WHIPPLE SUPERCHARGER INSTALLATION MANUAL

2021-2024 JEEP 392
6.4L ENGINE

***WHIPPLE PART NUMBERS**: WK-3170-30, WK-3170-32*
***-NFT for No Flash Tool included*

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

CALIFORNIA AIR RESCOURCE BOARD EXECUTIVE ORDER #D-231-115

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. Premium fuel (US 91 octane) is required to prevent spark-knock/detonation under certain operating conditions. Other countries must meet US 91 octane standards, RON+MON/2. **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. The fuel system is returnless, therefore, initial fuel in the system will be low octane. Drain all fuel!**
3. Review our limited warranty with care.
4. *PCM requires unlocking PCM for Calibration.*
5. *All DCX 2018 and up require gateway unlock tool (included with complete kits).*
6. Always wear eye protection during installation. Avoid spills, if one occurs, clean up and dispose of towels properly.
7. Never work on a hot engine.
8. Obey all traffic laws when testing the vehicle.
9. Supply your calibration to Whipple ahead of time so your unique PCM calibration can be built prior to the SC installation to minimize down time. **NOTE:** Whipple does not support long tube headers, cat removal or any custom modifications. Whipple does not offer custom tuning in anyway.
10. 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

Competition kits require new spark plugs, Whipple recommends NGK 5107 (LZTR7AIX) with **.032" gap**, distilled water (1.5gal) (NEVER USE TAP WATER), Mopar 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).

Chemicals and 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. 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.

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: Supercharger 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 you're 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 assume 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.

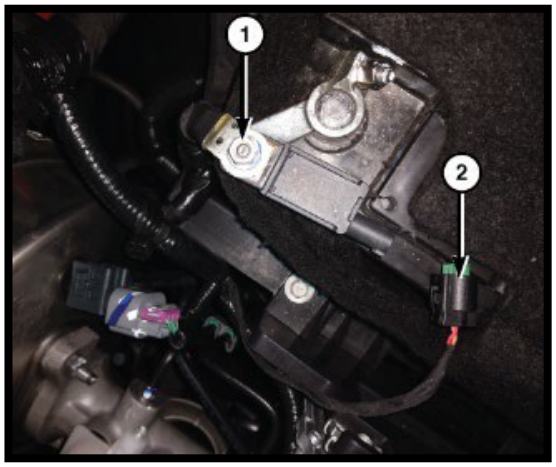
△ WARNING!! Keep out of the reach of children. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Also, shield your eyes when working near the battery to protect against possible splashing of the acid solution. In case of acid contact with the skin or eyes, flush immediately 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.

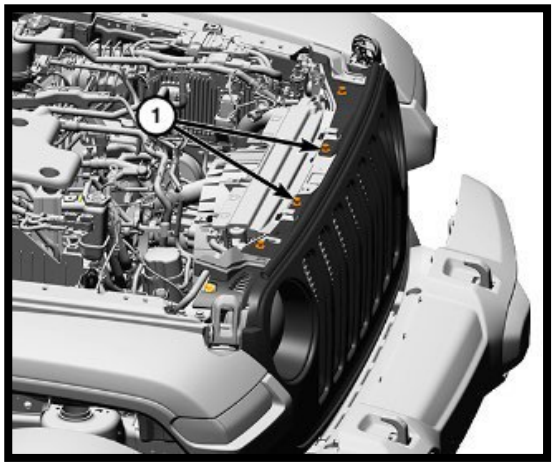
3. Slowly remove the factory gas cap to relieve any excess pressure.

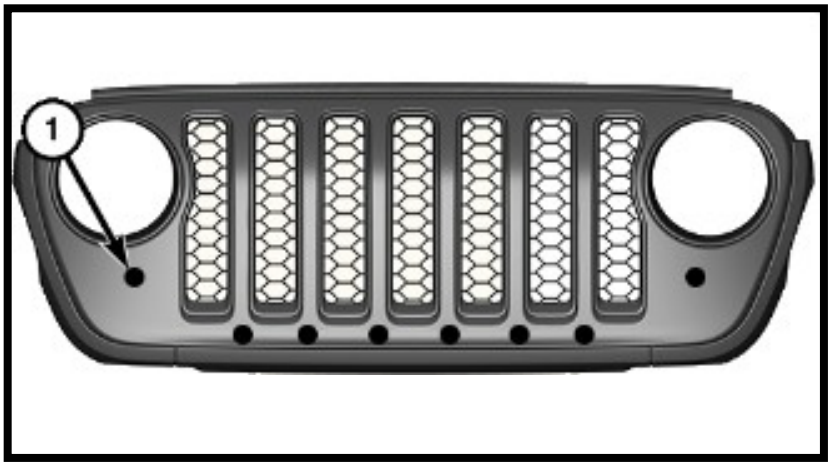
4. With a 10mm wrench disconnect the negative battery cable. Make sure the cable is far enough away from the battery that it does not accidentally touch the battery and make connection during the installation.



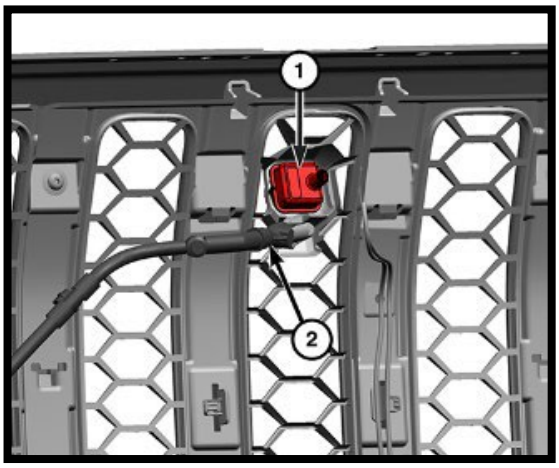
5. Using the factory mounting points, jack the vehicle up and install 4 jack stands at an ideal height of 18".

6. Remove the front grille by removing the push pins from top of grille. Carefully release the grille lower clips and separate and remove the lower grille.

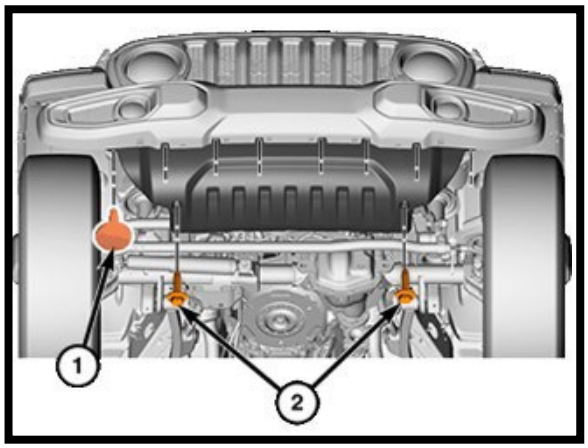




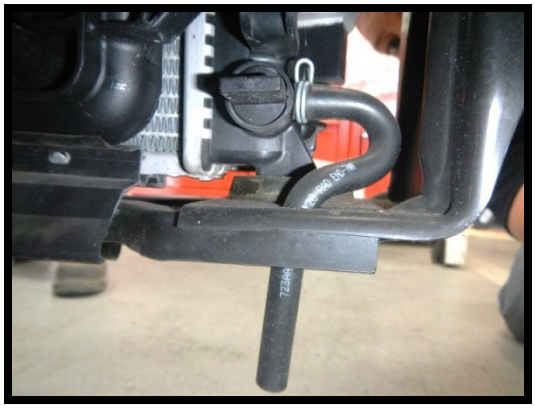
7. Disconnect the camera wire harness connector and washer hose, if equipped.



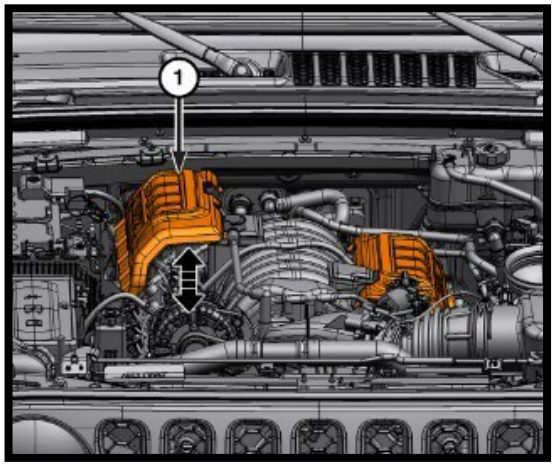
8. Remove the front air dam by removing the (7) factory fasteners.



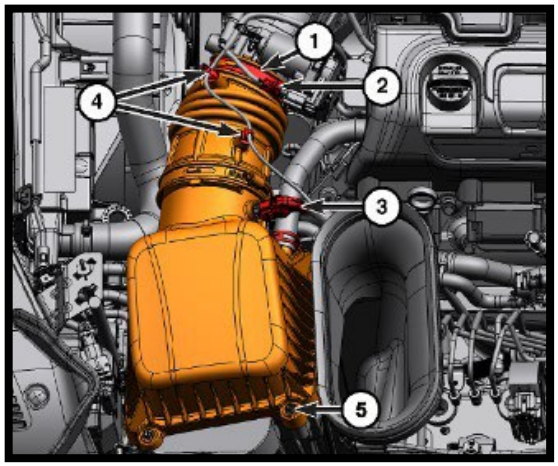
9. With a cool engine, drain the coolant into a clean drain pan for reuse later. Remove the radiator cap to vent the system. (Be careful not to remove the radiator cap if the engine is still hot). The drain spigot is located on the passenger, bottom side of radiator. Loosen spigot and let it drain into pan.



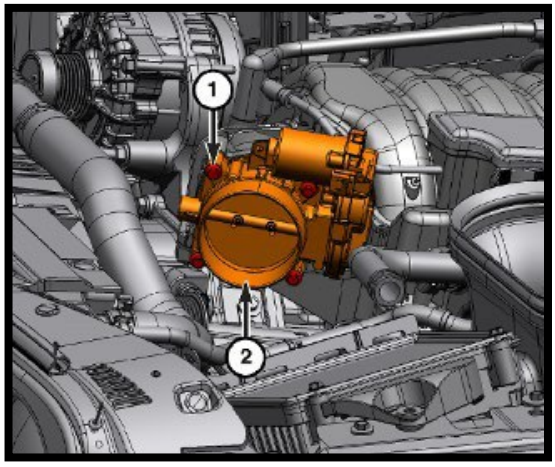
10. Remove the factory coil covers by carefully pulling up. This kit is designed to not run these, but they can be cut/modified to clear the supercharger system.



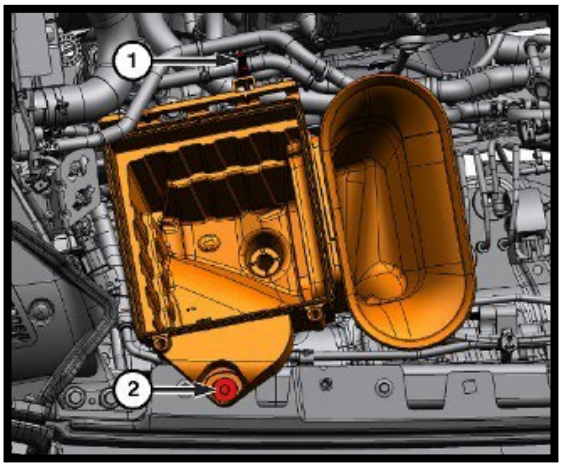
11. Loosen the clamp from the zip tube to throttle body (1). Disconnect wiring harness connector from throttle body actuator. Disconnect air temp sensor electrical connector (3). Remove wire harness clips from intake tube (4). Loosen the fasteners that secure air box cover (5). Remove air inlet tube, air box cover, make up air hose and air filter element from vehicle. **NOTE**: Leave air temp sensor installed in airbox, this will stay here.



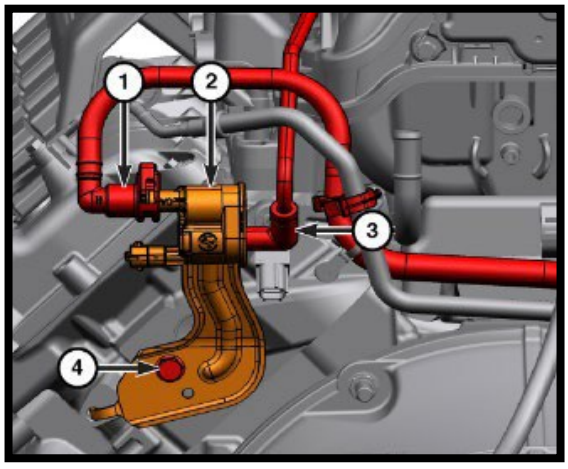
12. Disconnect the electronic throttle electrical connector by pulling the locking tab back and then squeezing the connector to release. Remove the throttle body by loosening factory fasteners. Cover opening with duct tape or similar.



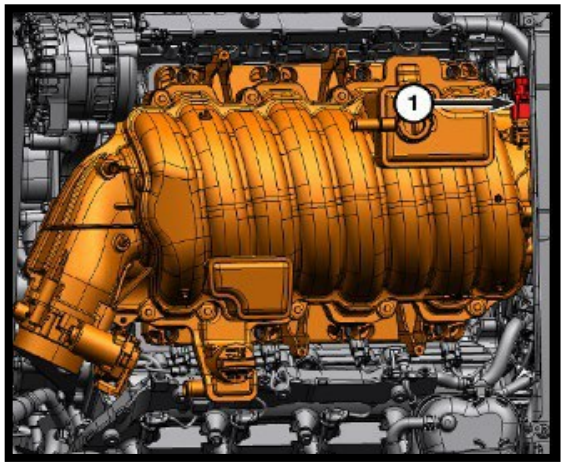
13. Remove the hose retainer (1) and airbox fastener (2). Lift the airbox straight up and away.



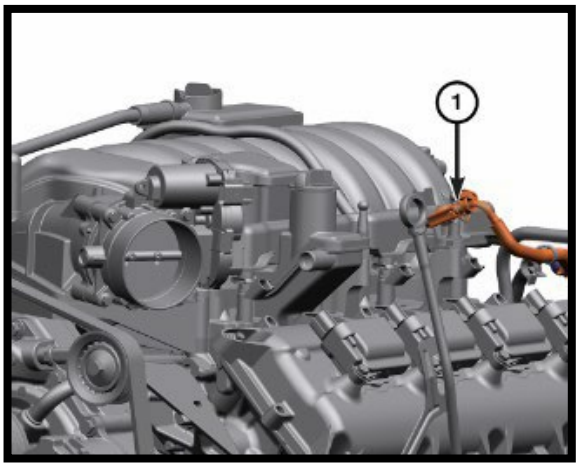
14. Remove the factory EVAP tube from the factory intake manifold and EVAP solenoid (#1).



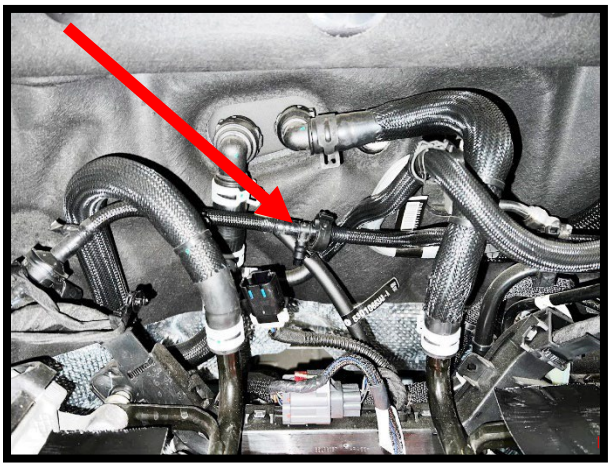
15. Disconnect the factory MAP sensor on the back of the intake manifold by pulling the locking tab back and then squeezing the connector to release.



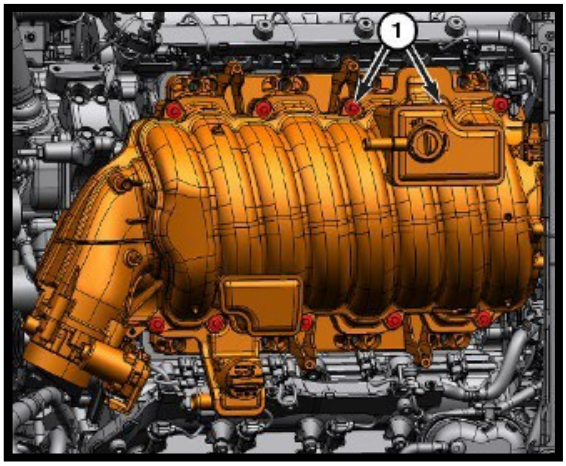
16. Remove the factory fuel supply line by squeezing the connector and pulling back or use a 3/8" fuel line removal tool. It's a good idea to wrap a shop rag around this before you pull to catch any fuel that may drip. Disconnect the fuel injector connectors (8) by pulling the locking tab back and then squeezing the connector to release.

