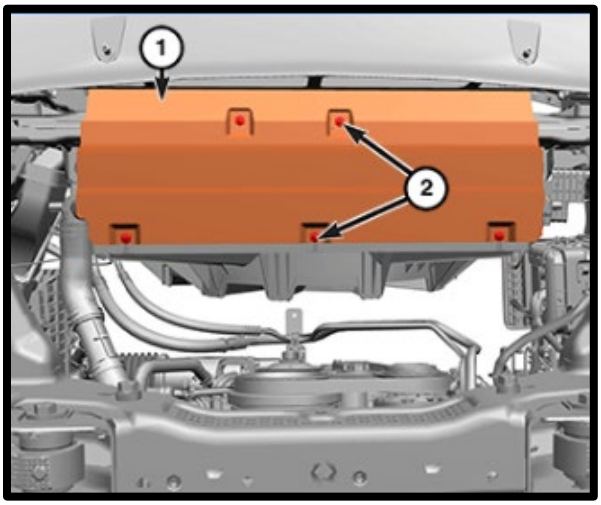
38. Loosen the M8 brace bolts from the MGU (1) and brace bracket (2).



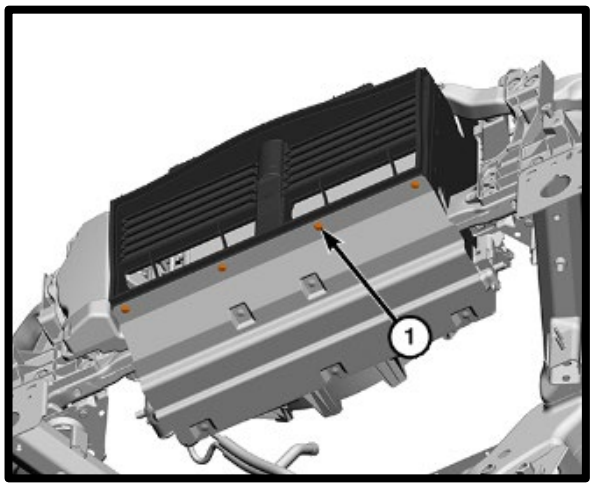
39. Remove the lower front M8 bolts from the MGU (1). Loosen both of the M10 bolts (2) two to three full turns and tap the bolts toward the housing face so that the rear threaded bushings unseat from the cover creating clearance.



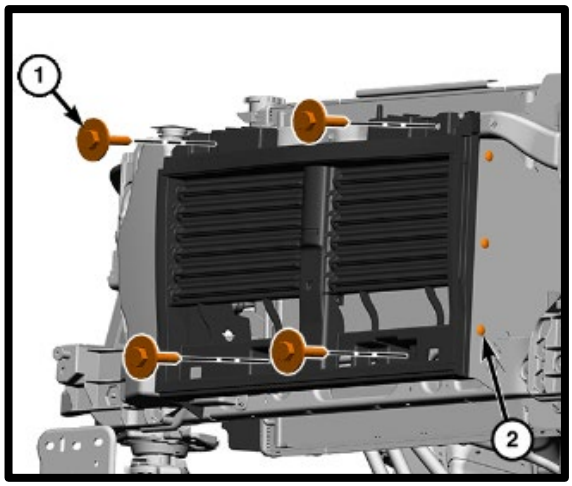
40. Carefully detach the lower fan shroud (under vehicle) by removing the push pin fasteners.



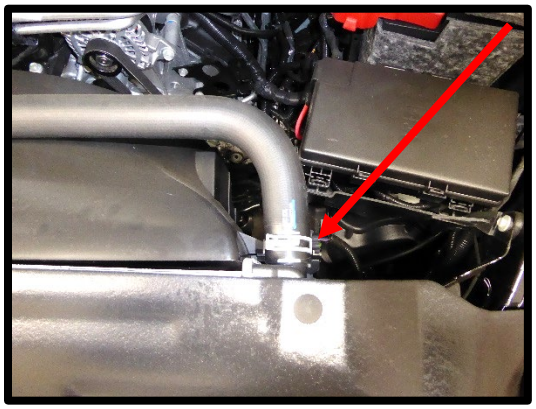
41. Remove the (4) lower air shield push pins.



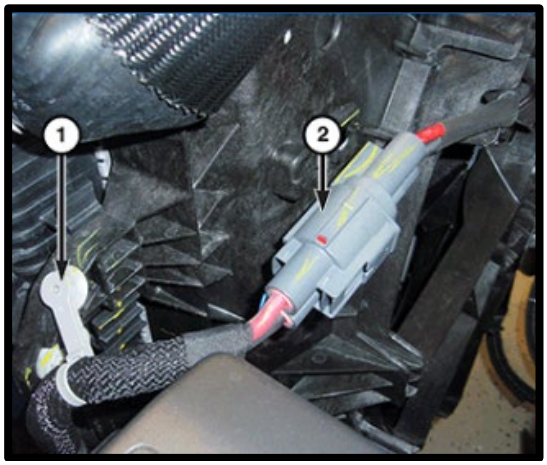
42. Remove the (3) side air guide push pin fasteners. Remove the (4) screws securing active shutter to radiator support cross member.



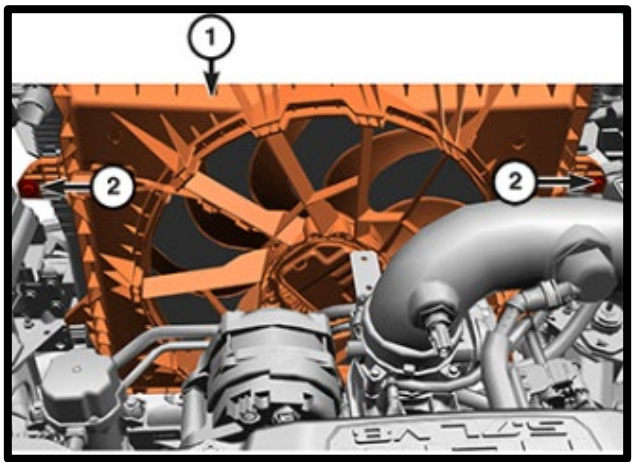
43. Using a hose clamp tool, remove the upper radiator hose from radiator.

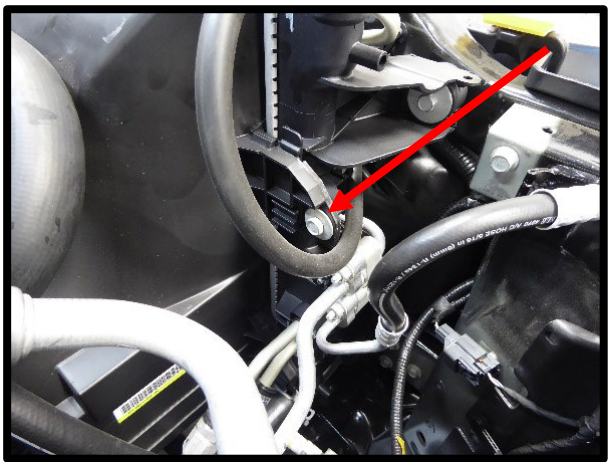


44. Disconnect the electronic fan connector and push pin retainer.

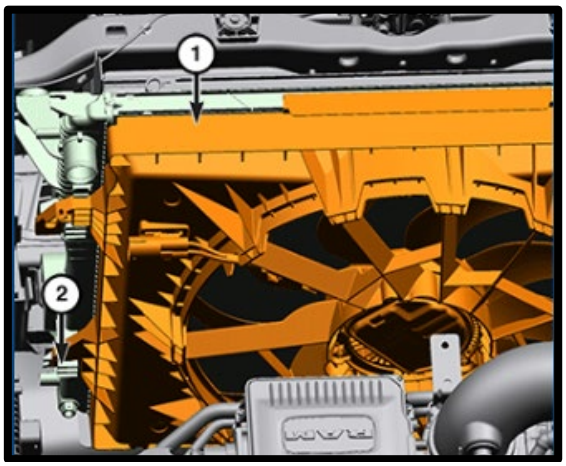


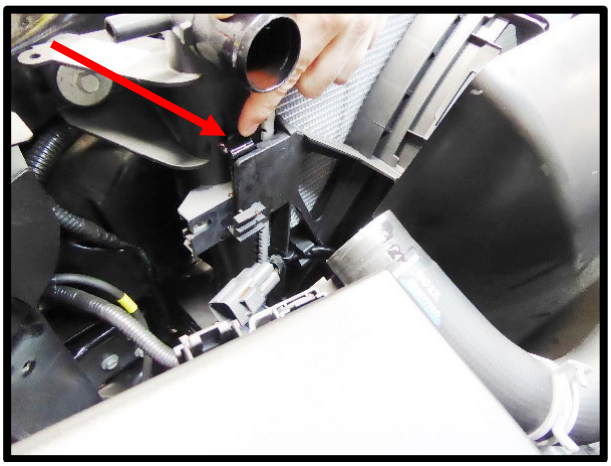
45. Remove the (2) factory bolts securing fan (1 per side) shroud to radiator using a 13mm socket.





46. Detach fan shroud from locking tabs. Position the shroud towards the engine. Depress the plastic retaining clips on each side of the fan assembly and pull up to detach the fan assembly. Lift electric fan assembly from vehicle.

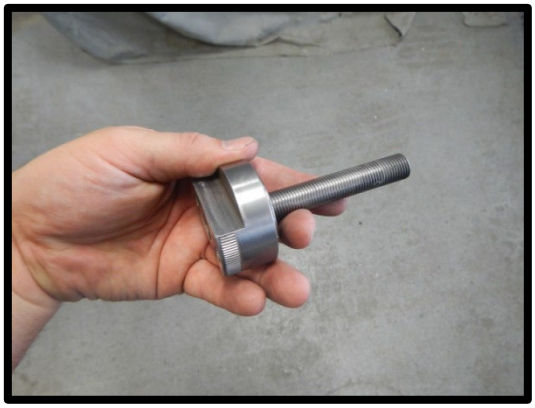
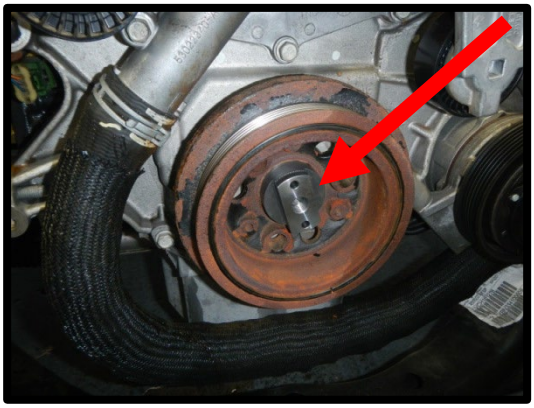
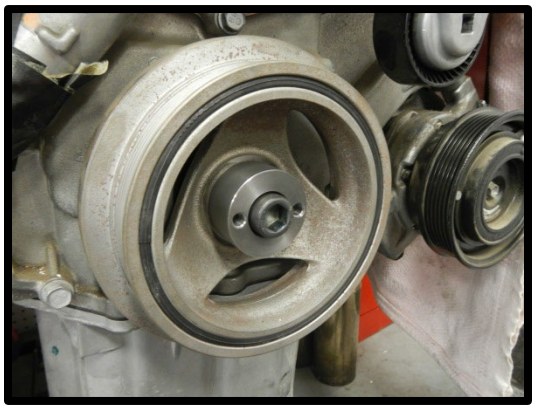




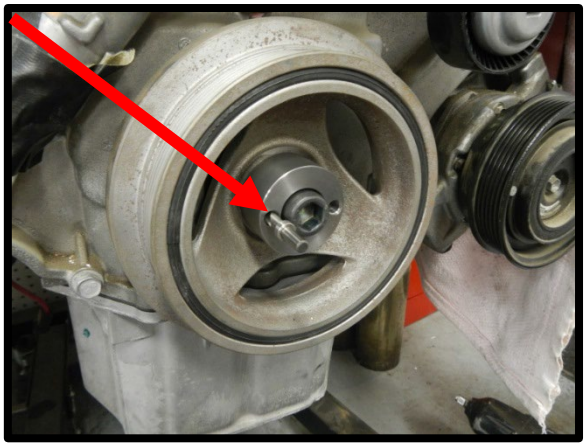
47. Carefully blow off any debris from the damper. It's a good idea to place some rags, blanket or tape over the radiator so debris does not get stuck inside the fins.

48. Using a ½" impact gun and a 21mm socket, remove the factory damper pulley center bolt. If you do not have access to air ratchet, you will need flywheel/flexplate holding tool to prevent engine from rotating.

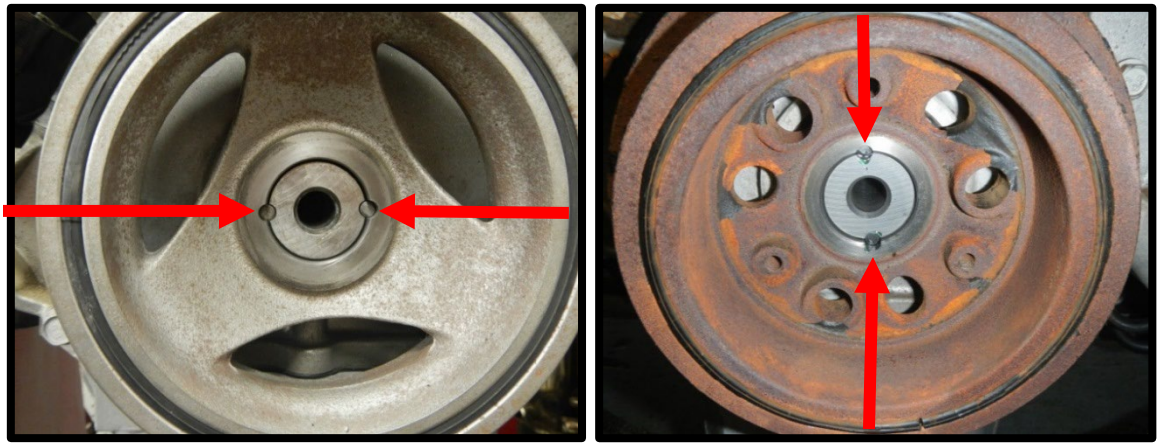
49. Install the supplied 14mm stud into the crank pinning adapter about halfway up the threads. Install stud and crank pin adapter into damper until snug (apply light amount of anti-seize to threads). Use a 1" wrench or a crescent wrench to tighten so it does not move while drilling.

50. Use the supplied ¼" drill bit (it has a stop at roughly 2.875" from drill bit tip), drill 2 holes into the crankshaft thru the (2) holes in the pin adapter. Blow off debris when done drilling. Remove the pin adapter using an adjustable wrench.



