



WHIPPLE SUPERCHARGER INSTALLATION MANUAL

2019-2024 GM 5.3/6.2 LT1 TRUCK

2021-2024 GM 5.3/6.2 LT1 SUV

PART NUMBER: WK-1210, WK-1211, WK-1212, WK-1213



WHIPPLE SUPERCHARGERS

3292 NORTH WEBER AVE

FRESNO, CA 93722

TEL 559.442.1261

FAX 559.442.4153

WWW.WHIPPLESUPERCHARGERS.COM

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

CALIFORNIA AIR RESOURCE BOARD EXECUTIVE ORDER #D231-96

**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. **Your PCM requires an UNLOCK SERVICE FROM HP TUNERS. This HAS to be done prior to installing supercharger to ensure no problems occur. DO NOT INSTALL WITHOUT UNLOCKING FIRST!!**
2. 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.
3. Review our limited warranty with care.
4. Always wear eye protection during installation.
5. Avoid spills, if one occurs, clean up and dispose of towels properly.
6. Never work on a hot engine.
7. Obey all traffic laws when testing the vehicle.
8. 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!**

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](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

The following items are not included in this supercharger kit and it is strongly recommended that they're used for ease of installation or maximum performance:

Extra Components

1-gallon distilled water, 1 gallon GM approved coolant, 4", 8" and 12" zip-ties, clean shop towels.

Tools

Torque wrench (1/4", 3/8", 1/2") Safety glasses, standard and metric wrench set, 1/4" drill bit, 1/4", 3/8", 1/2" assorted metric socket set, 3/8" assorted metric allen socket set, 3/8" assorted torx socket set, 8mm nut driver, screw driver set, pinch clamp tool, wire cutters and drain pan (for coolant).

Sealants

Blue Loctite™ #242 or equivalent, Red Loctite™ #271 or equivalent. All bolts that need Loctite™ are marked with: **Loctite™ (#242 blue) threads, Loctite™ (#271 red) threads.** 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 (example Lubriplate #105) 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 GM 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 engines or modified vehicles is not recommended. Custom configurations can greatly affect the operation of the vehicle.
3. **Modifications to your stock vehicle including, but not limited to engine, flywheel, clutch, torque converter, transmission, wheels, tires, axles, gears, driveshafts, air intake systems, exhaust system, additional weight and aftermarket electronics can have a significant impact on your vehicles operation. It is impossible for us to develop all possible variations and combinations. All vehicle and supplemental warranties are based off stock vehicle configurations. It is the sole responsibility of the customer making a warranty claim to prove that any vehicle modifications were within warranty. It is also the sole responsibility of the customer to determine if the modifications comply with all local, state and federal emission standards.**
4. **!! 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. Flex fuel/E85 is not supported.
5. Verify Fuel System: Supercharger systems should only be installed on vehicles that have new or clean fuel filters.
6. 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.
7. **!! CAUTION !!**
DO NOT remove the protective seal on the supercharger prior to installation. Foreign material entering the supercharger will automatically void all warranties.
8. Identify Supercharger Kit Components: Before beginning installation, identify all the components of your Whipple Supercharger Kit and ensure all items are present and undamaged.
9. **!! CAUTION !!**
Do not attempt to start the engine before adding the supplied Supercharger Oil to the supercharger!

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

PRE-INSTALL INSPECTION WITH SCAN TOOL (VERIFY CONDITION OF ENGINE)

1. It is advised to inspect the vehicle before install the supercharger kit as any potential problems can be found easier before the SC installation.
2. All vehicles should have full factory service performed BEFORE the supercharger install and any/all recalls performed.
3. Vehicles with reasonably high mileage (75,000) may have factory parts that are worn or deteriorated. It is very important to monitor all activity pre and post to ensure proper operation. Items such as the fuel pump, fuel filter, ignition coils, exhaust system, body mounts, transmission, etc may all have signs of wear and thus, create issues with the added power.

➡ 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

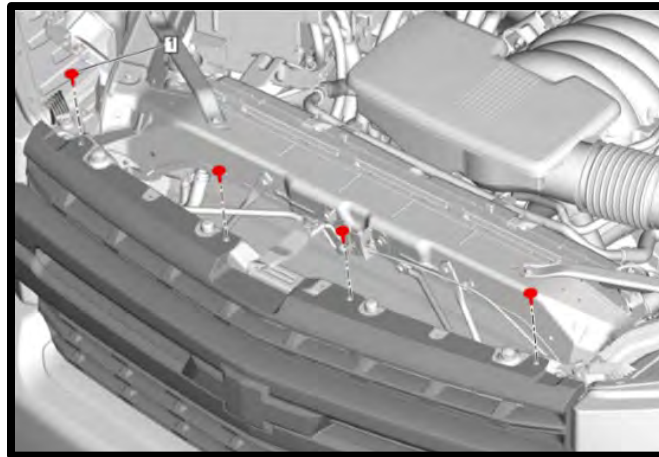
INSTALLATION MANUAL

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

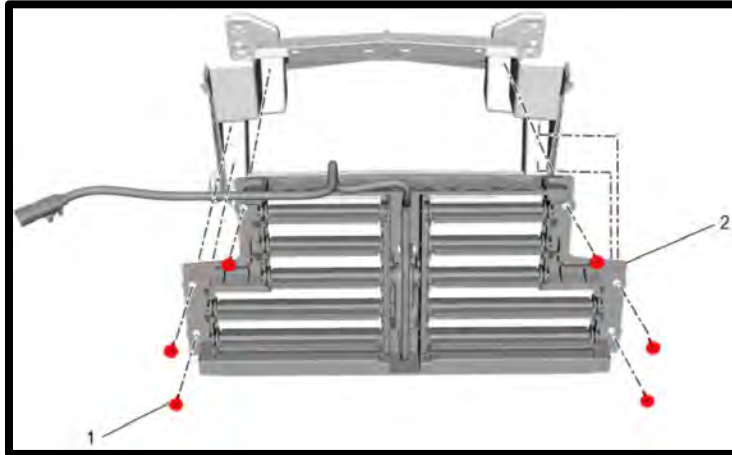
⚠ WARNING!! Batteries normally produce explosive gases. Therefore, do not allow flames, sparks or lighted substances to come near the battery. When charging or working near a battery, always shield your face and protect your eyes. Always provide ventilation. Failure to follow these instructions may result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

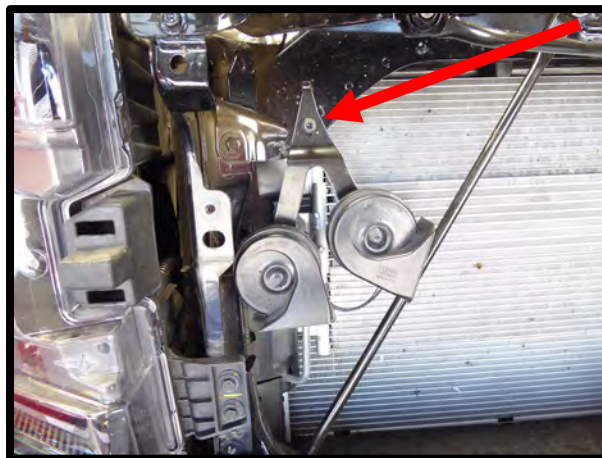
1. **DO NOT START INSTALLATION UNTIL PCM IS UNLOCKED AND CALIBRATION HAS BEEN SUPPLIED.** Follow the step-by-step calibration process instruction sheet. Your PCM must be unlocked to be able to program. Follow instructions to do this through HP Tuners. **Note: Cals can take up to 48 hours after request, this MUST be done before installing the supercharger.**
2. Using an air hose, blow off any loose dirt or debris from engine compartment. If really dirty, then steam clean the engine compartment before proceeding to the next step.
3. Disconnect the negative (-) battery connector with a 10mm wrench. Wrap cable with towel or rubber glove so it doesn't accidentally ground itself during install. The battery cable must remain off for the remainder of the install.
4. Remove upper radiator cover from vehicle by removing the plastic push pins, then lifting cover off from vehicle.
5. Remove grille from vehicle by removing the (4x) bolts.



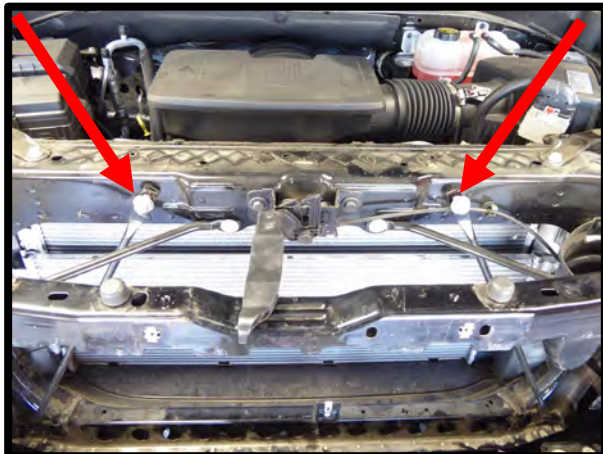
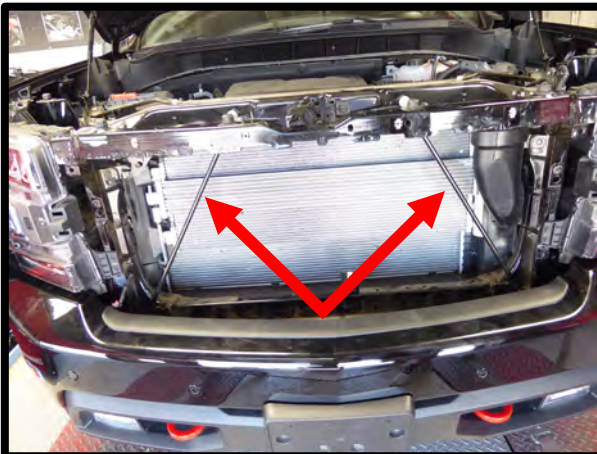
6. Remove the active grill shutters from vehicle by first disconnecting the electrical connector. Remove the (9x) bolts from shutters. **TIP:** the top of the shutter slightly forward and pull the shutter upward over the impact bar. **NOTE:** These will be reinstalled.