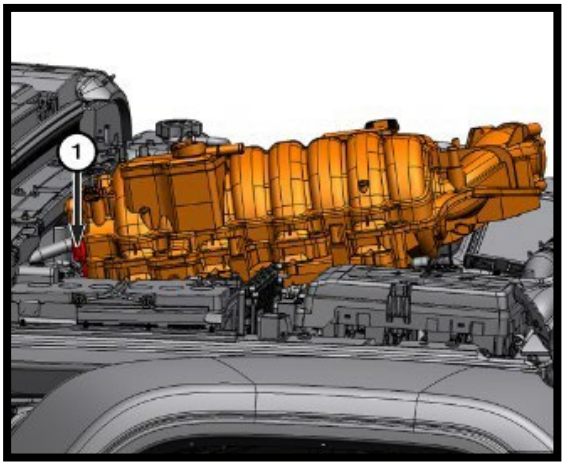


17. Disconnect brake booster line from factory check valve, located near the firewall as shown.



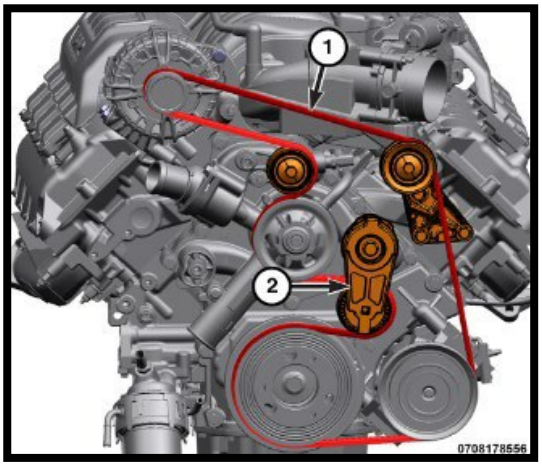
18. Using compressed air, remove all foreign debris from intake manifold and surround areas. Remove the factory (10) intake manifold bolts using an 8mm socket, 8" extension and ratchet. Carefully lift the intake manifold from the engine, be cautious that nothing falls into the open ports. Remove the factory foam insulation from valley of block, this will not fit with new manifold. Unplug the active runner control connector from the back of the manifold. There is a supporting tab connecting the wire harness to the intake manifold, remove this so the intake manifold can be removed with ease.



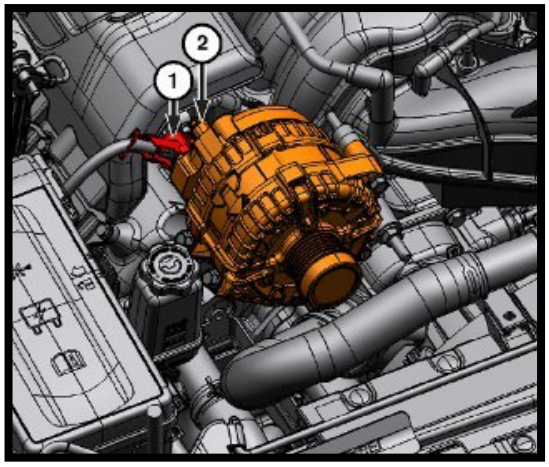


19. Use a clean shop rag and a cleaner such as acetone or carb cleaner to clean the cylinder head to intake manifold surface. Apply duct tape or masking tape to cover the ports until you're ready for the intake manifold installation.

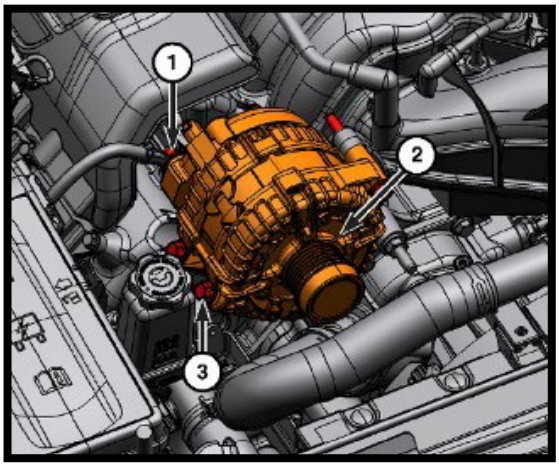
20. Using a 3/8" ratchet or breaker bar, release the tension from the spring-loaded tensioner by rotating clockwise. Remove the 6-rib belt from the engine. Using 16mm socket, remove spring loaded tensioner from engine (needed for belt system installation).



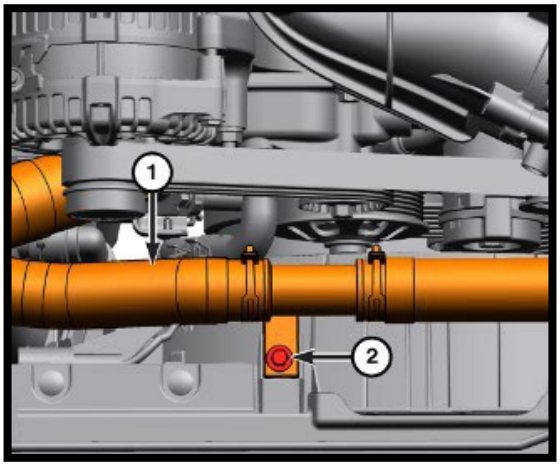
21. Disconnect and isolate the negative battery cable from alternator. Remove B+ terminal protective cover and remove B+ cable from alternator.



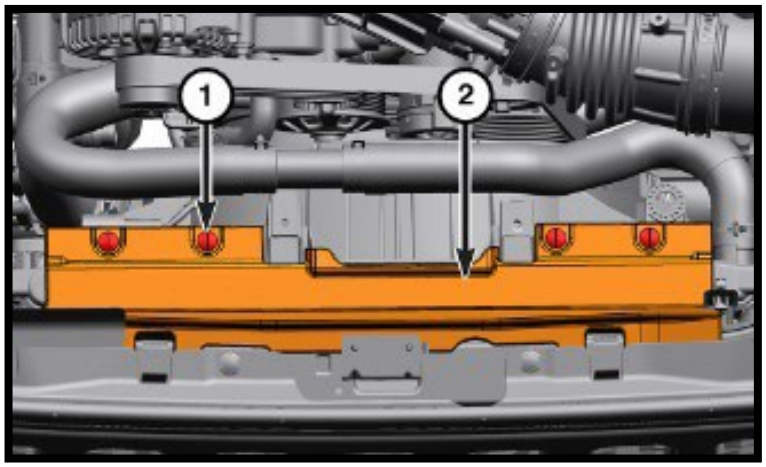
22. Remove the factory fasteners from the alternator and remove the alternator from engine.



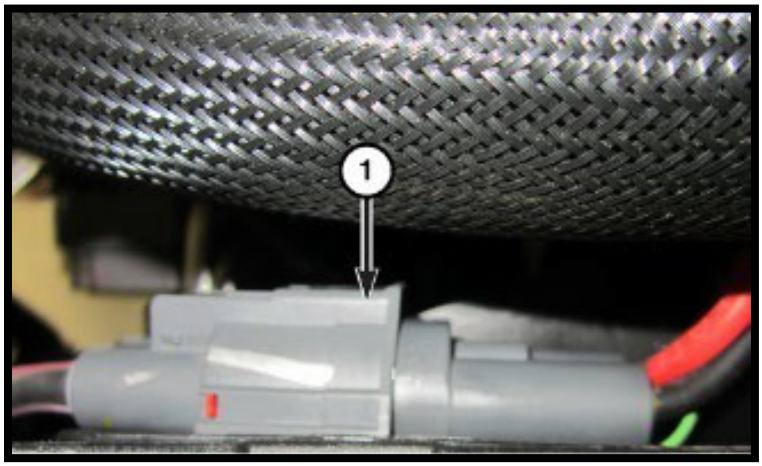
23. Loosen the factory fastener securing radiator hose to upper shroud.



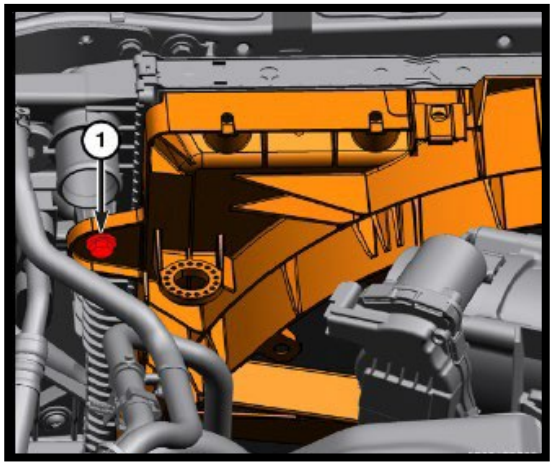
24. Remove the push pin retainers and the upper air deflector.

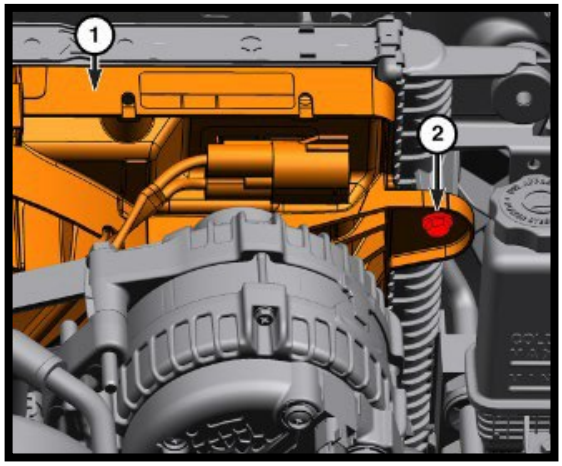


25. Disconnect the fan electrical connector by squeezing the electrical connector to release.

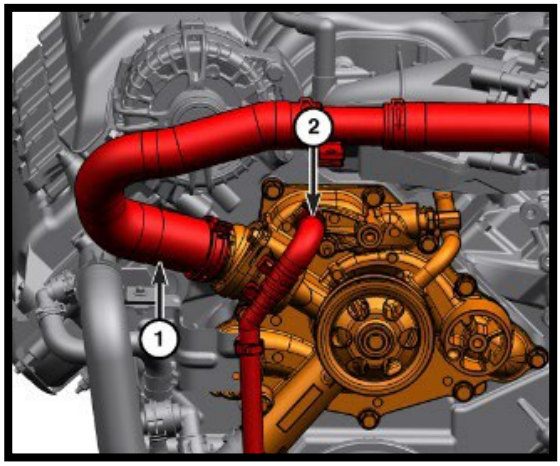


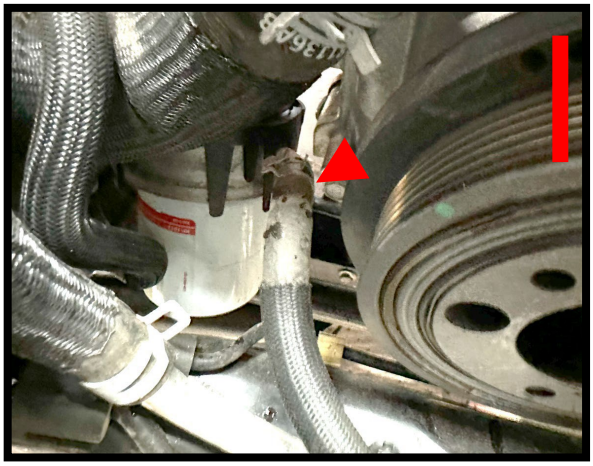
26. Remove the upper cooling fan bolts and remove cooling fan.



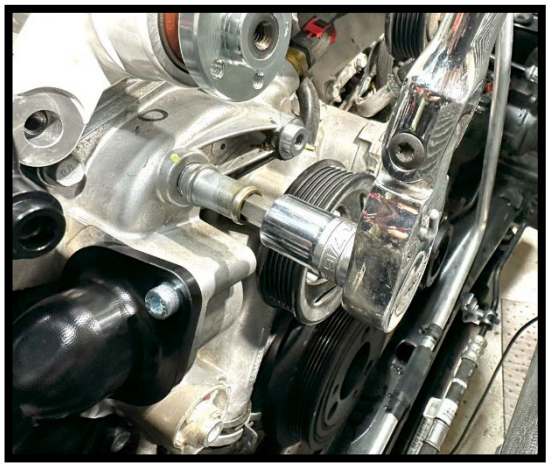


27. Remove the upper radiator hose (1) from the water neck by removing the pinch clamp (1) and pushing hose away from engine. Remove (2) vent hose from front of water pump, including plastic retainers holding to brackets. Remove (2) hose from engine, this will not be reused.

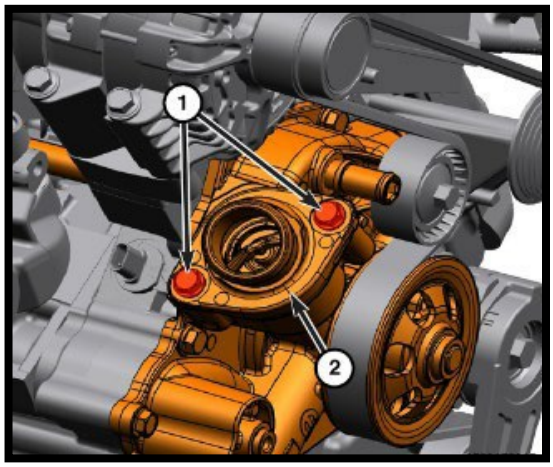




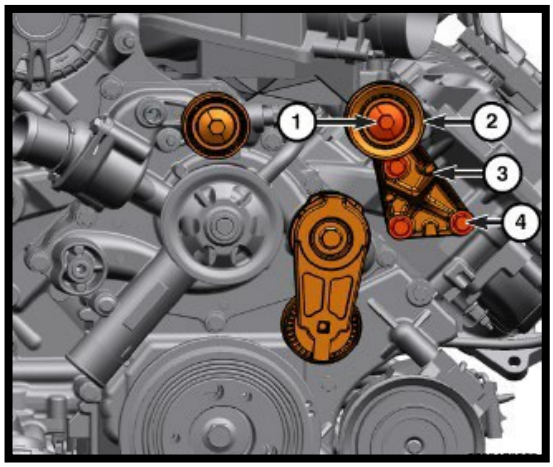
28. Using 7/16" allen socket, remove factory barbed fitting from water pump, this will not be reused.



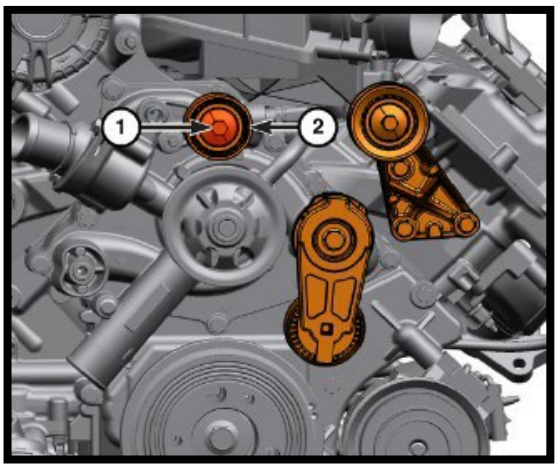
29. Remove factory thermostat housing, this will no longer be used (keep thermostat, this will stay in place).



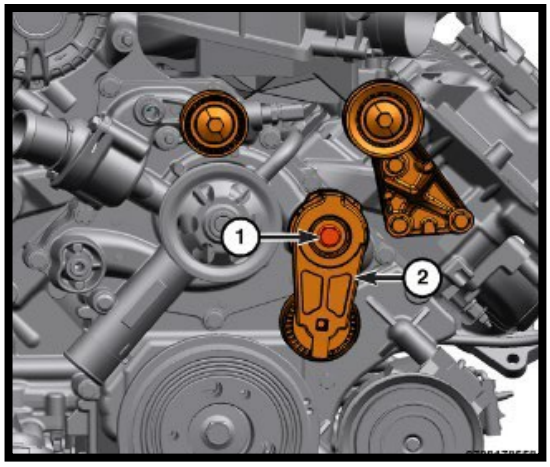
30. Remove the upper idler assembly from LH side of engine, this will not be reused. (1, 2, 3, 4).



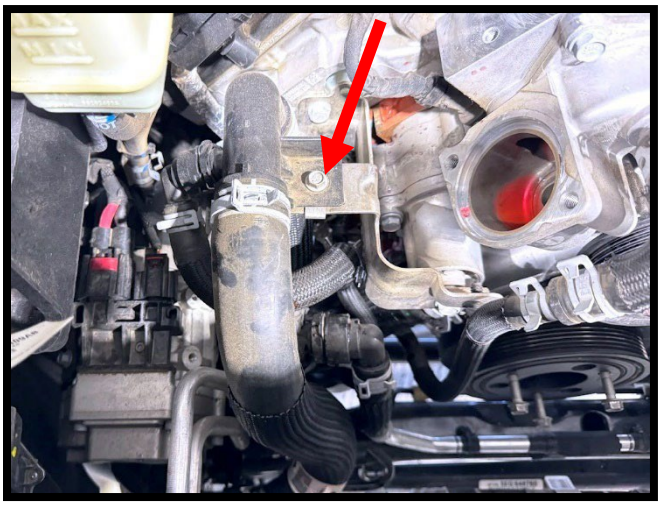
31. Remove the factory smooth plastic idler pulley from engine, this will not be reused.