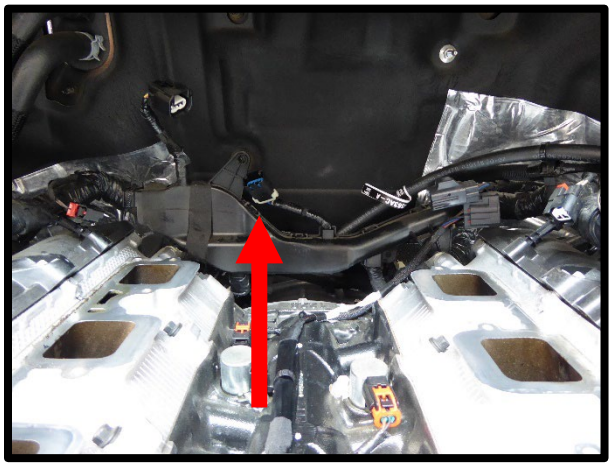
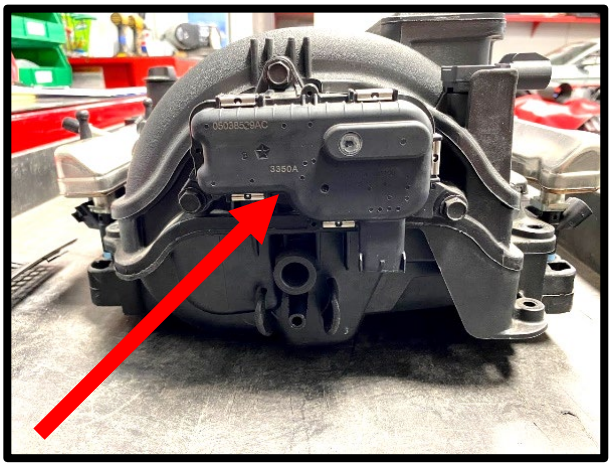

51. Install the supplied ¼" dowel pins with a generous amount of green Loctite #648. Use a hammer and punch or drift pin to tap in so they are flush.



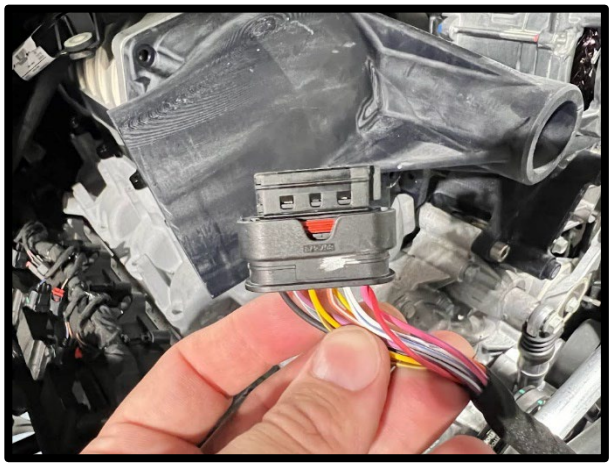
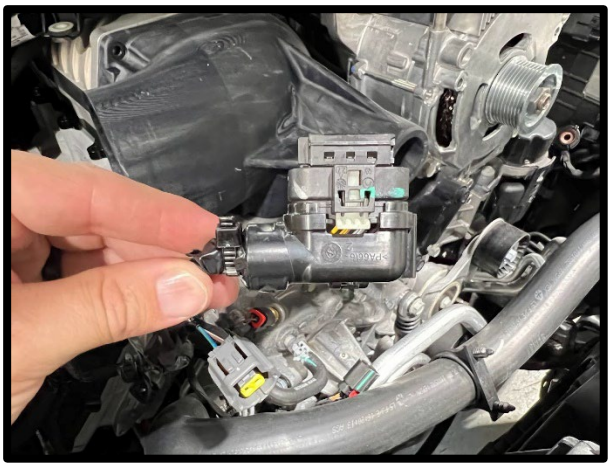
52. Apply light amount of anti-seize to threads of the factory damper pulley. Use a 21mm socket and torque to 129 ft/lbs. **DO NOT LET BALANCER ROTATE WHILE TORQUING.

53. Remove the (8) coil electrical connectors. Remove the coils using a 10mm socket and ratchet (2 bolts per coil). Lift the coil out and use a 5/8" spark plug socket and ratchet to remove the stock spark plugs (16). Apply light amount of anti-seize to the new spark plugs, torque to 7.5 -15 ft-lbs. Reinstall stock ignition coils in same locations as they were originally removed. **IMPORTANT! Gap plugs to .028".**

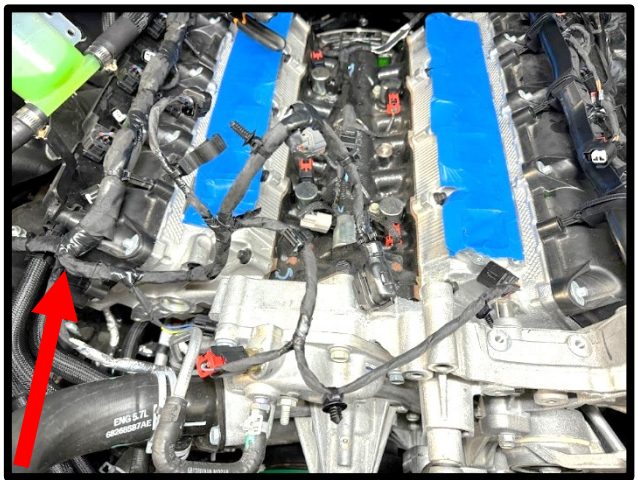
54. Remove the Active Runner Control (when applicable) motor from the intake manifold. Connect to factory connector behind engine. Zip tie this in the back, away from the engine.

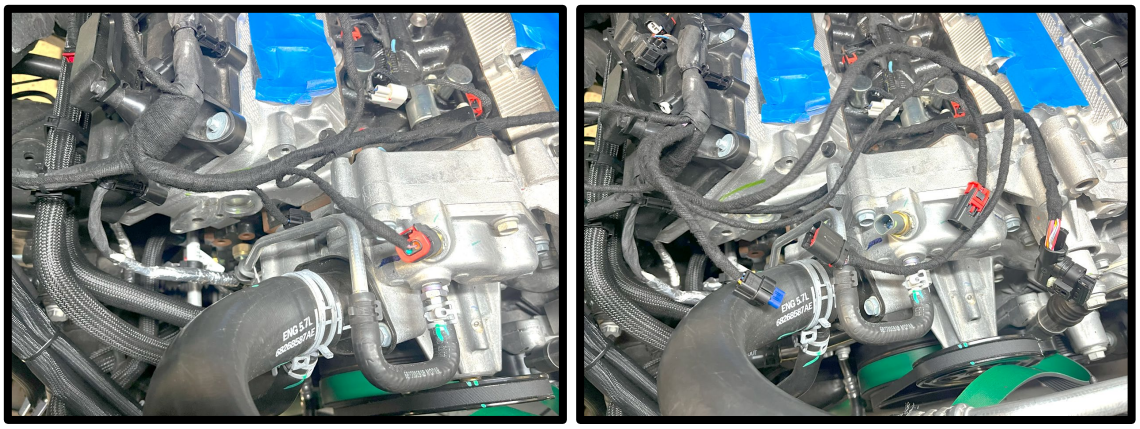
55. Remove the 90deg strain relief from the E-Torque electric connector.

56. Remove the harness retainers, factory loom on the E-Torque, coolant temp, throttle connector and camshaft position sensor connectors, including the harness retainers to the RH valve cover branch just above the valve cover.



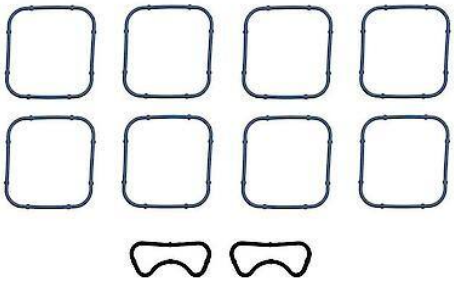

57. Connect the coolant temp connector to sensor. Route E torque connector across engine. Using the supplied tape role, recover the coolant temp and E-Torque loom together by folding over the coolant temp to help the length. Cover the rest of the open loom.



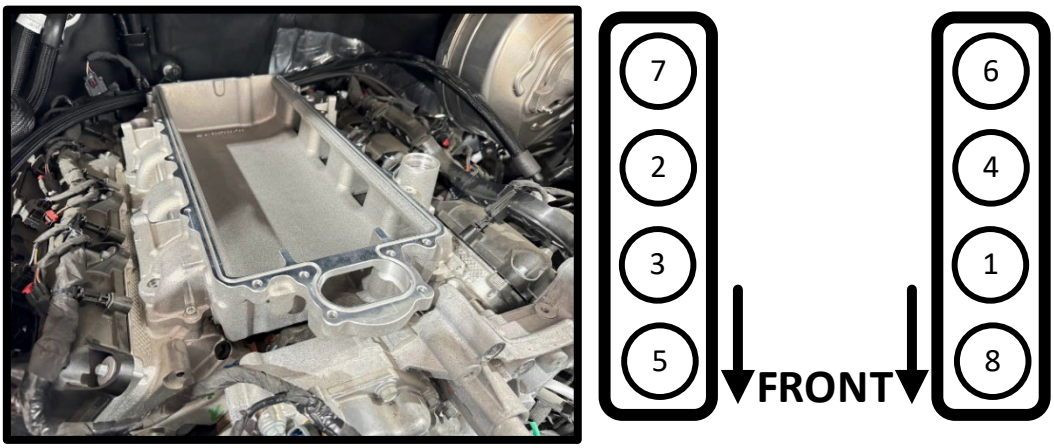
58. Disassemble the supercharger from intake manifold mid plate by removing the (4x) 8mm x 25mm HHFCS bolts using a 10mm socket (these will be reused). **NOTE: It is assembled for shipping and is missing its orings.**

59. Remove the tape from cylinder head ports. Clean the cylinder head surface in preparation for the new manifold installation.

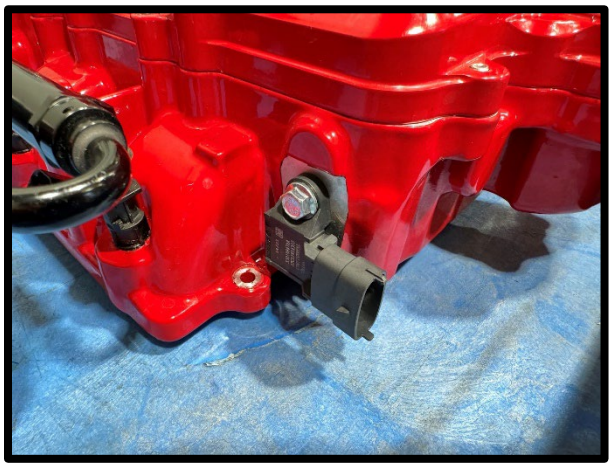
60. Remove the tape from the manifold and clean surface as needed. Install the (10) factory manifold orings. Apply light amount of grease for ease of installation.



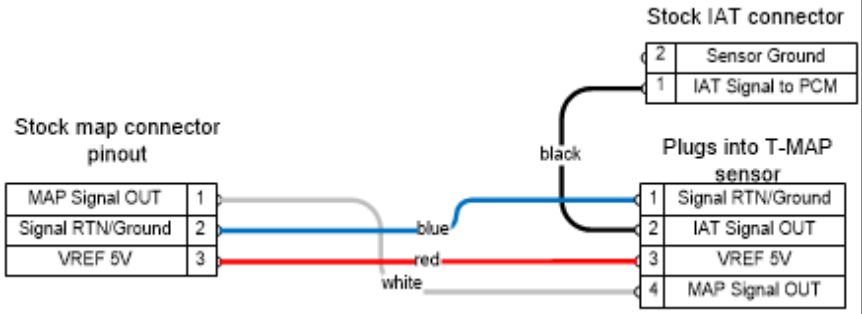
61. Install the manifold to engine, look through ports and align manifold. Torque the (8x) 6mm x 25mm HHFCS bolts in the sequence shown below.
    1. First pass, using the sequence, 60 in-lbs.
    2. Second pass, using the sequence, 72 in-lbs.
    3. Third pass, using the sequence, 88 in-lbs.

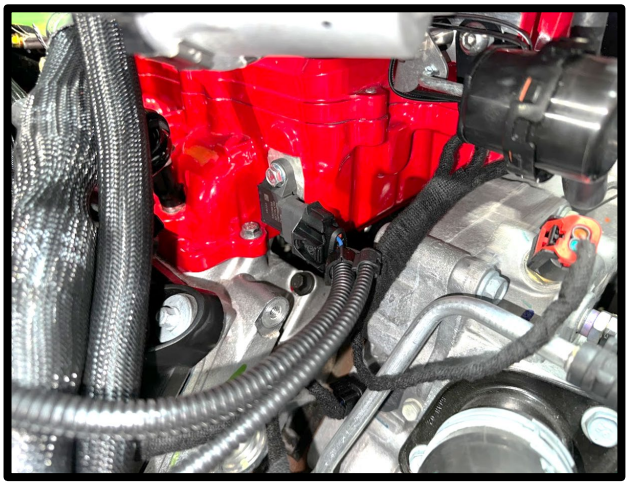


62. Install the supplied TMAP sensor to supercharger, apply light amount of grease to oring to ease installation. Secure to SC using supplied 6mm x 12mm SHCS. Torque to 80 in-lbs using 10mm socket.

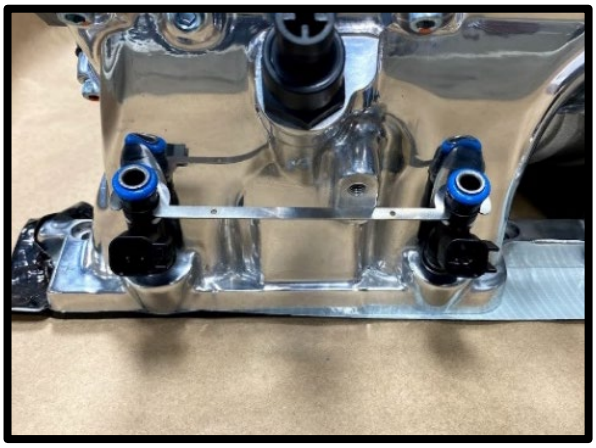


63. Install the supplied TMAP pigtail from factory MAP sensor to TMAP. Connect 4-way end to TMAP previously installed. Route single wire to LH side of engine. Connect to stock IAT sensor connector.



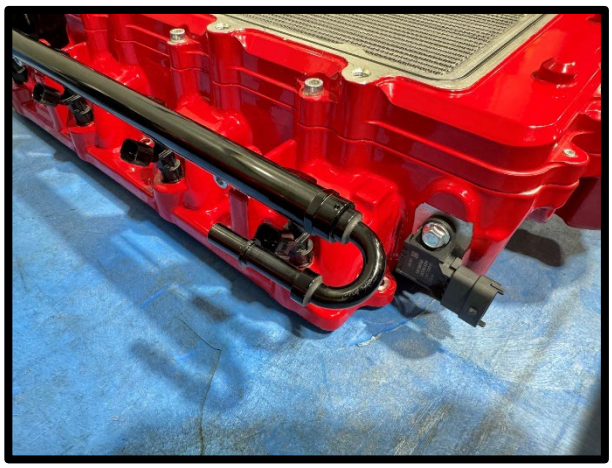


64. Apply light amount of grease to the supplied fuel injectors. Install injectors to supercharger assembly. Install the injector clocking brackets to each fuel injector. ***NOTE:** Failure to use brackets may cause running problems due to unique spray angle of the supplied fuel injectors.

