WHIPPLE SUPERCHARGER INSTALLATION MANUAL

2011-2021 JEEP/JEEP SRT AND 2012-2024 DODGE DURANGO 5.7L/6.4L ENGINES

*WK-3100-30, WK-3100-32, WK-3101-30, WK-3101-32, WK-3102-30, WK-3102-32, WK-3110-30, WK-3110-32, WK-3121-30, WK-3121-32, WK-3122-30, WK-3122-32, WK-3130-30, WK-3130-32, WK-3131-30, WK-3131-32, WK-3132-30, WK-3132-32 **-CA FOR COLD AIR OPTION, -NFT for No Flash Tool*

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

CALIFORNIA AIR RESCOURCE BOARD EXECUTIVE ORDER #D-231-85

INTRODUCTION

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

1. Please read the installation manual and verify that all items are present. If you are missing hardware or have any questions, please contact your dealer or Whipple Superchargers before you start the installation.
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. ***2015 and UP require a PCM unlocked, follow the PCM reflash instructions.***
5. ***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 any 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
Whipple recommends NGK 5107 (LZTR7AIX) with **.028" 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 your clothing away from moving parts when the engine is running.
- Do not wear loose clothing or jewelry that can be caught in rotating or moving parts.

Symbol Key

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

➲ NOTE

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

!! CAUTION !!

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

⚠ WARNING!!

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

COMMON ABBREVIATIONS

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

SUPERCHARGER INSTALLATION INSTRUCTIONS

Before you begin installing the Whipple SC system, make sure you have completed the **Pre-Installation Checklist**. Be sure you have:

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.

☐ Have you completed all items in the **Pre-Installation Checklist**?

➲ NOTE

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

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

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

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

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

ILLUSTRATED INSTALLATION GUIDE

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

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

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

1. 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.

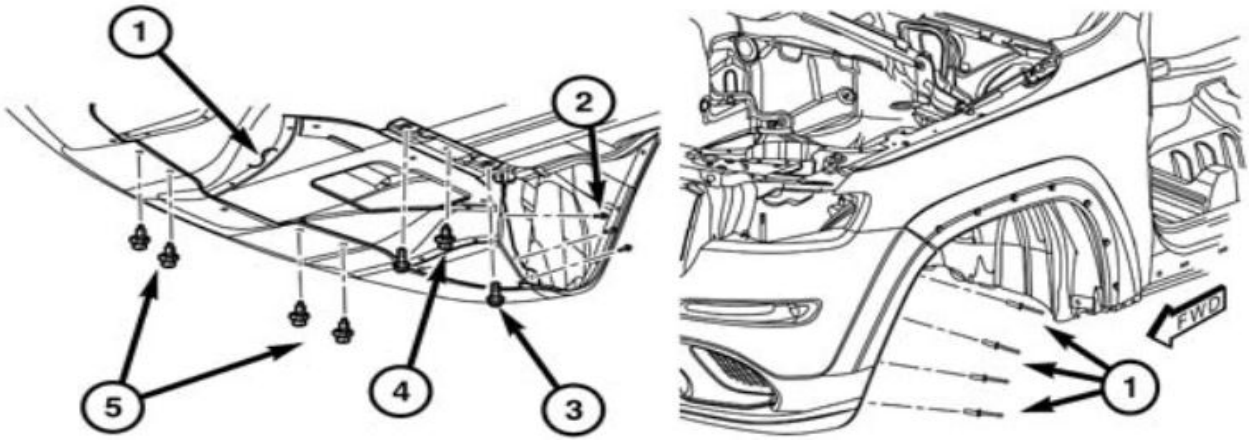
2. Using the supplied flash tool, connect to the vehicle's OBDII port and follow the on-screen instructions to get factory calibration strategy code ID. Go to the Whipple website, www.whipplesuperchargers.com and click on the CALIBRATION REQUEST tab. Fill out the requested information and include upload of stock cal. Once emailed, you will receive a support ticket. Use the support ticket # for any questions or issues. **Note:** Make sure your battery is fully charged before installing, if not, install a battery charger to maintain 14volts.

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

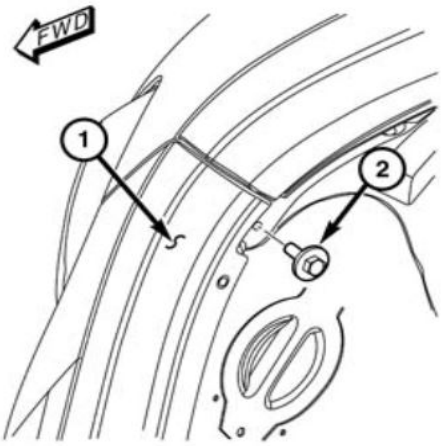
4. With a 10mm wrench disconnect the (-) negative battery cable (under the passenger rear seat). Make sure the cable is far enough away from the battery that it does not accidentally touch the battery and make connection during the installation.

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

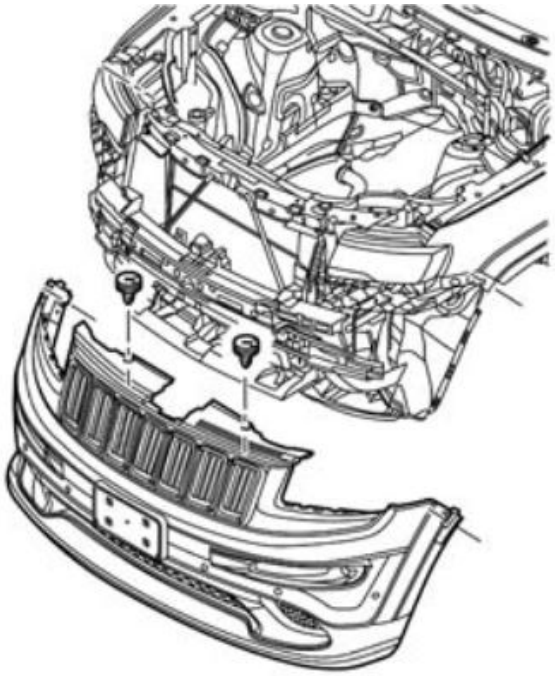
6. Remove the front fascia from Jeep SRT:



- ☐ Remove the fasteners (2) from the front belly pan (1) to each wheel liner.
- ☐ Remove the push pin (4) and the rear fasteners (3) from the belly pan.
- ☐ Remove the front push pins (5) from the belly pan to the fascia and remove the belly pan (1).
- ☐ Remove the rivets (1) from the front fascia to each wheel liner.

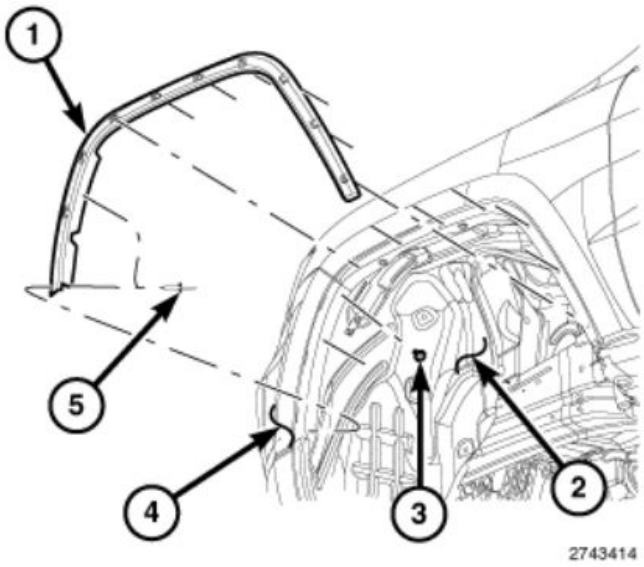


☐ Remove the fasteners (2) securing the fascia (1) to the support brackets.

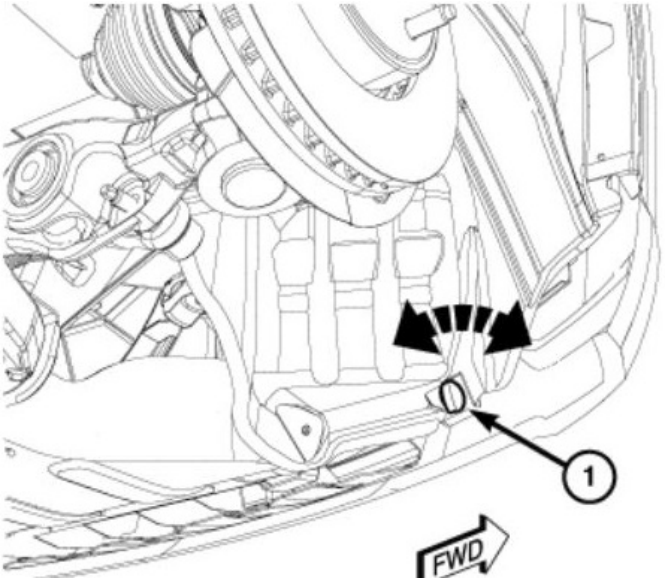


☐ Release the integral latches at the wheel well openings and the radiator grille assembly.
☐ Disconnect the fog lamp electrical connectors, if equipped.
☐ Remove the upper push pin fasteners and remove the fascia.

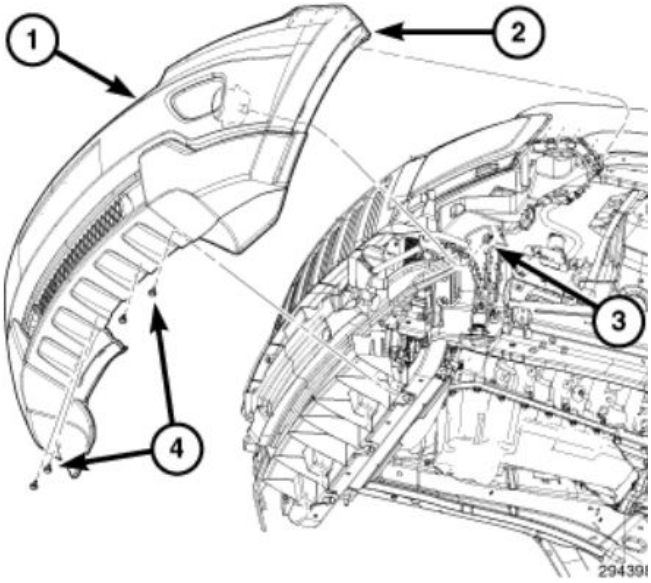
7. Remove the fascia from the Jeep Grand Cherokee:



☐ Remove the plastic rivets (5) at each wheel well that secure the flares (1) to the fascia (4).
☐ Release the clips and partially remove both front fender flares.
☐ Remove the fasteners (3) that secure the wheel liners (2) to the fascia (4).