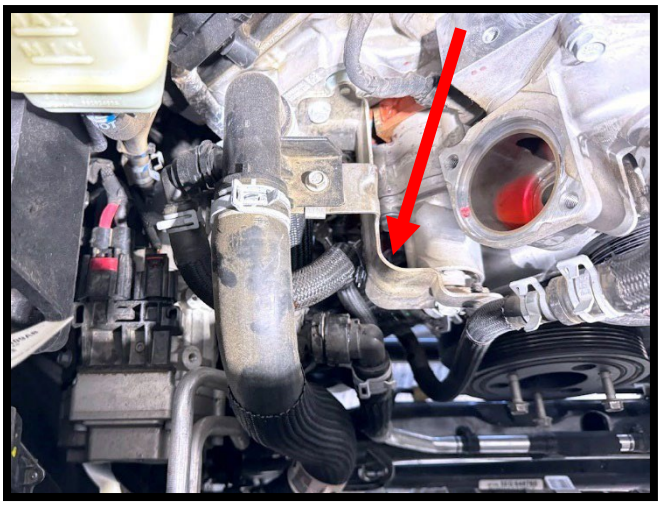
32. Remove the factory spring loaded tensioner from the engine, this will not be reused.



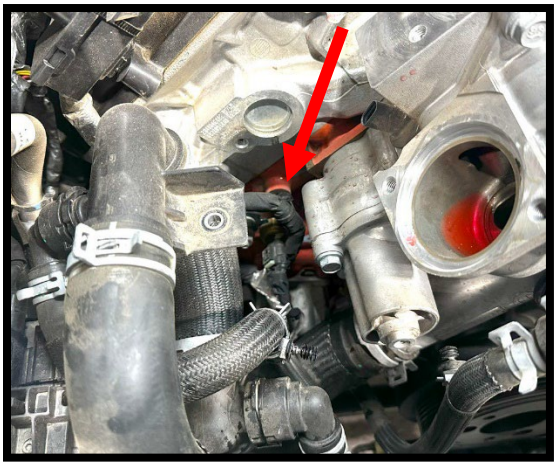
33. Remove the factory fastener securing the radiator hose plastic adapter to steel support bracket.



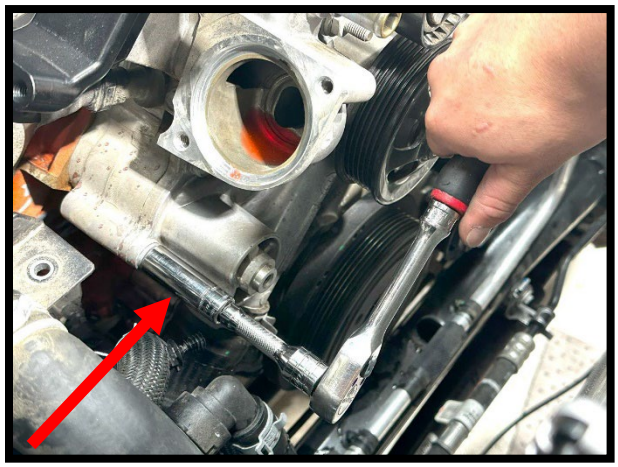
34. Remove the factory radiator hose support bracket from engine, this will no longer be used.



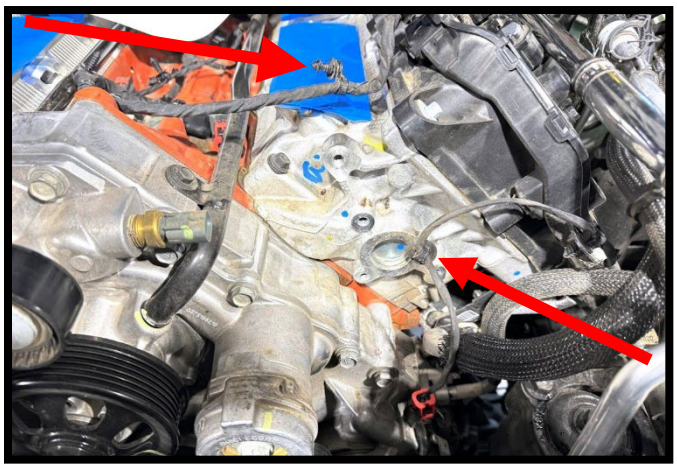
35. Remove plastic retainer and loom from RH side engine block.



36. Remove the factory fastener from water pump, just under thermostat housing.



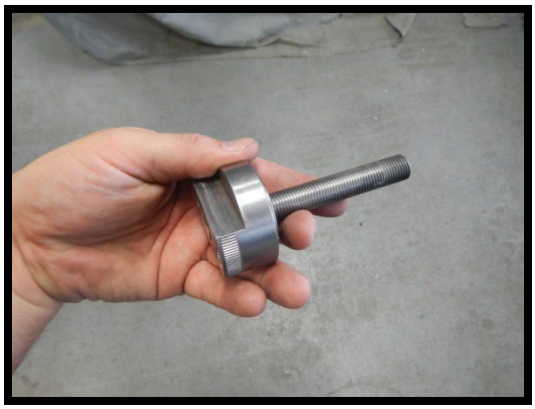
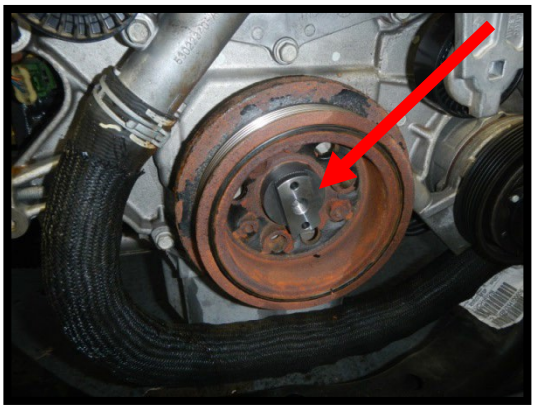
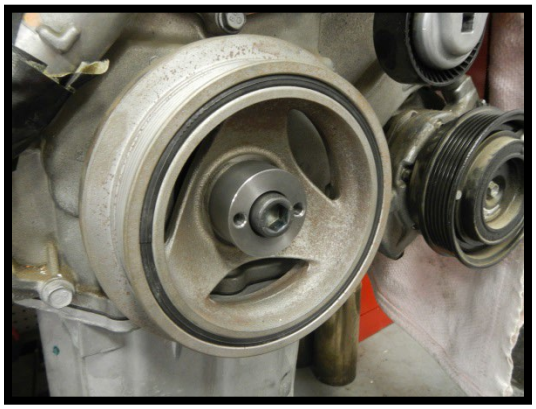
37. Remove the plastic wire retainers from block and wiring loom from LH front cylinder head.



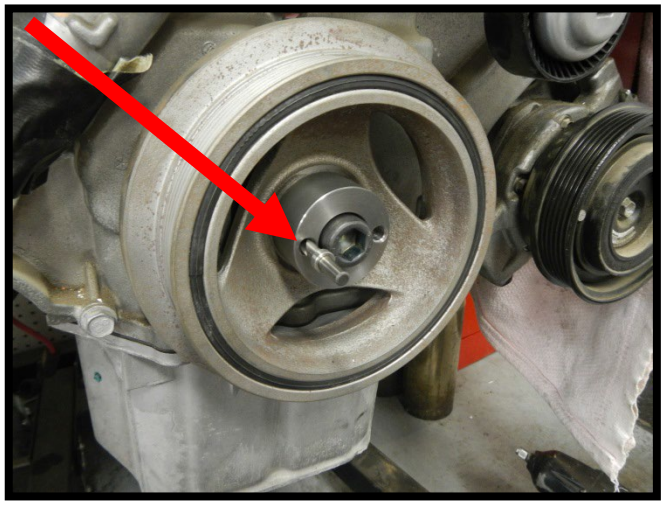
38. Remove the factory hydro guide snorkel system from hood.

39. Using a ½" impact gun and a 21mm socket, remove the factory damper pulley center bolt. Carefully blow off any debris from the damper. It's a good idea to place some rags, blankets or tape over the radiator so debris does not get stuck inside the fins.

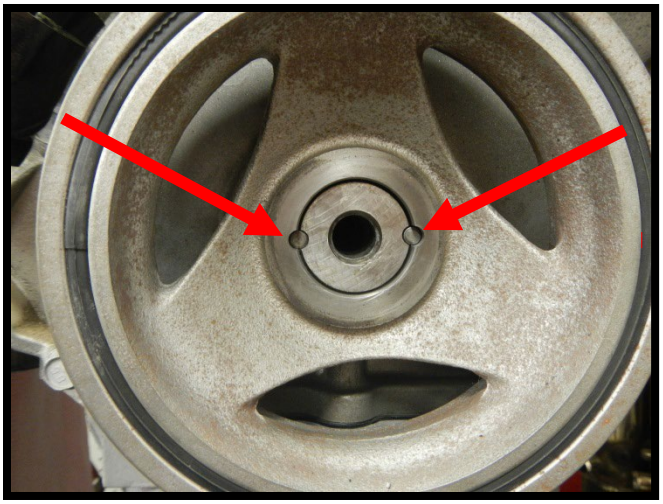
40. Install the supplied 14mm stud into the crank pinning adapter about halfway up the threads. Install stud and crank pin adapter into damper until snug (apply light amount of anti-seize to threads). Use a 1" wrench or a crescent wrench to tighten so it does not move while drilling. **NOTE:** There are multiple OEM versions of balancers, the crank pin kit works on all versions.

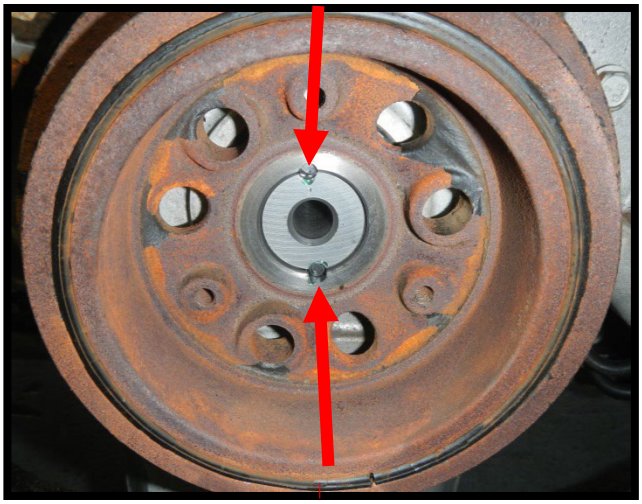




41. Use the supplied ¼" drill bit (it has a stop at roughly 2.875" from drill bit tip), drill 2 holes into the crankshaft thru the (2) holes in the pin adapter. Blow off debris when done drilling. Remove the pin adapter using an adjustable wrench.




42. 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.

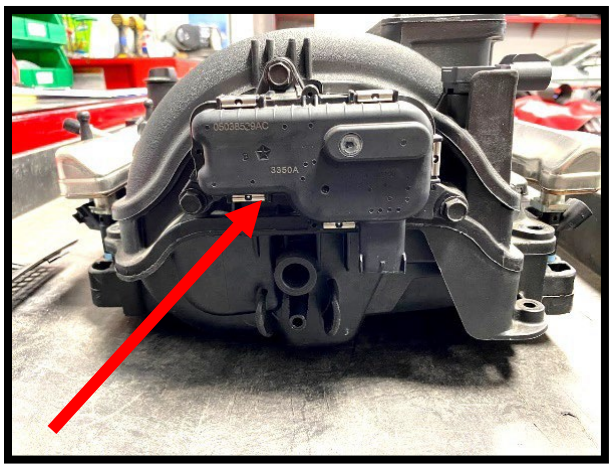




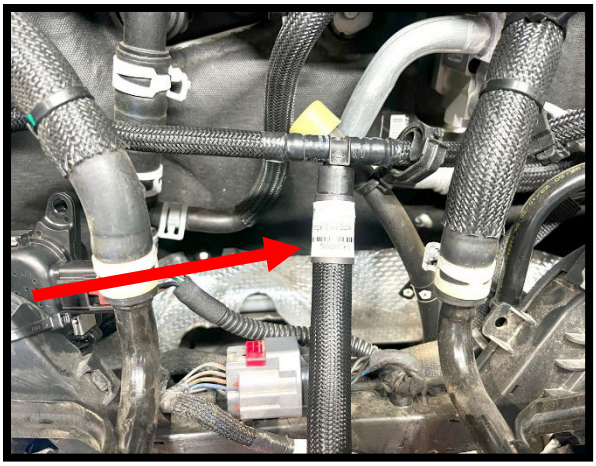
43. Apply light amount of anti-seize to threads of the factory damper pulley. Use a 21mm socket and torque to 129 ft/lbs. **WARNING** **NEVER LET BALANCER ROTATE WHILE TORQUING.

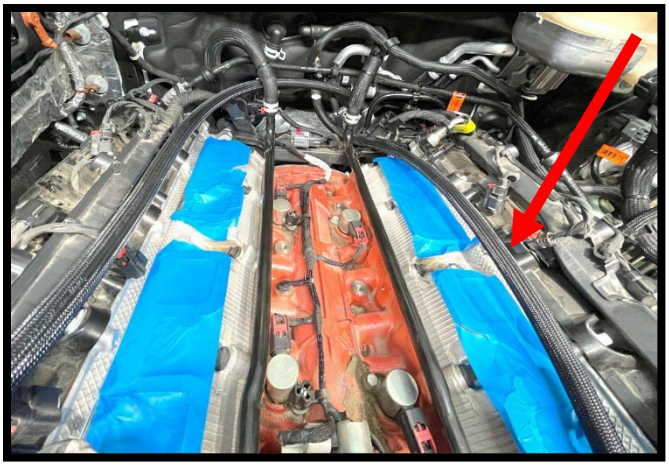
44. Remove the (8) coil electrical connectors. Remove the coils using a 10mm socket and ratchet (2 bolts per coil). Lift the coil out and use a 5/8" spark plug socket and ratchet to remove the stock spark plugs (16). Apply light amount of anti-seize to the new spark plugs, torque to 7.5 -15 ft-lbs. Reinstall stock ignition coils in same locations as they were originally removed. **IMPORTANT! Gap plugs to .032".**

45. 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. **NOTE:** Failure to do so will set codes.

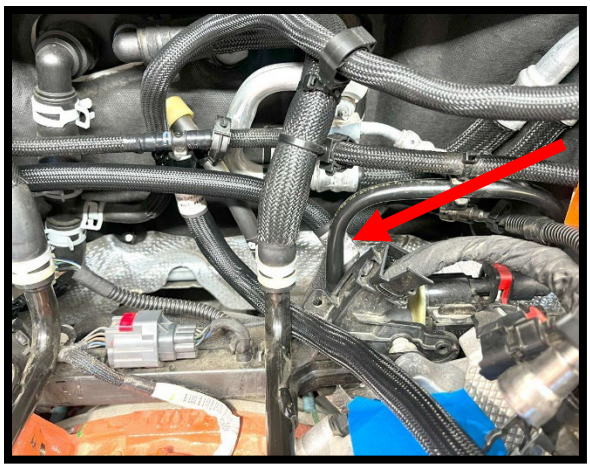


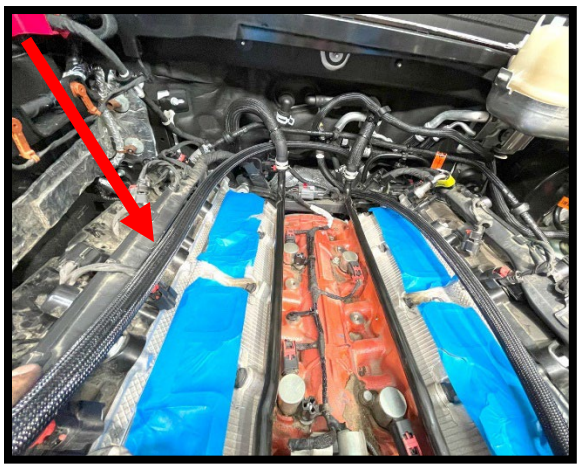
46. Preinstall the supplied #5000361 brake booster hose to the factory tee fitting. Secure hose using (1x) #4 hose clamp. Route hose to LH side of engine for later installation.



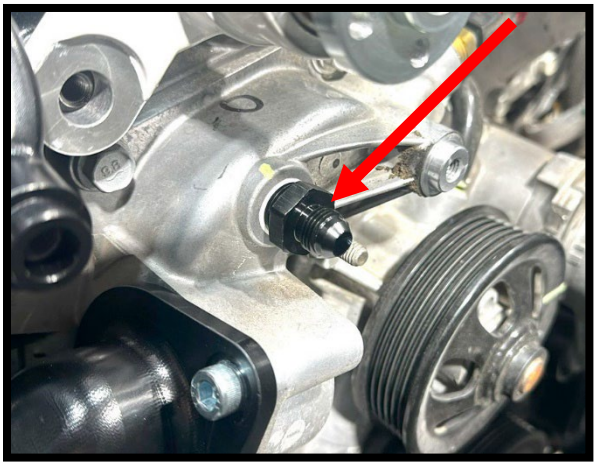


47. Preinstall the supplied #5000360 EVAP hose to the EVAP solenoid. Secure hose using (1x) #4 hose clamp. Route hose to RH side of engine for later installation.



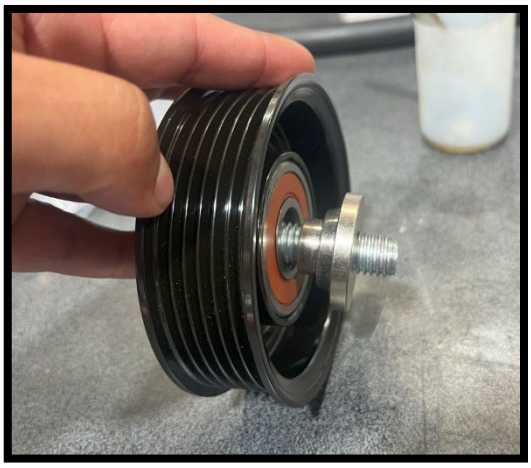


48. Apply light amount of pipe sealant to supplied (1x) 3/8" NPT to -6AN fitting NPT threads. Install fitting into factory water pump vent port.