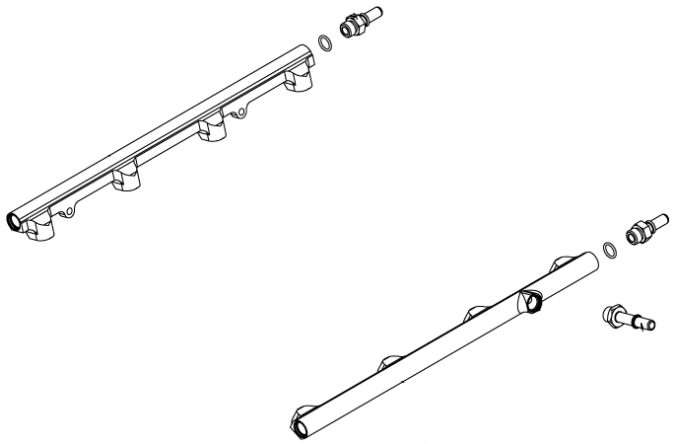


65. Secure rails to supercharger using the supplied (4) 6mm x 16mm SHCS. Use **Blue Loctite #243** on the threads of each bolt. Torque to 80 lbs-in.

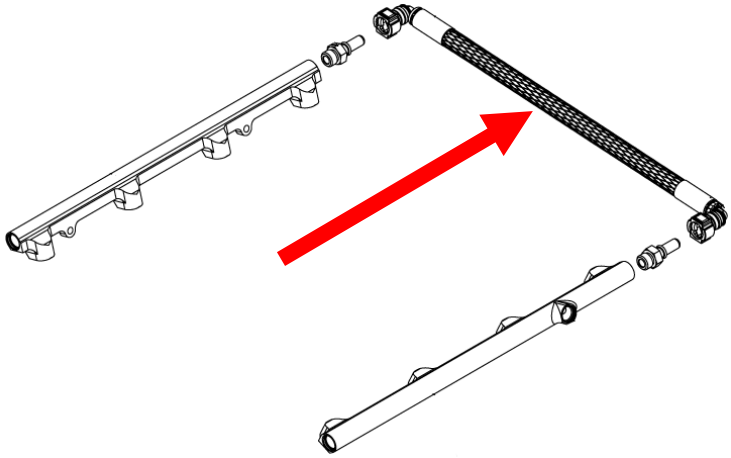
66. Install the (2) #2-906-V75BR orings to the (2) -6 180deg 9.49mm quick connect fittings, apply light amount of grease to orings to ease installation. Install these to the front of each fuel rail.



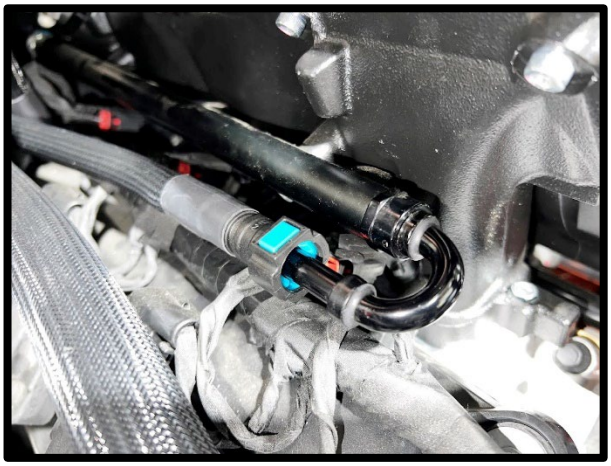
67. Install the (3) #2-906-V75BR orings to the (2) -6 ORB to 9.49mm and (1) -6 ORB to 9.49mm fittings. Apply light amount of grease to orings to ease installation. Install the 9.49mm fuel feed fitting on the LH/Driver side rail -6 port. Install the (2) 9.49mm fittings to the rear ports of each rail (fuel cross over).



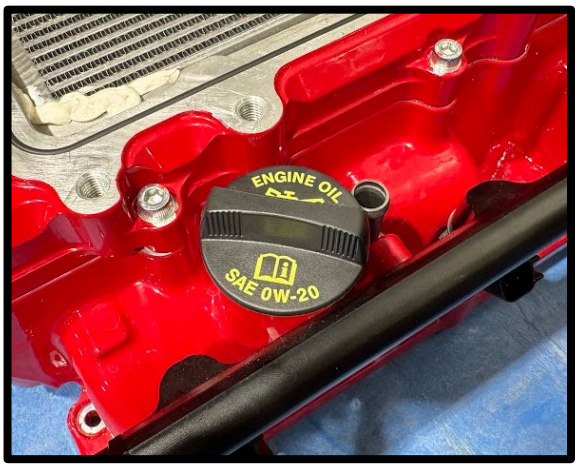
68. Install the supplied fuel cross over hose with dual 90deg to the rear side of each fuel rail. Click and secure in place. **CAUTION:** Ensure fuel fitting clicks and locks in place.



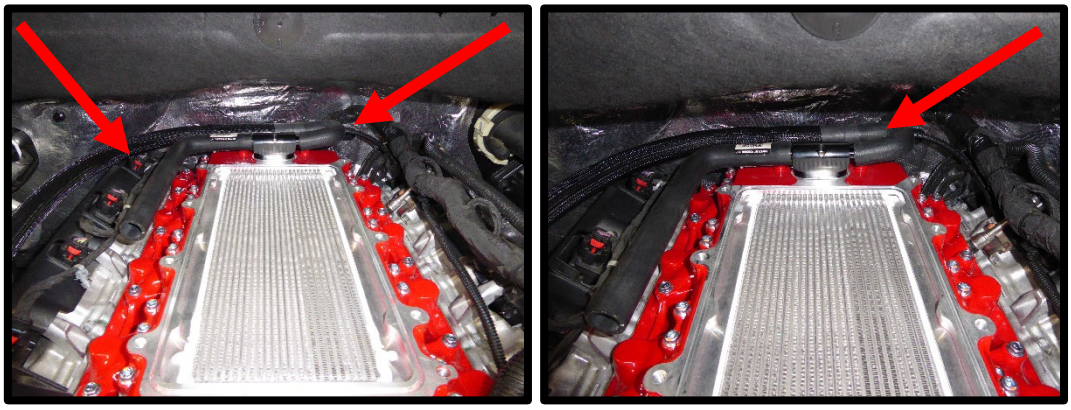
69. Install the 3/8" x 50" fuel front cross over hose, around the back of the supercharger and connect to both previously installed 180deg fittings. **CAUTION:** Ensure fuel fitting clicks and locks in place.



70. Remove the factory oil fill cap from intake manifold, transfer to new manifold oil fill port.



71. Preinstall the intercooler hoses. Install supplied 180deg ¾" hose (#3103310) to odd bank side of intercooler manifold. Secure end with constant tension clamp. Route to even bank (RH) side for future install. Install supplied 90deg ¾" x 10" hose #28476 to even bank RH of intercooler manifold (routes to filler reservoir). Secure with constant tension clamp.

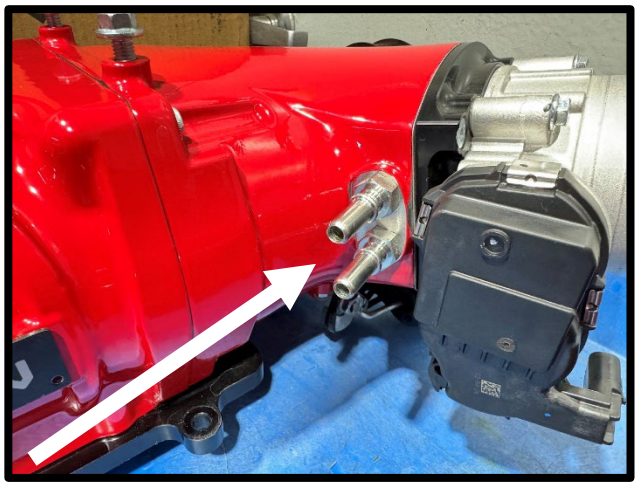
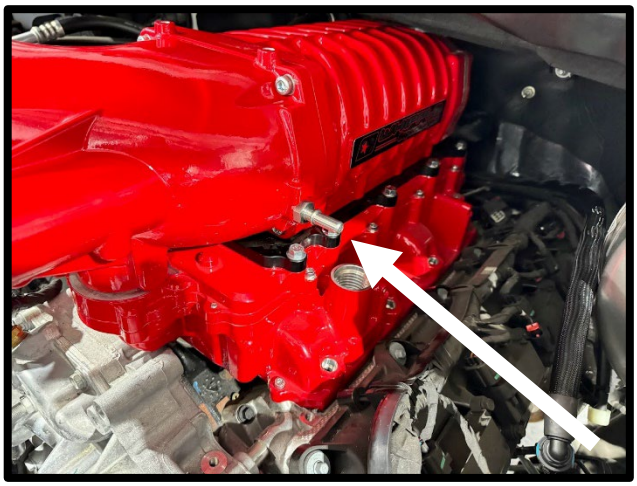


72. The supercharger must be filled with oil prior to use. This supercharger is shipped without oil inside. The oil is in a separate bottle supplied with your kit and is prefilled to the exact oil amount.

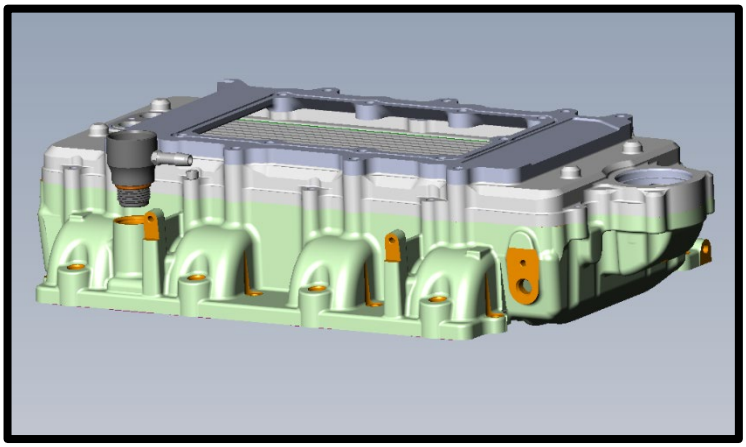
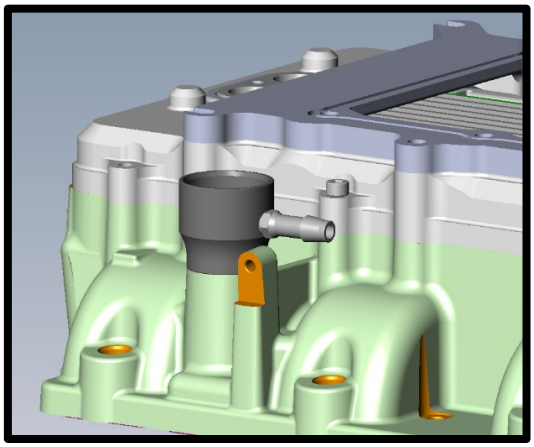
CAUTION! Severe damage to the compressor will occur if you overfill the supercharger rear gear case.

- ☐ Make sure the SC is sitting on a flat surface.
- ☐ Remove -6AN allen plug (1/4" allen wrench) and fill SC with **WHIPPLE SC OIL ONLY!!**
- ☐ Fill to the middle of the sight glass. Tip from side to side then with the SC flat again, check oil level again, add if necessary. Whipple kits are supplied with pre-measured oil bottles, therefore, on all new installs **NOTE:** The W185FF compressor takes a maximum of 3.5oz and a minimum of 3.0oz. Failure to fill properly will result in catastrophic damage.
- ☐ Reinstall -6AN allen plug.
- ☐ **NOTE:** After running the SC, the oil level will lower due to oil filling the bearings. The proper level while **not running** should be between the bottom of the sight glass and the middle and will vary when running and not running.
- ☐ Change SC oil every 100,000 miles and only use **WHIPPLE SC OIL ONLY!!**

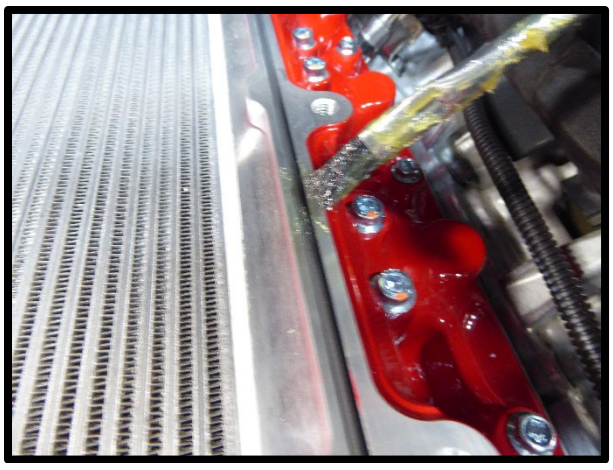
73. Install the (3) 9.89mm fittings with the (3) #2-906-V75BR orings, to SC inlet, (2) on RH side of inlet and (1) on LH side. Apply light amount of grease to oring to ease installation.

74. Remove stock PCV from intake manifold by rotating counterclockwise. Install the #113 oring to PCV adapter. Apply a light amount of grease to oring and install adapter to PCV port of SC housing. Install the stock PCV to adapter.

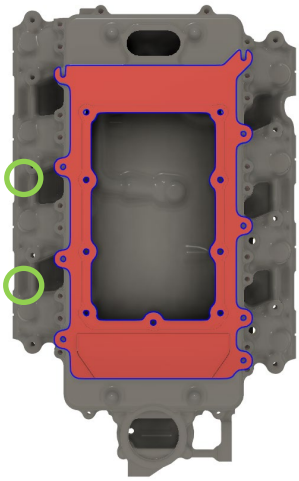



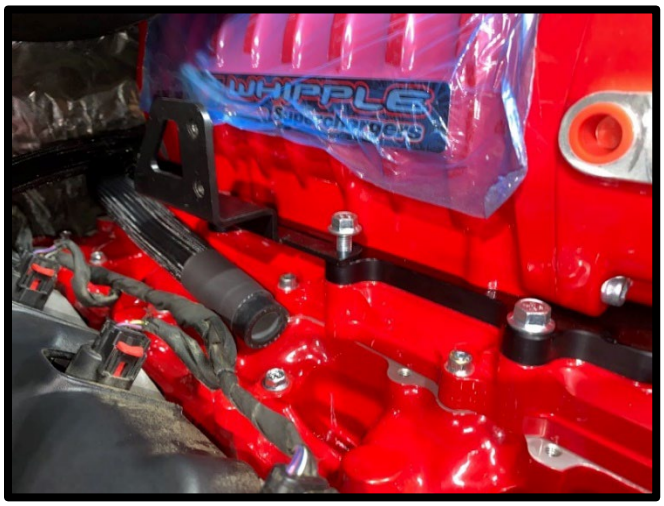
75. Install the supplied mid-plate oring, PN #3103014. Apply heavy layer of grease/Lubriplate to help secure oring in place and easy installation of SC. **NOTE: Failure to do so, may lead to oring coming out during SC installation and cause an air leak.**



76. Install the supplied bypass oring, PN #2-230-V75-BR. Using light amount of grease, coat the bypass internal oring for easy SC installation.