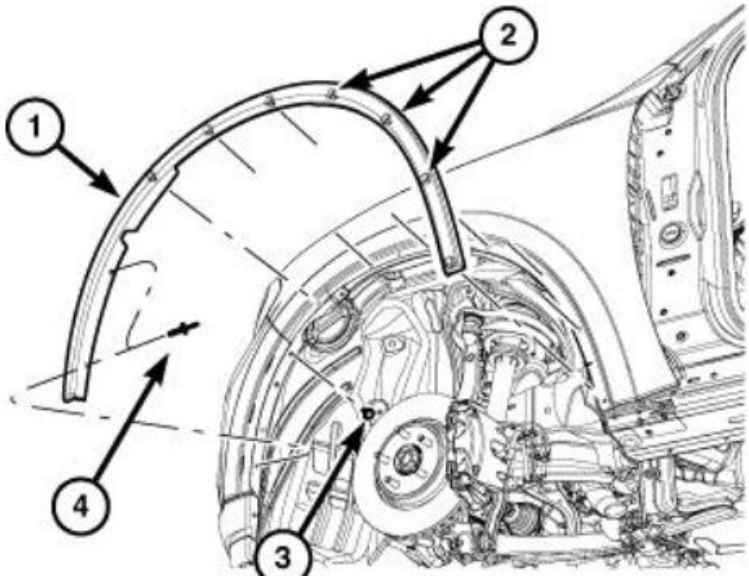


☐ Remove the 1/4 turn fasteners (1) and separate the lower wheel liner from the fascia.

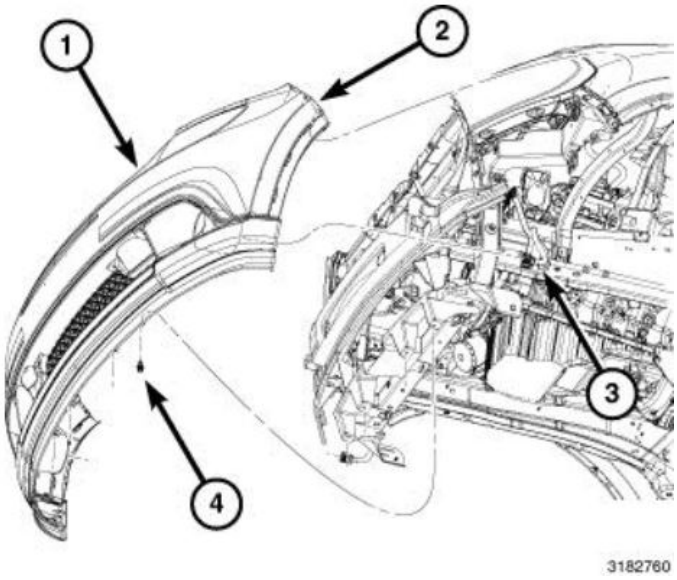


☐ Remove the four lower retainers (4).
☐ Release the integral latches at the wheel well openings (2) and the radiator grille assembly.
☐ Disconnect the fog lamp electrical connectors (3), if equipped.
☐ Remove the fascia assembly (1).

8. Remove the front fascia on the Dodge Durango:

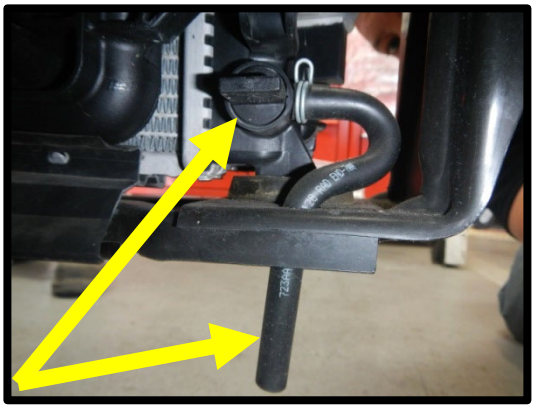


- ☐ Remove the two plastic rivets (4) that secure the flares (1) to the fascia.
- ☐ Using Trim Stick (C-4755) or equivalent, carefully release the seven clips (2) attaching the flare (1) to the fender and remove the flare.
- ☐ Remove the fasteners (3) that secure the wheel liners to the fascia.

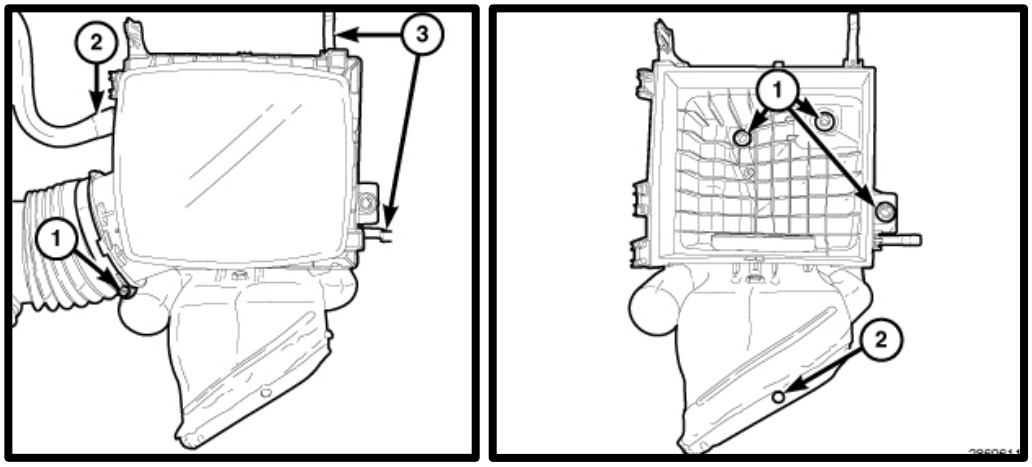


- ☐ Remove the four lower retainers (4).
- ☐ Release the integral latches at the wheel well openings (2) and the radiator grille assembly.
- ☐ Disconnect the fog lamp electrical connectors (3), if equipped.
- ☐ Remove the fascia assembly (1).

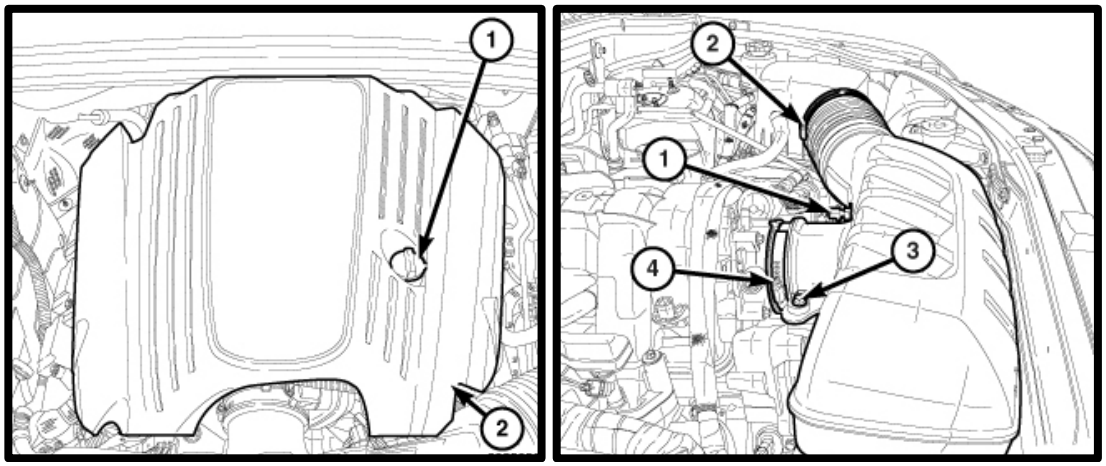
9. With a cool engine, drain the coolant into a clean drain pan for reuse later. Remove the radiator cap to vent the system. (Be careful not to remove the radiator cap if the engine is still hot). The drain spigot is located on the passenger, bottom side of radiator. Loosen spigot and let it drain into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



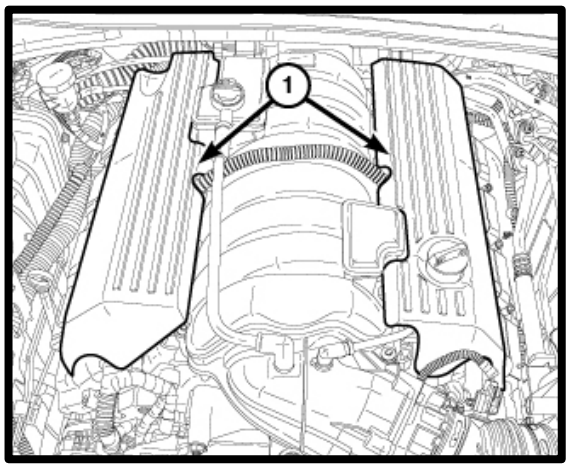
10. Loosen hose clamp from airbox lid. Remove make-up air vent line from airbox. Unclip airbox lid and remove lid and stock filter element. Remove airbox lower from vehicle for later modification. 6.4L, disconnect air temp sensor connector and remove air inlet tube.



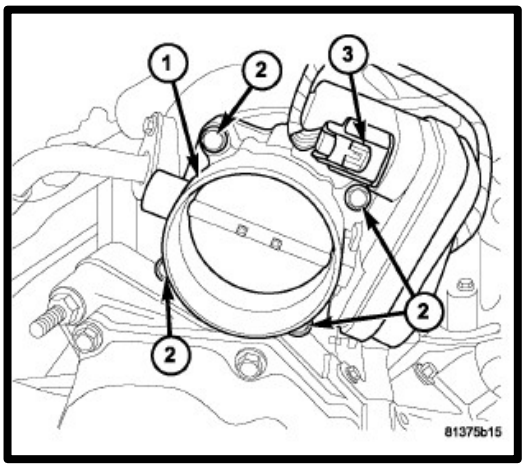
11. (5.7L) Remove the oil fill cap, then lift and separate engine cover. Disconnect IAT sensor. Loosen hose clamps and remove air inlet.

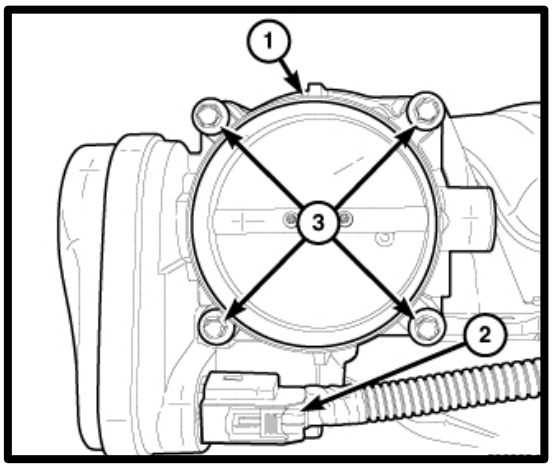


12. (6.4L) Remove the factory coil covers by carefully pulling up. Store these for later use.