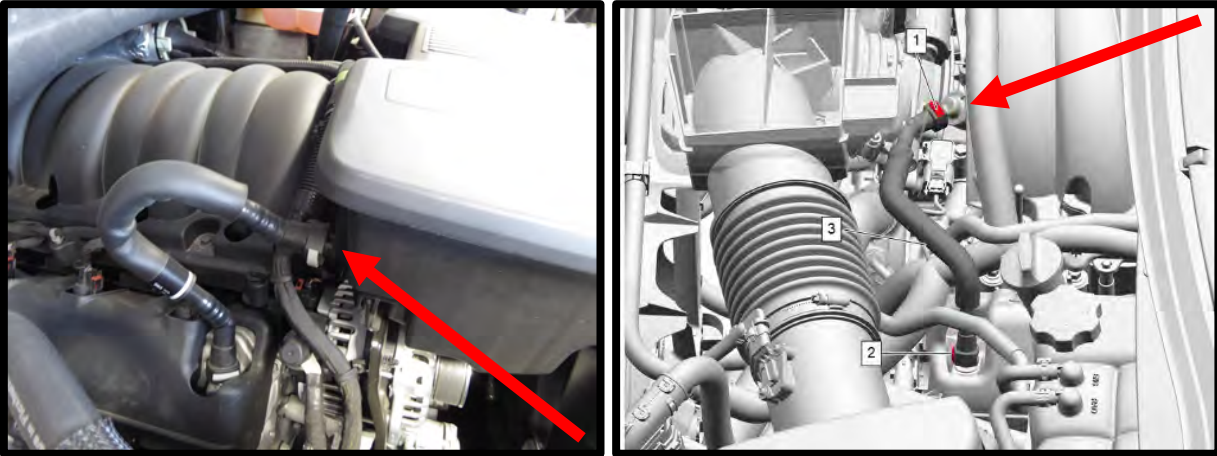
7. Disconnect the horn electrical connector. Remove horn bracket and horns using a 10mm socket. These will go back in same place later.



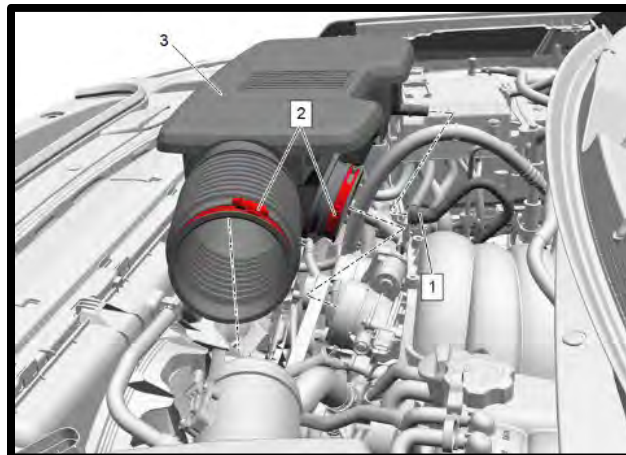
8. Remove the (2x) support rods from vehicle using a 13mm socket (4 bolts). These will go back in same place later.



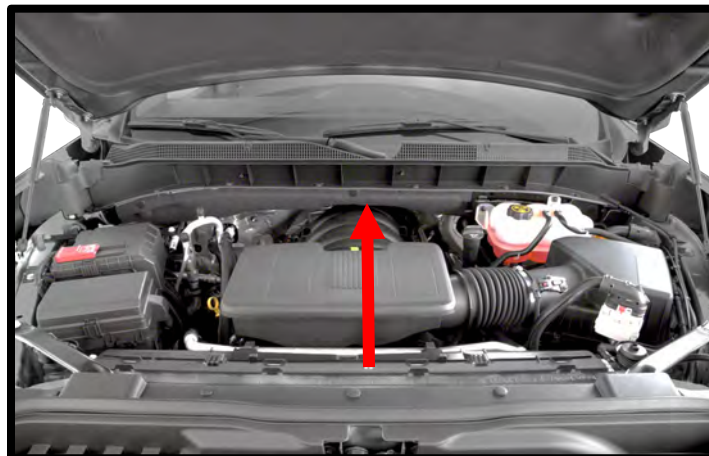
9. Disconnect the PCV and make-up air quick connect fittings from both valve covers and airbox. Even bank connects to air duct, odd bank connects to intake manifold. Both will no longer be used.



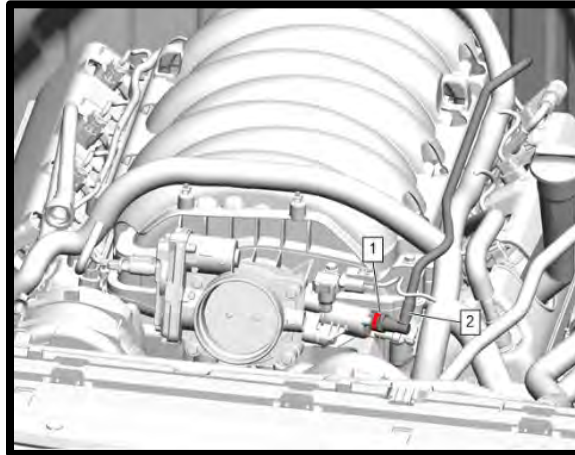
10. Remove the (2x) hose clamps using an 8mm nut driver that secures the air tube to the airbox and throttle body. Lift the factory air ducting away from engine.



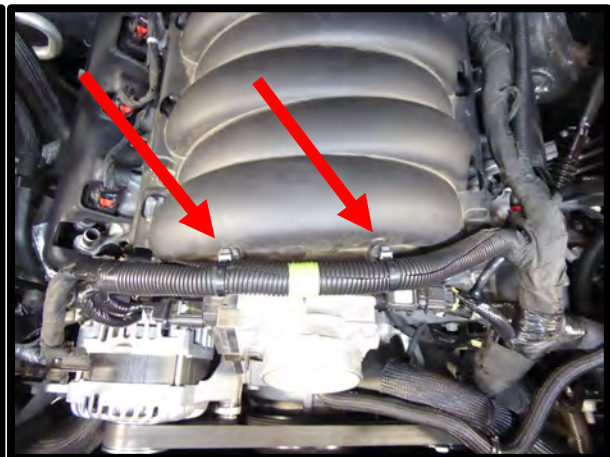
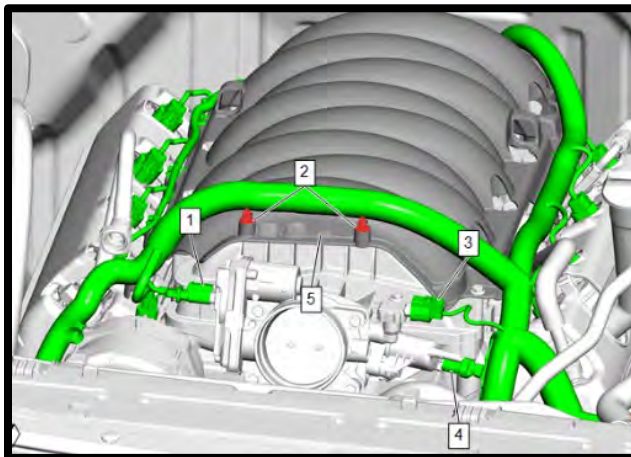
11. Remove the upper firewall shrouding, by removing the (5x) plastic push pins. This will rub the top of the SC and thus, needs to be removed, or notched by test fitting during SC installation.



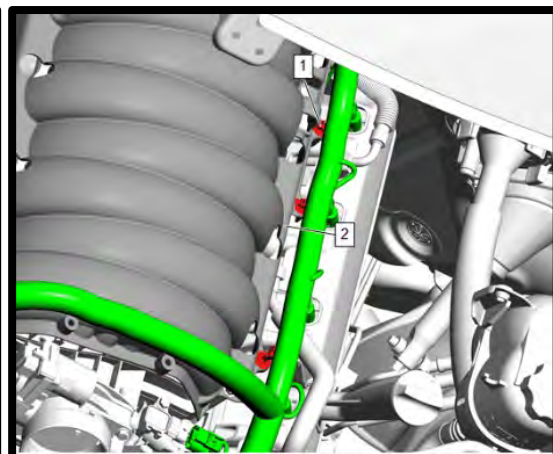
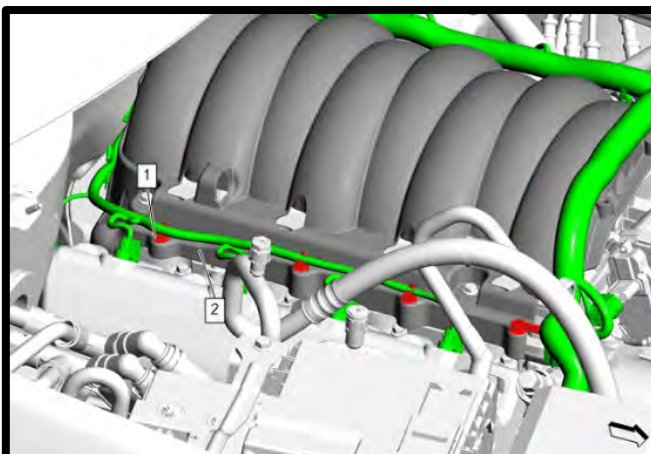
12. Disconnect the factory EVAP solenoid quick connection from solenoid by squeezing the connector and pulling away. Disconnect the EVAP 2-way electrical connector. Remove the solenoid from intake manifold using 10mm socket. NOTE: Keep factory bolt, this will be reused.



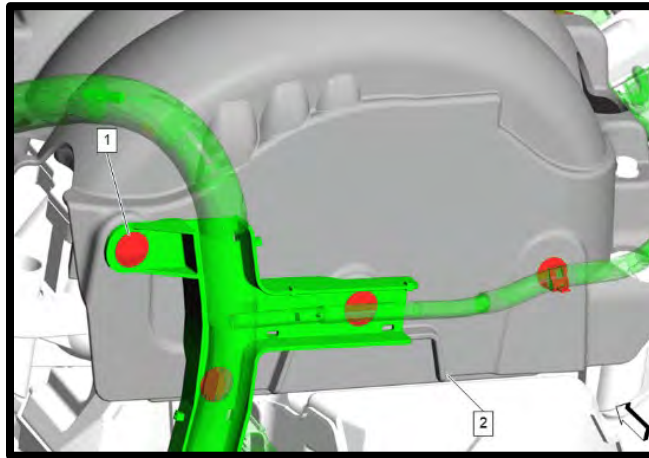
13. Disconnect the electronic throttle connector (1x) by pulling up on the red safety clip, and then squeezing the connector while pulling up. Release the wiring harness (2x) from top of intake manifold. Disconnect the factory MAP sensor (3x) electrical connector by squeezing the connector and pulling it away.