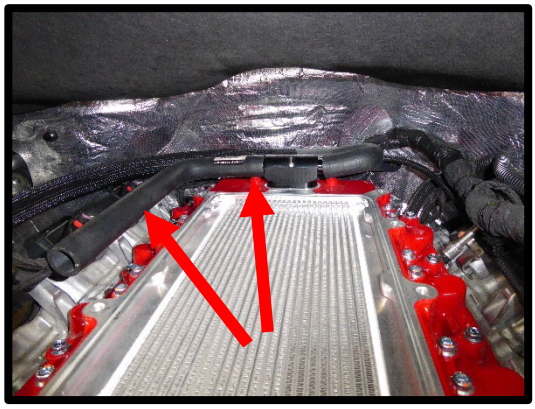
77. Carefully slide the SC into position on the intake manifold. Start the (7x) 8mm x 25mm HHFCS bolts (4x you previously removed). Install the reservoir bracket under the (2x) 8mm x 30mm HHFCS bolts shown in green below. Torque to 17 ft-lbs.



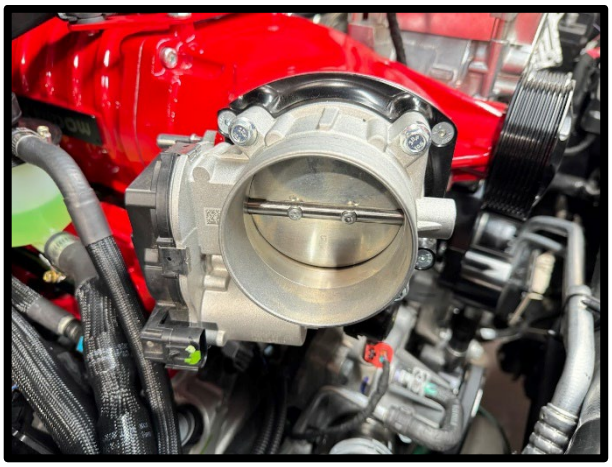


78. Mount IC reservoir to bracket using the (2x) 6mm x 12mm HHFCS. Torque to 112 in-lbs.

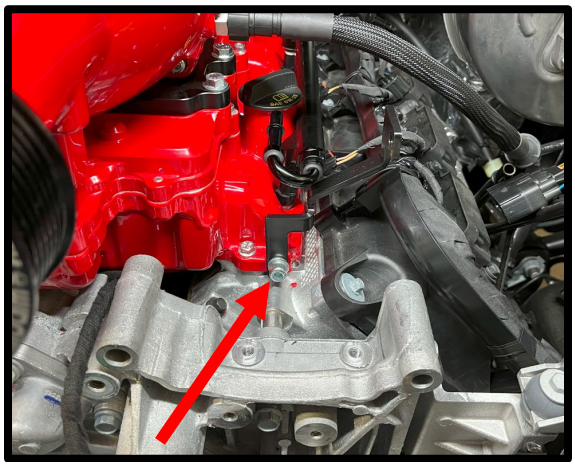
79. Secure previously installed IC outlet hose #5000347 (even bank side) to IC reservoir rear fitting. Secure with constant tension clamps.

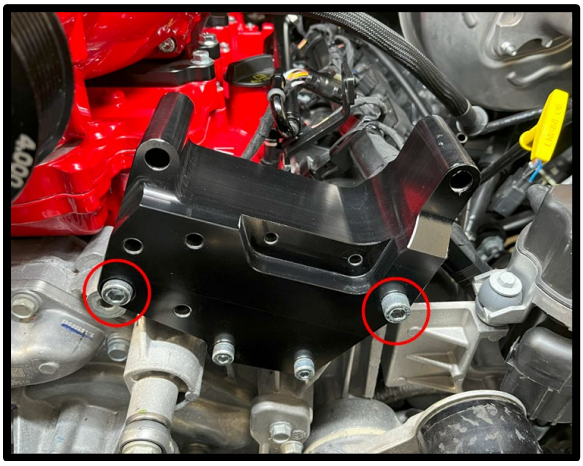
80. Install the TB to the supercharger inlet using the supplied TB adapter, supplied gasket and the (4x) 6mm x 25mm FHCS. Torque to 75 in-lbs. Install the stock throttle body oring to TB adapter, then install the throttle body using the (4x) 6mm x 35mm HHFCS bolts. Use **Blue Loctite #243** on threads, torque to 88 in-lbs using a 10mm socket.

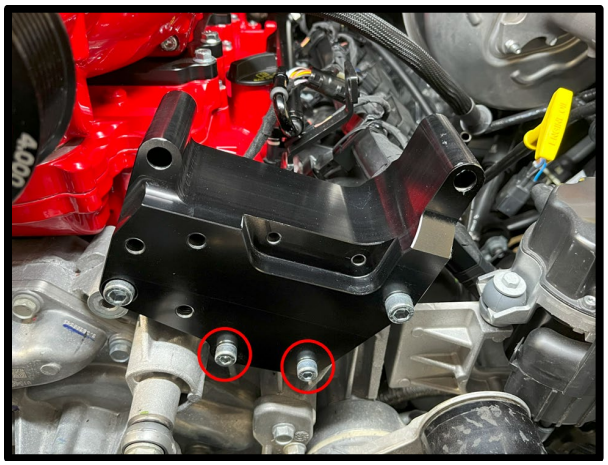
81. Install the E-Torque support bracket to the front **LH** side of the manifold using the supplied (1x) 8mm x 18mm SHCS. Torque to 18 ft-lbs.



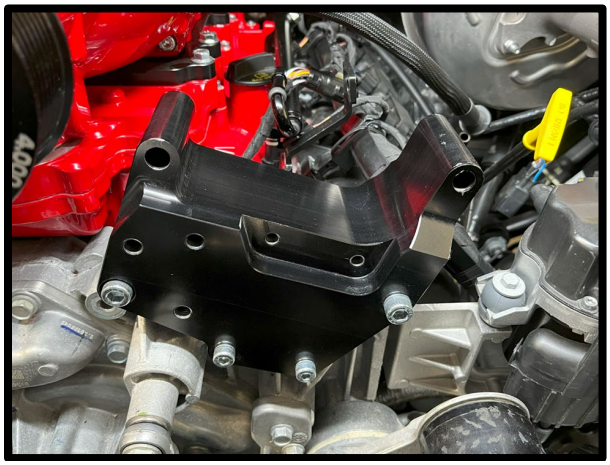
82. Install the E-Torque relocation bracket to original position. Secure first position as shown below, using the supplied (2x) 10mm x 110mm SHCS and secure opposite end with the (2x) 10mm nyloc flanged nut. Leave loose for now.



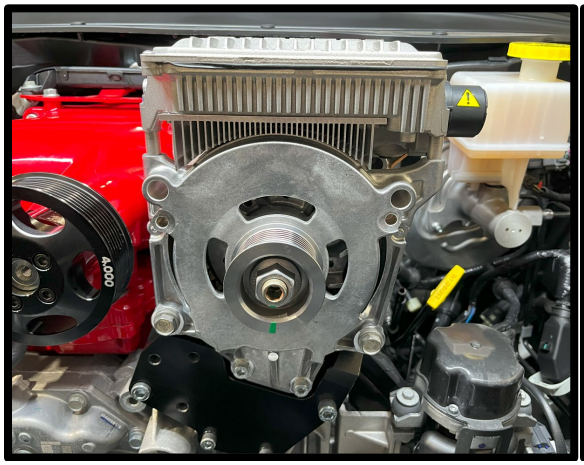
83. Secure E-Torque relocation bracket lower section using the (2x) 8mm x 30mm SHCS. Leave loose for now.

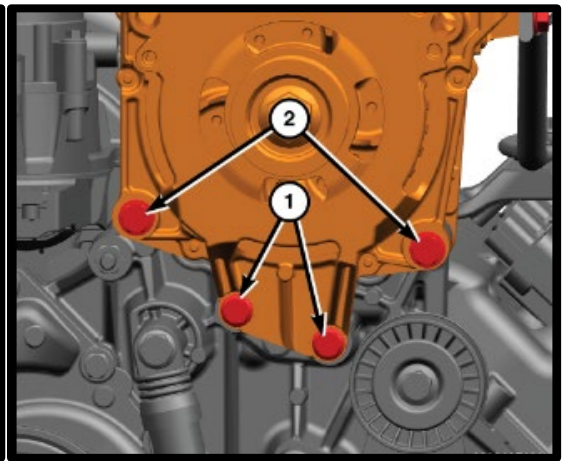


84. Tighten the (2x) 10mm x 110mm SHCS bolts and (2x) nyloc nuts, then torque the (2x) 8mm x 30mm SHCS to 21 ft-lbs.

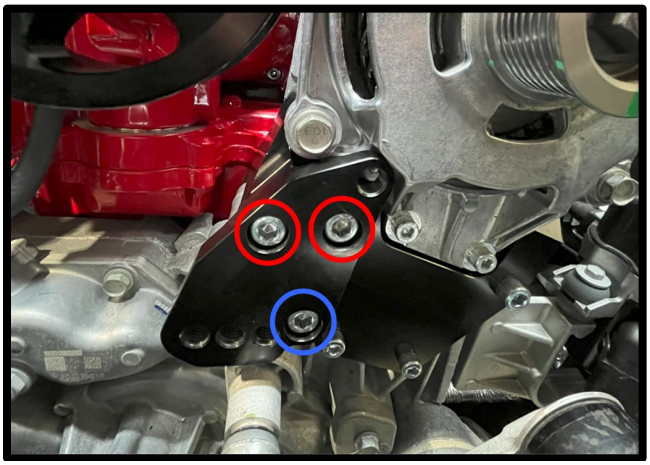


85. Mount the E-Torque motor to the relocation bracket. Secure using the stock 10mm fasteners (2) up top and the supplied (2x) 8mm x 30mm SHCS bolts in lower holes (1). Torque the upper M10 bolts, #2 to 41 ft-lbs. Torque the M8 lower bolts, #1 to 21 ft-lbs.

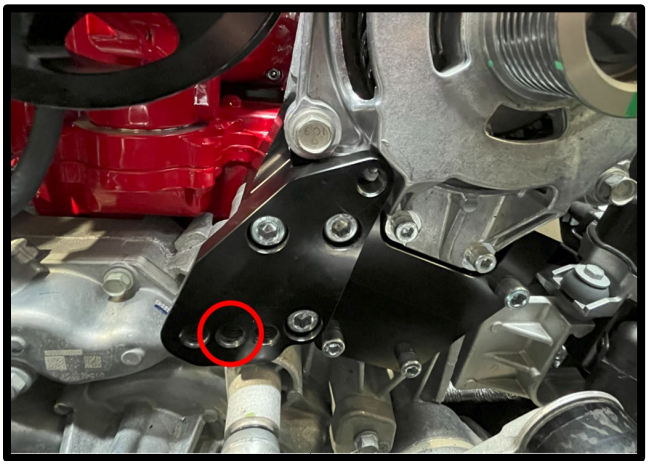


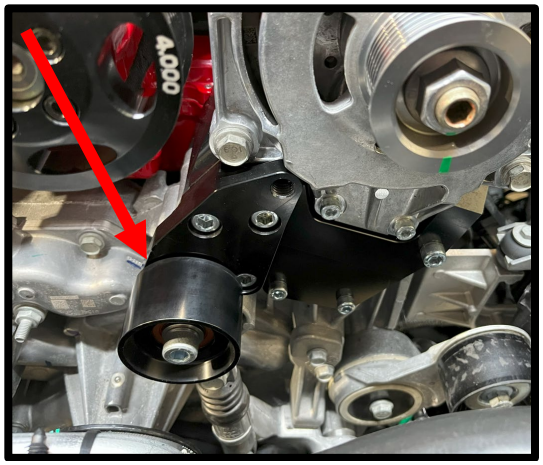


86. Install the supplied billet idler bracket to E-Torque relocation bracket, use the (2x) 10mm x 45mm SHCS in the upper bolt holes (red circles). Use the (1x) 10mm x 30mm SHCS in bottom hole (blue circle). Torque the (3x) bolts to 18 ft-lbs.

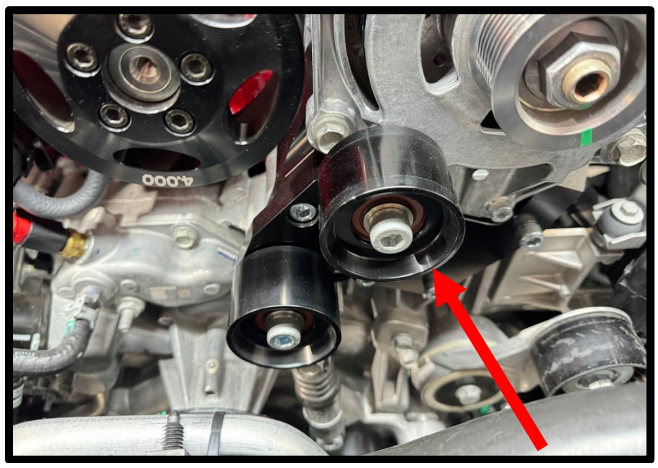


87. Install the supplied lower smooth idler pulley to the middle position (B), using the (1x) ½" x 2" bolt, ½" idler step washer and ½" step spacer. Torque to 30 ft-lbs.

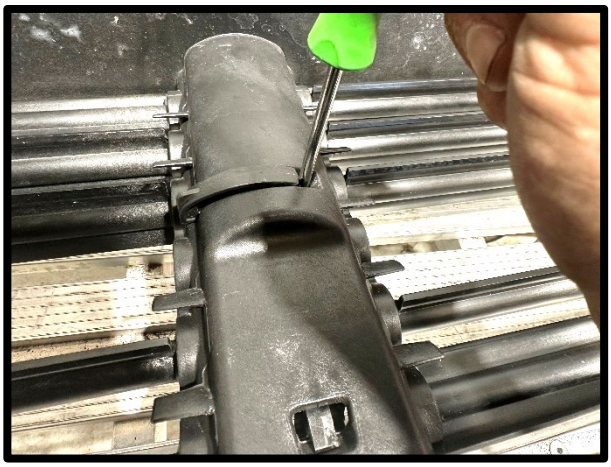


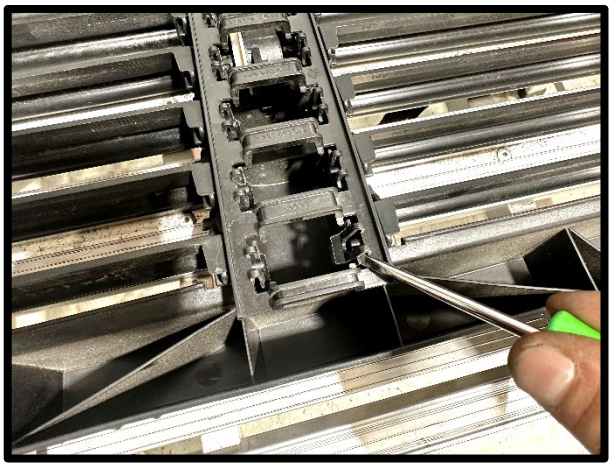


88. Install the supplied upper idler pulley to idler bracket using the (1x) ½" x 2" bolt, ½" idler step washer and ½" step spacer. Torque to 30 ft-lbs.