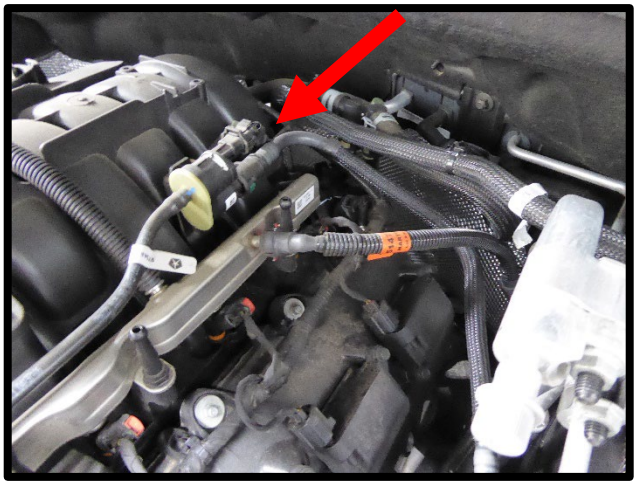


13. Disconnect the electronic throttle electrical connector by pulling the locking tab back and then squeezing the connector to release. Remove the throttle body from the engine by removing the (4) mounting bolts, use an 8mm socket and ratchet.

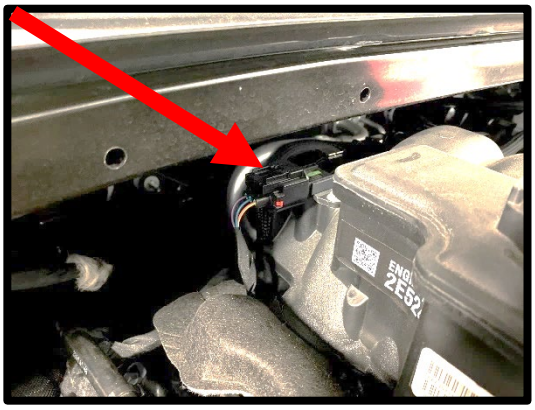
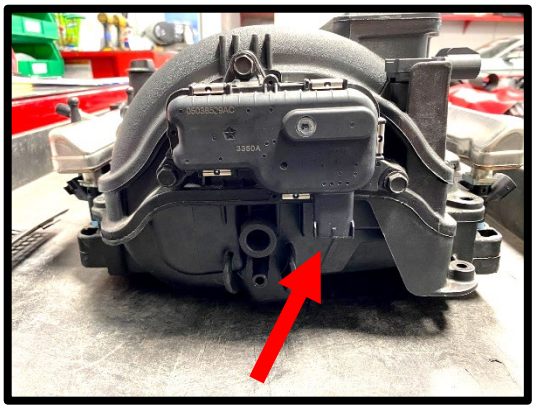




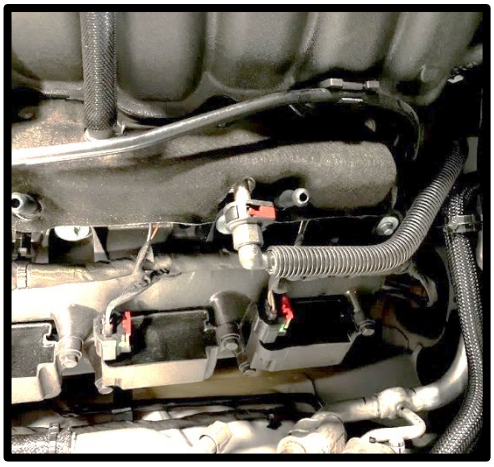
14. Remove the factory EVAP tube from the factory intake manifold and EVAP solenoid. **NOTE:** EVAP solenoid position varies by model year.



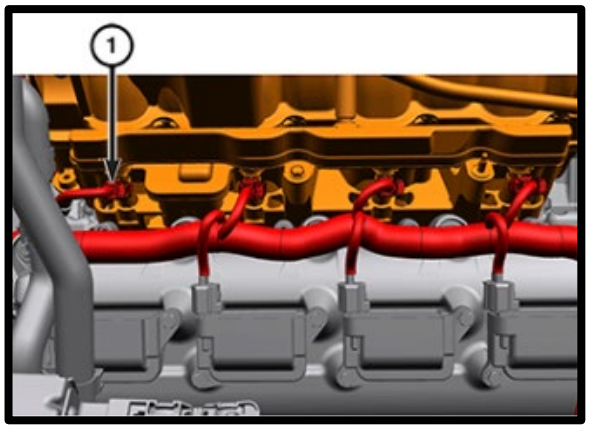
15. Disconnect the factory MAP sensor on the back of the intake manifold by pulling the locking tab back and then squeezing the connector to release. When applicable, unplug the active runner control connector from the back of the manifold (not all vehicles equipped with this). There is a supporting tab connecting the wire harness to the intake manifold, remove this so the intake manifold can be removed with ease. **NOTE:** When available, this will be used later.

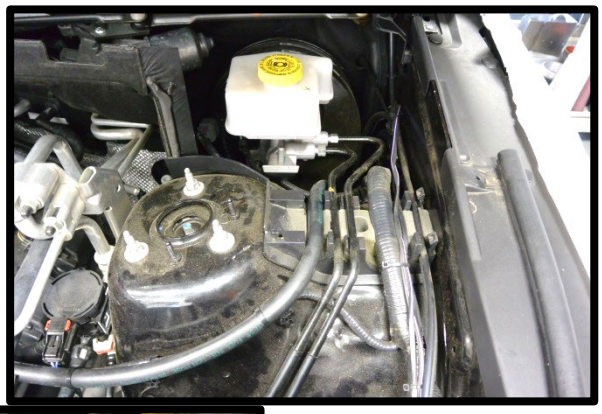
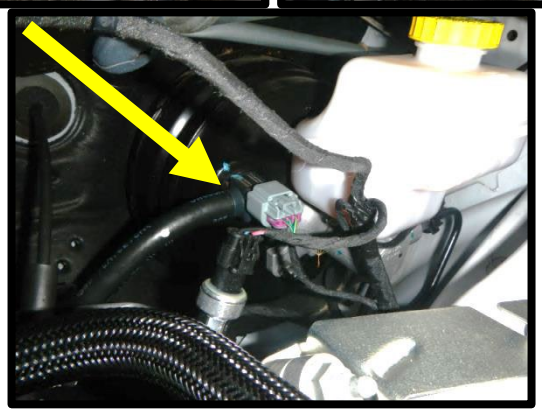
16. Remove the factory fuel supply line by squeezing the connector and pulling back or use a 3/8" fuel line removal tool (varies by year/application). It's a good idea to wrap a shop rag around this before you pull to catch any fuel that may drip. Disconnect the fuel injector connectors (8) by pulling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



17. Disconnect the fuel injector connectors (8) by pulling the locking tab back and then squeezing the connector to release.

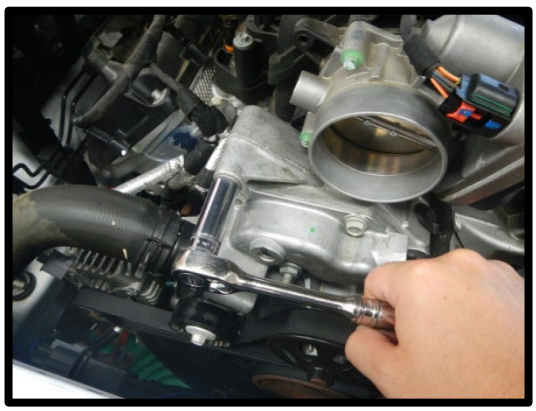


18. Remove the factory plastic shielding on the driver side inner fender/firewall for access to the brake booster. Remove the factory brake booster line from the back of the intake manifold and the brake booster. It's easier to remove from the brake booster and then snaking through when you're removing the intake manifold. Remove the factory 90deg plastic adapter from the brake booster hose end for later use. Note: Disconnect electrical connector at the brake booster by squeezing the connector to release.

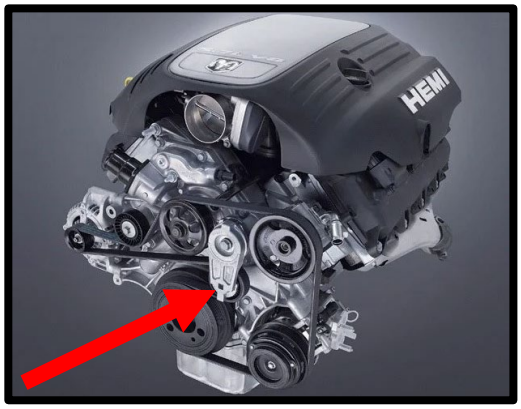




19. Using compressed air, remove all foreign debris from intake manifold and surround areas. Remove the factory (10) intake manifold bolts using an 8mm socket, 8" extension and ratchet. Carefully lift the intake manifold from the engine, be cautious that nothing falls into the open ports. Remove the factory foam insulation from valley of block, this will not fit with new manifold. 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. Remove the factory bolt that the steel support inlet was bolted too using a 15mm deep well socket and ratchet.

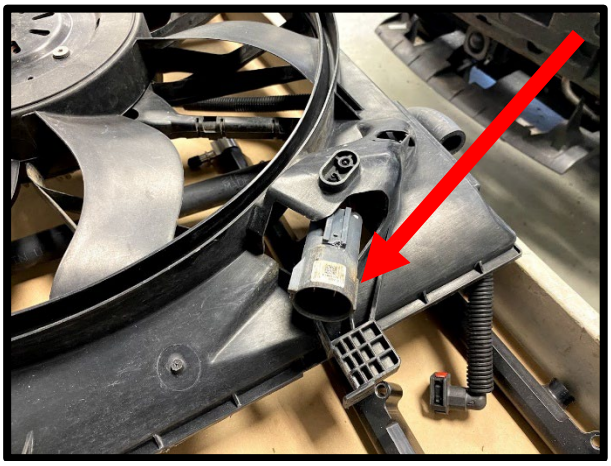


21. Using a 3/8" ratchet or breaker bar, release the tension from the spring-loaded tensioner by rotating clockwise. Remove the 6-rib belt from the engine. Using 16mm socket, remove spring loaded tensioner from engine (needed for belt system installation).