49. Install the supplied T-Nut to the billet idler/tensioner mount. Note the position of the offset. T-Nut threaded hole should be oriented in the image.

50. Using the .390" idler step spacer, 1/2" ID step washer and (1x) ½" x 2" SHCS bolt, mount the 87mm grooved idler (#36157) pulley to idler mount. Leave idler slightly loose for later belt adjustment.



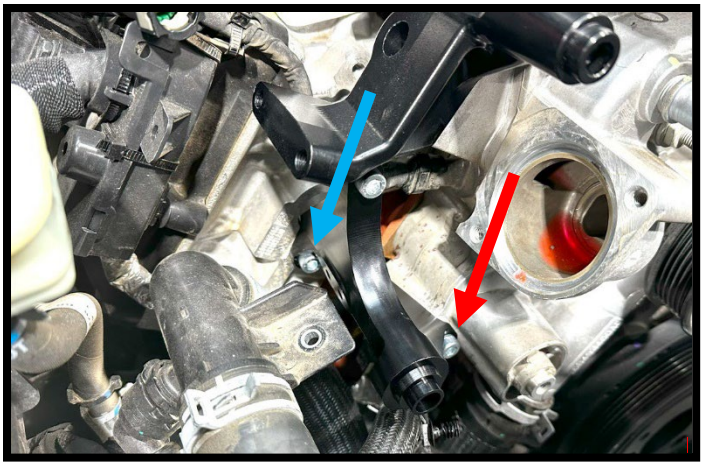
51. Mount the billet idler/tensioner mount to the LH cylinder head. Use the supplied (3x) 8mm x 60mm SHCS. Torque to 15 ft-lbs.

52. Install supplied 63.50mm smooth idler pulley to new spring-loaded tensioner. Use supplied (1x) 10mm ID step washer and (1x) 10mm x 40mm SHCS. Torque to 18 ft-lb

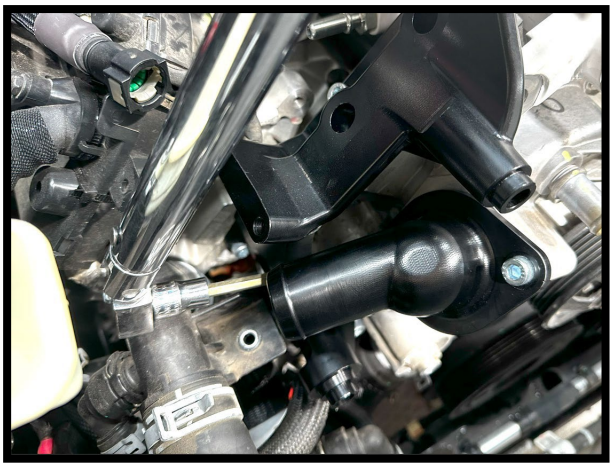
53. Mount the supplied spring-loaded tensioner to new tensioner mount using supplied (1x) 10mm x 60mm SHCS. Torque to 18 ft-lbs.

54. Install the alternator relocation bracket to factory location. Secure using supplied (4x) 10mm x 60mm SHCS. Torque to 21 ft-lbs.

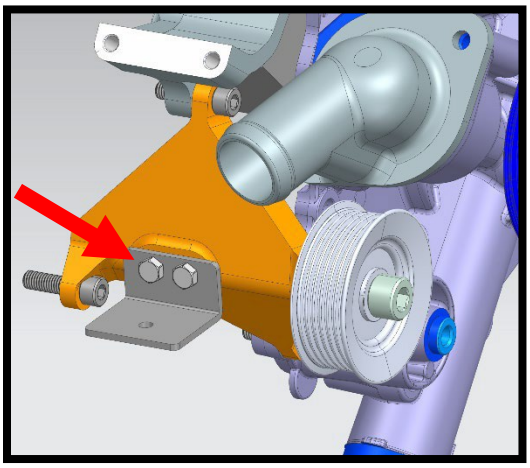

55. Install the idler pulley mount to engine block and alternator relocation bracket. Secure using the supplied (2x) 8mm x 22mm SHCS (red arrows) and (1x) 8mm x 35mm SHCS (top, blue arrow). Torque to 18 ft-lbs.



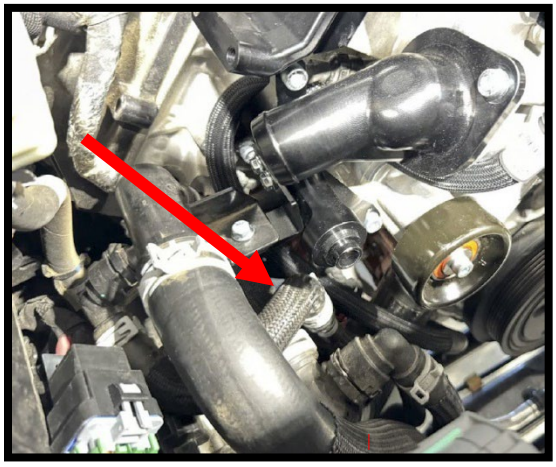
56. Install the new water neck to the factory location, above the thermostat. Secure using the supplied (2x) 8mm x 25mm SHCS. Torque to 18 ft-lbs. **NOTE**: Rear bolt requires ball head allen socket.

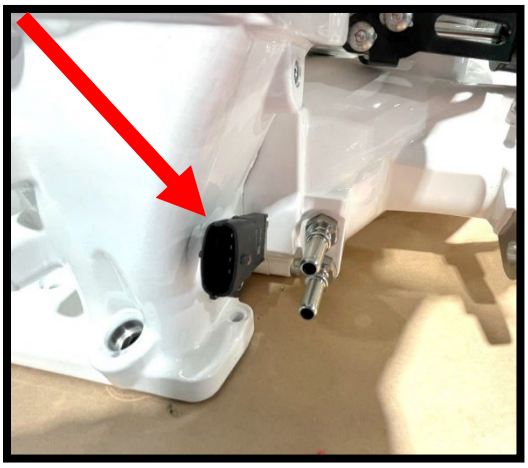
57. Install supplied water hose support bracket to idler bracket, using the (2x) 6mm x 12mm HHFCS bolts. Torque to 80 in-lbs.



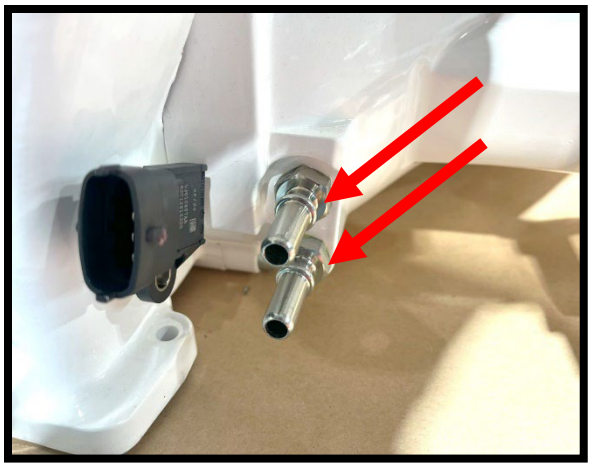
58. Secure the factory plastic 90deg water fitting to previously installed support bracket, using the (1x) 6mm x 20mm HHFCS. Torque to 80 in-lbs.



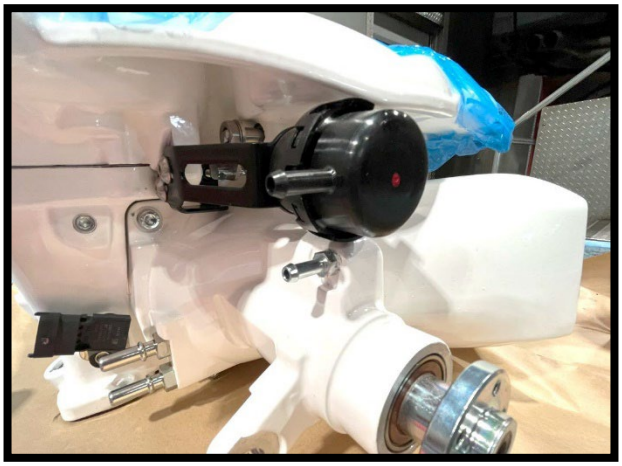
59. Install the supplied TMAP sensor to supercharger, apply light amount of grease to oring to ease installation. Secure to SC using supplied (1x) 6mm x 14mm HHFCS. Torque to 88 in-lbs using 10mm socket.



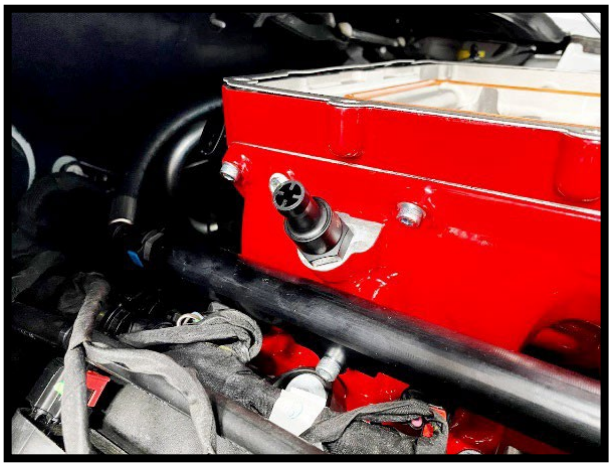
60. Install the (3x) 9.89mm fittings with the (3x) #2-906-V75BR orings, to SC inlet, (2) on RH side of inlet and (1) on LH side. Apply light amount of grease to oring to ease installation.



61. Apply light amount of pipe sealant to supplied (1x) ¼" NPT to ¼" barbed fitting threads. Install fitting into SC inlet.



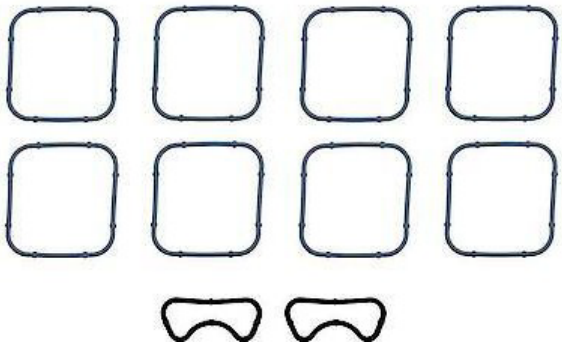
62. Install the (1x) #113 oring to PCV fitting. Apply light amount of grease to oring. Install the PCV fitting to the RH side of open passage on supercharger runner.



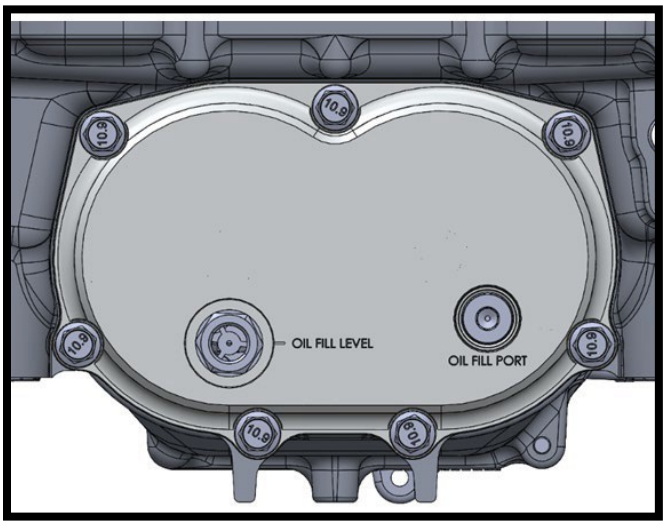
63. Remove the factory oil fill cap from stock intake manifold, transfer to supercharger LH runner oil port.

64. Install the TB adapter to the supercharger inlet using the supplied gasket and the (4x) 6mm x 25mm FHCS. Torque to 75 in-lbs. Clean the stock TB rubber gasket, then install to adapter. 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.

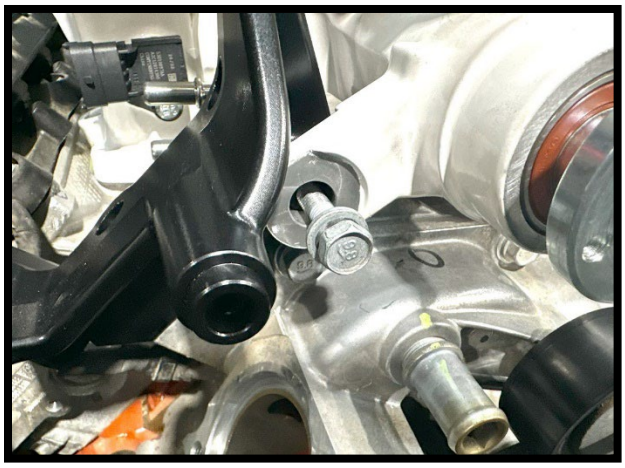
65. Remove the tape from the supercharger runners. Install the (10x) factory manifold orings to the supercharger runners. Apply light amount of grease for ease of installation. Remove the tape covering the intake runners.



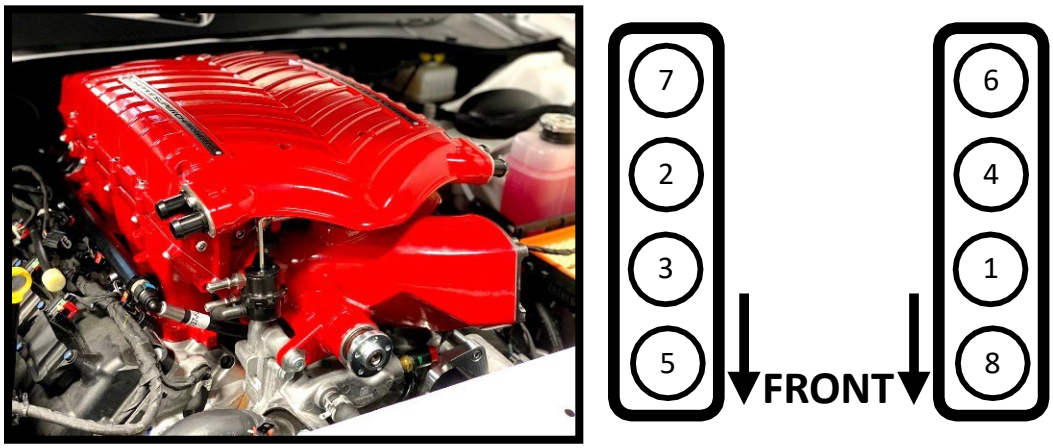
66. Make sure the supercharger is on a flat surface. Remove the oil fill plug using an 8mm allen socket.
    - Fill the compressor to the **BOTTOM** of the fill plug (**4.0 FL/OZ**). Rock compressor back and forth. Then spin the compressor/rotors by the pulley so the oil fills the bearings. **NEVER OVER FILL THE SUPERCHARGER!**
    - Apply light amount of grease to oil fill plug oring, reinstall. Torque to 140 lbs-in.



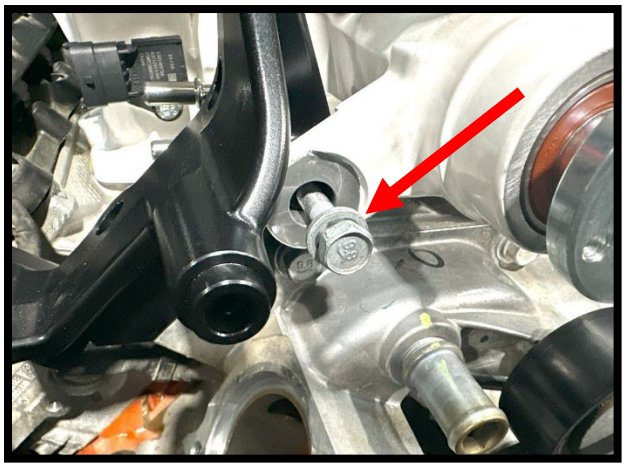
67. Install the supercharger assembly to engine. Use the intake bolts and injector bores to achieve the best alignment possible between engine and supercharger. Install the (8x) M6 x 25mm intake manifold bolts hand tight (**DO NOT TORQUE**). Install the front support bolt, using the (1x) 8mm x 70mm HHFCS bolt, hand tight. (**DO NOT TORQUE).**



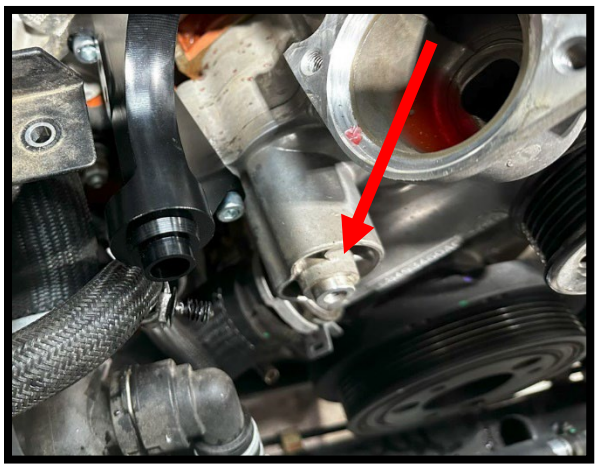
68. With the supercharger mounting bolts hand tight and supercharger best aligned, use a 10mm socket, install the (8x) M6 x 25mm intake manifold bolts in the sequence shown below.
    - First pass, using the sequence, 60 in-lbs.
    - Second pass, using the sequence, 72 in-lbs.
    - Third pass, using the sequence, 88 in-lbs.