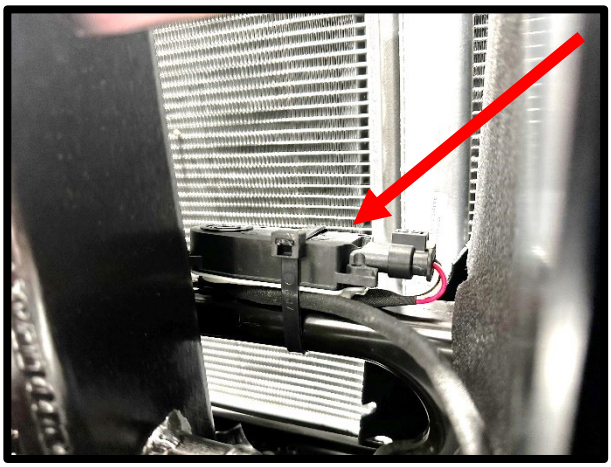


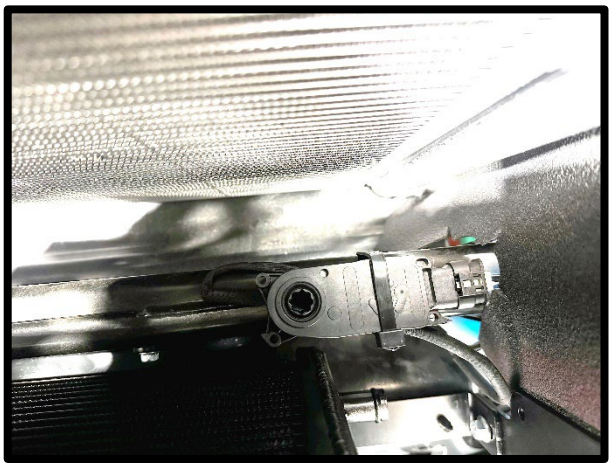
89. Remove stock shutter motor from shutter assembly by first removing the shutter motor cover using small flat head screwdriver. Remove the shutter arms until you can release shutter motor from assembly.



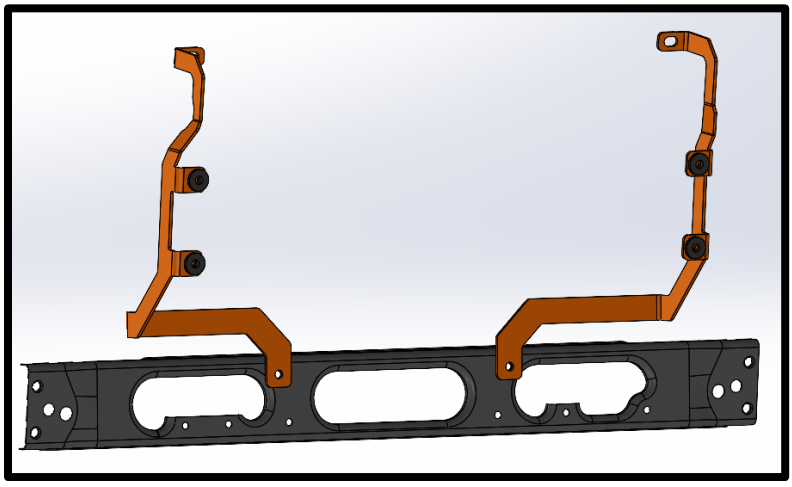
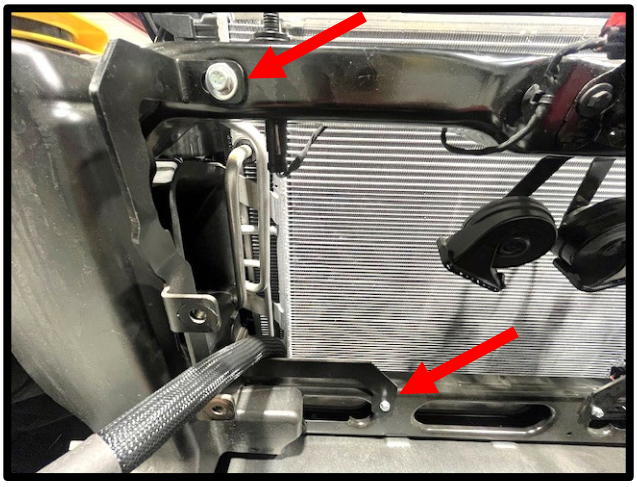


90. Zip-tie stock shutter motor to frame just behind LTR. Connect electrical connector and zip tie for clean installation.

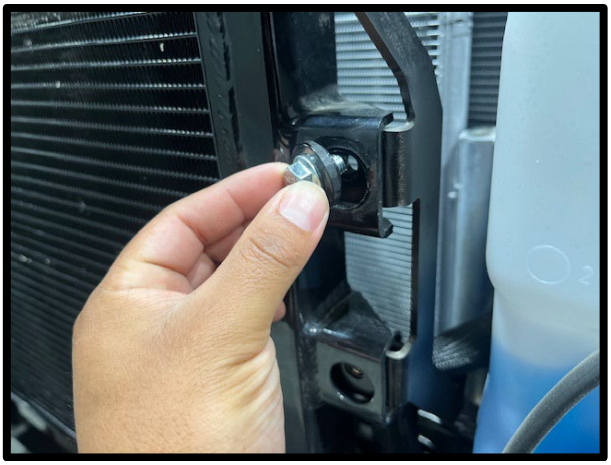




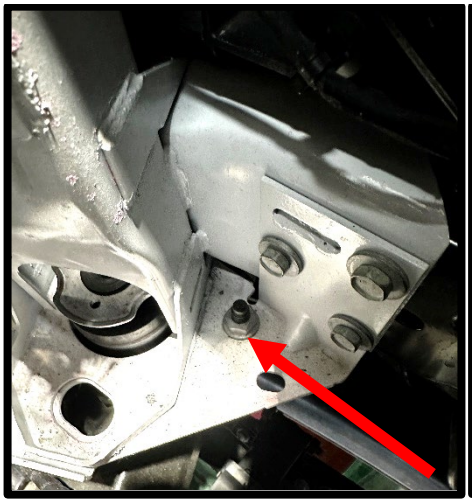
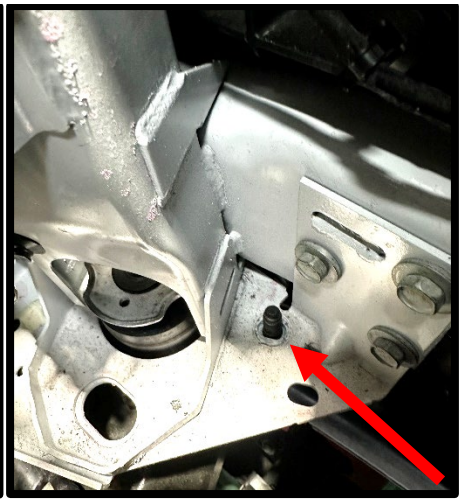
91. Mount the supplied LH and RH heat exchanger brackets to the upper and lower core support. Secure the top of the brackets using the supplied (2x) 6mm x 16mm HHFCS bolts with (2x) 6mm washers. Secure bottom using supplied (2x) 6mm x 12mm HHFCS bolts.

92. Mount the heat exchanger to the brackets, using the (4x) .813" step washer and (4x) 8mm x 16mm HHFCS bolts.

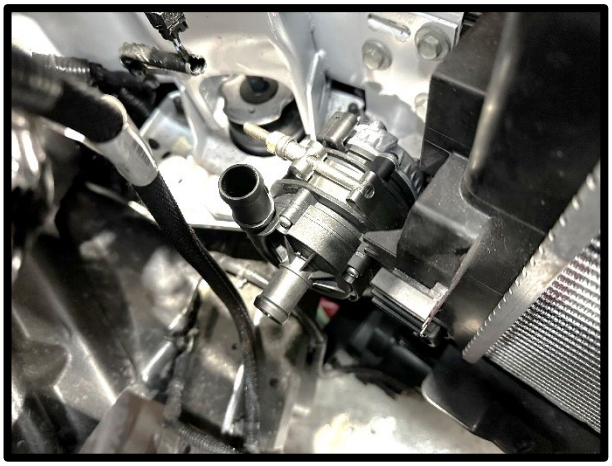



93. Remove factory nut from stud on LH inner frame, next to radiator.

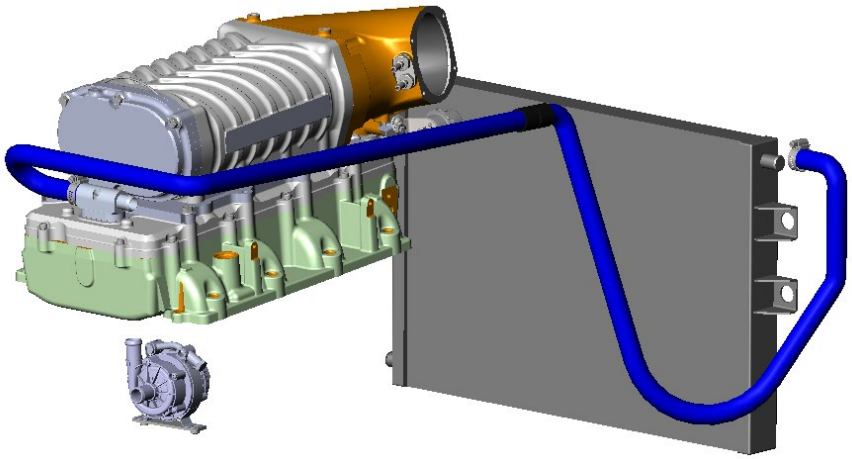



94. Mount the IC pump clamp to the pump bracket using the supplied (2) 6mm x 12mm HHFCS. Mount the IC pump to the IC pump bracket. Leave pump clamp loose until hose installation.

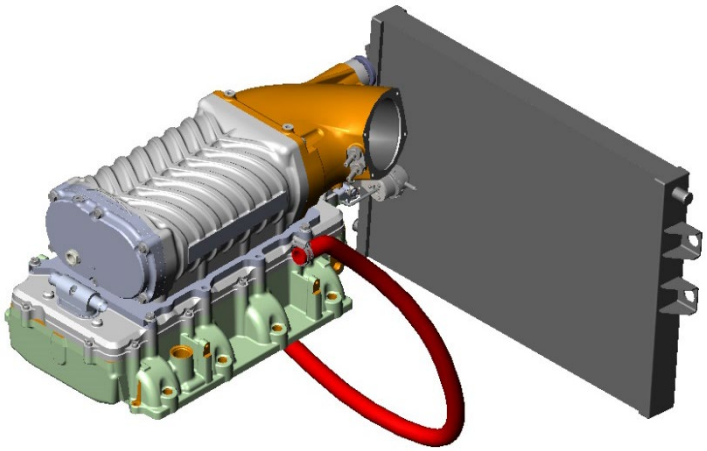
95. Mount IC pump to LH inner frame factory stud, secure using stock nut previously removed.

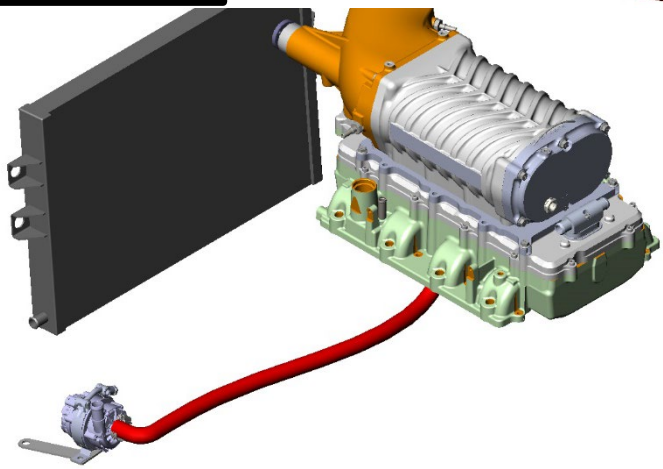


96. Using the ¾" hose coupler and (2x) Gates heat shrink clamps, connect installed #3103310 hose to straight end of #3103324 IC hose. Route down RH side of engine, through radiator support, up to LTR outlet. Install 90deg end on top heat exchanger fitting, secure with #16 constant tension clamp. **NOTE: Verify and ensure hose cannot kink and limit intercooler flow, use zip-ties to secure hose**.

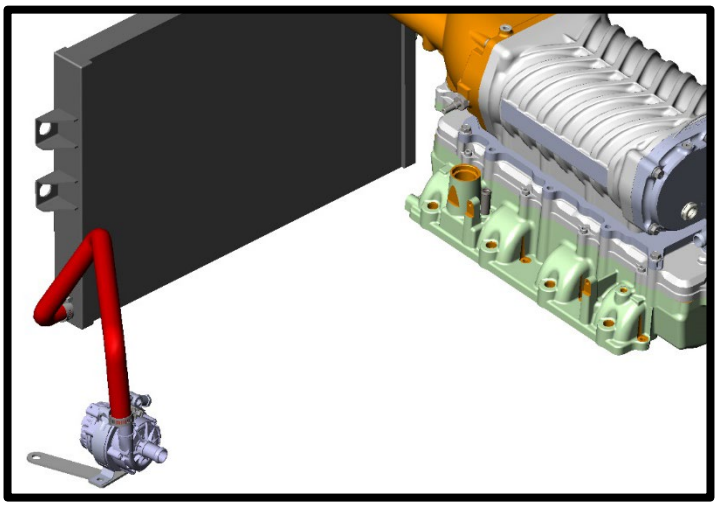


97. Install the supplied intercooler outlet hose, #3103463 (from IC reservoir front fitting). Route around front of the motor to the IC pump. Secure hoses with #12 black worm clamps. Install the 23" #28479 hose to tee and route to rear IC filler reservoir fitting. Secure using #4 clamp.