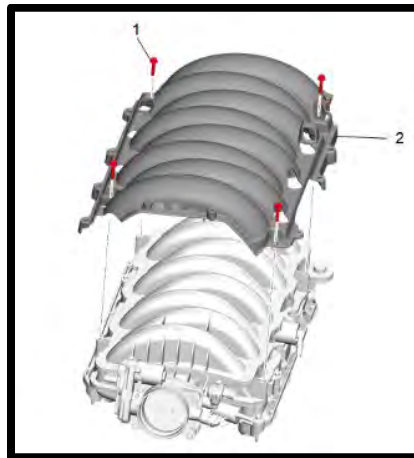
14. Release the (8) wiring harness plastic push pins from the intake manifold. Remove the plastic push pins from the coil wires from manifold cover.



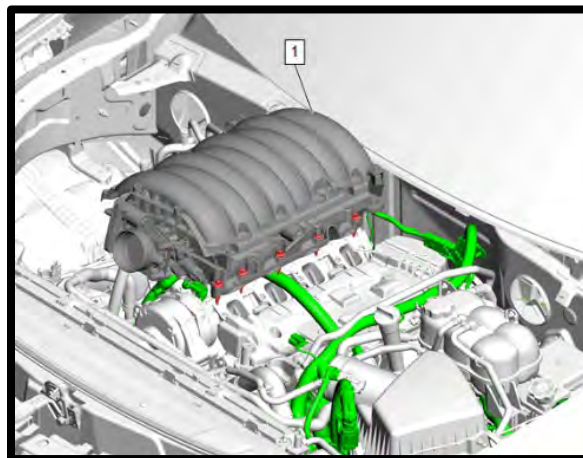
15. Remove the (1) wiring harness retainer from rear of manifold cover. Remove the wiring harness retainers from manifold cover for removal.



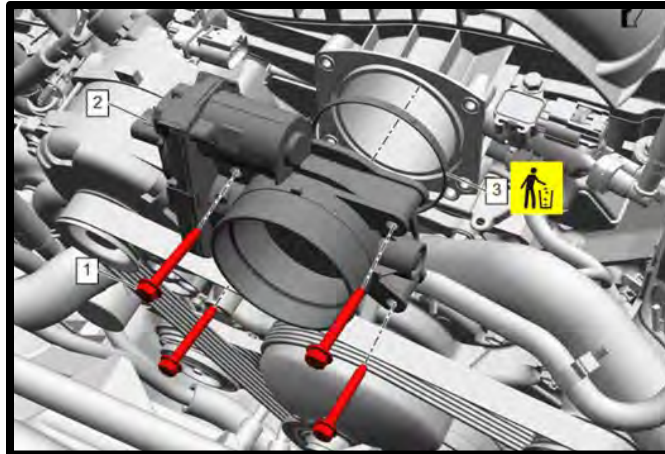
16. Remove the (4x) intake manifold cover bolts using a 10mm socket. These will not be reused.



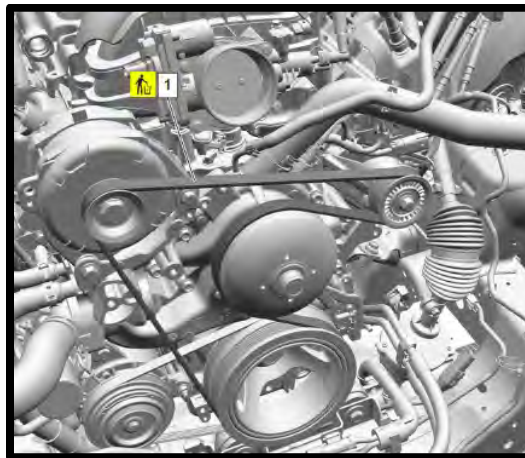
17. Using a 10mm socket, remove the (10x) bolts securing manifold to cylinder heads. Remove manifold from engine. Clean intake manifold surface, temporarily cover with masking or duct tape.



18. Remove the stock throttle body from the engine by removing the (4x) bolts using a 10mm socket.



19. Using a stretchy belt tool, remove the stock 6-rib belt from engine (this will not be reused). **NOTE:** You could also cut belt if you don't have stretchy belt tool.



20. Using a razor, remove the (2x) quick connect fittings from the stock EVAP hose. Apply light amount of grease to orings. Install fittings into supplied 3/8" x 22" hose. Install hose to the back of the cylinder head as it was before and leave loose on odd bank side of engine for later installation.



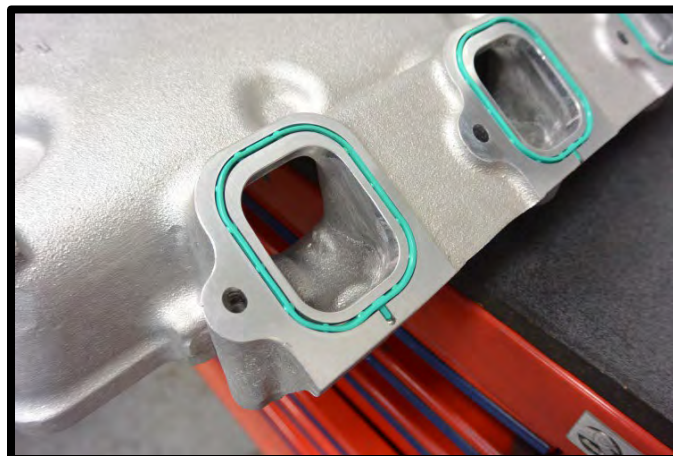
21. Install the supplied LT4 3-bar TMAP sensor (PN# 12644807) to the intake manifold. Apply light amount of grease to oring before installing. Secure to manifold using the supplied 1x 6mm x 20mm SHCS using a 5mm allen. Torque to 90 in-lbs.



22. Install the supplied MAP extension harness to the MAP sensor before install manifold. Press until it clicks in place.



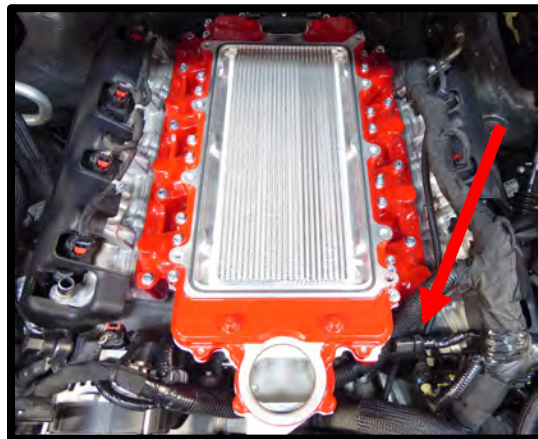
23. Remove the factory orings from the intake manifold (8x). Install these into the new intake manifold.



24. 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.**
25. Remove the tape you previously installed on the intake manifold. Clean the cylinder head surface in preparation for the new manifold installation.
26. Install the new intake manifold to the engine, pay close attention to the orings, making sure they do not fall out or move. Secure intake manifold using the supplied (10x) 6mm x 65mm SHCS. Torque to 89 in/lbs on first pass, follow with a final torque to 130 in/lbs. **NOTE:** Torque from center bolts and work your way out to ends.



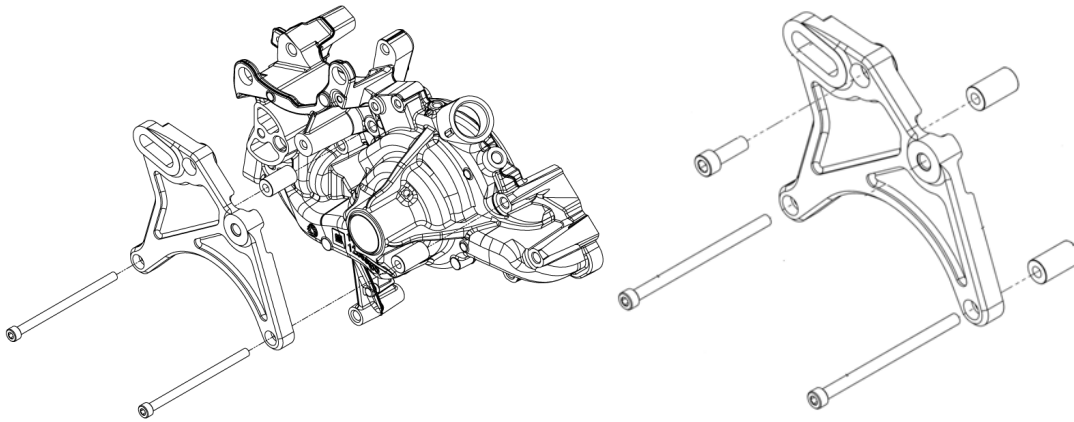
27. Route the MAP sensor pigtail down the odd bank side of intake manifold and secure to factory MAP sensor connector. Secure in place using zip-ties.



28. **(Complete Kits)** Lift up on the plastic coil covers. Carefully pull coil wires from spark plug (you can damage). Remove the stock spark plugs & replace with the Denso ITV22 or NGK LTR7AIX-11. Gap the sparkplug at **.032"**. **DO NOT CRUSH THE ELECTRODE!!** Apply a small amount of anti-seize to threads, then torque to 11 ft-lbs. **NOTE:** NGK plugs out of the box come at .052", this will misfire if not properly gapped.



29. Mount the supplied idler plate to the engine and Whipple manifold as shown. Use the supplied (2x) aluminum spacers behind the idler plate. Secure the (2x) lower mounting points with the 8mm x 130mm SHCS and the (1x) upper mount (to manifold) with the 10mm x 30mm SHCS. Torque the (2x) 8mm bolts to 28 ft-lbs and the (1) 10mm bolt to 35 ft-lbs.