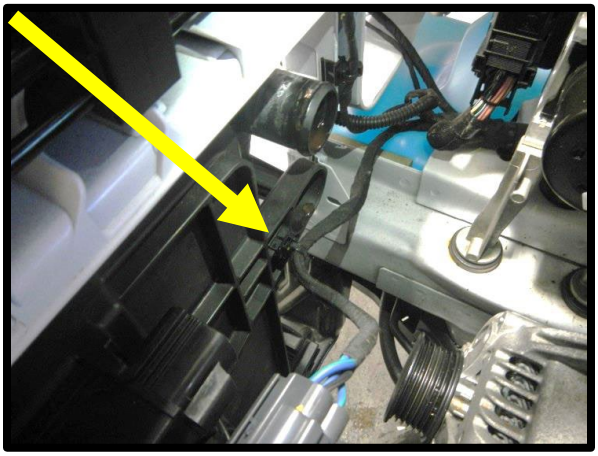


22. (**Complete kits**) Remove the (8) coil electrical connectors. Remove the coils using a 10mm socket and ratchet (2 bolts per coil). Lift the coil out and use a 5/8" spark plug socket and ratchet to remove the stock spark plugs (16). Apply light amount of anti-seize to the new spark plugs, torque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

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



24. Remove the edge clip that secures the fan wiring harness to the fan by using a small flat head screw driver. This will be reused. Remove the two zip ties holding the power steering line to fan.

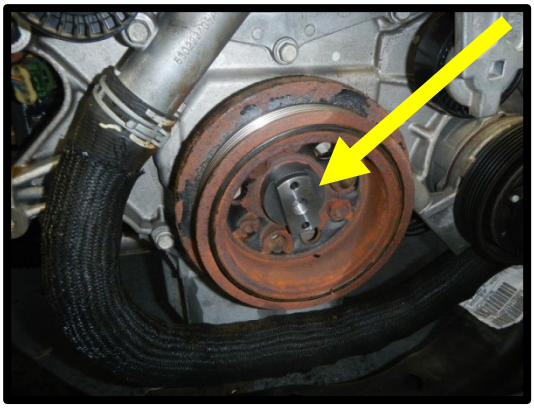


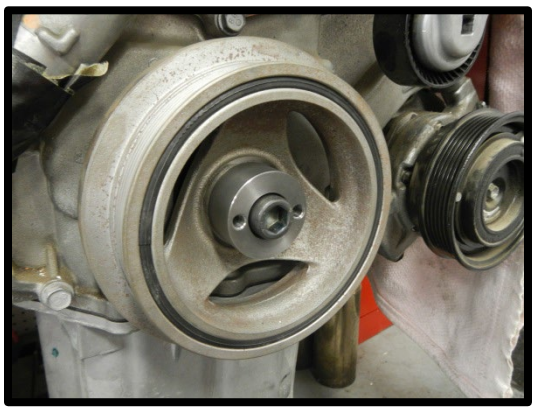
25. Remove the electric fan from the radiator for proper clearance.

26. Using a ½" impact gun and a 21mm socket, remove the factory damper pulley center bolt.

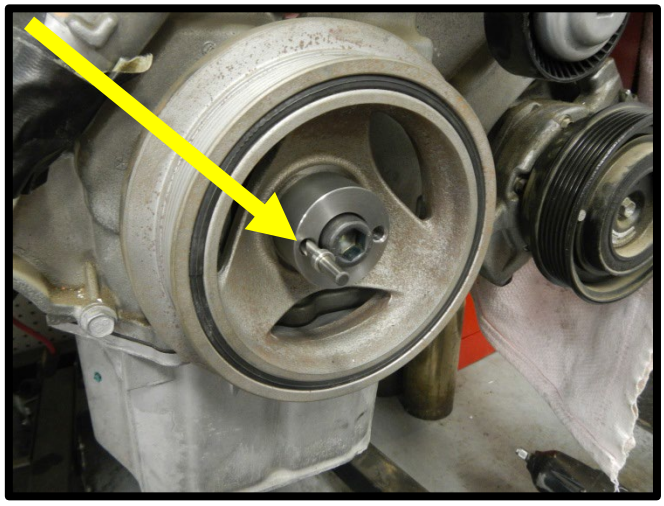
27. Carefully blow off any debris from the damper. It's a good idea to place some rags, blanket or tape over the radiator so debris does not get stuck inside the fins.

28. 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:** Balancers vary in shape from year to year, crank pin kit works on all.

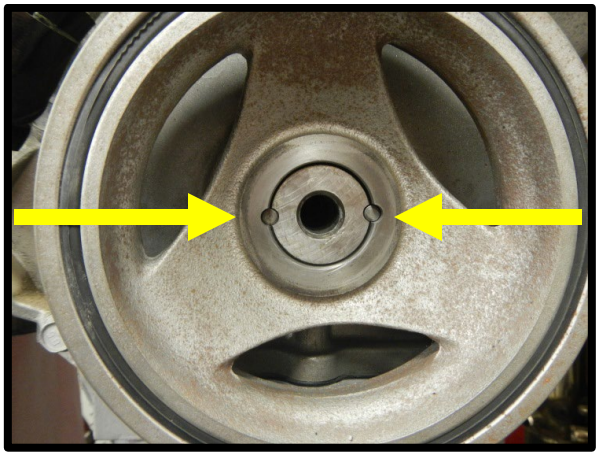
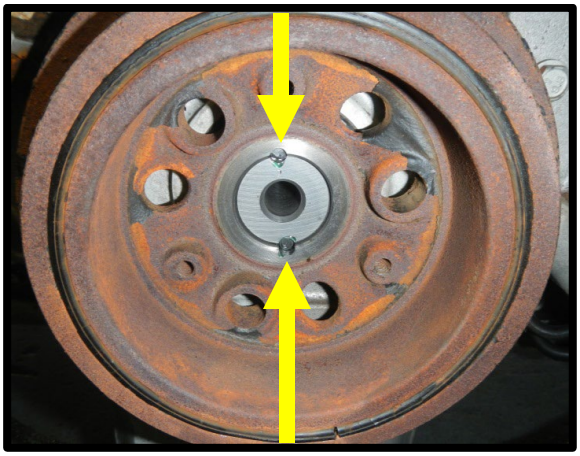




29. Use the supplied ¼" drill bit (it has a stop at roughly 2.875" from drill bit tip), drill 2 holes into the crankshaft thru the (2) holes in the pin adapter. Blow off debris when done drilling. Remove the pin adapter using an adjustable wrench.

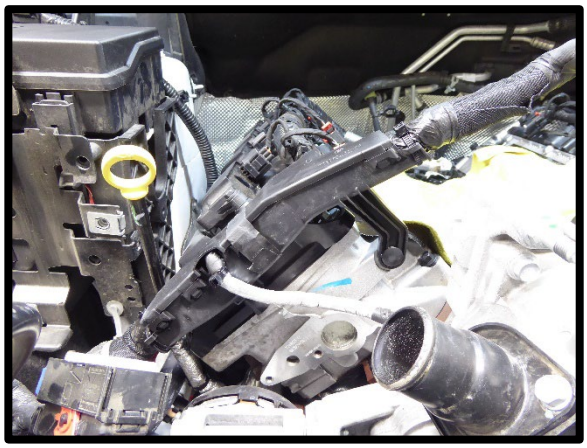
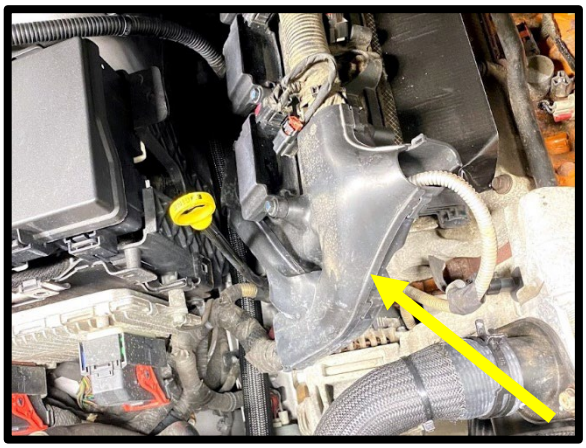



30. Install the supplied ¼" dowel pins with a generous amount of green Loctite #648. Use a hammer and punch or drift pin to tap in so they are flush.

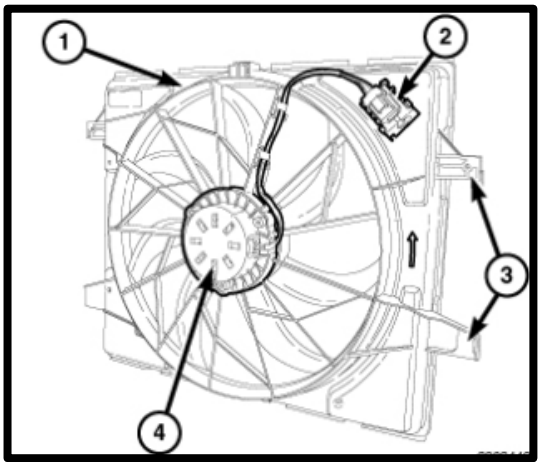



31. Apply light amount of anti-seize to threads of the factory damper pulley. Use a 21mm socket and torque to 129 ft/lbs. ****NEVER LET BALANCER ROTATE WHILE TORQUING.**

32. Remove the plastic harness retainer from the passenger side front of engine. NOTE: You will install split loom at later step.

33. Reinstall the electric fan. Secure into factory location using the factory (2) bolts using an 8mm socket and ratchet.



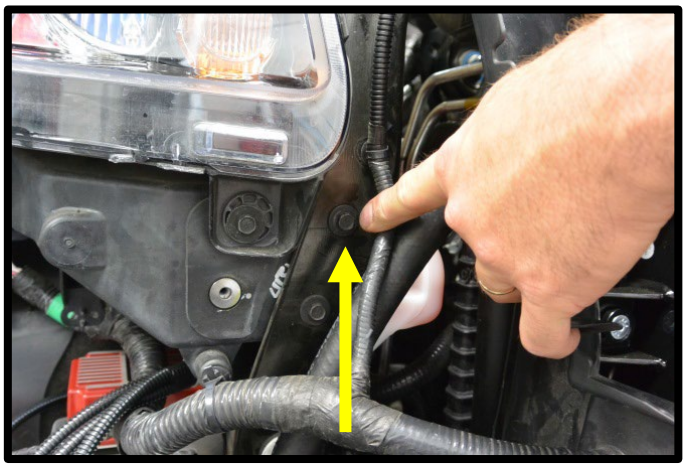
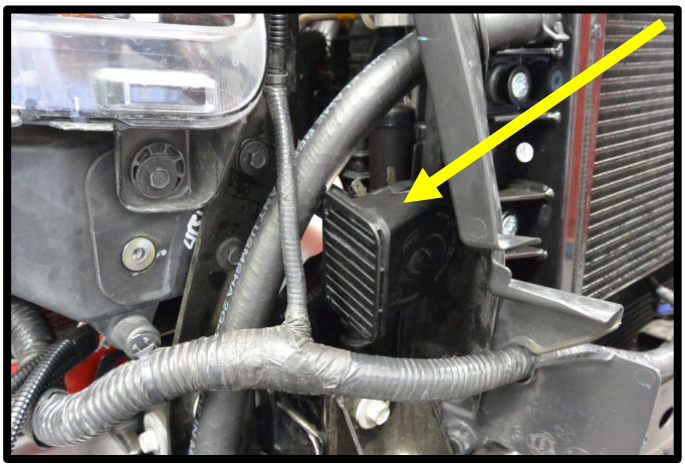
34. Reattach upper radiator closeout with (2) screws using a ¼" socket or flathead screwdriver.