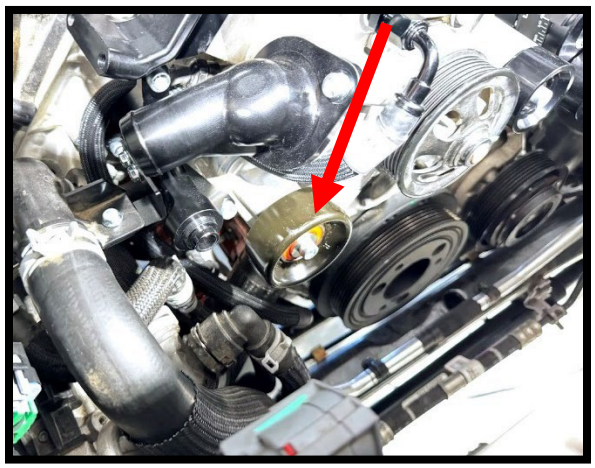


69. Torque the (1x) 8mm x 70mm HHFCS to 26 ft-lbs using 16mm socket.

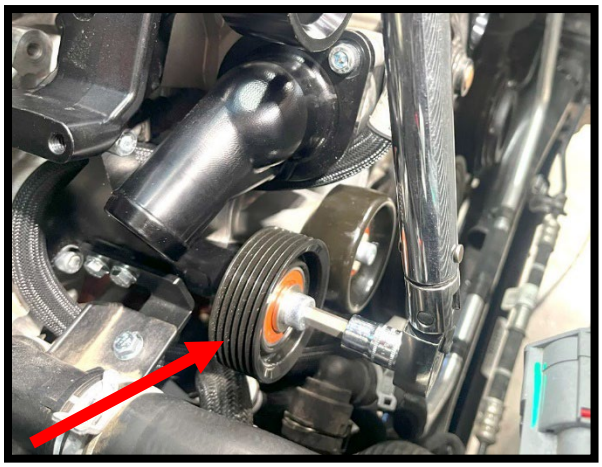


70. Install supplied 76mm smooth idler pulley to stock mounting location shown below. Use supplied 8mm ID step washer and supplied (1x) 8mm x 35mm SHCS. Torque to 18 ft-lbs



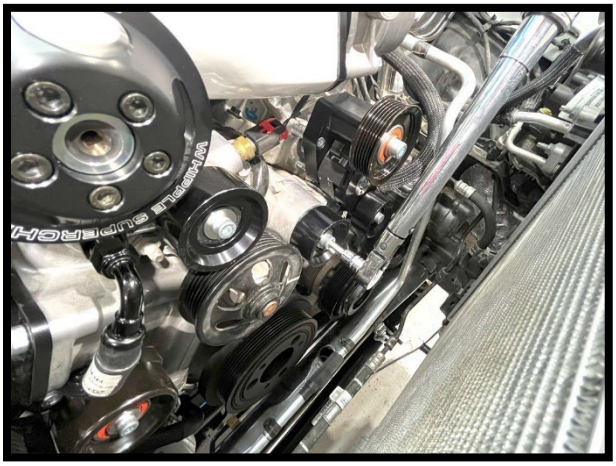


71. Install supplied 70mm grooved idler pulley to lower billet idler mount. Use supplied (1x) 10mm ID step washer and supplied (1x) 10mm x 30mm SHCS. Torque to 21 ft-lbs.

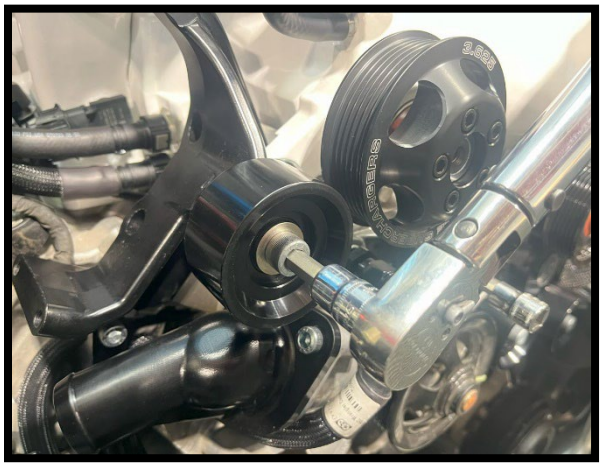


72. Install supplied 63.50mm smooth idler pulley to stock mounting location shown below. Use supplied (1x) 8mm step washer and supplied (1x) 8mm x 30mm SHCS. Torque to 18 ft-lbs.

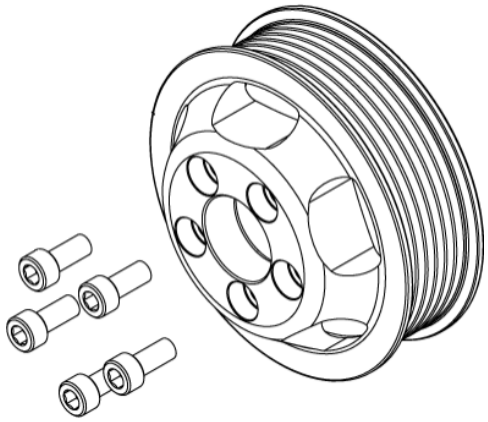
73. Install supplied 63.50mm smooth idler pulley to original tensioner mount. Use supplied (1x) 10mm ID step washer and supplied (1x) 10mm x 40mm SHCS. Torque to 21 ft-lbs.



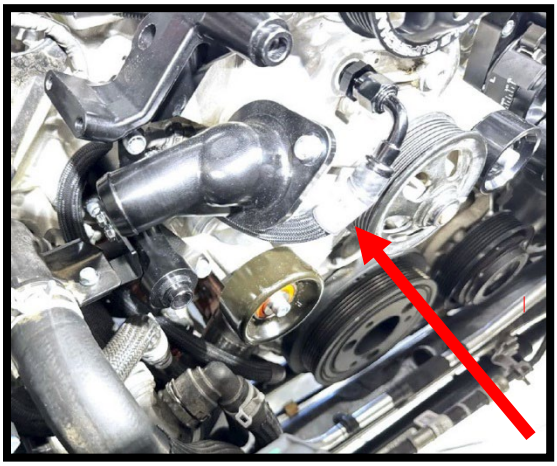
74. Install supplied 63.50mm smooth idler pulley to alternator relocation bracket. Use supplied (1x) 10mm ID step washer and supplied (1x) 10mm x 40mm SHCS. Torque to 21 ft-lbs.



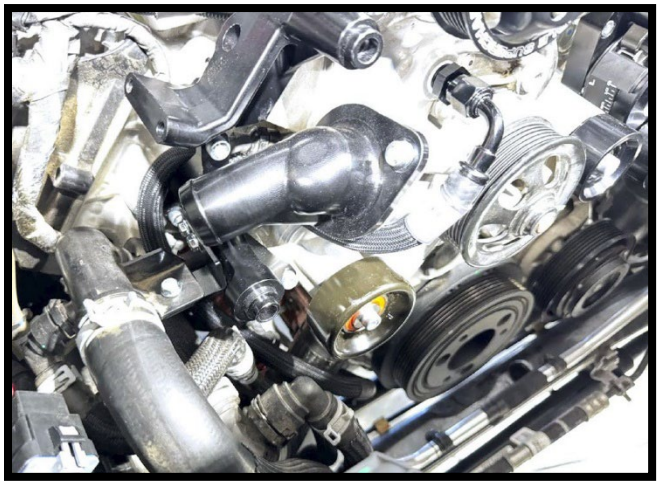
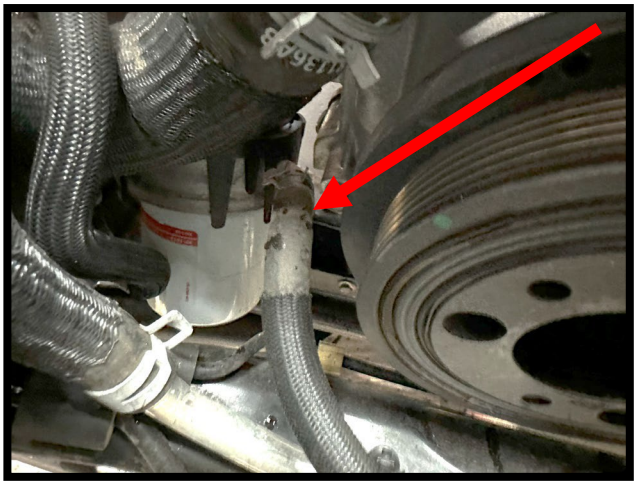
75. Install the supercharger pulley, with the (5x) 6mm x 15mm SHCS bolts. **Leave hand tight for now**.



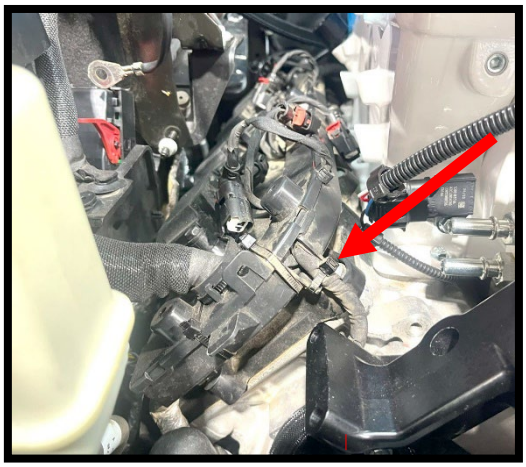
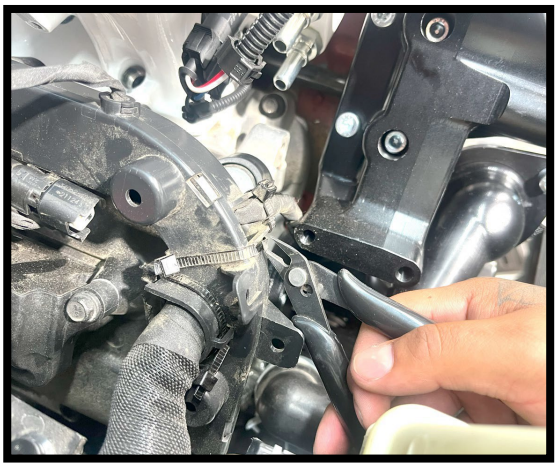
76. Install the supplied 3/8" 90deg push lock fitting to the #50000378 hose end, secure with (1x) #6 hose clamp. Install this hose to previously installed -6 fitting.



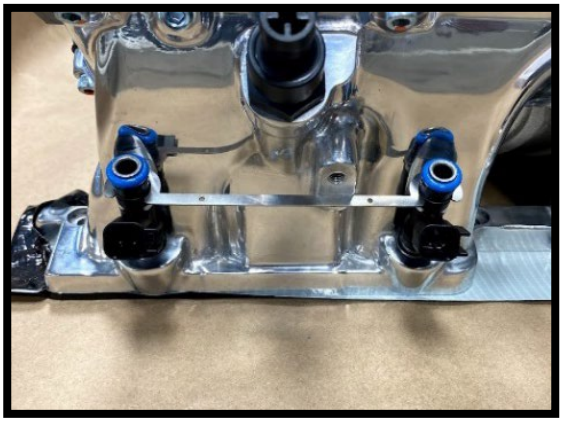
77. Route the other end of hose #50000378 back, just under water neck, behind the lower idler mount, down to the stock oil filter mount. Install the other end down to oil filter mount barb. Secure hose with supplied (1x) #6 hose clamp. Secure hose using zip ties to keep away from belt system.

78. Cut the wire tires securing plastic harness retainer on RH side valve cover. Remove plastic cover assembly and discard. Use the supplied harness tape to cover loom.

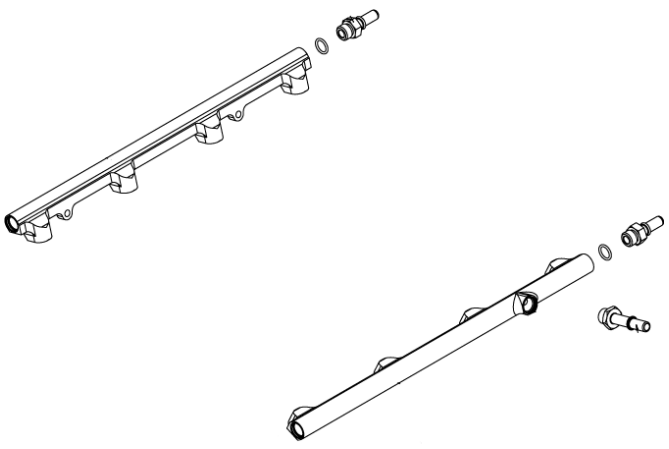
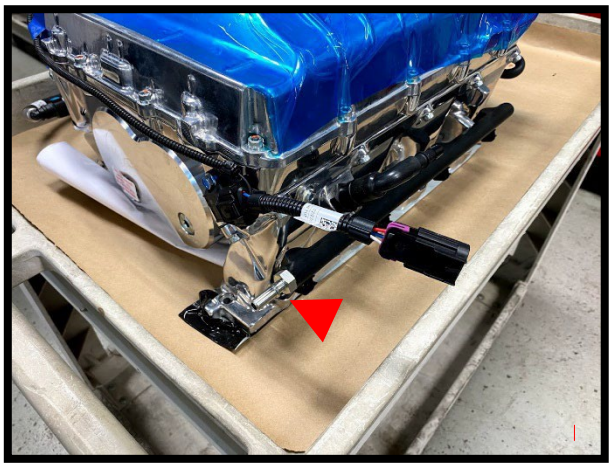



79. Apply light amount of grease to the supplied fuel injectors. Install injectors to supercharger assembly. Install the injector clocking brackets to each fuel injector. ***NOTE:** Failure to use brackets may cause running problems due to unique spray angle of the supplied fuel injectors.

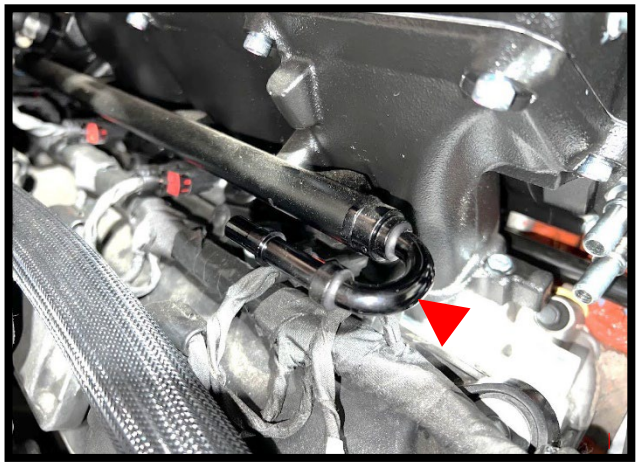



80. Secure rails to supercharger using the supplied (4x) 6mm x 16mm SHCS. Use **Blue Loctite #243** on the threads of each bolt. Torque to 80 lbs-in.

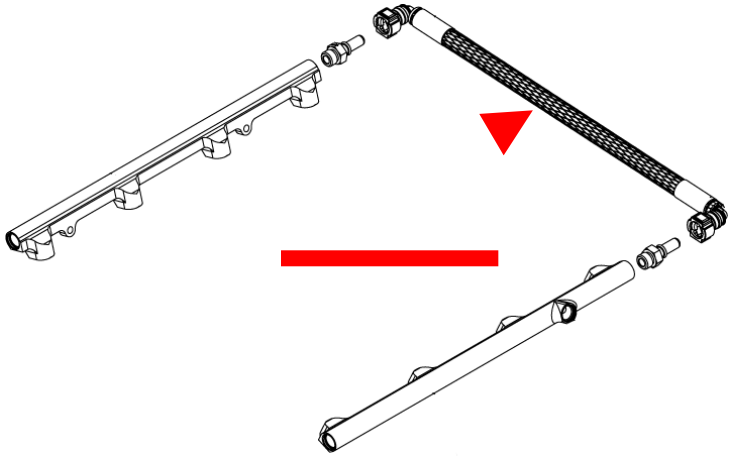
81. Install the (3x) #2-906-V75BR orings to the (2x) -6 ORB to 9.49mm and (1x) -6 ORB to 9.49mm fittings. Apply light amount of grease to orings to ease installation. Install the 9.49mm fuel feed fitting on the LH/Driver side rail -6 port. Install the (2x) 9.49mm fittings to the rear ports of each rail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

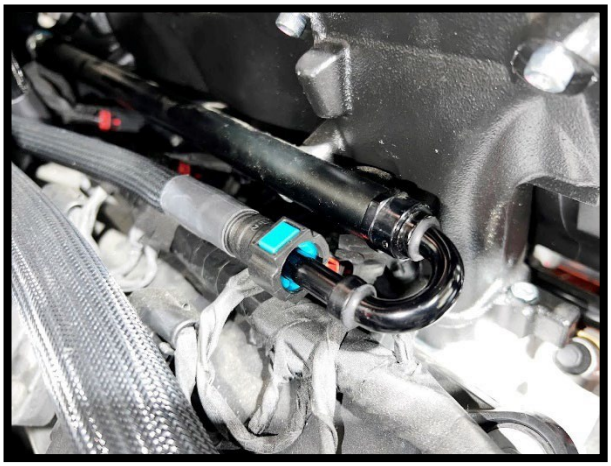
82. Install the (2x) #2-906-V75BR orings to the (2x) -6 180deg 9.49mm quick connect fittings, apply light amount of grease to orings to ease installation. Install these to the front of each fuel rail.