30. Mount the (2x) supplied smooth idlers, PN #38006 to the plate with the (2x) ½" x 2" HHFCS, .500" ID step spacer and .317" pulley spacer on rear of idler pulley. Use the sliding Tee-nut on the upper slotted hole for future belt slack adjustment. Torque the non-adjustable idler pulley ½" x 2" HHFCS bolt to 35 ft-lbs. Leave adjustable loose until later.



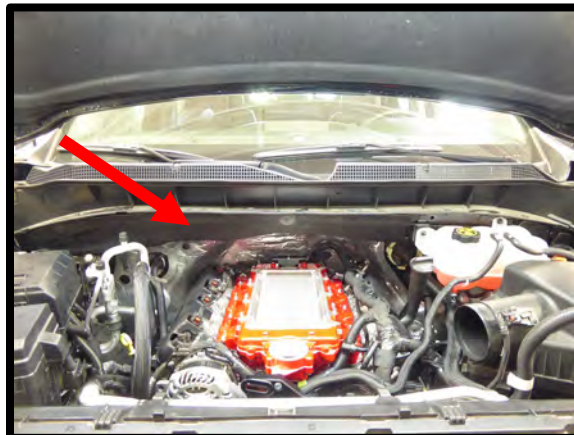
31. Mount the EVAP solenoid to the SC inlet, using the stock fastener and 10mm socket. Connect the new EVAP hose you previously installed.



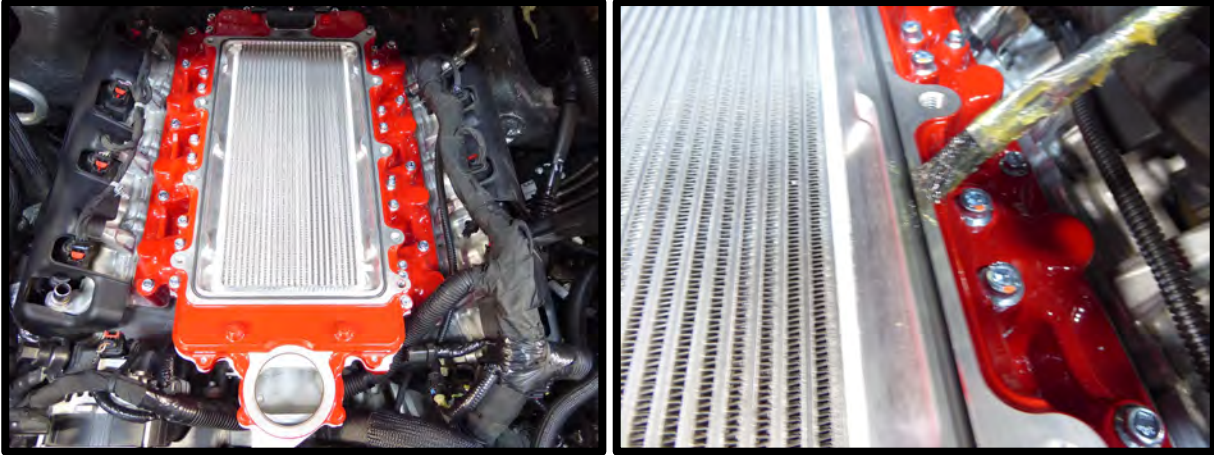
32. Preinstall the ½" x 21" to the RH valve cover fitting with 90deg 15.82mm quick connect fitting. Route open hose end under the intake manifold to opposing sides for future installation to air intake tube. Install supplied 15.82mm 90deg quick connect fitting to end of hose.



33. Remove the upper firewall shrouding, by removing the (5x) plastic push pins. This will rub the top of the SC and thus, needs to be removed, or notched by test fitting during SC installation.



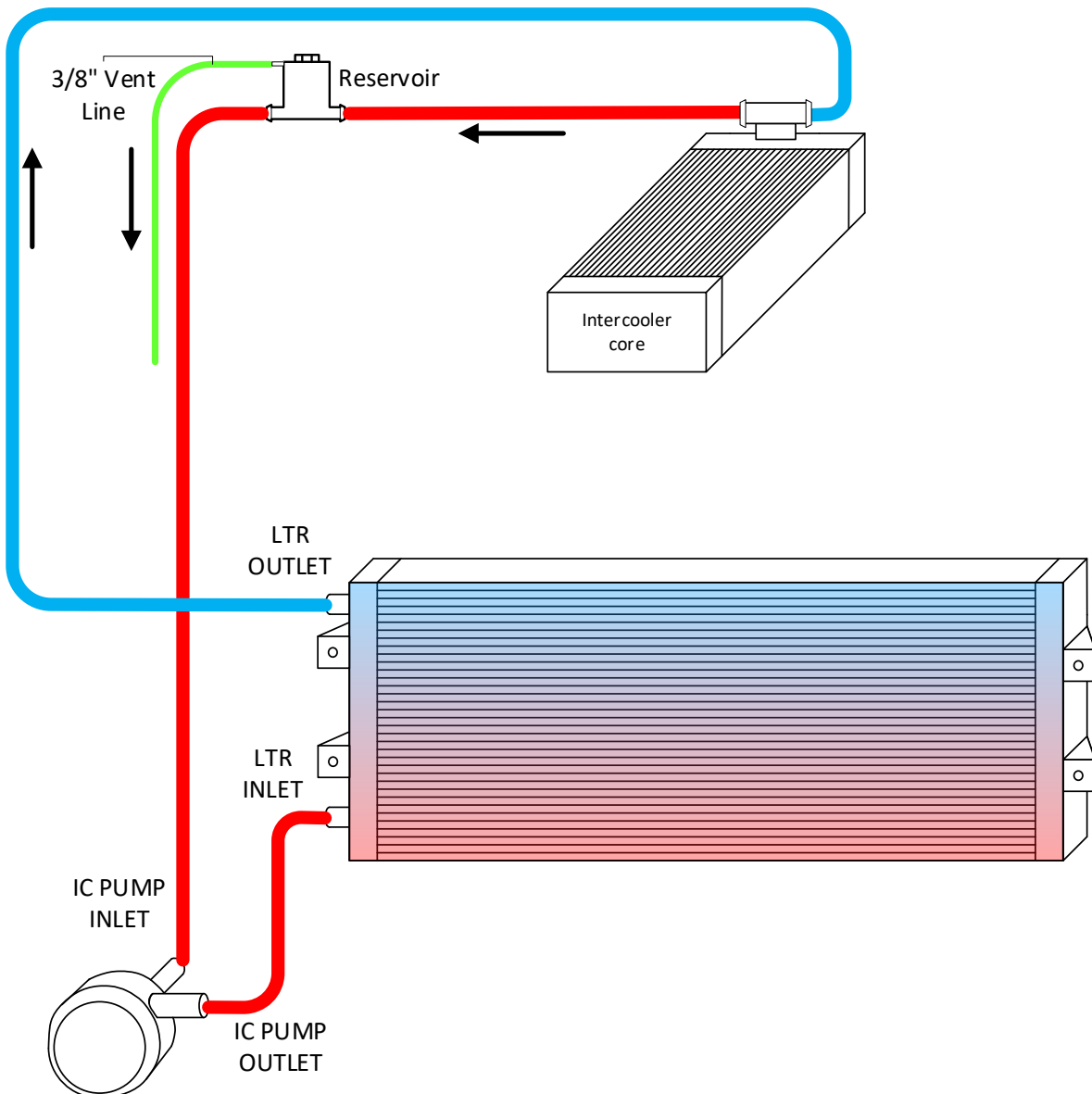
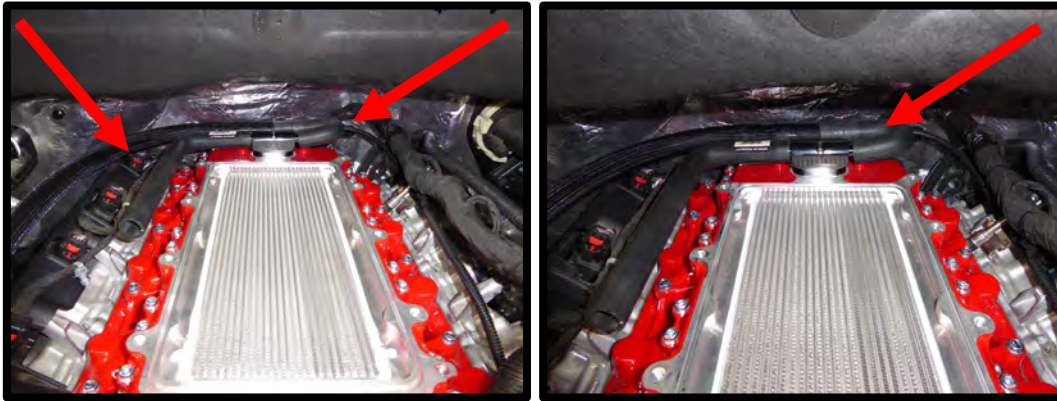
34. Install the supplied mid-plate oring, PN #3103014. Apply heavy layer of grease/Lubriplate to help secure oring in place and easy installation of SC. **NOTE: Failure to do so, may lead to oring coming out during SC installation and cause an air leak.**



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



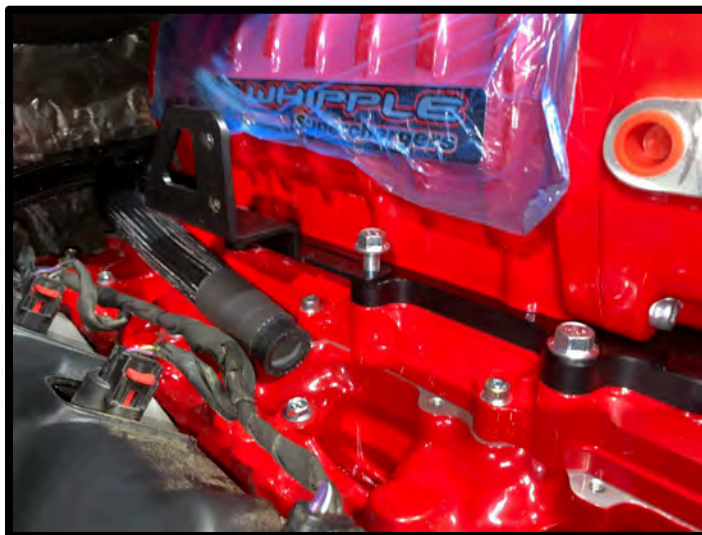
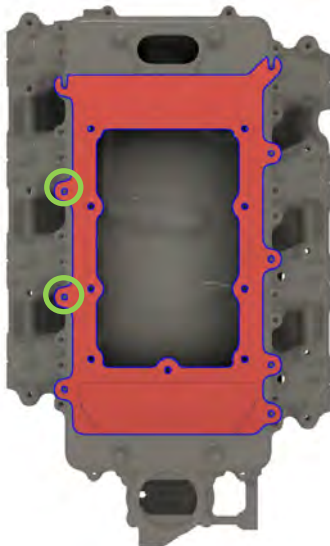
36. Preinstall the intercooler hoses. Install supplied 180deg 3/4" hose (#3103310) to odd bank side of intercooler manifold. Secure end with constant tension clamp. Route to even bank (RH) side for future install. Install supplied 90deg 3/4" x 10" hose #28476 to even bank RH of intercooler manifold (routes to filler reservoir). Secure with constant tension clamp.