35. Replace previously removed (2) zip ties from power steering line mounts.

36. (**Jeep**) Relocate the passenger side horn. Remove from vehicle by disconnecting the (2) electrical connectors and (1) bolt. Rotate the factory bracket as shown in the images.


37. Remove the factory loom from the upper radiator support and pull the horn wires out of the loom. Route the horn wires to the passenger side headlight. Reinstall factory hood latch wires back to factory location.

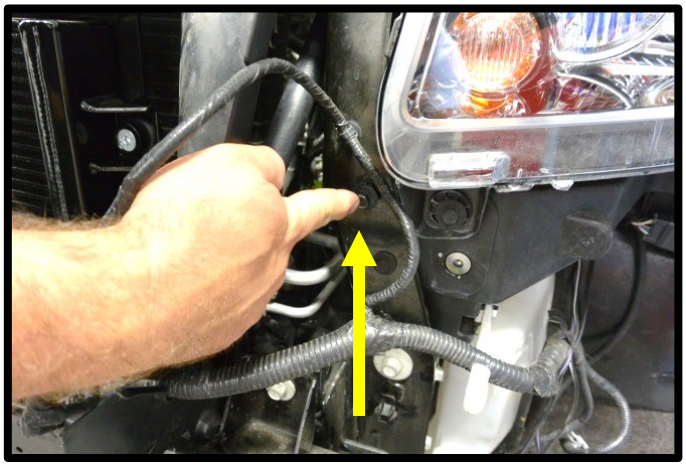

38. Locate the stock hex head bolt just below the headlight on passenger side. Remove bolt, install factory horn as shown. Use factory bolt in factory location to secure. Durango versions, utilize the supplied relocation bracket.

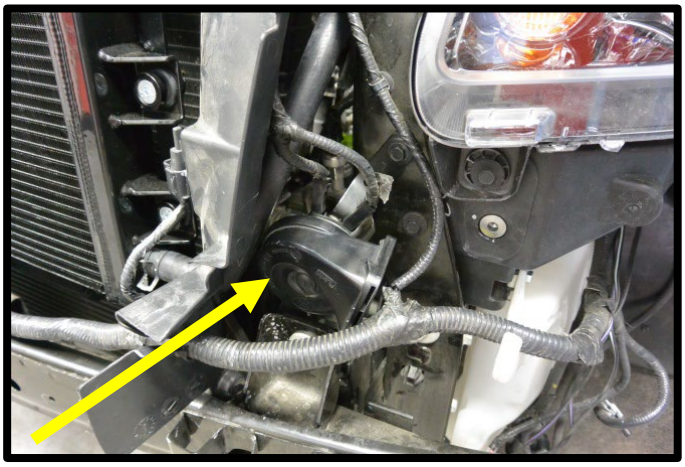



39. (**Jeep**) Relocate the driver side horn. Remove from vehicle by disconnecting the (2) electrical connectors and (1) bolt. Rotate the factory bracket as shown in the images

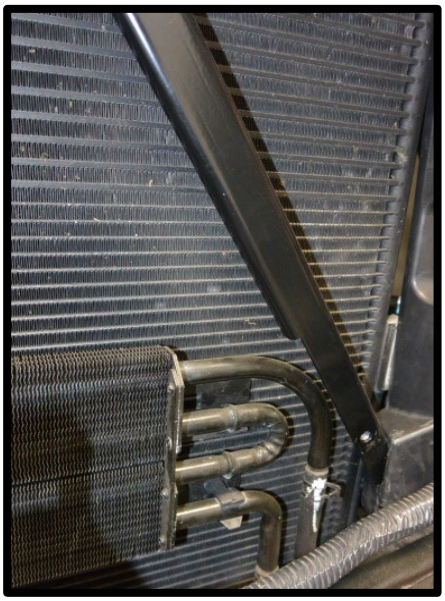
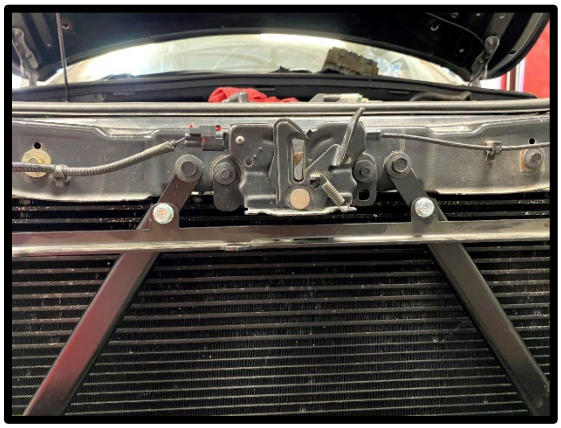

40. Remove the factory loom from the upper radiator support and pull the horn wires out of the loom. Route the horn wires to the driver side headlight.

41. Locate the stock hex head bolt just below the headlight on driver side. Remove bolt, install factory horn as shown. Use factory bolt in factory location to secure. Durango versions, utilize the supplied relocation bracket.

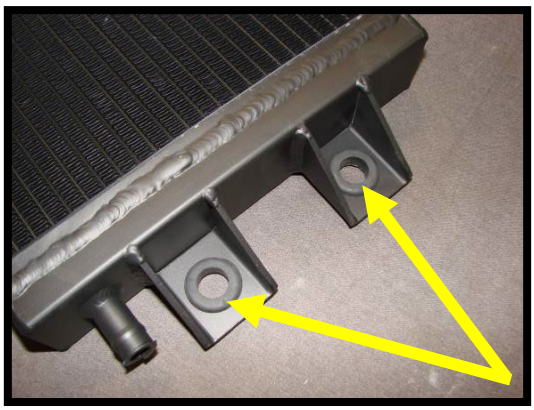




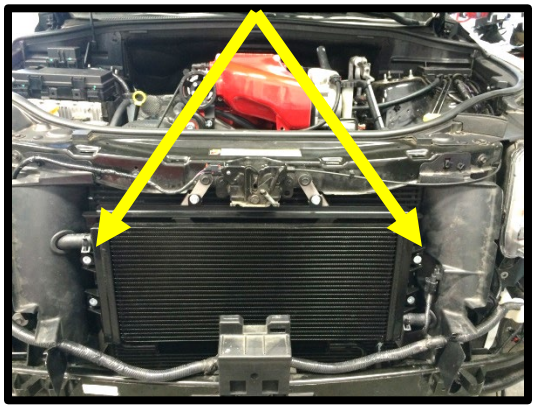
42. Remove the factory bumper to core support struts from vehicle. Replace with the supplied new struts. Note: The driver side and passenger side struts vary from vehicle to vehicle. Therefore, install the clearance portion down and to the inside to insure avoiding the power steering heat exchanger. Install the heat exchanger bracket to the struts with the provided (2) 8mm x 16mm flanged bolts.

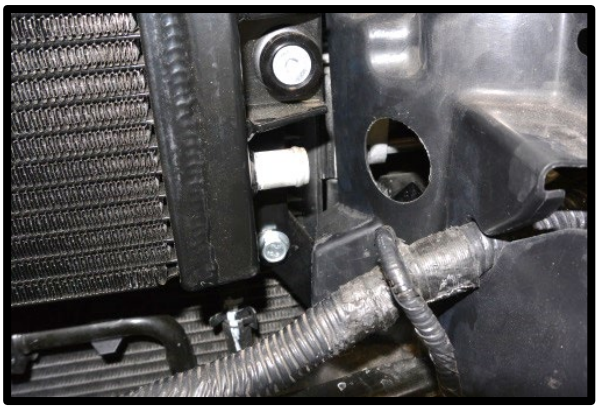
43. (**Jeep**) Install the supplied (4) rubber grommets to the heat exchanger mounts. Install the supplied (4) aluminum heat exchanger spuds to rubber grommets installed in heat exchanger. Insert the supplied (4) 8mm x 35mm FHSCS bolts into the aluminum heat exchanger spuds.



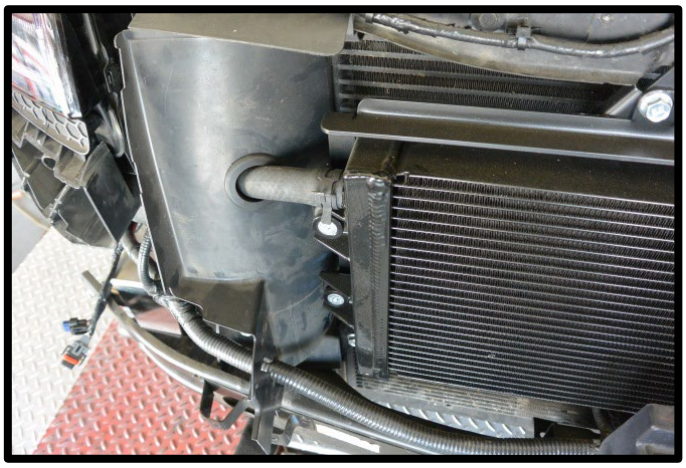

44. (**Jeep**) Install the heat exchanger to the heat exchanger bracket. Loosely install the upper two 8mm flat head socket cap screws on each side. Use the supplied (4) 8mm nyloc nut to secure backside of the (4) 8mm x 35mm FHSCS bolts. Adjust the brackets as necessary to align the lower holes and install the final two 8mm flat head socket cap screws. Once centered, using a 5mm allen, torque the 8mm bolts to 18 ft/lbs.