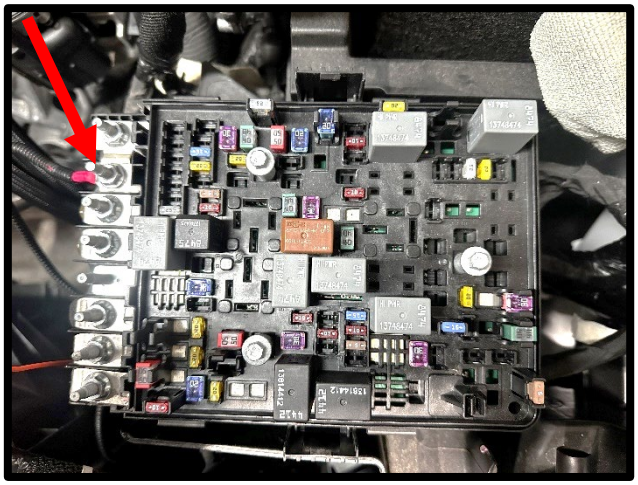


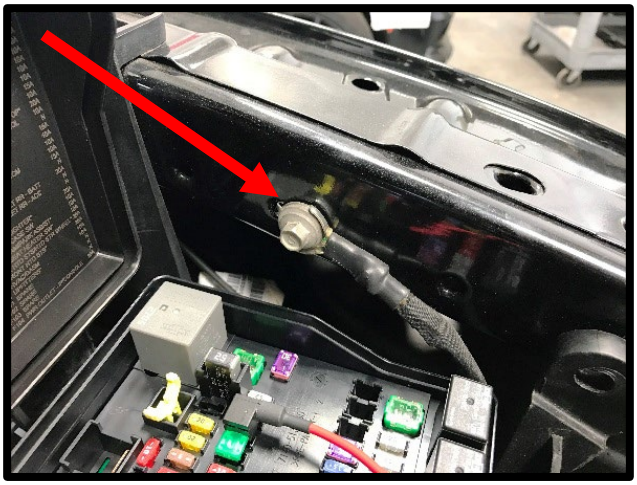


98. Install supplied 12 ½" #3103150 hose from IC pump outlet to the LTR lower barb fitting (feed). Secure both with #16 pinch clamps.

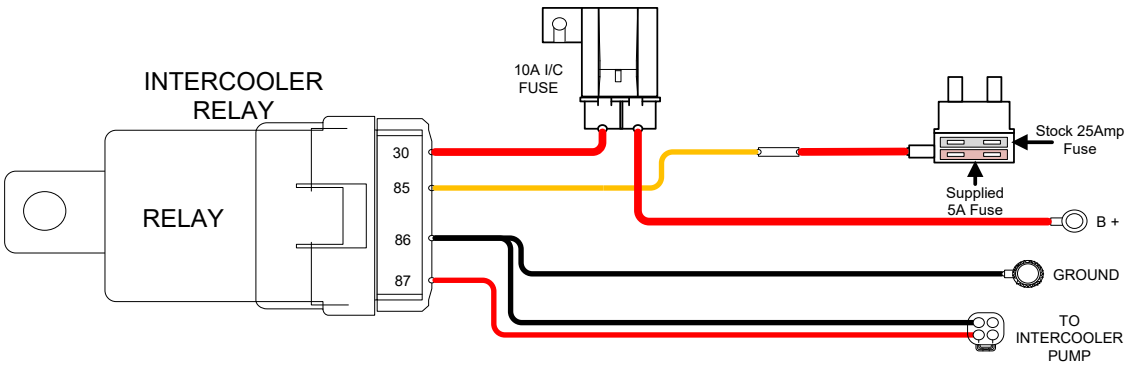


99. Install the IC pump relay harness. Connect the 12V to the 2nd from rear power stud. Install the ground to the inner fender factory ground position.

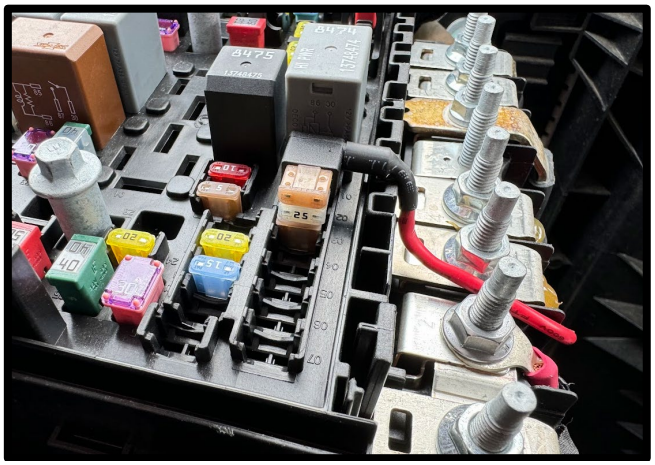




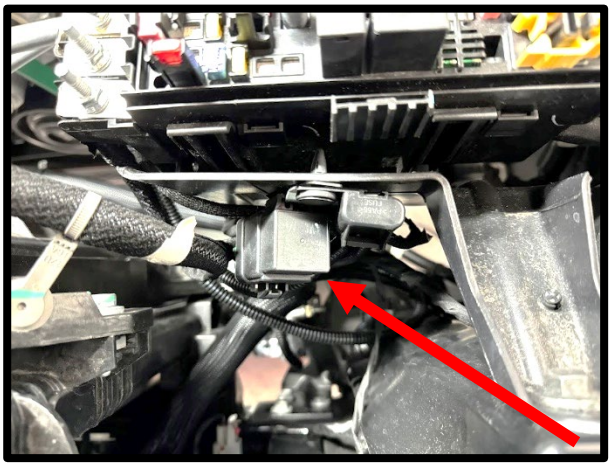
100. Remove the fuse from location F01 (fuel pump). Install this into the fuse tap. Install the fuse tap (should have the 25amp and 5amp fuses) into location F01.



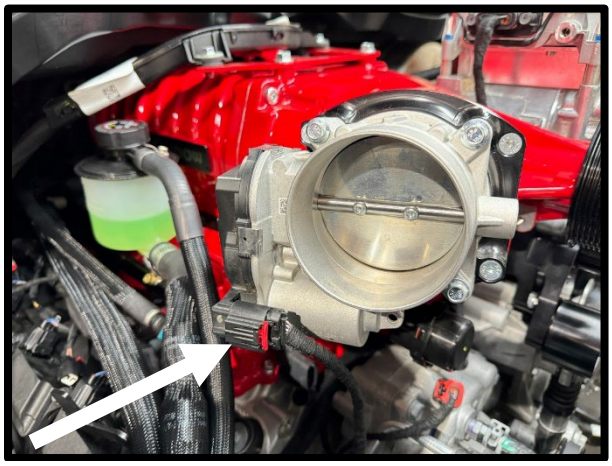
101. Route the turn on wire (red) through the fuse box. Route the pump 4-way connector to the driver side front fender for connection to the IC pump.



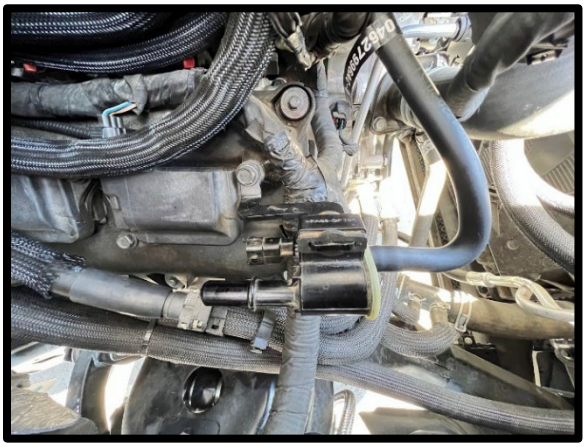
102. Mount relay and fuse to box using push pin retainer.



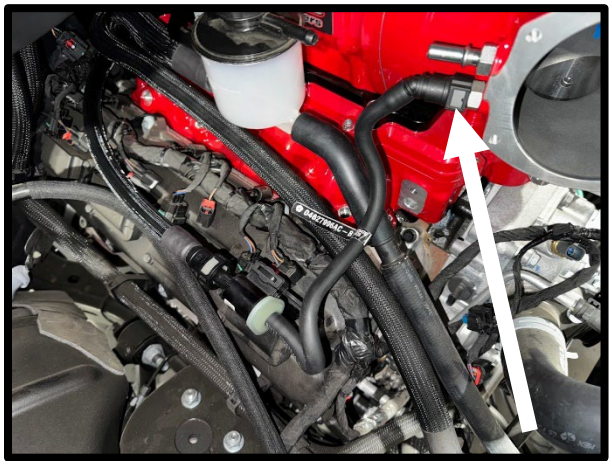
103. Reconnect throttle electrical connector, secure red safety clip.



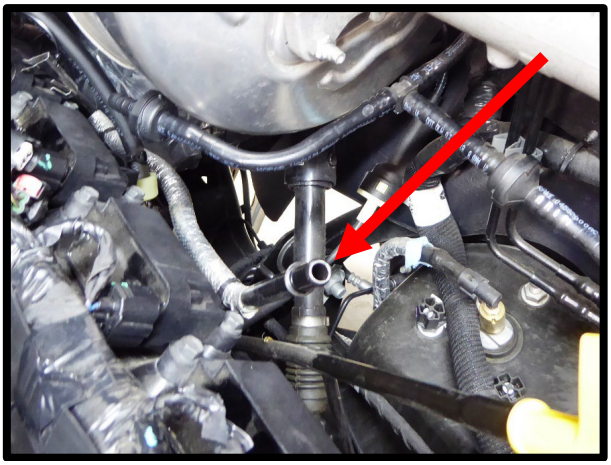
104. Remove the front coil mounting bolt on cylinder #2. Install coil bracket under bolt, secure bolt. Mount the EVAP solenoid to the supplied adapter bracket by sliding rubber grommet over bracket. Reconnect factory 2-way connector.

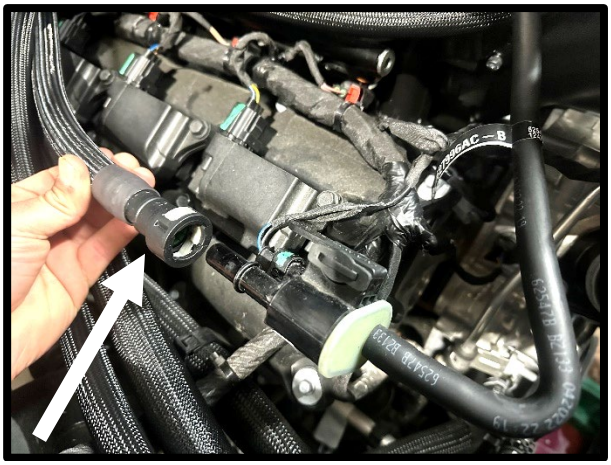


105. Install the stock EVAP hose from EVAP solenoid to the top 9.89mm quick connect fitting.

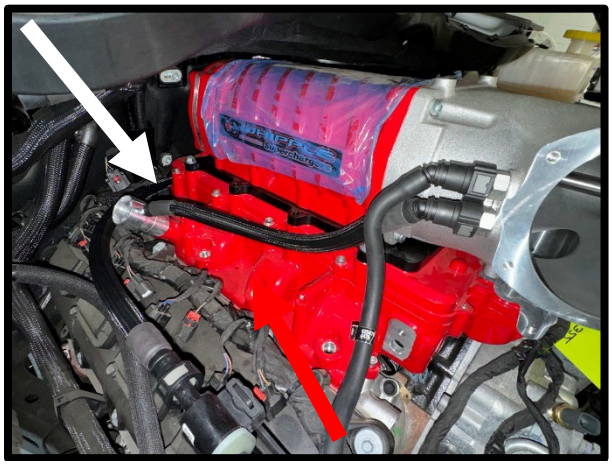


106. Route the supplied EVAP hose #5000371 from the factory EVAP connection located on LH side of engine to RH side (around back of SC) to EVAP solenoid. Install 90deg quick connect fitting to stock connection, install straight fitting at solenoid.



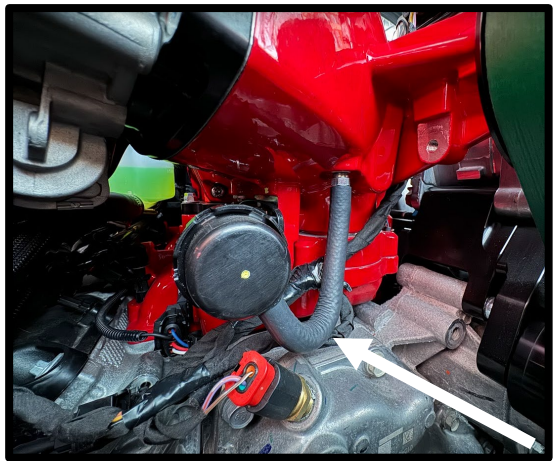


107. Install the 3/8" x 14" PCV hose, from PCV 3/8" adapter to bottom 9.89mm quick connect fitting at SC inlet.



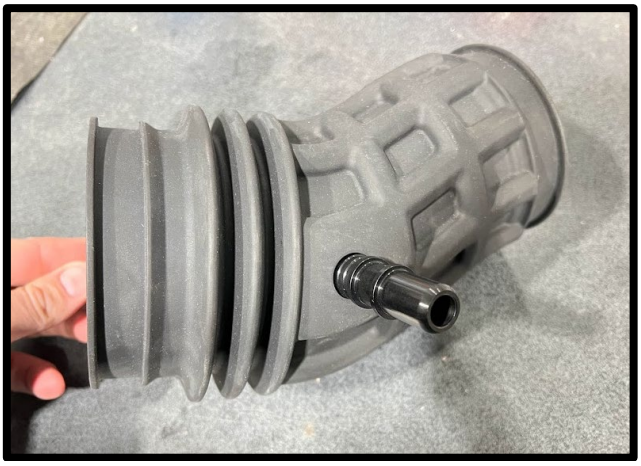
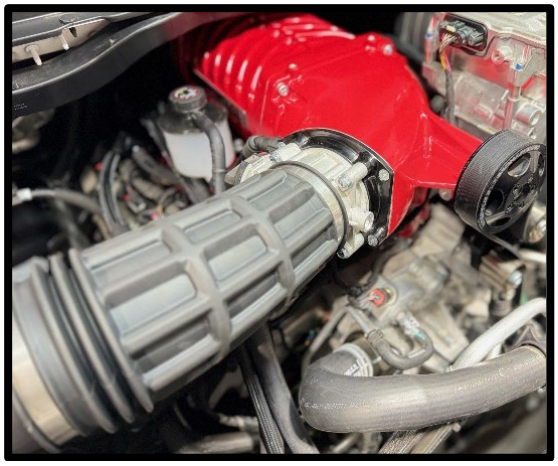
108. Install the supplied brake booster #5000374 3/8" x 10" hose to factory check valve (never remove check valve). Connect hose to the front driver side 9.89mm fitting until it clicks and locks in place.

109. Apply light amount of pipe Teflon to threads of supplied 1/8" NPT to ¼" barb fitting. Install into front port on SC inlet. Install supplied ¼" hose from bypass actuator nipple to ¼" barb fitting.