37. 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!!**
38. 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.



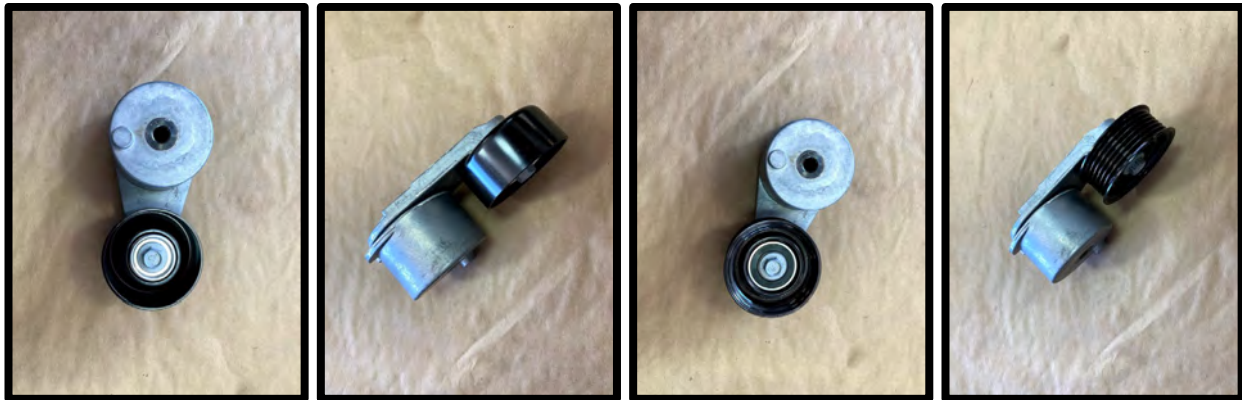
39. Mount IC reservoir to bracket using the (2x) 6mm x 12mm HHFCS. Torque to 112 in-lbs.



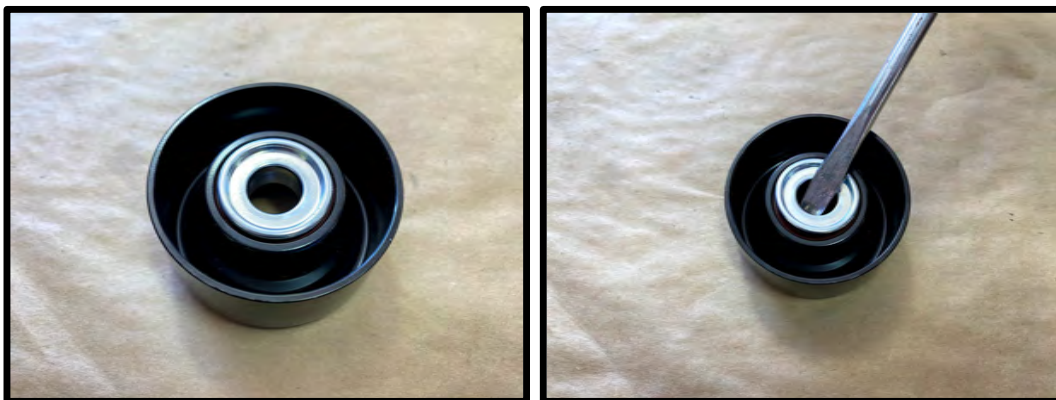
40. Secure previously installed IC outlet hose #5000347 (even bank side) to IC reservoir rear fitting. Secure with constant tension clamps.



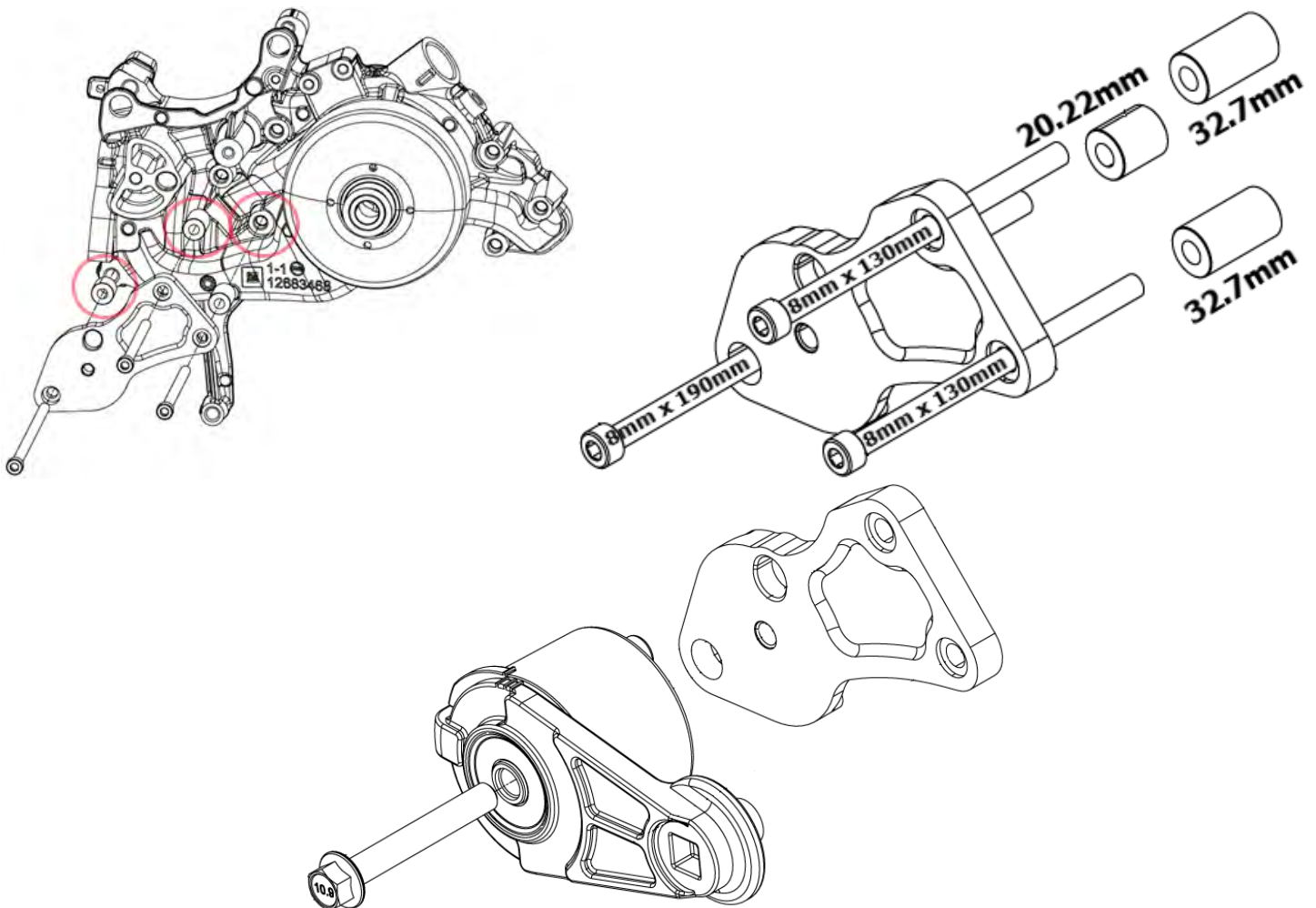
41. Using a 13mm socket, remove the 70mm smooth idler pulley from the spring-loaded tensioner PN #39371. Install the supplied 76mm grooved idler pulley PN #36326 to tensioner using original bolt. Torque to 15 ft-lbs.



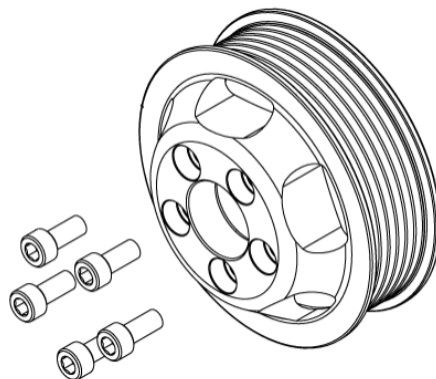
42. Using a flat head screw driver, remove the washer from the 70mm smooth idler you removed from spring loaded tensioner, the washer will not be used.



43. Using a 13mm socket, remove the (3x) stock bolts from water pump. Install the (3x) tensioner plate spacers, (2x) 32.7mm and (1x) 20.22mm. Secure plate to engine using the (2x) 8mm x 130mm SHCS with the 32.7mm spacers, the (1x) 8mm x 190mm SHCS with the 20.22mm spacer. Torque to 15 ft-lbs. Secure spring-loaded tensioner to bracket using the (1x) 10mm x 70mm HHFCS bolt. Torque to 18 ft-lbs.