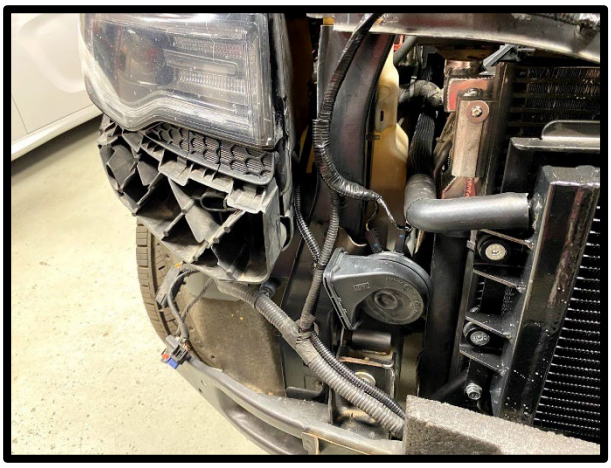


45. (**Jeep**) Use a 1 ½" hole saw to drill out the plastic shroud to allow access for the IC lines. Try to keep drill center point close to barb center line for hose alignment. Install the supplied rubber grommets.

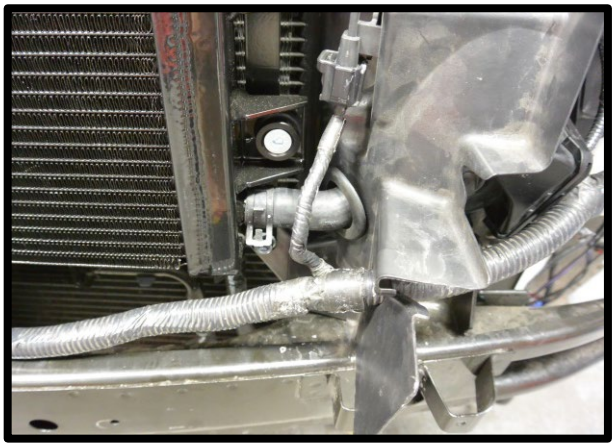
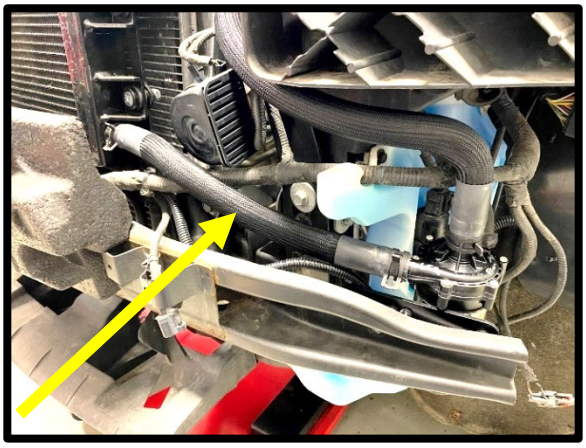


46. (**Jeep**) Route the IC pump outlet hose #3103094 from the LTR outlet, through the grommet, to the Y fitting on RH bank. Secure end with supplied pinch clamp.

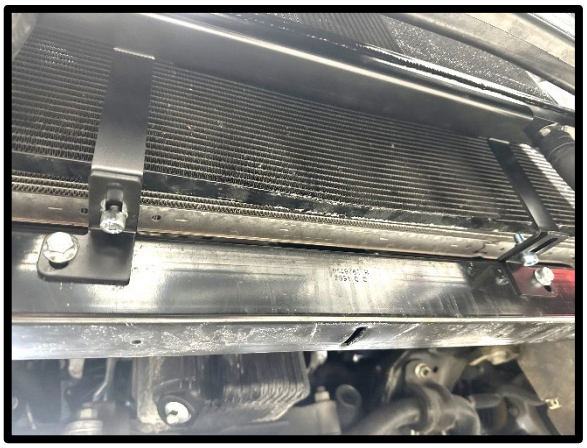




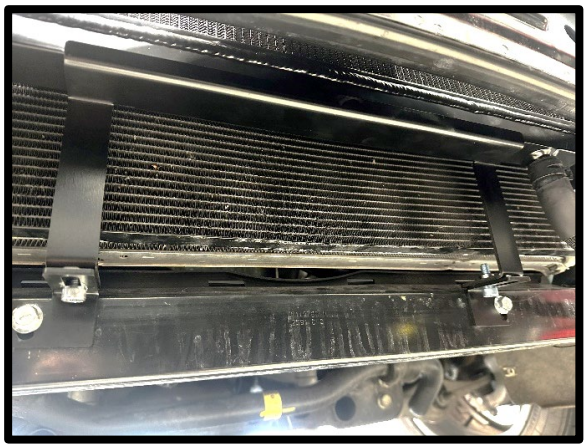
47. (**Jeep**) Install the heat exchanger lower feed port with ¾" x 14 ½" hose. Secure hose with pinch clamps.

48. (**Durango**) Locate the (2) holes in the front of the front cross member. Drill the (2) holes with a ½" drill bit. Install the rivet nut inserts. Make sure the rivet nut insert is fully seated and use the provided insert tool. Take caution to ensure the rivet nut doesn't spin during installation. Mount the (2) L brackets to rivet nuts using 8mm x 14mm HHFCS bolt (leave loose for now). Set heat exchanger saddle bracket (with rubber strip on saddle bracket) on top of the L brackets. Use supplied (2) 8mm x 18mm SHCS bolt and washer to secure saddle bracket to L brackets (leave loose).

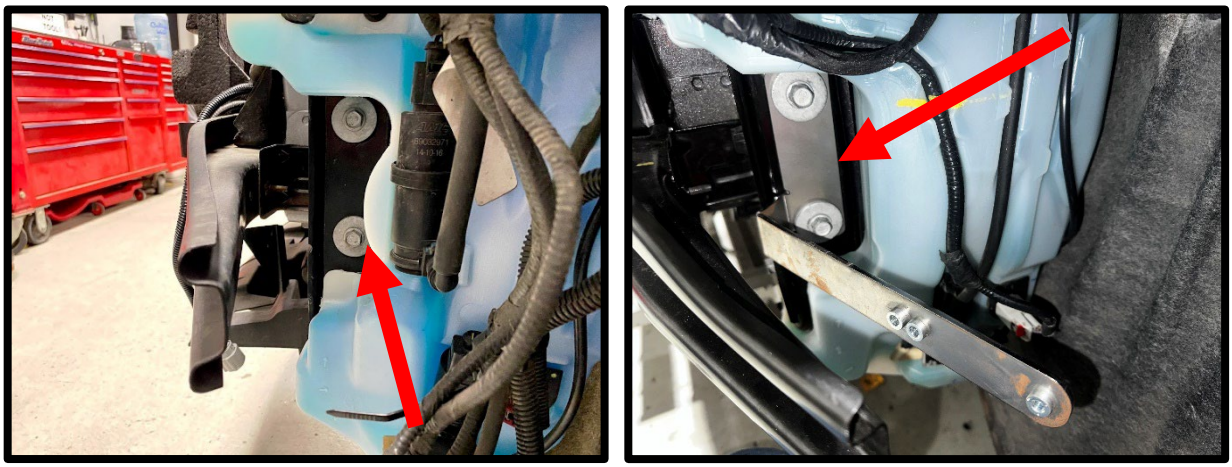



49. Use adjustable bracket to find proper center, as you must clear the condenser and the front bumper center structure. Use the upper slotted holes and lower adjustable brackets to give yourself a minimum of .25" on both sides.

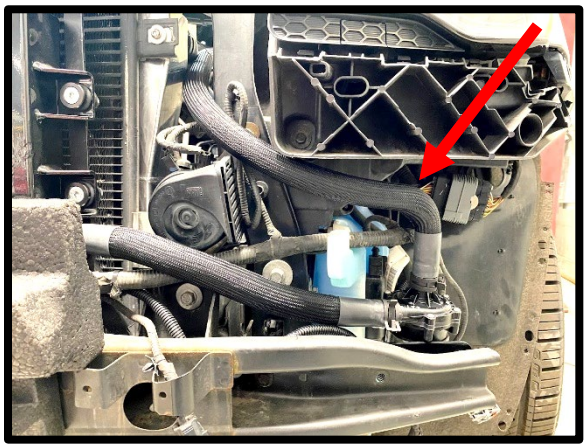
50. Install the supplied (2) 8mm lock washers to the factory studs. Secure booster bracket to stock studs using the (2) 8mm washers and (2) 8mm nyloc nuts. Install the fuel pump booster to the supplied steel bracket using the supplied (4) 8/32" x .375" SHCS.

51. Remove the (2) factory bolts using a 13mm socket on the LH front bumper area. Install the IC pump bracket and secure factory bolts.



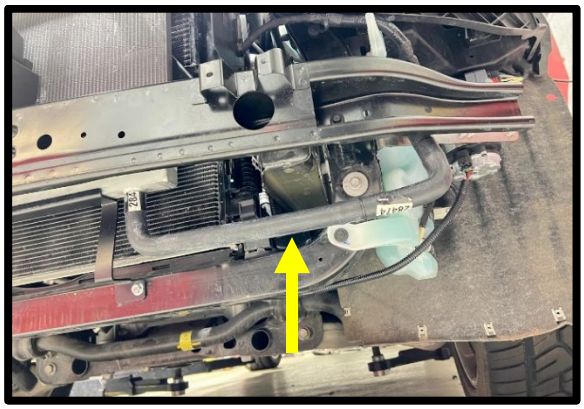
52. Mount the T bolt clamp to the pump bracket using the (2) 6mm x 10mm HHFCS bolts. Slide IC pump into T-bolt clamp. Rotate and place in position, line up pump outlet along bumper support. Secure t-bolt clamp nut. **Note:** Face T-Bolt clamp as shown in image, failure to do so may cause fitment issues.

53. (**Jeep**) Install the IC pump feed hose #3103202 from the IC filler tee to the IC pump. 90deg fits to the pump inlet. Secure both ends with supplied pinch clamps.

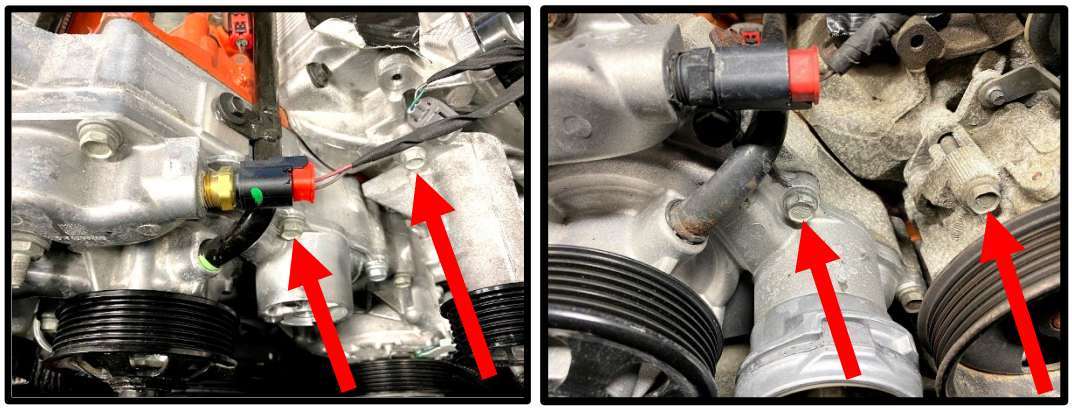


54. (**Durango**) Install the supplied ¾" ID hose from the LTR outlet hose to the passenger side of the engine for later installation. Secure with pinch clamp. **NOTE**: Hose will be cut to fit.