83. 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.



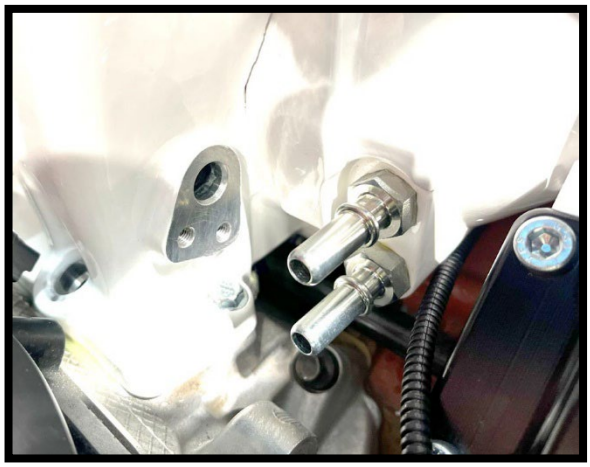
84. Install the 3/8" x 50" fuel front cross over hose, around the back of the supercharger and connect to both previously installed 180deg fittings. **CAUTION:** Ensure fuel fitting clicks and locks in place.



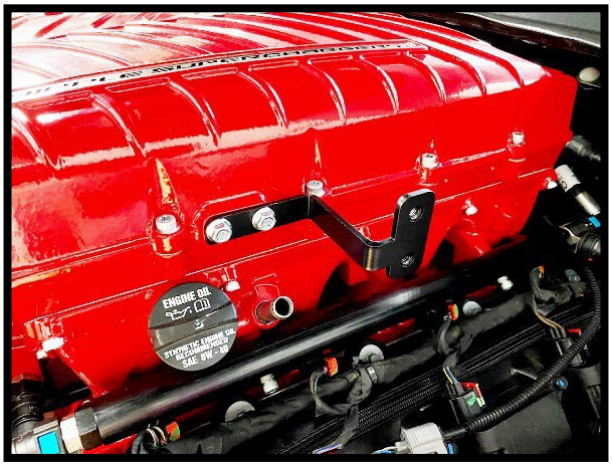
85. Reconnect stock fuel feed hose to the 9.49mm fitting you previously installed. **CAUTION:** Ensure fuel fitting clicks and locks in place.

86. Install the (1x) #2-906-V75BR oring to the -6 ORB to 9.89mm fitting. Install the (1x) 9.89mm fitting in the LH side of SC inlet. Apply light amount of grease to oring to ease installation.

87. Install the (2x) 9.89mm fittings with the (2x) #2-906-V75BR orings, to SC inlet. Apply light amount of grease to oring to ease installation.

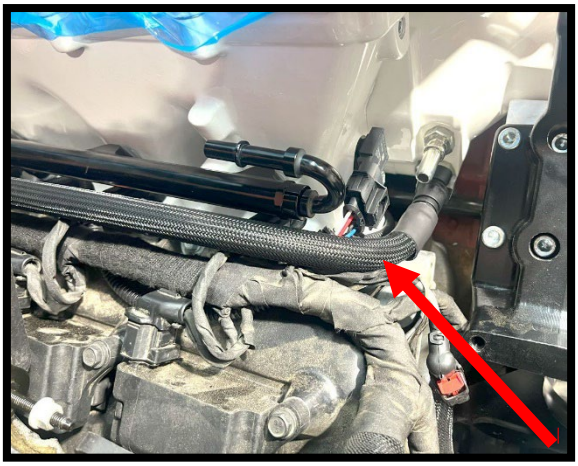


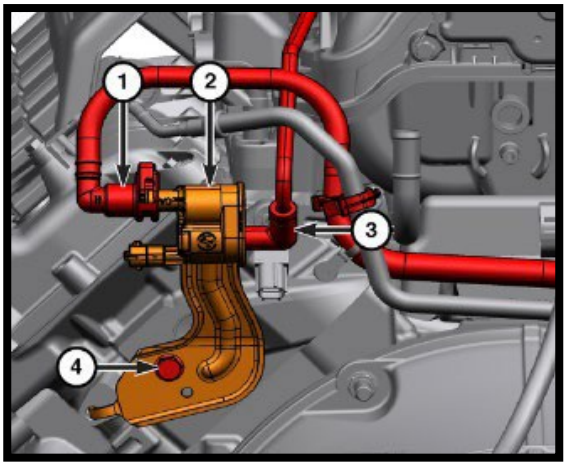
88. Install filler reservoir bracket to the LH side of supercharger lid. Use supplied (2x) 6mm x 12mm HHFCS. Torque to 89 in-lbs using 10mm socket.



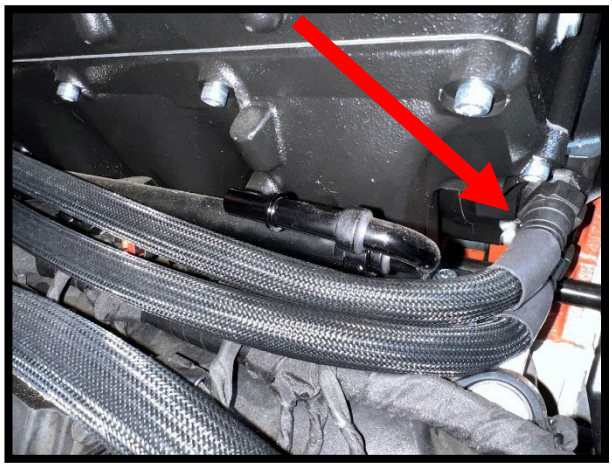
89. Install filler reservoir to bracket using the supplied (2x) 6mm x 12mm HHFCS. Torque to 75 in-lbs using 10mm socket.

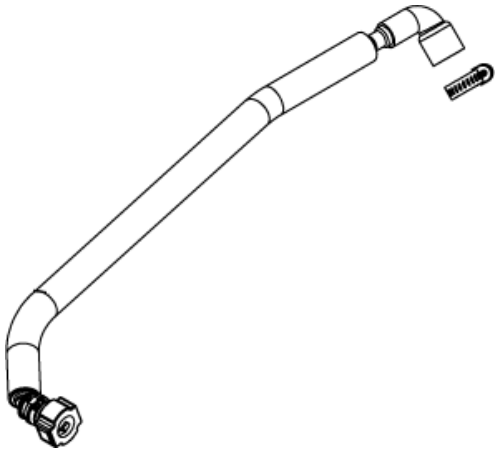
90. Install supplied 3/8" #5000360 hose to SC inlet bottom 9.89mm quick connect fitting previously installed. Install stock EVAP 90deg to end of hose. Secure to EVAP solenoid (#1).



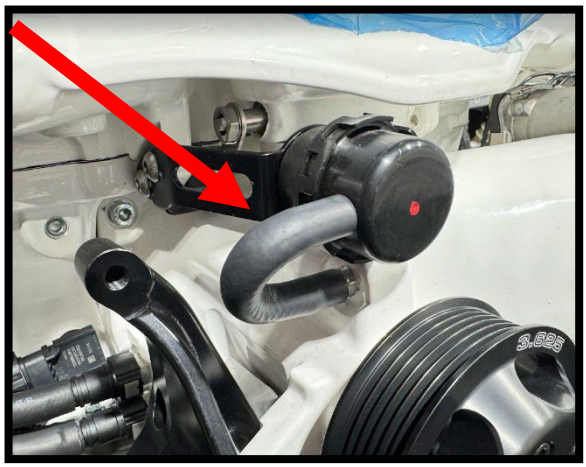


91. Install supplied 3/8" #5000265 hose with 90deg end from SC inlet top 9.89mm quick connect fitting to PCV valve previously installed. Secure 90deg rubber hose with supplied #6 worm clamp.

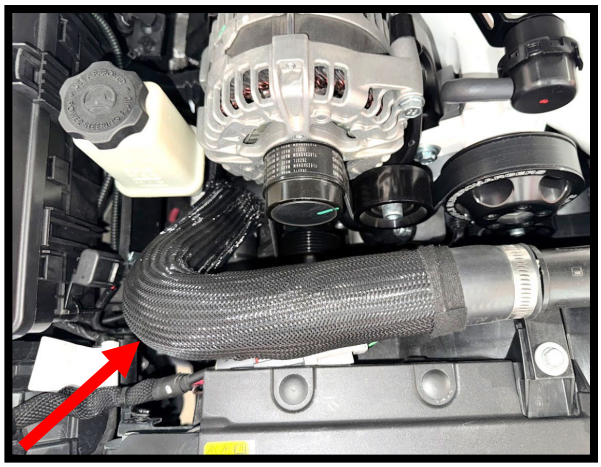




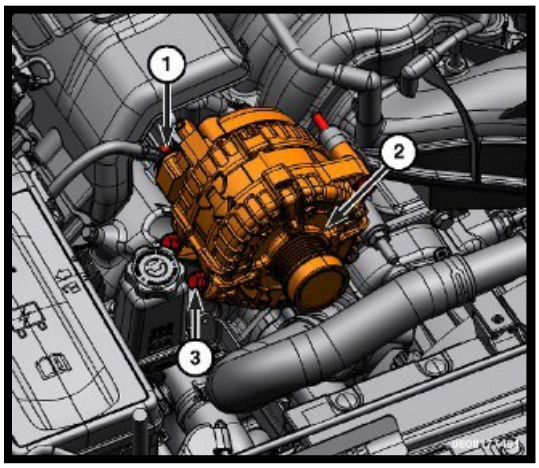
92. Install the supplied ¼" U-bend hose from ¼" barb fitting to bypass actuator barb. Secure both ends with zip tie.



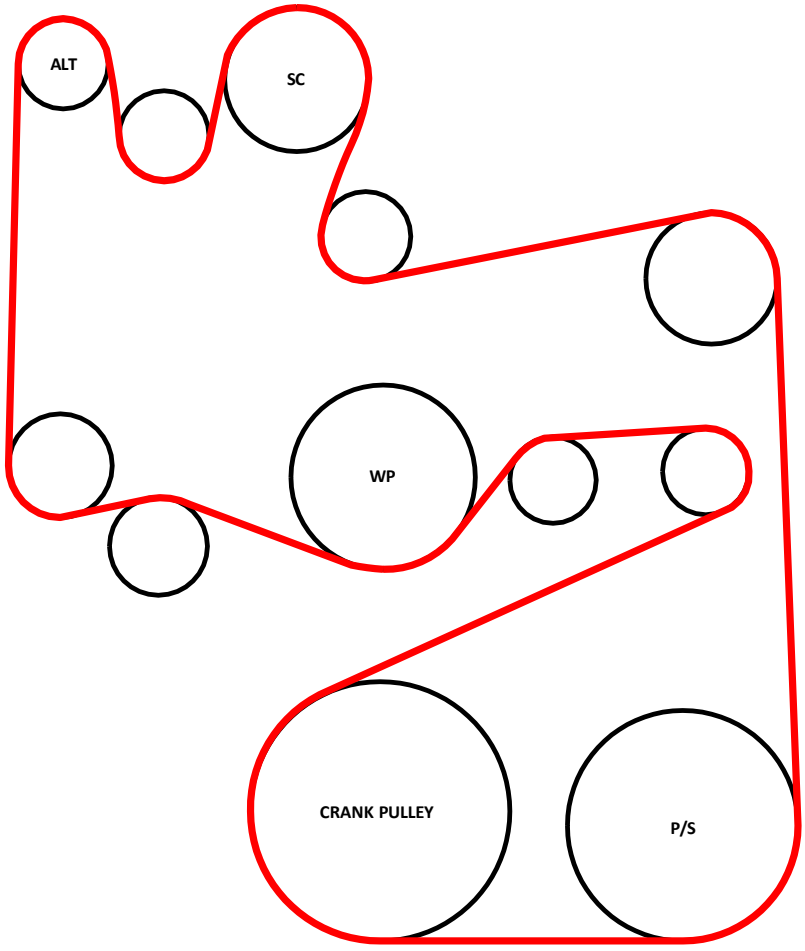
93. Install stock radiator hose sleeving over supplied radiator hose #3103424. Install the supplied radiator hose to engine. Secure end to stock coupler (1x #20 clamp) and other end to water neck using (1x) #24 hose clamp. Replace stock clamp using the (1x) #20 hose clamp. NOTE: Ensure it fits post barb at water neck or it could leak later.



94. Install the stock alternator to the updated bracket. Use factory (2x) bolts (3 in image). Secure upper boss using supplied (1x) 8mm x 70Xmm HHFCS. Torque to 18 ft-lbs. Secure B+ using factory hardware, torque to 10 ft-lbs. Reconnect stock generator field harness connector until it clicks and locks in place.

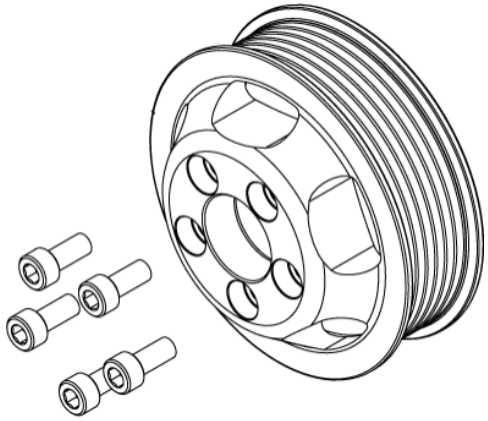


95. Using a 3/8" breaker bar, open spring-loaded tensioner to max position. Install the supplied drive belt using the belt routing diagram below. **Leave adjustable idler loose for now**.

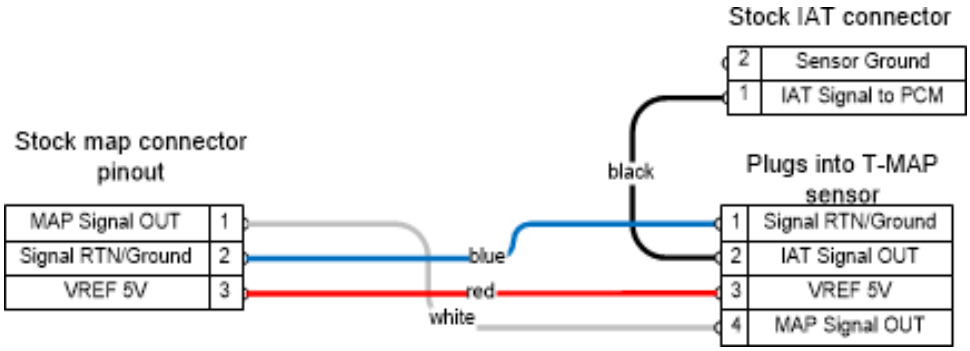


96. With the spring-loaded tensioner in max open position, use the upper, grooved idler to remove slack by sliding to its furthest position towards LH/drivers side. Torque to 30 ft-lbs.

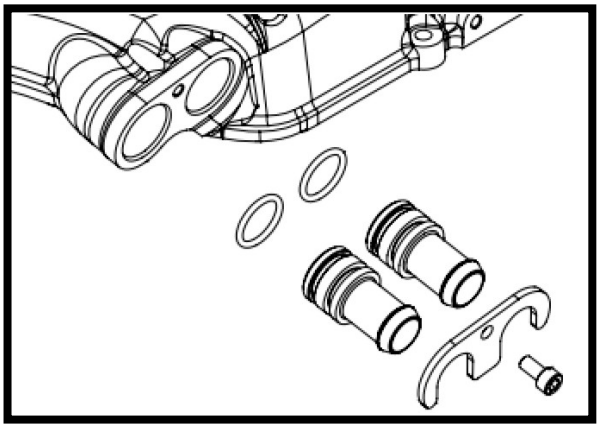
97. Torque the (5x) 6mm x 15mm SHCS pulley bolts to 119 in-lbs.



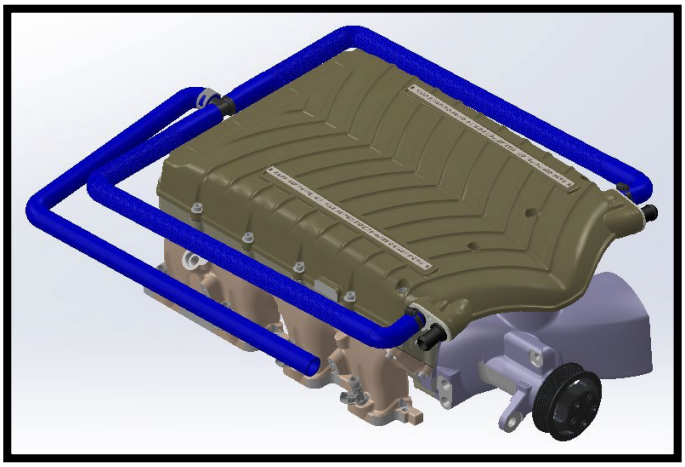
98. Install the supplied TMAP pigtail from factory MAP sensor to TMAP. Connect 4-way end to TMAP previously installed. Route single wire to LH side of engine. Connect to stock IAT sensor connector.