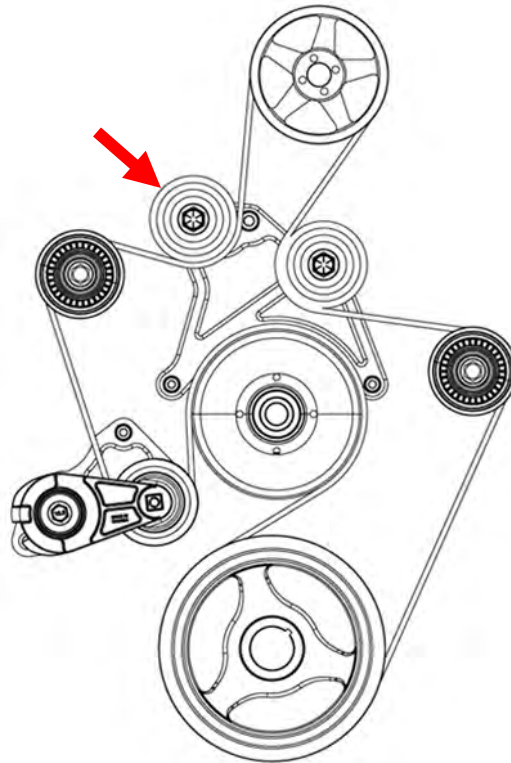


44. Install the supplied supercharger pulley using the supplied (5x) 6mm x 14mm SHCS to secure. Torque to 119 in/lbs using a 5mm allen socket. Use the 6-rib belt to hold the pulley in place to torque. **NOTE:** Loctite or thread locker is not required or needed.

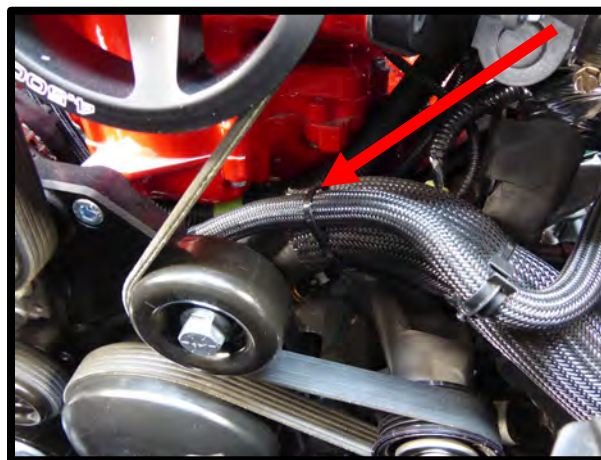


45. Install the supplied 6-rib belt. Using a ½" breaker bar, rotate the spring-loaded tensioner to its max open position. Slide the sliding idler pulley to remove max amount of belt slack. Lock sliding idler into position by torquing the ½" x 2.00" HHFCS bolt to 35 ft-lbs, then release the spring-loaded tensioner. This should position it between 75% to 100% open. Once you run it, the belt will stretch and re-adjustment maybe required. **NOTE:** Leaving belt lose will result in belt coming off during WOT operation, always remove slack from belt system.

- 5.3L: K060947 (94.7" long)
- 6.2L: K060947 (94.7" long)



46. Using a zip-tie, secure coolant relief line to radiator hose so it can't touch the idler/belt.



47. (5.3L) Install the factory throttle body oring to the new throttle body adapter. Install the supplied throttle body adapter gasket and install adapter to the SC inlet using the supplied (4x) 6mm x 30mm FHCS (4mm allen socket), torque to 80 in/lbs.



48. (5.3L) Use the supplied (4) 6mm x 40mm SHCS flange bolt to secure throttle body to throttle body adapter using a 10mm socket, torque to 80 in/lbs. **Loctite™ (#242 blue) threads. NOTE: Motor faces rear of engine.**

49. (6.2L) Install the supplied gaskets on both sides of the throttle body adapter. Use the supplied (4x) 6mm x 60mm hex flange head bolts to mount the stock throttle body to the SC inlet using a 10mm socket. Torque to 89 in/lbs.



50. Install the supplied throttle body extension harness to the factory connector. Ensure that this clicks and locks into place. Route extension under the throttle body and connect extension to throttle body, ensuring it clicks and locks into place. **NOTE:** Secure this extension with a cable tie so it cannot go forward and get into the belt system.

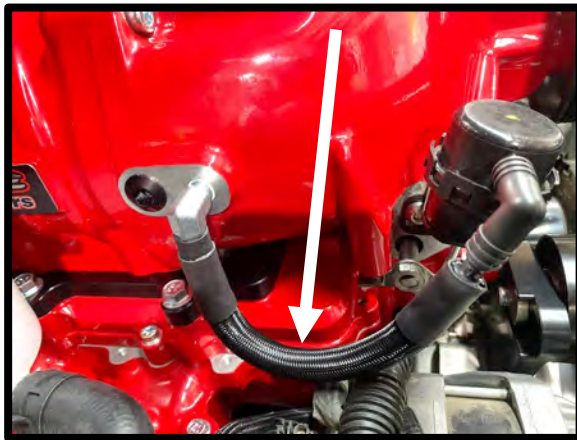
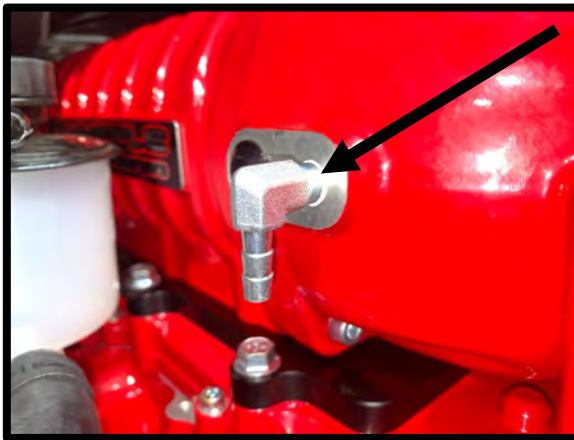


51. Install the supplied (1) 6AN viton oring, PN #2-906-075 to the 9.89mm to 6 ORB fitting. Apply grease to oring prior to installation. Install the plug and fitting.

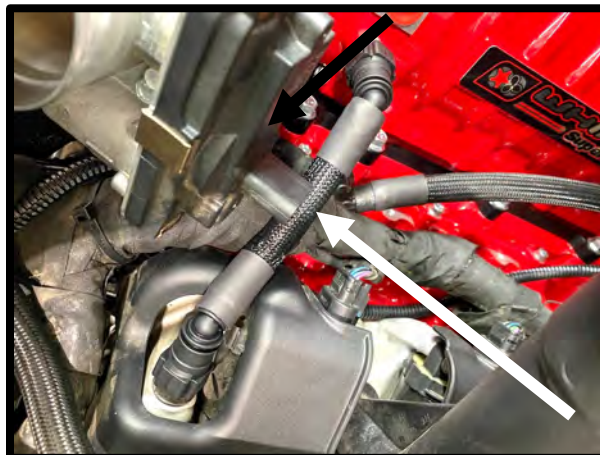
- 9.89mm to 6AN ORB on LH side of SC inlet.
- 6AN ORB plug to RH side of SC inlet. (Oring is preinstalled).



52. Install the 1/4" ID dual 90deg bypass hose from the bypass valve to the 1/4" barb fitting.



53. Install the 3/8" x 7 1/2" hose to the LH valve cover barb. Connect to the 9.89mm fitting previously installed. **NOTE:** Secure line to radiator hose using zip ties to ensure hose can't touch belt.



54. Install the supplied ½" to 15.82mm aluminum fitting into barb of new inlet hose.



55. **(5.3L Only)** Install supplied rubber boot to throttle body flange.



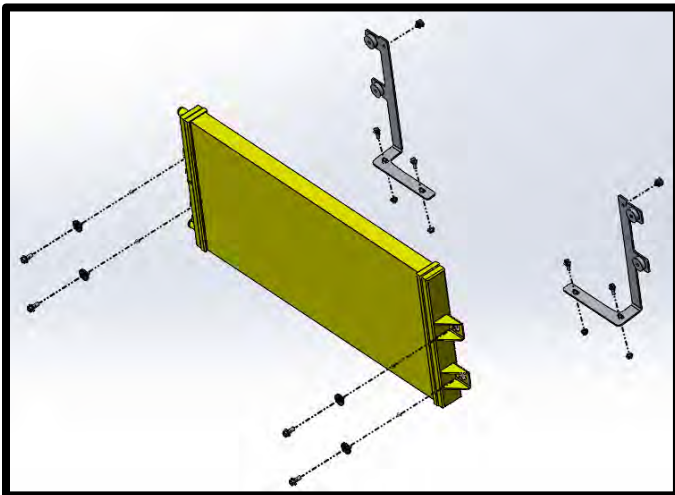
56. Install the supplied Whipple air inlet tube to airbox and throttle body. It is sometimes easier to remove airbox lid to get hose in place. Secure tube with the supplied #72 clamp to airbox and #64 to throttle body.



57. Connect the 1/2" x 21" PCV hose you previously routed from the passenger side (even bank) valve cover. Secure line with multiple zip-ties for clean installation. **NOTE:** Verify hose can't kink or bend.



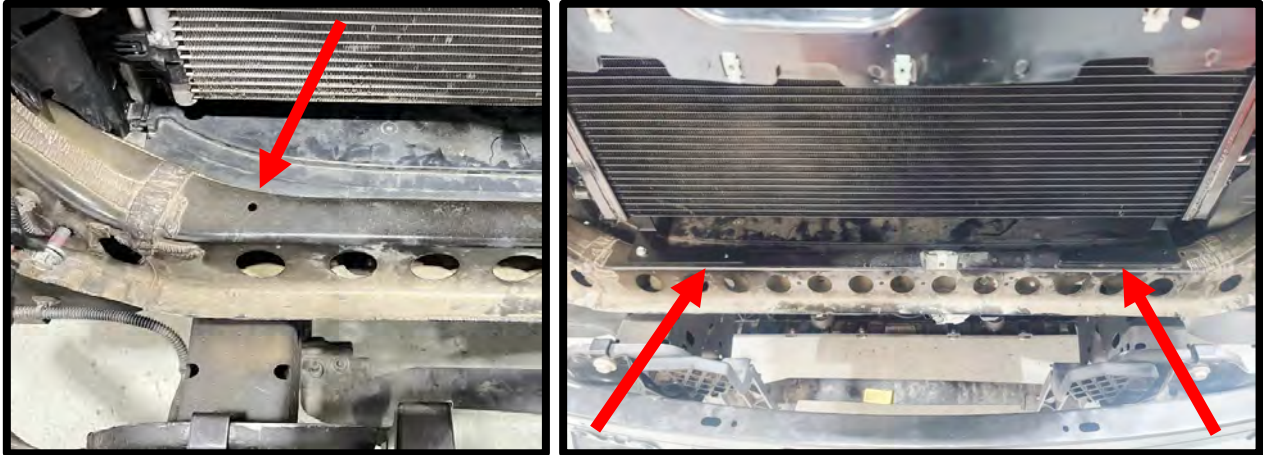
58. Mount the heat exchanger to heat exchanger brackets using the (4x) .813" sleeves and (4x) 8mm x 18mm HHFCS bolts. Leave slightly loose for now. RH side #3103313-01, LH side #3133313.