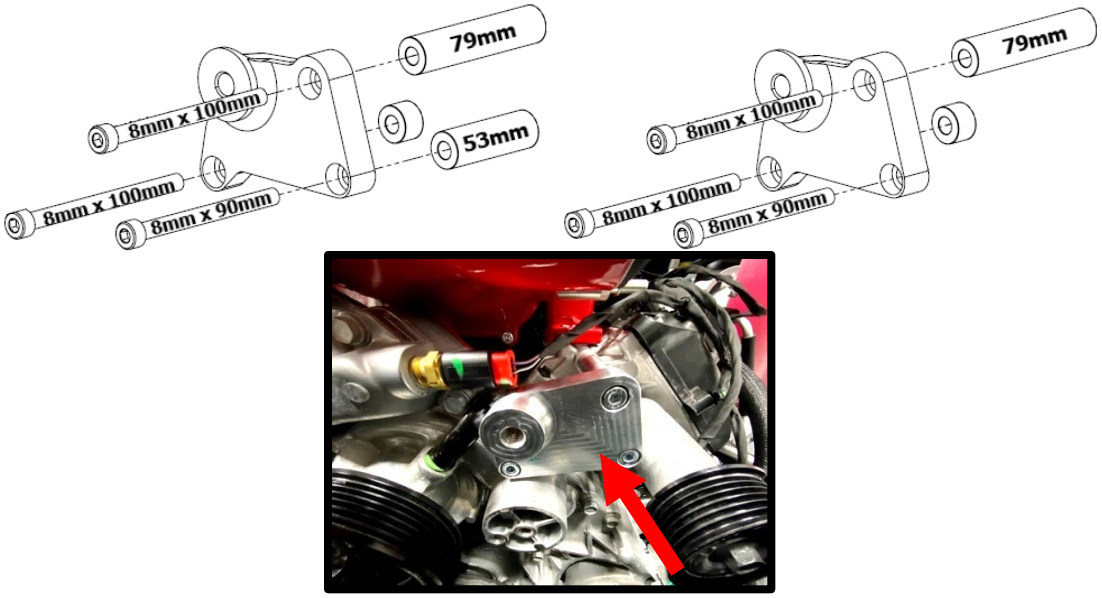
55. (**Durango**) Connect the ¾" ID hose with 90deg hose to IC water pump outlet. Route other end to LH (driver side IC fitting, cut hose to fit. Install supplied sheaving and heat shrink on ends to secure sheaving. Secure end with supplied pinch clamp. Route other end to IC pump fitting, secure both ends with pinch clamps.



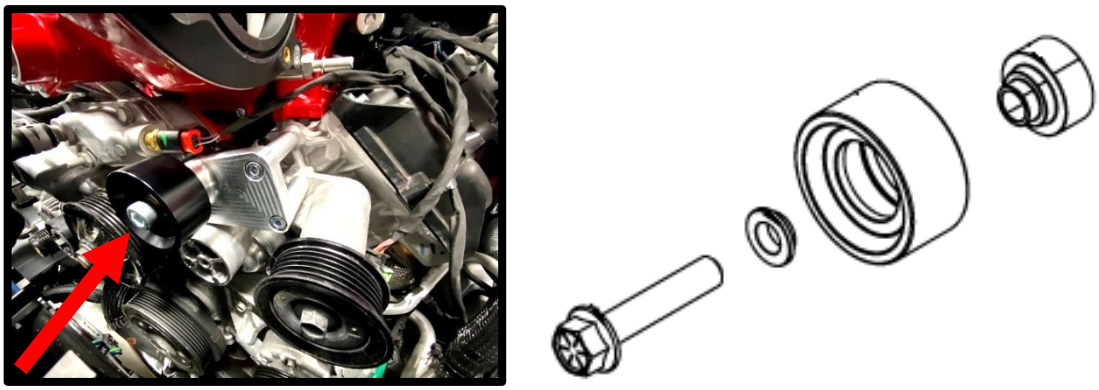
56. Using a 13mm socket, remove the upper left bolt form the idler pulley (or PS pump) assembly and the water pump bolt directly above the belt tensioner.



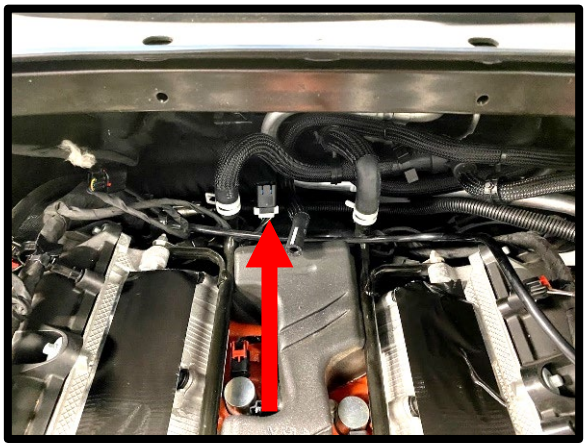
57. Install idler plate to engine using the (3) support stands, and supplied bolts as shown below. ***NOTE:** Mechanical power steering equipped vehicles, discard the 53mm spacer, use the same 8mm x 90mm SHCS. Torque idler plate bolts to 21 ft-lbs.

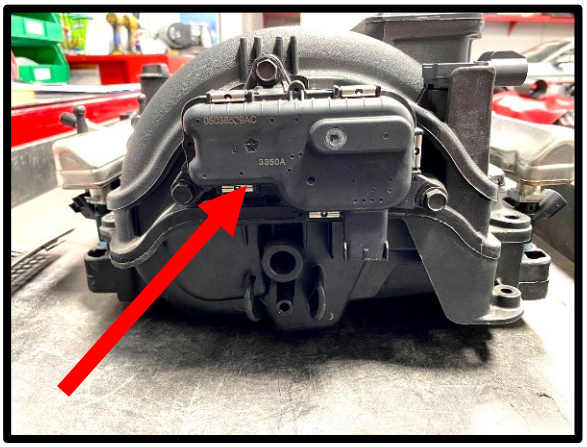


58. Install the supplied 3.0" smooth idler pulley to bracket using the supplied .776" step spacer, ½" step washer and ½" x 2 ½" HHFCS bolt. Torque to 18 ft-lbs using a ¾" socket.



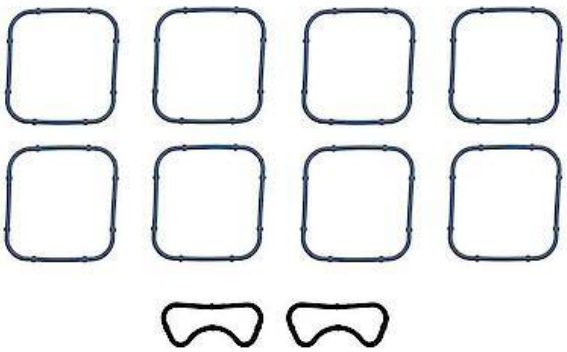
59. Remove the Active Runner Control (when applicable) motor from the intake manifold. Connect to factory connector behind engine. Zip tie this in the back, away from the engine. CAUTION: Failure to do so will result in failure codes.



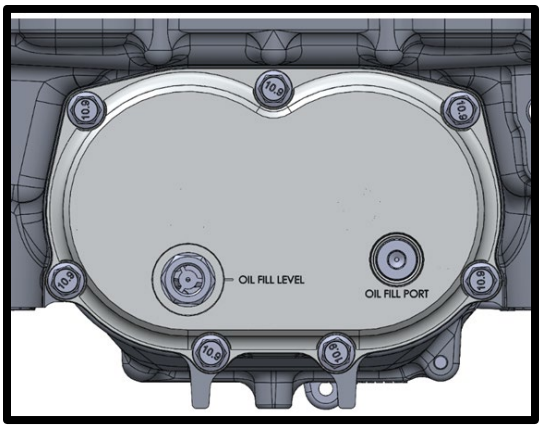


60. Install the supplied TMAP sensor to supercharger, apply light amount of grease to oring to ease installation. Secure to SC using supplied 6mm x 14mm FSHCS. Torque to 88 in-lbs using 10mm socket.

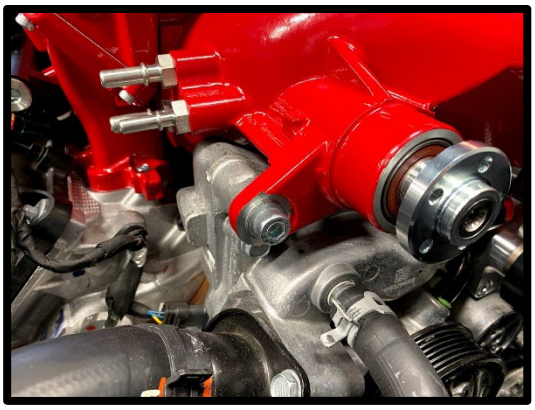
61. Remove the tape from the supercharger runners. Install the (10) factory manifold orings to the supercharger runners. Apply light amount of grease for ease of installation. Remove the tape covering the intake runners.



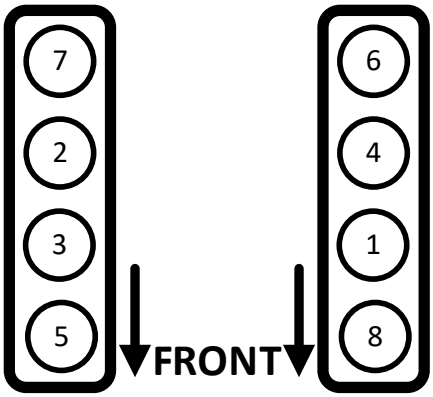
62. Make sure the supercharger is on a flat surface. Remove the oil fill plug using an 8mm allen socket.
    - Fill the compressor to the **BOTTOM** of the fill plug (**4.0 FL/OZ**). Rock compressor back and forth. Then spin the compressor/rotors by the pulley so the oil fills the bearings. **NEVER OVER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



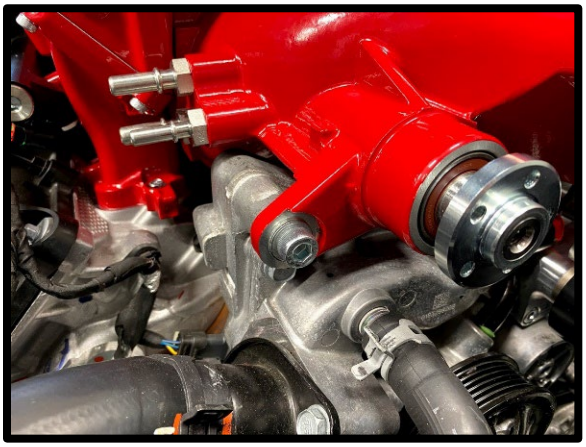
63. Install the supercharger assembly to engine. Use the intake bolts and injector bores to achieve the best alignment possible between engine and supercharger. Install the (8) M6 x 25mm intake manifold bolts hand tight (**DO NOT TORQUE**). Install the front support bolt, using the (1) 10mm x 30mm HHFCS bolt, hand tight.