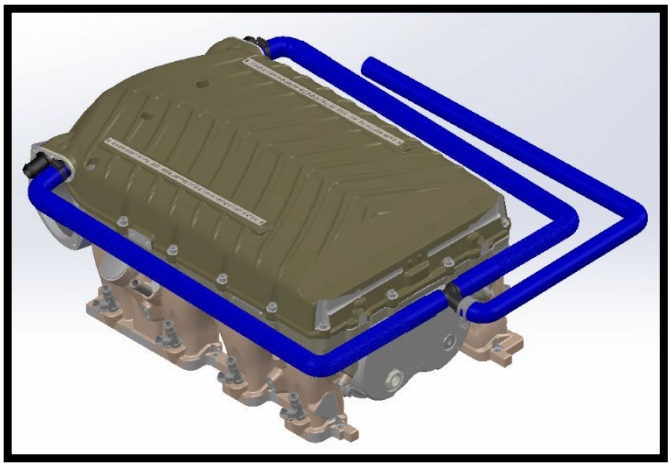


99. Install the (4x) 2-117 IC fitting orings to the (4x) IC fittings. Apply grease to the (4x) 2-117 IC fitting orings. Slide fittings into lid. Secure fittings with supplied fitting retainer bracket and (2x) 6mm x 12mm SHCS bolt. Torque to 80 in-lbs.

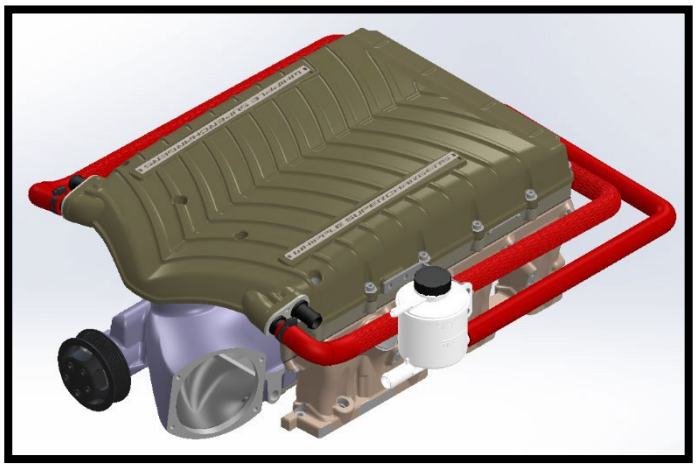


100. Install the supplied intercooler feed supply hoses, #3103182 to the LH and RH rear most intercooler fittings. Secure both fittings with supplied #12 black worm clamps at IC inlet fittings. Secure both hoses to the supplied tee using #16 pinch clamps. Install the 36.5" #3103392 hose to tee and route to RH side of engine for later connection to heat exchanger. ***NOTE**: Face the tee downward for clean installation.

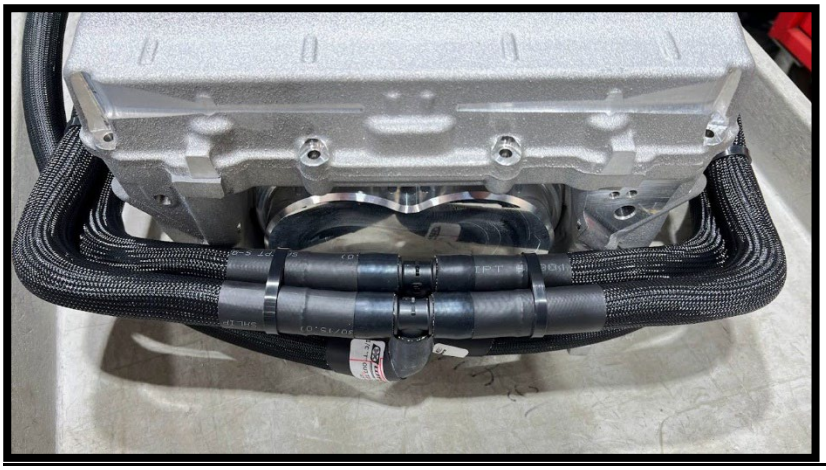




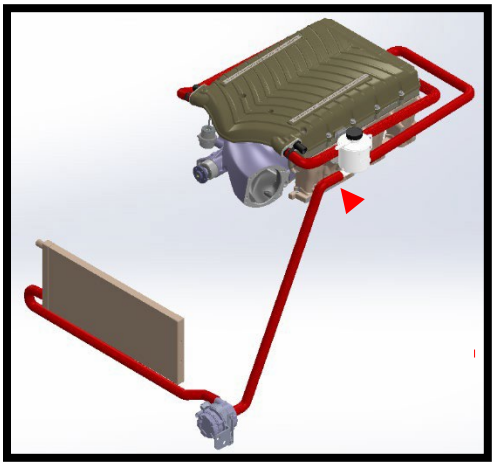
101. Install the supplied intercooler outlet hoses, #3103182 to the LH and RH front most intercooler fittings. Secure both fittings with supplied #12 black worm clamps. Secure both hoses to the supplied tee using #16 pinch clamps. Install the 23" #28479 hose to tee and route to rear IC filler reservoir fitting. Secure using #16 pinch clamp. ***NOTE**: Face the tee downward for clean installation.



102. Secure IC hoses using zip-ties for clean installation.



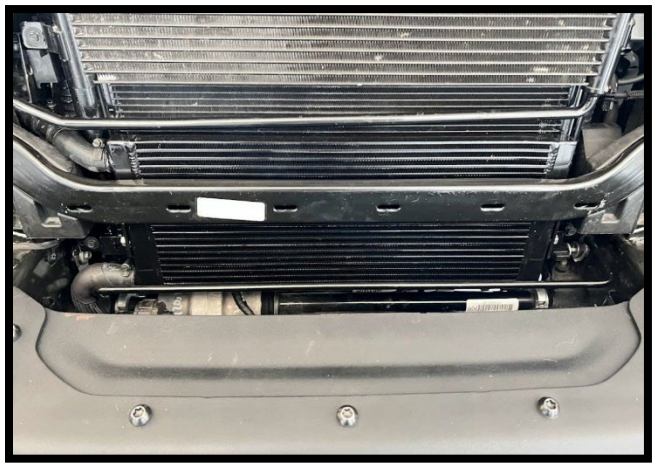

103. Connect hose #3103521 from IC pump inlet to filler reservoir forward facing fitting. Secure both ends using (2x) #12 worm clamps.



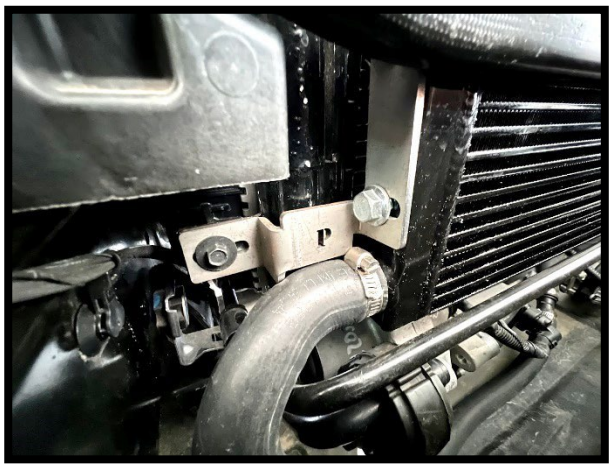
104. Install the 3/8" reservoir vent hose #3103098 to filler reservoir barb. Secure using (1x) #6 hose clamp. Route down along the IC pump inlet hose. Secure vent hose using zip ties to keep away from belt system. **NOTE: This can burp if system exceeds 10psi, do not run next to exhaust.**

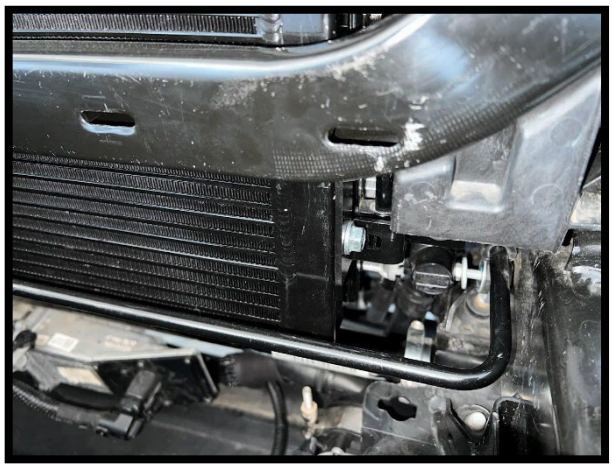
105. Reinstall the factory fan assembly in reverse order using factory hardware.

106. Slide the heat exchanger into position by sliding up from bottom of cross brace, up into position.



107. Install the heat exchanger brackets to vehicle and heat exchanger. Use the stock fastener to secure to vehicle, use supplied (4x) 8mm x 16mm HHFCS bolts to secure heat exchanger to brackets.

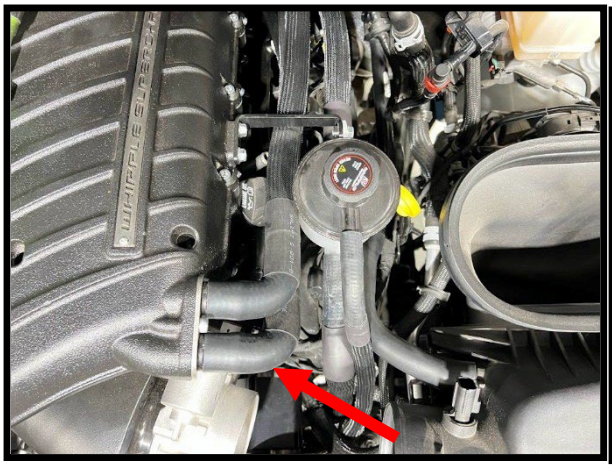


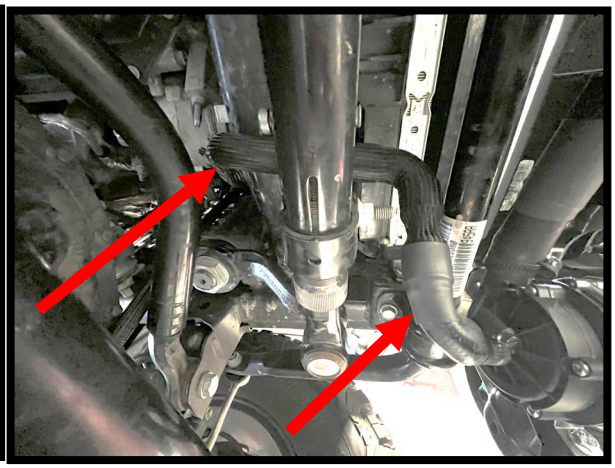


108. Install intercooler pump bracket to LH frame mount. Remove the (2x) stock fasteners, install IC pump mount bracket. Resecure using factory fasteners.

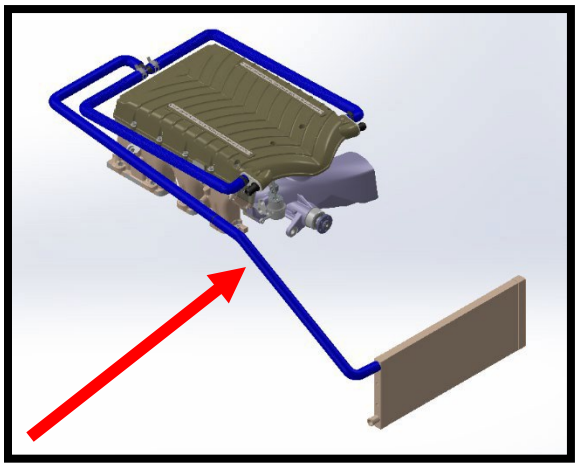
109. Mount pump and t-bolt clamp to IC pump bracket using the (2x) 6mm x 12mm HHFCS bolts.

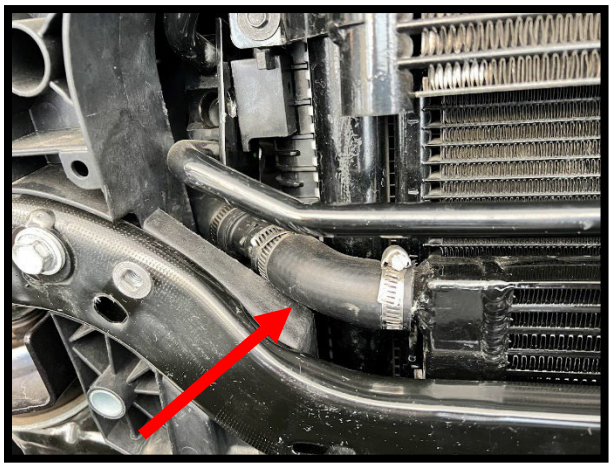
110. Install the supplied hose #3103521 to the reservoir front fitting to the pump inlet. Secure both ends with #12 hose clamps.



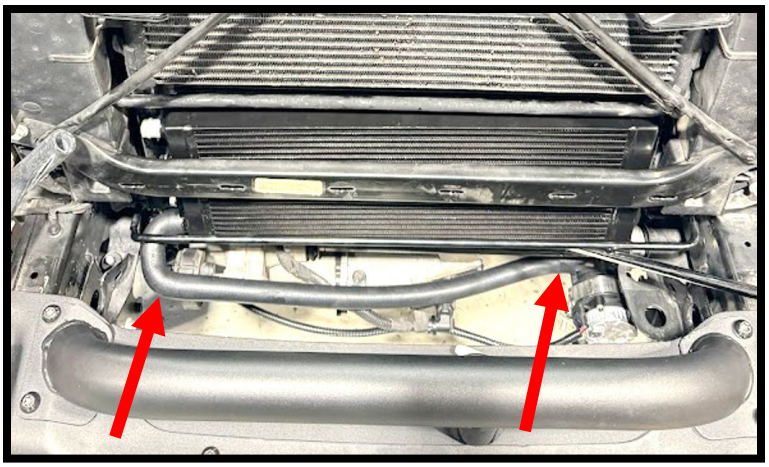


111. Connect hose #3103149 to the previously installed #3103392 from cold side tee fitting using supplied ¾" barb and (2x) shrink clamps (use heat to shrink in place). Route around radiator, to LTR top, RH outlet fitting. Secure end with supplied #12 worm clamp.

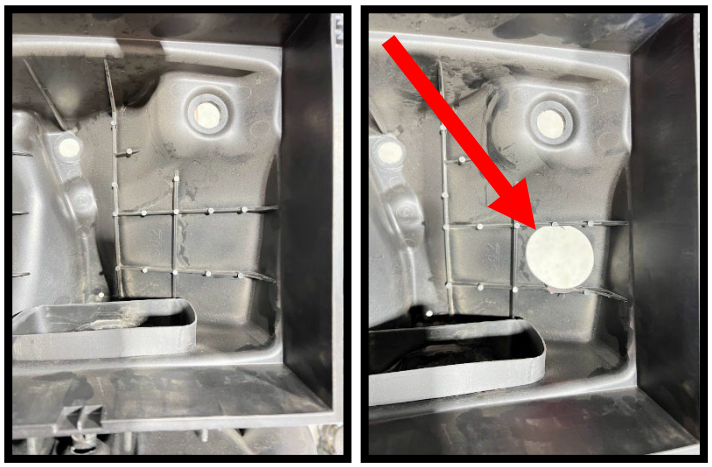




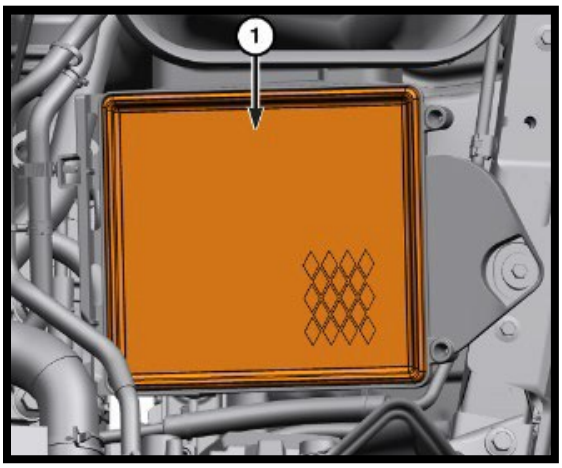
112. Install the supplied LTR feed hose #5000383 from the IC pump outlet to LTR inlet. Secure both ends with #12 worm clamps. ***CAUTION: Ensure this hose can never KINK or rub a hole during operation.**



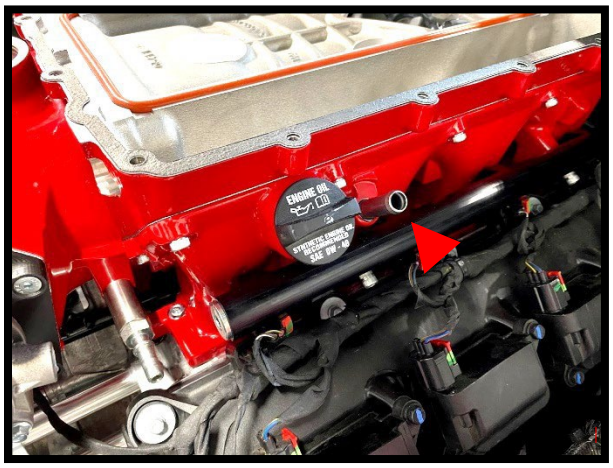
113. (**Stock air box**) Using a 3.0" hole saw (larger preferred), drill a hole in the front/upper corner of the airbox. Failure to do so will limit airflow and power as the stock snorkel cannot flow enough air. Clean debris.