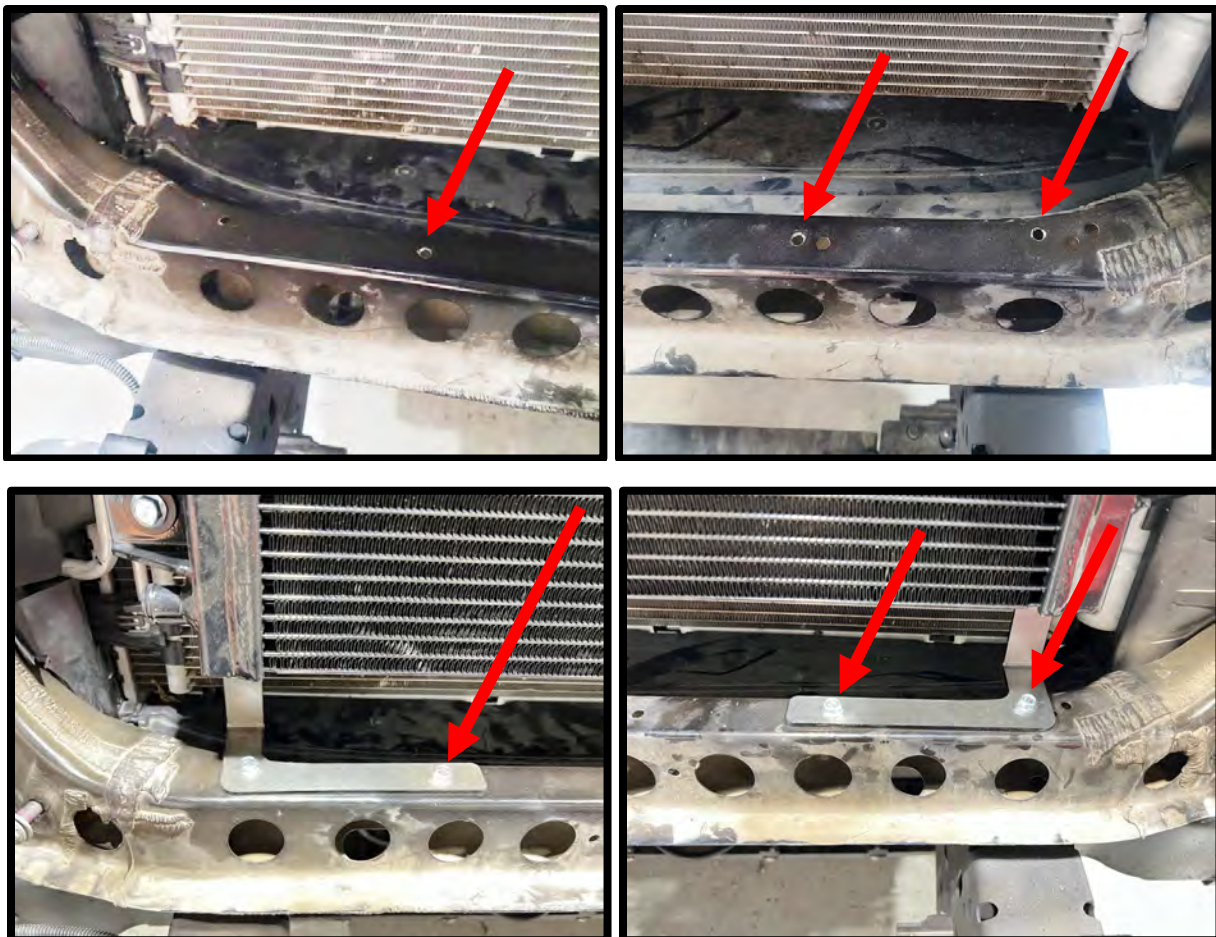
59. Install the supplied padding to the core support over hang at the two corners (LH and RH) closest to the LTR. The overhang cannot rub the LTR.



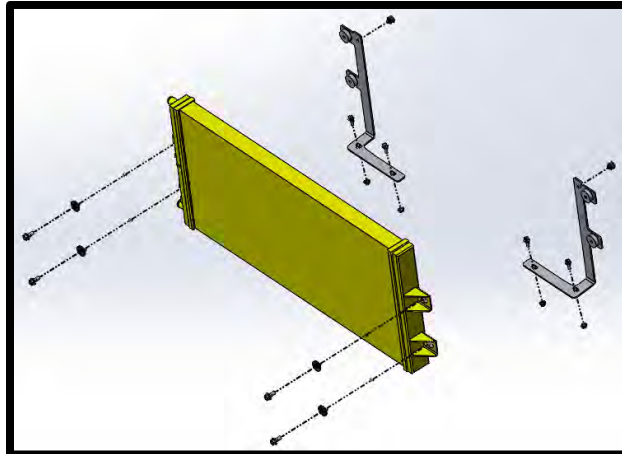
60. Locate the factory drilled hole in the front core support, RH side as a locating point. Install the RH side LTR bracket using (1x) 6mm x 20mm HHFCS and 6mm flanged nut on bottom side. Leave loose for now.



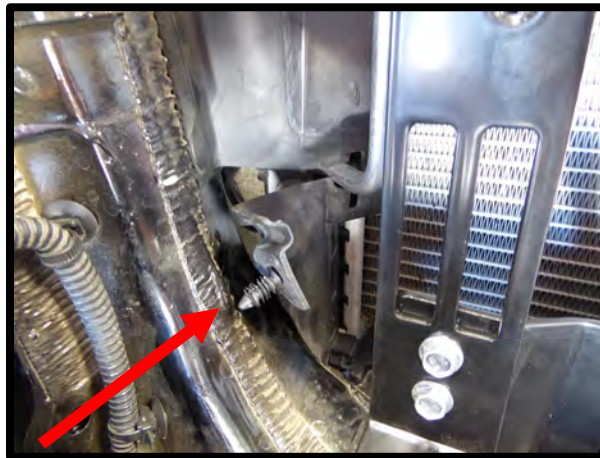
61. Set the RH bracket to the core support. Ensure LTR doesn't hit upper lip to core support or condenser/radiator behind LTR. Use a 1/4" drill bit to drill the (1x) mounting hole in the core support for the RH bracket. Repeating the same step, drill the (2x) holes for the LH bracket. Secure bracket using supplied 6mm x 20mm HHFCS. Secure bolt with the supplied 6mm serrated flange nut. Leave loose for now.



62. Secure all the LTR brackets and LTR mounting hardware.



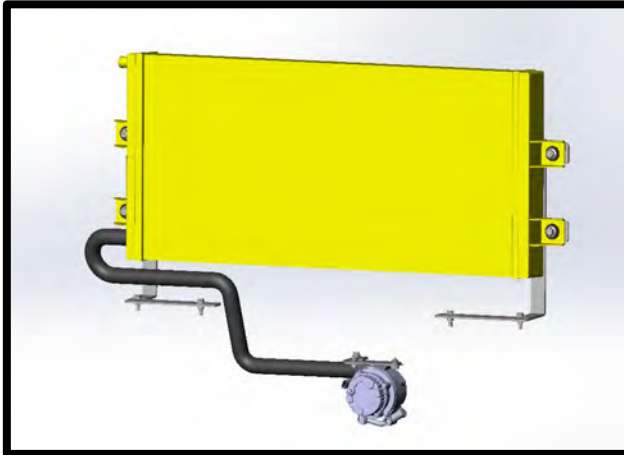
63. Remove the plastic push pins securing the rubber shielding between radiator and radiator support. This is needed for hose routing.



64. Mount the IC pump bracket to the stock predrilled hole, on bottom side of core support. Secure using supplied 6mm x 14mm HHFCS from the top side, then supplied 6mm flanged nut on bottom side. Install supplied t-bolt clamp around IC pump (leave loose until after hose installation). Secure pump to bracket using the (2x) 6mm x 12mm HHFCS bolts.



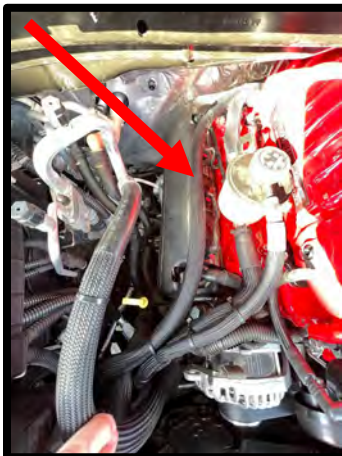
65. Install the supplied U bend hose #3103311 to the pump outlet and bottom LTR inlet fitting. Mark and cut the plastic shrouding (1 ¼" x 1 ¼") to fit the hose. Route to IC pump inlet, secure both ends with supplied constant tension clamps (2x).