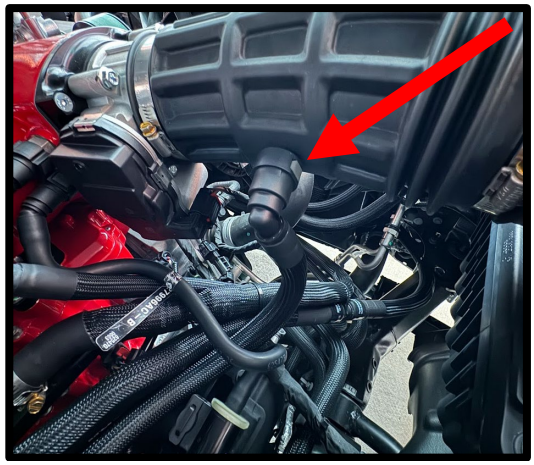


110. Install supplied high flow air filter element in place of stock filter.

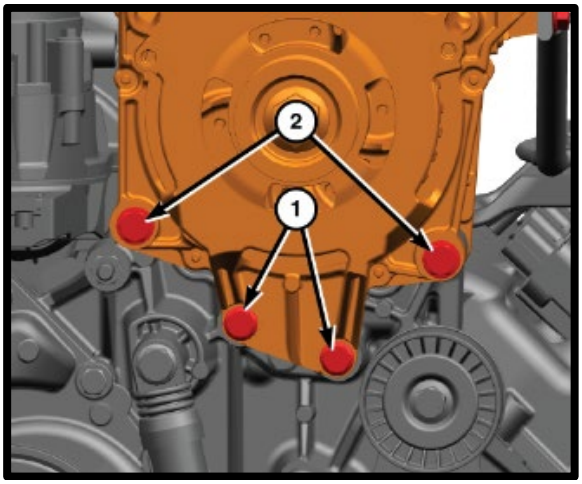
111. Install the ½" to 15.82mm fitting into the inlet air tube. Install the air tube using supplied #56 at throttle body and #64 clamp at the airbox.

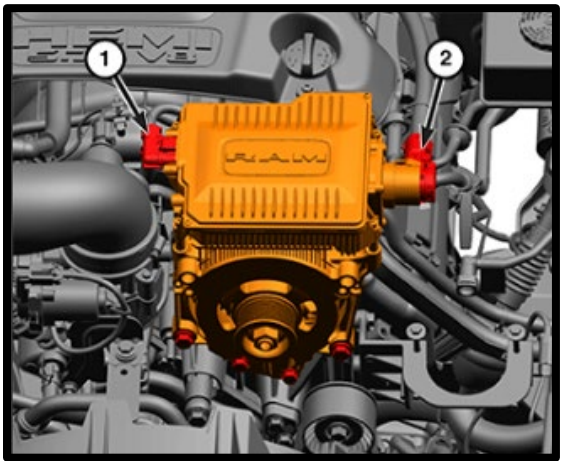
112. Install the ½" x 56.5" hose (#5000380) from the LH breather tube (make up air) hose, route around the back of the engine and towards front on passenger side. Connect the 15.82mm fitting in inlet air tube. Zip-tie line for clean installation.



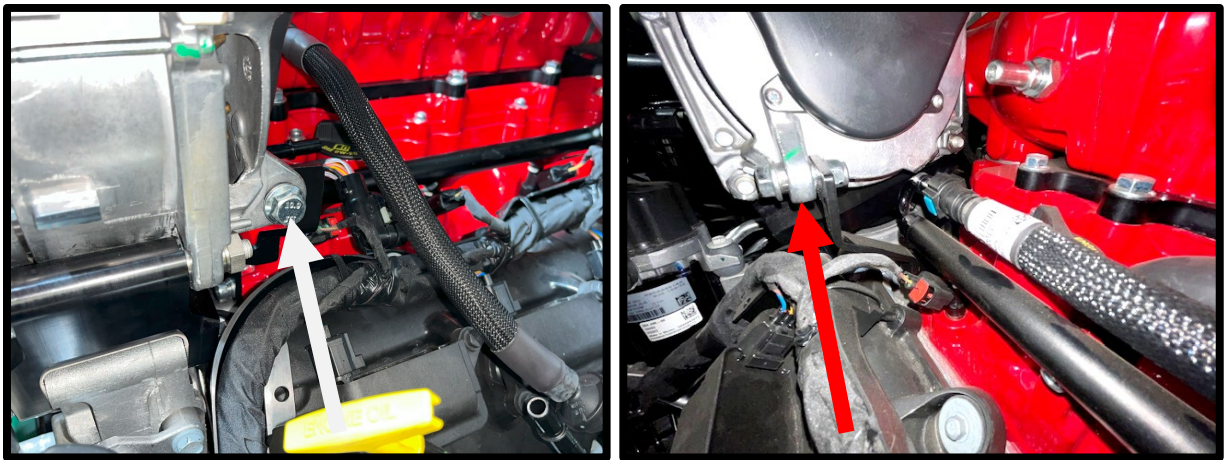
113. Reinstall MGU to supplied relocation bracket, using factory hardware. Torque the M10 bolts (2x) to 41 lb-ft and the M8 bolts (2x) to 21 lb-ft.

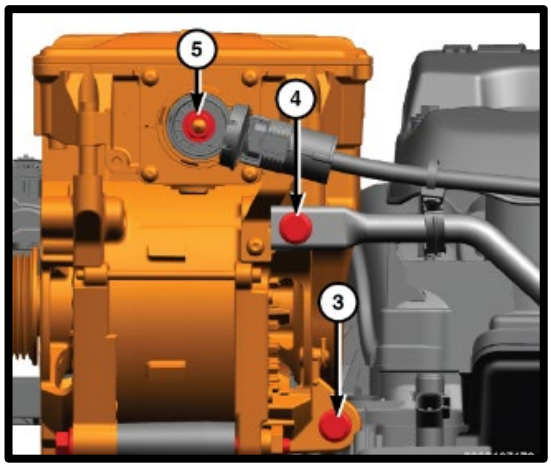
114. Close the 48-volt positive cable cover (2). Connect the MGU wire harness connector (1) to the MGT and secure the connector locking tab.



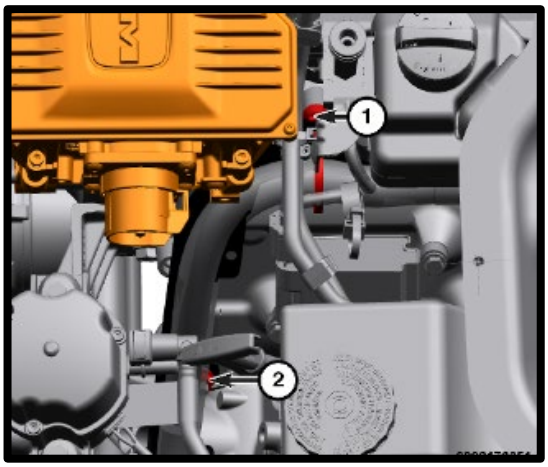
115. Connect the previously installed MGU support brace to MGU using supplied 10mm x 35mm HHFCS, then the 10mm washer and 10mm nyloc nut.



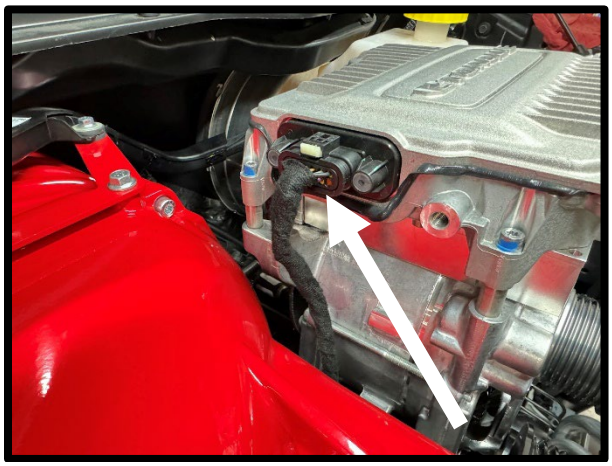
116. Install the M8 nut to 48-volt cable (5) and torque to 13 lb-ft.



117. Make sure that the engine wiring harness carrier is installed over the valve cover stud and tighten the fastener cover (2) securely.

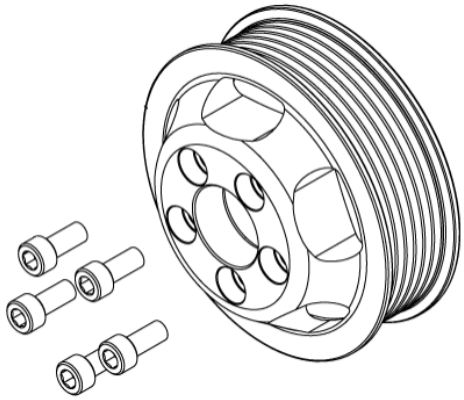


118. Reconnect E-Torque electrical connector.

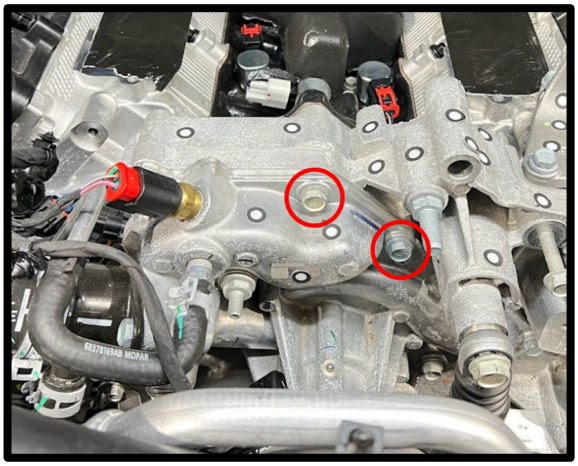


119. Install the wire harness bracket to the supercharger inlet using the (2x) 6mm x 12mm HHFCS, torque to 80 in-lbs. Reconnect factory harness retainer to bracket using the (3x) 6mm x 20mm HHFCS and oversized 6mm washers.

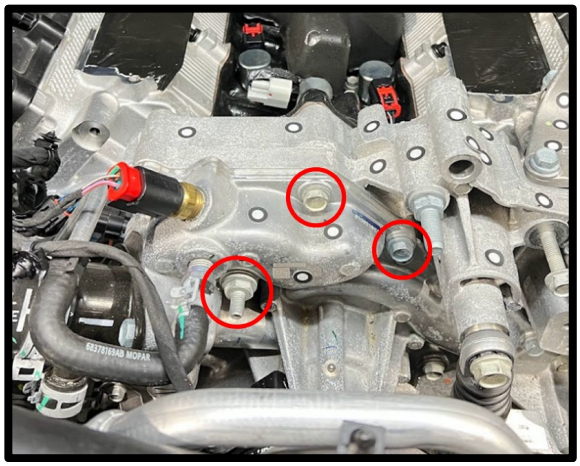
120. Install the supercharger pulley with the (5x) 6mm x 15mm SHCS bolts. Lightly torque until belt is in position.

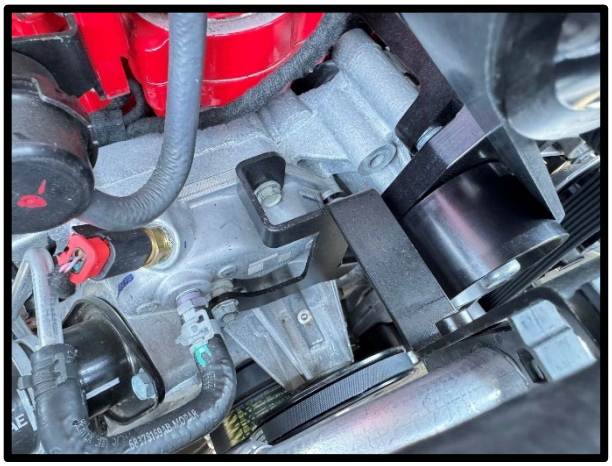


121. Remove the (2x) factory bolts from water pump.

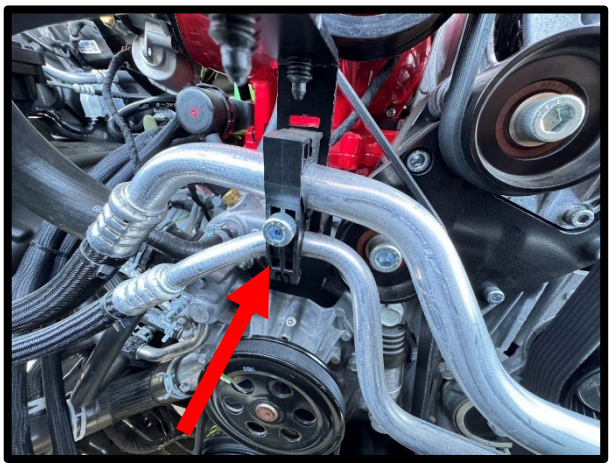


122. Install the AC line support bracket to the 3 mounting points, using previous nut removed and the (2x) stock fasteners. Torque to 21 ft-lbs.

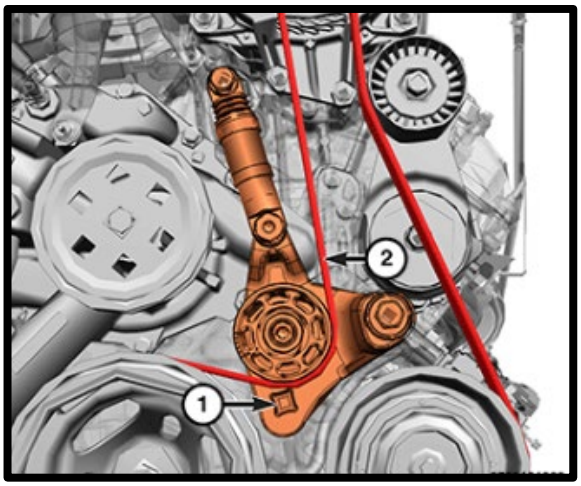




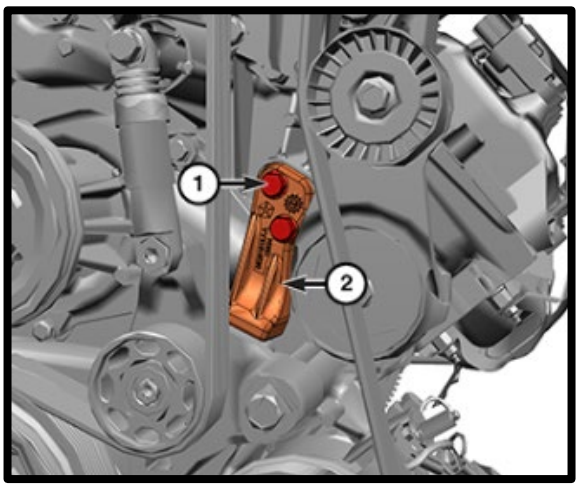
123. Using factory plastic AC line retainer, secure AC lines to previously installed bracket using the supplied (1) 8mm x 35mm HHFCS bolt. Torque to 72 in-lbs.