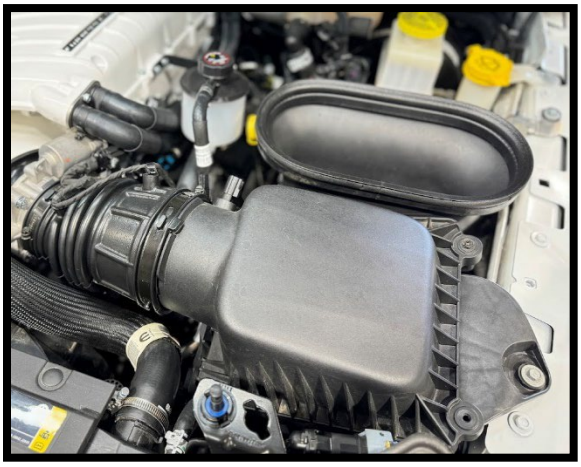
114. Install the supplied high flow filter to factory airbox lower. Install the air box and supplied rubber inlet hose to factory airbox and throttle body using stock clamps. Secure box using stock bolt with an 8mm nut driver.



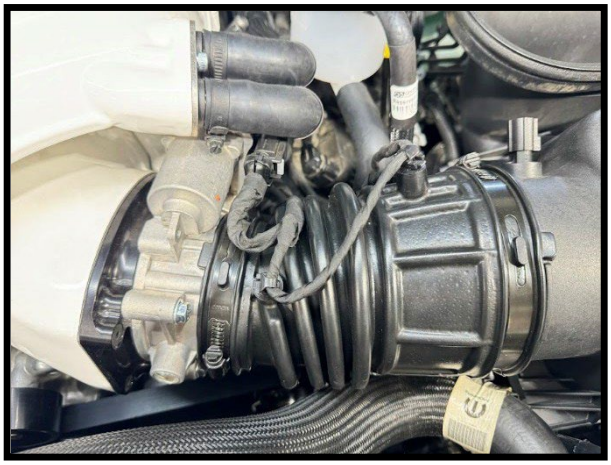
115. Locate stock make-up air hose. Install stock end to airbox lid. Install the supplied ¾" to ½" hose coupler to end of hose. Install supplied 90deg rubber hose end to hose coupler. Install this to make-up air barb in manifold.



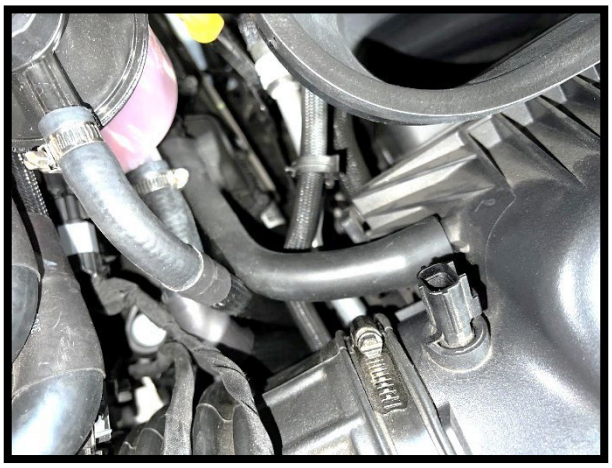
116. Install stock airbox lid assembly back into position using factory hardware.

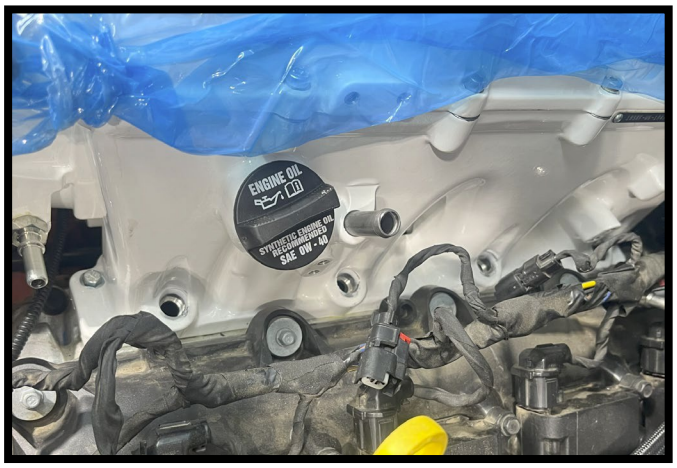


117. Install stock air inlet tube using factory clamps to throttle body and airbox. Reinstall wiring harness retainers to stock locations.



118. Install the stock breather hose to airbox lid. Route under reservoir to supplied ½" hose #5000383. Couple together using supplied ½" to ¾" coupler. Secure ½" hose end to hose barb next to oil fill cap.

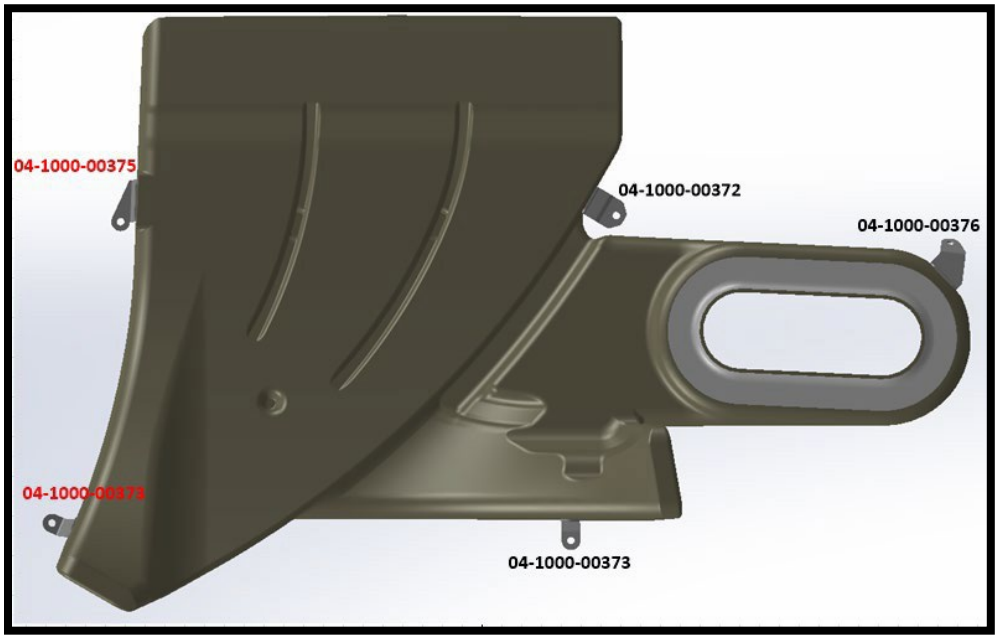




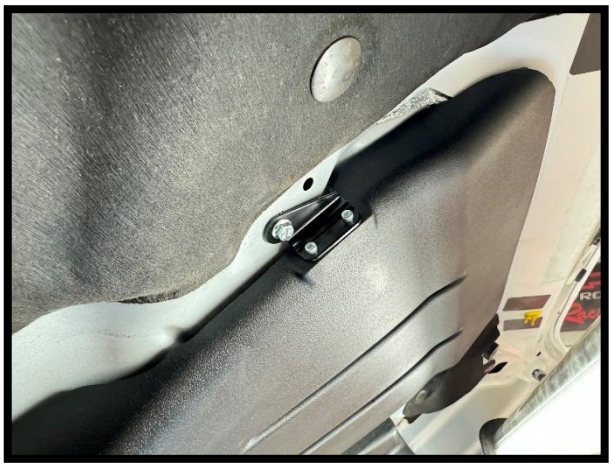
119. Install supplied rubber trim material to top lip around new air inlet snorkel.

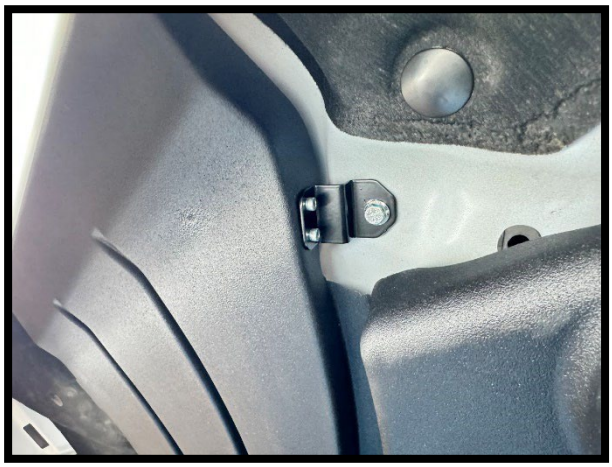
120. Transfer the rubber flaps from stock snorkel to new airbox snorkel using factory hardware.

121. Install the air inlet snorkel mounting brackets to snorkel with the (5x) support brackets shown in the next steps.



122. Secure front of snorkel using brackets 04-1000-00375 (RH front) and 04-1000-00372 (LH front). Secure brackets to airbox using (2x per) 4mm x .7mm SHCS. Secure to hood using (1x per) 6mm x 20mm HHFCS.

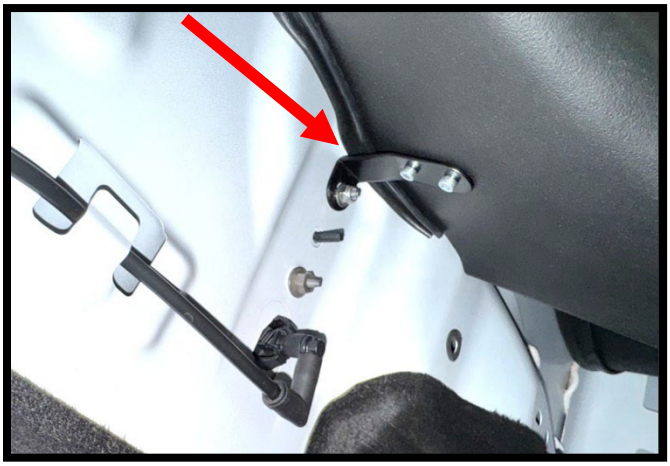




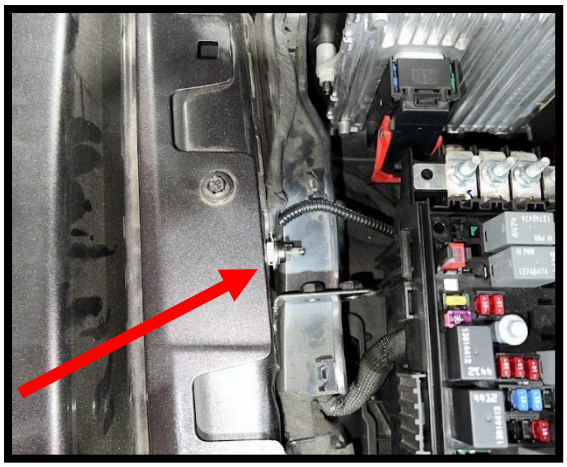
123. Secure front of snorkel using bracket 04-1000-00376 (LH front). Secure brackets to airbox using (2x) 4mm x .7mm SHCS. Secure to hood using (1x per) 6mm x 20mm HHFCS.

124. Secure rear RH side of snorkel using bracket 04-1000-00373 (1x). Secure brackets to airbox using (2x) 4mm x .7mm SHCS. Secure to hood using (1x) 6mm x 20mm HHFCS.

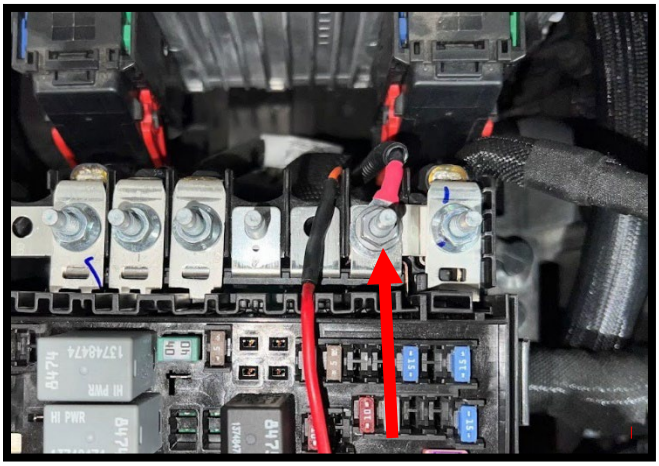
125. Secure rear LH side of snorkel using bracket 04-1000-00373 (1x). Secure brackets to airbox using (2x) 4mm x .7mm SHCS. Secure to hood using stock fastener.



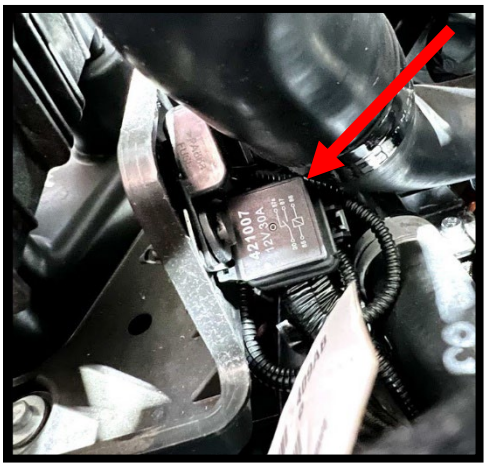
126. Bolt intercooler relay harness black ground wire to chassis ground on body next to fuse box.



127. Remove stock 12v power stud nut, install the intercooler relay power B+ eyelet to the factory power stud on fuse center and reinstall stock fastener.

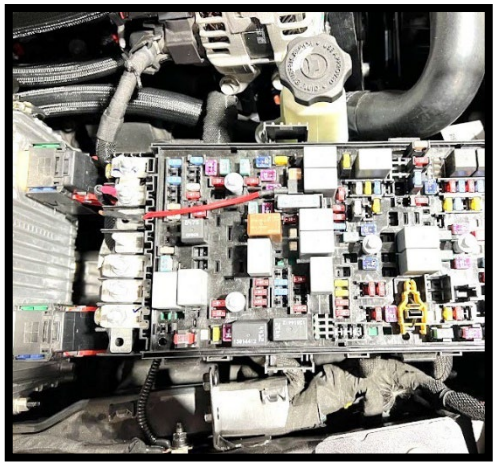


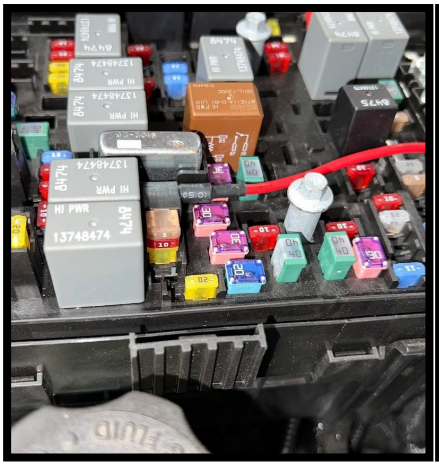
128. Use a 5/32" drill bit, drill a small hole in the fuse box. Mount intercooler relay and fuse holder on fuse box bracket or to fuse box using plastic push pin.

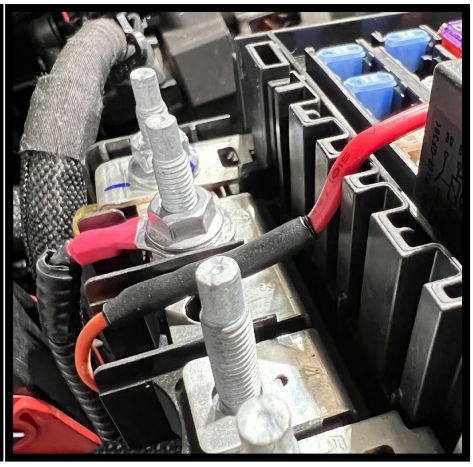


129. Route the main pump connector down, across radiator support area and to the pump. Connect to pump. Secure harness away from heat and any moving parts using zip-ties.

130. Using crimpers, connect the fuse tap wire to the barrel connector. Slide the supplied heat shrink over barrel crimp connector, use heat gun to shrink and seal connection. Remove the stock 10A fuse from **location #F50 HD ACC**, install into supplied fuse tap in spot previously occupied by 10A fuse. Install fuse tap to **#F50 HD ACC.** This will have the stock 10A fuse and the supplied 5A for IC pump system. NOTE: Make sure wire is clear of any potential chaffing or cutting.







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.

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.

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

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 its 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.***

138. Start the engine and let idle. The engine should idle normally between 600-700 rpm at normal operating temps. Inspect for leaks.

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.

139. 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.

140. 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.

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. Install the supplied emissions decal next to factory emissions decal.

143. If you would like to install a boost gauge, there is an extra 1/8" NPT port located on the passenger side of the supercharger runner.

144. 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.

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

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

147. 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.

148. If you have questions about your vehicle's 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. When changing engine oil, remove the catch can from intake manifold for proper filling.
2. Use only premium grade fuel (91-octane or higher). (RON+MON)/2 is the US spec on fuel.
3. Always listen for any sign of spark knock or pinging. If present, discontinue use immediately and consult your vehicle owner's manual.
4. 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.
5. 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.
6. 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.

7. 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.
8. Inspect and clean your high-flow air filter element every 7,500 miles.
9. Inspect and replace spark plugs every 10,000 miles. Only run specified plugs gapped to .032".
10. Follow your factory service intervals for oil changes and other typical maintenance items.
11. 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 drive train.

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 and higher 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. 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). Boosters are hard on spark plugs and should never be used on consistent basis.

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 a 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.