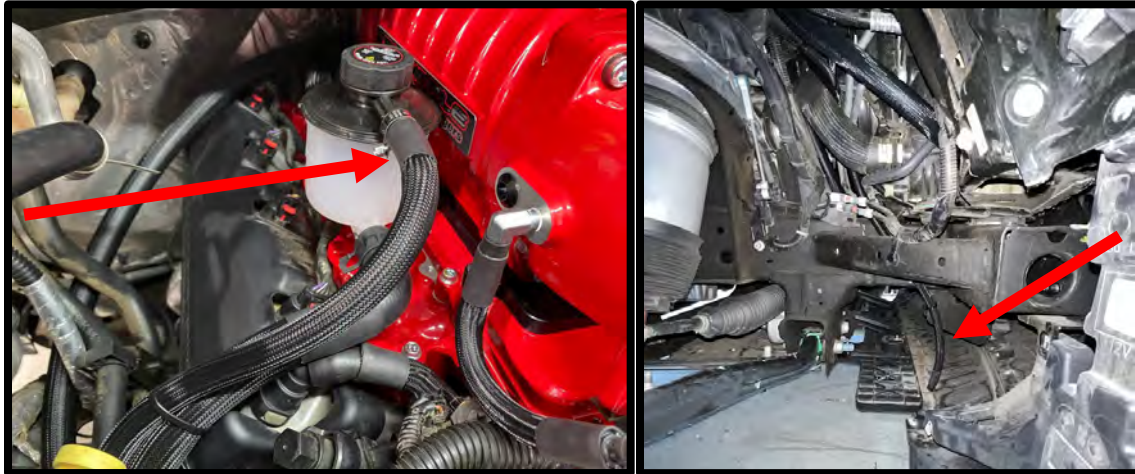
66. Install and route the IC pump inlet hose #3103309 (from IC reservoir front fitting) down the RH side, below radiator to the IC pump inlet. Secure both ends with supplied constant tension clamps (2x). **NOTE: Verify and ensure hose cannot kink and limit intercooler flow, use zip-ties to secure hose.**



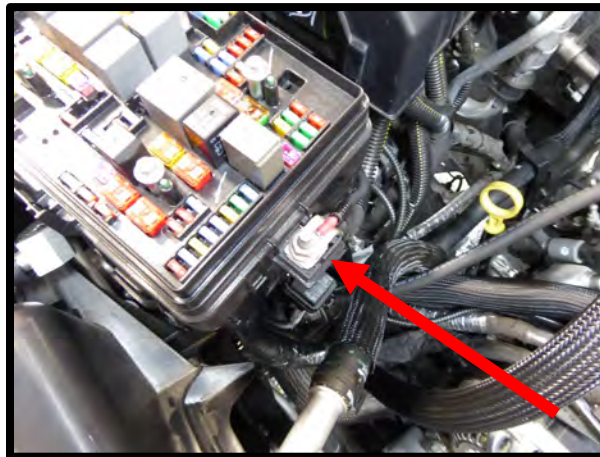
67. Using the ¾" hose coupler and (2x) Gates heat shrink clamps, connect installed #3103310 hose to straight end of #3103324 IC hose. Route down RH side of engine, behind dipstick, through radiator support, up to LTR outlet. Install 90deg end on top heat exchanger fitting, secure with constant tension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



68. Install the supplied 3/8" reservoir breather hose to the IC reservoir barb. Route to front of engine and secure with zip tie to reservoir outlet hose. **NOTE: Verify and ensure hose cannot kink and limit intercooler venting. The system uses a 15psi cap, it will only vent in the case of a failure or over-fill.**



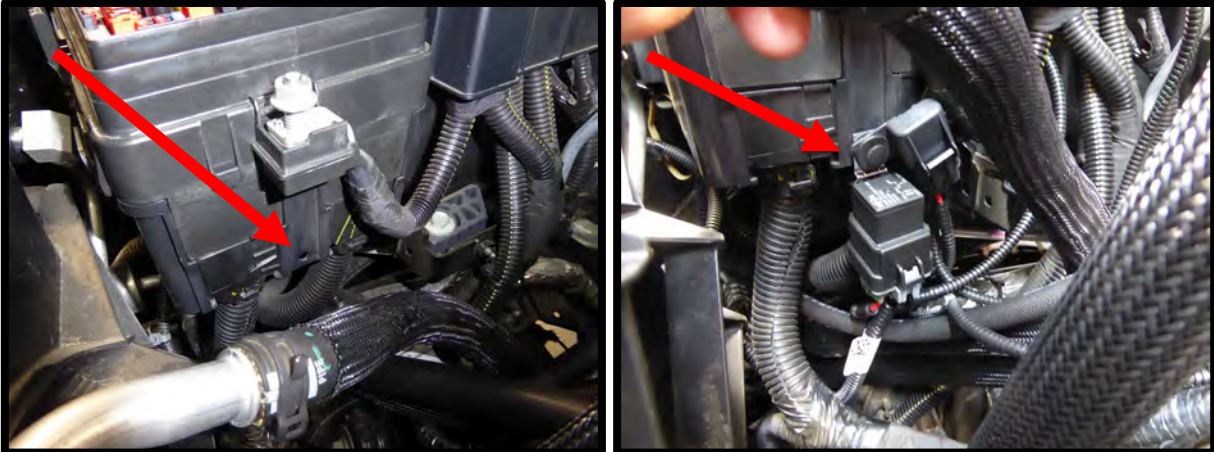
69. Remove the factory fuse box cover on even bank side of engine compartment. Install IC pump relay harness power eyelet under factory stud. Reinstall fuse box cover.



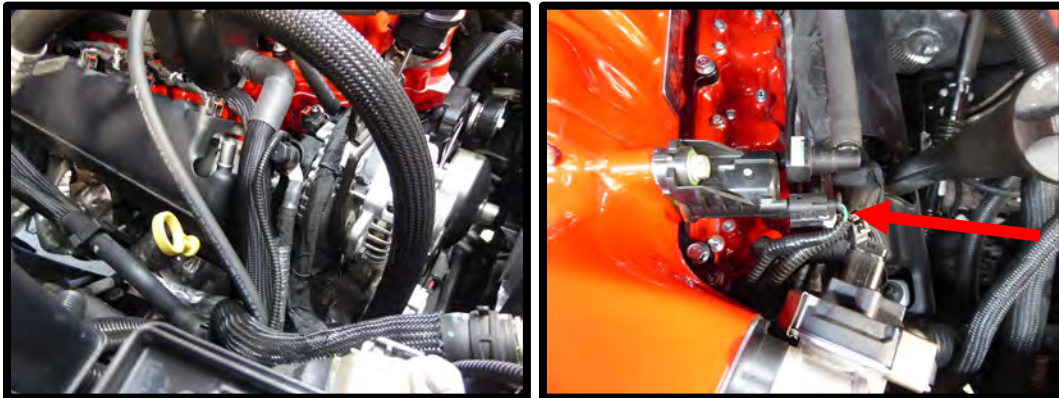
70. Install the IC pump relay harness ground eyelet to the factory post by removing bolt from even bank front core support brace, near fuse box. Install eyelet under factory bolt head.



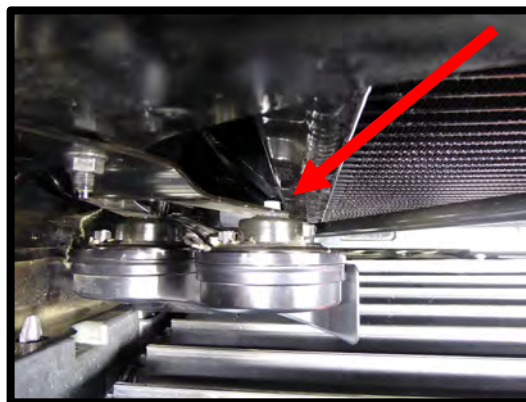
71. Secure IC pump relay and fuse holder using the supplied push pin, on lower side of airbox in factory hole.



72. Route the IC pump 2-way connector and to the IC pump, between the radiator and core support, to the pump. Push connector until it clicks and locks in place and secure wiring using zip-ties for clean installation.
73. Route the IC relay harness turn on wire (orange wire with 2-way connector on end) over the alternator power wire, under the front of the SC/Bypass and to the factory EVAP connector. Connector stock EVAP to female connector and new male end to factory EVAP solenoid. Secure relay harness wires using zip-ties for clean installation and protection from belt or heat sources.



74. Reverse order for shutter, horns, support rods and fascia reinstall. NOTE: Ensure the horn bracket bolt clears heat exchanger. If closer than **5mm**, slightly bend bracket out of the way. Ensure you reconnected shutters.



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 before filling the 50/50 mixture of coolant and distilled water. If one is not available, the following procedure will be adequate.



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.

75. Using a Lisle 24680 Spill-Free Funnel, or equivalent, secure the appropriate filler neck adapter to the reservoir. 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 to match the stock color. 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.**
76. Turn the ignition to the **ON** position, after a brief delay, the electric pump motor will cycle. Air bubbles will begin to rise to the reservoir, 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 15 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 intercooler hoses while the pump is cycling. Building pressure in the system will help push the trapped air from the intercooler system to the filler tee. **NOTE:** Do not let the coolant level in the funnel run empty as this may introduce more air into the system.
77. 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!**
78. 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. **CAUTION: Never go WOT until air has been bled 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.

79. 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.



80. Attach the negative cable to the battery and tighten.

81. Turn the Ignition key on, DO NOT START THE ENGINE. Inspect for any leaks such as fuel, coolant, and intercooler coolant, correct as required.
82. Start the engine and let it idle for 30 seconds and then shut the engine off. Check the SC oil and correct if needed.
83. Start the engine and let it idle. The engine should idle normally between 600-700 rpm. Inspect for leaks. 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. Top off as necessary.
84. Before driving make sure that you have 91 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. Do not use octane booster in fuel to get to 91.
85. DO NOT use aftermarket air filter box or duct with the supplied Whipple calibration. The Whipple calibration is designed to work with the factory air box, factory MAF and Whipple air inlet duct and nothing else. Changes to the air inlet system will require a custom calibration which Whipple does not provide and is not 50-state emissions legal.
86. Install the supplied 50-state legal sticker to factory radiator shroud or on hood near factory emissions sticker. Clean area with acetone or cleaning agent before installing.
87. Test drive vehicle for the first few miles under normal driving conditions. Listen for any noises, vibrations, engine misfire or anything that does not seem normal. The supercharger does have a slight whining noise under boost conditions, which is normal.
88. Re-check the radiator and intercooler reservoir coolant level regularly over the first 1,000 miles, top off level as needed. **NOTE: It is very common for installers to leave air in the system, if pump is varying in RPM, it has air in the system.**
89. After the initial test drive, go through the belt tensioner process again. When next you start driving, 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. Continued detonation can cause engine damage, contact Whipple if you are having this issue.
90. 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.

⚠ 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).
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, if changing the speed of the SC, change oil every 50,000 miles. Use Whipple SC 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 10,000 miles. Replace as necessary.
8. Check intercooler fluid level every 7,500 miles.
9. Replace spark plugs every 20,000 miles. Only run specified plugs, Denso ITV22 or NGK 6510 (.032" gap).
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.

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