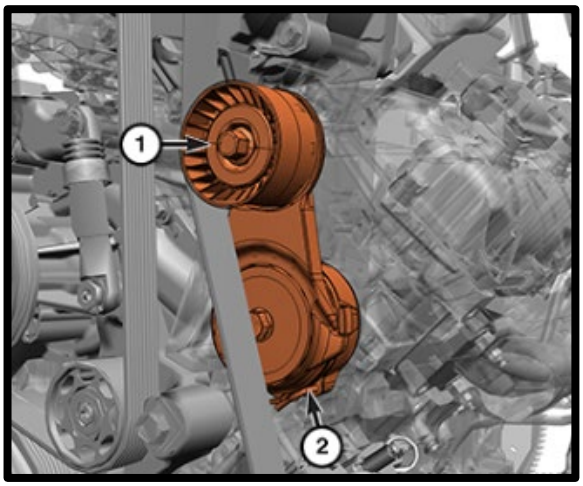
124. Using a ½" drive ratchet or breaker bar on the hydraulic tensioner (1), rotate tensioner clockwise and install supplied belt over crank pulley and AC pulley.



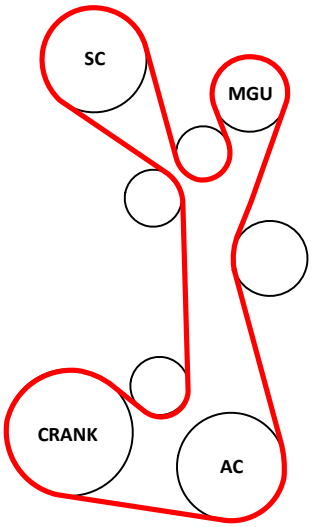
125. Install the stock bolts (1) and the belt tensioner stop bracket (2). Torque to 18 ft-lbs.



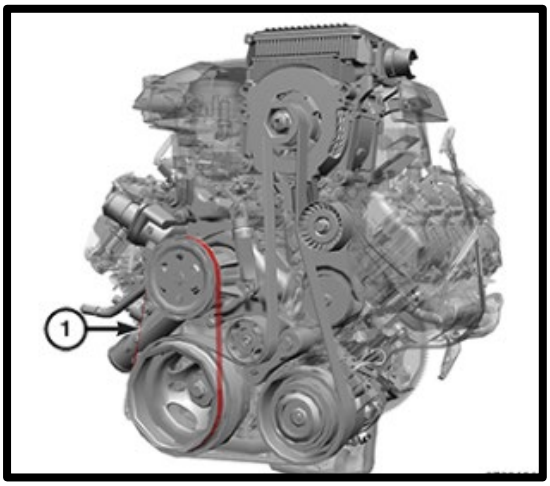
126. Using a breaker bar and 15mm socket, release the tension from the belt tensioner by rotating clockwise (2) to unload tensioner. Install a locking device such as a 5/32" drill bit or 9/64 allen hex in the belt tensioner (1).

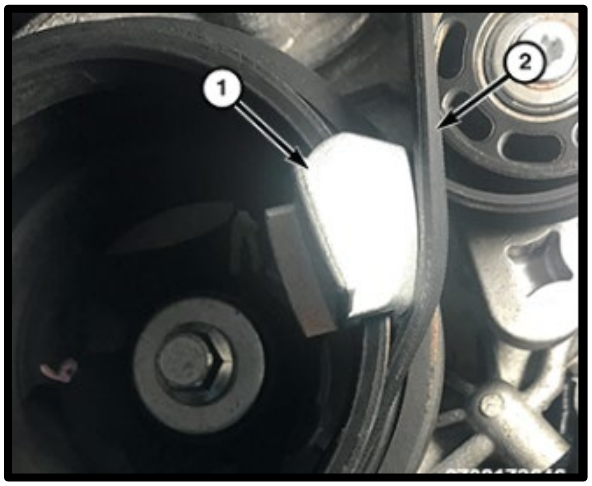


127. Install the supplied drive belt using the belt routing diagram below.

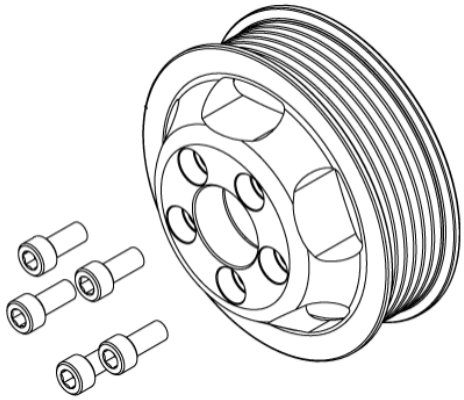


128. Using the LIL59370 Stretchy Belt Removal/Installer (1) available from Mopar Service Equipment or equivalent, and using a suitable tool rotate the vibration damper clockwise by hand until belt is on pulley.

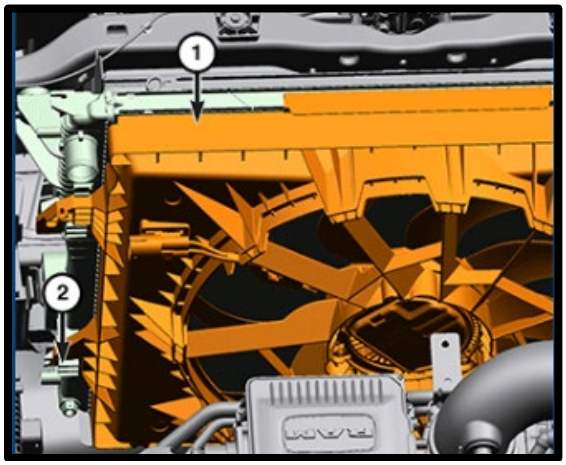




129. Torque supercharger pulley bolts to 119 in-lbs using a 5mm allen socket.



130. Reinstall fan shroud upper and lower as it was stock. Reconnect electric fan connector.



131. Refill the Engine coolant. Verify that your coolant drain is closed and use a filter/strainer to pour the recycled coolant/water mixture that you drained from the radiator. If necessary, top off with a **Dodge/Chrysler/Jeep approved engine coolant**. Whipple also recommends running 2 bottles of Redline Water Wetter which can be found at most automotive parts stores. **⚠ WARNING!! DO NOT USE TAP WATER OR ANY NON DODGE/CHRYSLER/JEEP APPROVED ENGINE COOLANT, THIS WILL CAUSE CORRISION IN THE SYSTEM.** Start engine to completely fill system.

132. Attach the negative cable to the battery and tighten using a 10mm wrench.

133. Using a Lisle 24680 Spill-Free Funnel, or equivalent, secure the appropriate filler neck adapter to the filler neck/surge tank.

The electric water pump used on the Whipple SC system has a built-in micro-processor that will vary pump cycle speed when air bubbles are present in the system. If a significant amount of air is trapped in the system, the pump may cycle at a lower speed and pulsations are likely to occur resulting in poor cooling performance.

For the best result, it is highly recommended to use a Radiator Cooling System Vacuum Purge and Refill Kit to properly evacuate the air from the intercooler system. If one is not available, the following procedure will be adequate, but the system must be checked after 2 heat cycles to verify proper operation.

134. Attach the funnel and fill with a 50/50 mixture of coolant and distilled water until the funnel is half full. Whipple recommends Zerex G-05 or any DCX approved coolant. The Whipple IC system is compatible with all common types of antifreeze, it is customer preference. Note: Whipple also recommends 1 bottle of Red Line Water Wetter or equivalent. Never use tap water, this will cause corrosion and destroy the system.

135. Turn the ignition to the **ON** position, after a brief delay, the electric pump motor will cycle (**06-10** models only run with engine running). Air bubbles will begin to rise to the filler tee as the coolant level drops, continue to fill while pump is running. Once it's done filling, turn the ignition key **OFF**, the level will drop, top off with fluid. Reinstall filler cap and turn the ignition **ON** and let run for 60 seconds. Turn key **OFF**, remove cap to release air. Repeat until the filler tee holds at the cold fill level with key **OFF**. To build more pressure in the intercooler system, try squeezing the in and out intercooler hoses while the pump is running. Building pressure in the system will help push the trapped air from the intercooler system to the filler tee. It also helps to lift the filler neck 4"-8" higher than its mount to help purge the air. **NOTE:** Do not let the coolant level in the funnel run empty as this may introduce more air into the system.

136. Cycle the ignition to the ON position again and repeat until the sound of the electric pump is continuous without any pulsation and the fluid level is met at the filler cap. ***NOTE: During water pump start-up, it is normal for a slight pulsation to occur. Once the pump has reached its maximum cycle speed, no pulsations should be present. If any pulsations occur, there is air in the system.*** ***NEVER GO WOT UNTIL AIR IS BLED OUT!***

137. Several drive cycles may be required to completely purge the air from the intercooler system. During a drive cycle, the intercooler system will build up pressure as the supercharger temperature increases. Any residual air trapped in the system will have to be bled out when the cap is removed. Use a rag when removing in case there is excess pressure. ***TIP: Never go WOT until air has been bleed from IC system, engine failure could occur if not bled properly.***

WARNING: Always avoid removing the filler neck cap when the system is hot. The hot coolant is under pressure and may spray out causing burns.

138. After running for 2 minutes turn off engine and inspect the level in the engine radiator and the intercooler tank. With the key in the ON position engine off, inspect the coolant in the intercooler tank, the coolant should flow in the tank. If it does not, the coolant circuit has an air pocket trapped in it. Add coolant to fill the system.

139. Before driving, make SURE that you have 91 [(RON+MON)/2] or higher-octane fuel in the system. NOT ½ tank of 87 and ½ tank of 91, ALL 91 or better fuel in the system.

140. DO NOT use aftermarket cold air kits or duct with the supplied Whipple calibration. The Whipple calibration is designed to work with the Whipple cold air intake system or the factory air box with high flow filter only. Changes to the air inlet system could cause potential issues with the calibration and performance. Aftermarket throttle bodies are not supported with the Whipple calibrations.

141. Clean the inner area of the gas door with acetone. Attach the "91 OCTANE OR HIGHER" decal to the gas tank fill cap or door.

142. Test drive vehicle for the first few miles under normal driving conditions, obey all traffic laws. Listen for any noises, vibrations, engine misfire, detonation/pinging or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal.

143. Re-check the radiator and intercooler reservoir coolant level regularly over the first 1,000 miles, top off level as needed.

144. Re-check SC oil level regularly over the first 1,000 miles, level may drop very slightly as it fills the bearings and cavities.

145. After the initial test drive, go through the belt tensioner process again. During your second 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 causes are low octane gasoline still in the tank or the wrong/old spark plugs.

146. If you have questions about your vehicles performance, please check with your installation facility or call Whipple Superchargers at 559.442.1261, Monday through Friday from 8am to 5:00pm, Pacific Time or email questions to tech@whipplesuperchargers.com. Whipple does not offer custom tuning for modified engines.

⚠ WARNING!! Verify the bypass actuator is working properly. To monitor, look at the bypass arm when the motor is not running. Start engine and verify that the actuator arm has opened. This arm will be extended when the engine is above 1" of vacuum (boost) and will be open when there is more than 1" of engine vacuum.

MAINTENANCE AND SERVICE

Be sure to follow the maintenance and service recommendations below to optimize the life and performance of your Whipple-supercharged vehicle.

For best performance and continued reliability, it is essential to adhere to the following guidelines:

1. Use only premium grade fuel (91-octane or higher). (RON+MON)/2 is the US spec on fuel.
2. Always listen for any sign of spark knock or pinging. If present, discontinue use immediately and consult your vehicle owner's manual.
3. Do not operate the vehicle at large throttle opening if the MIL lamp is on steadily. This indicates an electronic engine control malfunction: reduce throttle opening and consult your vehicle dealer.
4. Check the supercharger oil level at every engine oil change. Add Whipple SC oil to the supercharger if required. Do not overfill the supercharger rear gear case.
5. Change the oil in the supercharger every 100,000 miles. Use Whipple SC approved oil only.

Severe damage to the compressor will occur if you overfill the supercharger rear gear case.

6. Do not operate the vehicle at large throttle opening if the MIL lamp is on steadily. This indicates an electronic engine control malfunction: reduce throttle opening and consult your vehicle dealer.
7. Inspect and clean your high-flow air filter element every 7,500 miles.
8. Inspect and replace spark plugs every **10,000 miles**. Run only stock (gap .028") or NGK LZTR7AIX (.028") plugs.
9. Follow your factory service intervals for oil changes and other typical maintenance items.
10. Check the supercharger/accessory drive belt. Adjust or replace as required.

Any modification to your vehicle's new computer program may cause serious damage to the engine and/or powertrain.

IMPORTANT INFORMATION

BOOST LEVELS
All Whipple kits are shipped with boost levels that Whipple feels achieves maximum power while maintaining reliability with stock engines (@ sea level). Additional pulleys are available for lower boost levels, the supplied calibration (complete kits) for the original pulley or larger (lower boost). Higher boost levels must run higher octane levels and are not supported.

EXHAUST
Cat-back exhaust systems help reduce heat and minimize exhaust back pressure. They do not affect the calibration and are always a good idea for added safety and performance. Long tube headers and/or high flow cats require calibration changes, due to emission laws, this **CANNOT** be supported by Whipple.

FUEL SYSTEM
The Whipple fuel system (FLOW) needs no additional changes for power levels supplied by Whipple. Stock fuel PSI is 58psi, this will drop to 51-53psi at WOT due to stock fuel line diameter. If lower, the fuel pump or filter may have an issue.

FUEL OCTANE
Never run a fuel octane that is below 91octane, (RON+MON)/2 and never run fuel with more volume than 10% Ethanol. It is recommended, when available, to run 92-94 octane. Never mix mid-level (below 91) with 91+, this is very dangerous and can cause severe engine damage. Do not attempt to increase octane ratings with generic octane boosters, these are very hard on spark plugs and many brands do very little to the actual octane rating (1 point is .1 octane).

ENGINE COOLANT
Whipple recommends running a 50/50 mix of distilled water and coolant. The engine temp should run between 195-205deg F under normal driving conditions. The fans are turned on at an earlier temp to promote cooler operating temps. We also recommend 1-2 bottles of Red Line Water Wetter coolant additive. This will reduce air bubble insulation, which increases overall engine temp.

FUEL LEVEL
Never operate at WOT when the vehicle fuel levels are below an 1/8 tank. Low fuel levels could cause the fuel pump to cavitate, and you'll have fuel flow spikes resulting in lean conditions and consequently detonation.

CONGRATULATIONS

Your new Whipple Supercharger is engineered to significantly increase your engines power across a broad range of RPM's. It is Whipple's goal to improve your driving experience for many miles and years to come.

Whipple Superchargers operate as an air pump and contain internal rotors that are driven by the engine's crankshaft and serpentine belts. The supercharger compresses outside air and channels it into the engine's intake ports. Because of their design, superchargers may generate some additional noise over the standard, normally aspirated induction system.

At idle, you may hear a medium-pitch rattle from the supercharger main housing. This will diminish at about 400-500 rpm above idle.

You may also experience a muffled high-pitched whine during acceleration. This is caused by the pumping action of the supercharger compressing air and only occurs during boost conditions. It is inaudible during part-throttle acceleration.

These are normal noises associated with any supercharger and have no effect on supercharger performance or engine durability.

Your supercharger is warranted by Whipple Superchargers, please see your terms and conditions on the back of your invoice for more information in regards to the limited warranty. NOTE: Whipple Superchargers will not authorize any warranty repair work or supercharger replacement for normal noise