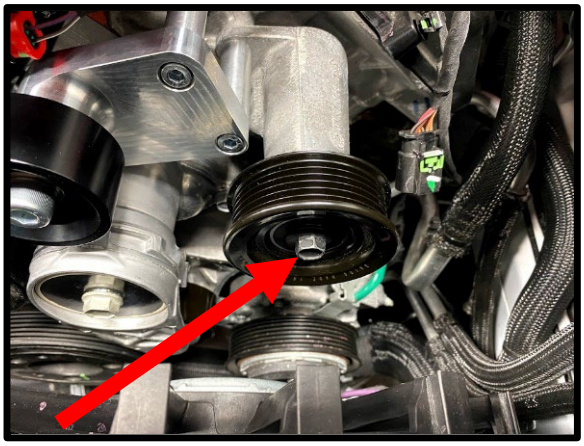
64. With the supercharger mounting bolts hand tight and supercharger best aligned, use a 10mm socket, install the (8) M6 x 25mm intake manifold bolts in the sequence shown below. Torque all bolts to 8 ft-lbs in the same order.
    1. First pass, using the sequence, 60 in-lbs.
    2. Second pass, using the sequence, 72 in-lbs.
    3. Third pass, using the sequence, 88 in-lbs.



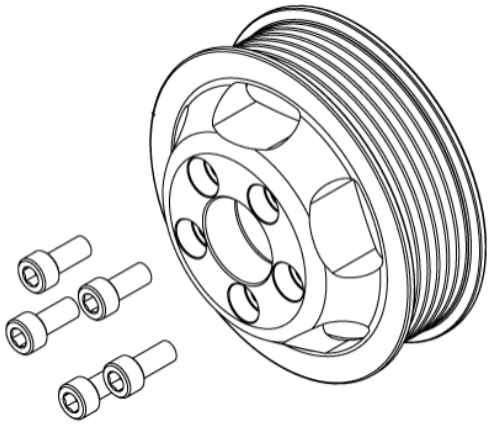
65. Torque the (1) 10mm x 30mm HHFCS to 30 ft-lbs using 16mm socket.



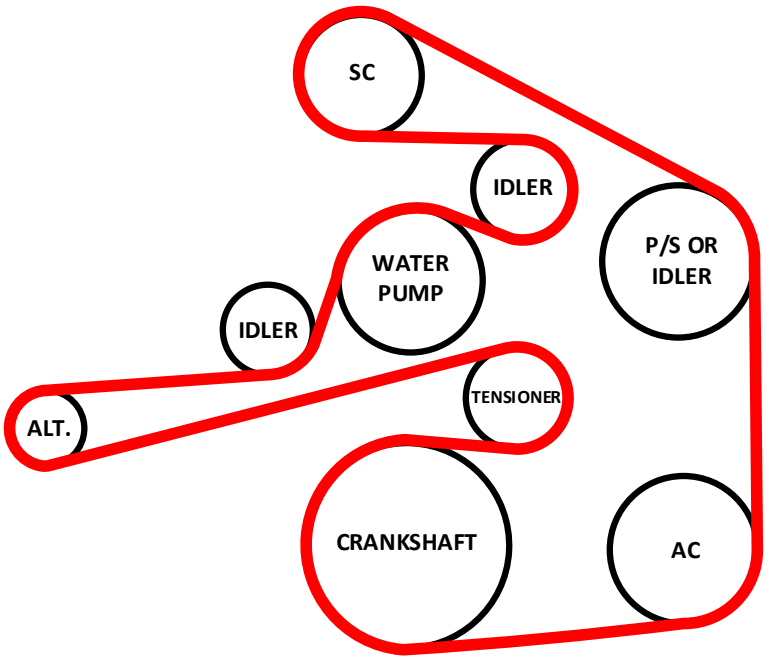
66. (**Electric power steering-based vehicles**) Remove the stock idler pulley from factory mount using 13mm socket. Replace with supplied 90mm idler pulley. Use factory hardware to secure in place. Torque to 18 ft-lbs using 13mm socket.



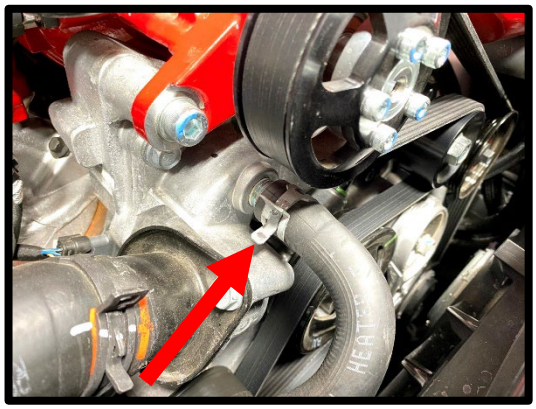
67. Install the supercharger pulley, with the (5) 6mm x 14mm SHCS bolts. Leave hand tight for now.



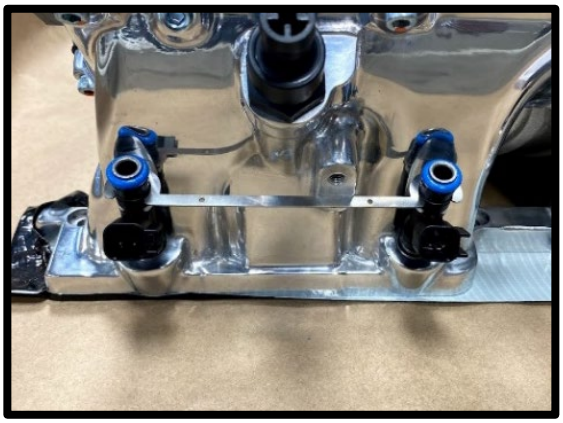
68. Install the supplied drive belt using the belt routing diagram below.



69. Verify (when applicable) proper clearance between the SC belt and the factory clamp just below it. Rotate clamp out of the way.

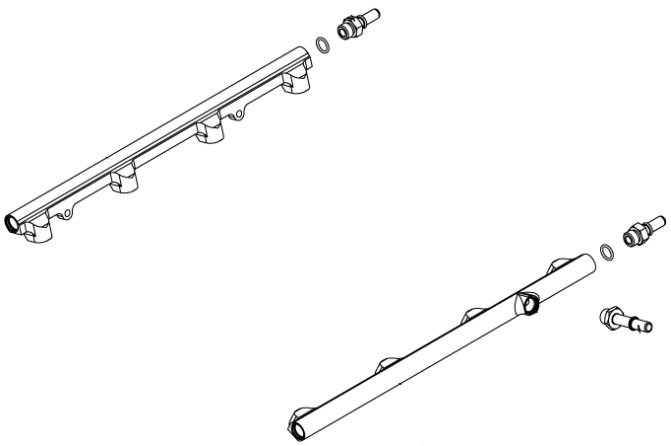


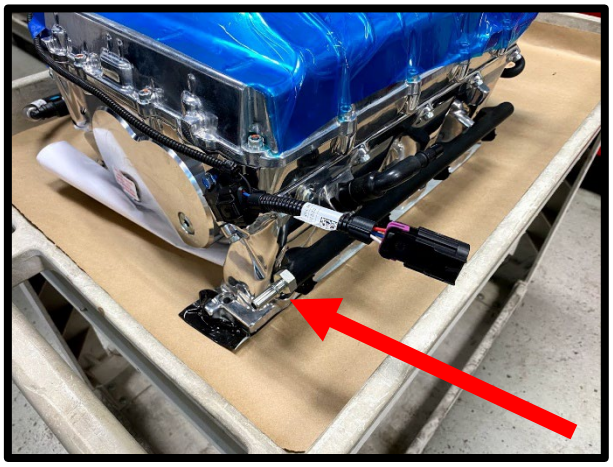
70. Apply light amount of grease to the supplied fuel injectors. Install injectors to supercharger assembly. Install the injector clocking brackets to each fuel injector. ***NOTE:** Failure to use brackets may cause running problems due to unique spray angle of the supplied fuel injectors.



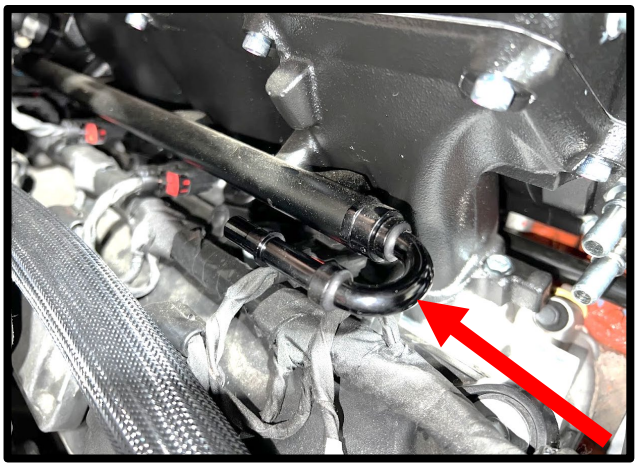
71. Secure rails to supercharger using the supplied (4) 6mm x 16mm SHCS. Use **Blue Loctite #243** on the threads of each bolt. Torque to 80 lbs-in.

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

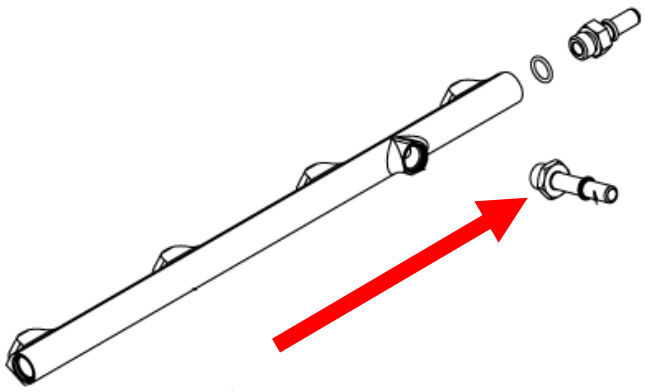




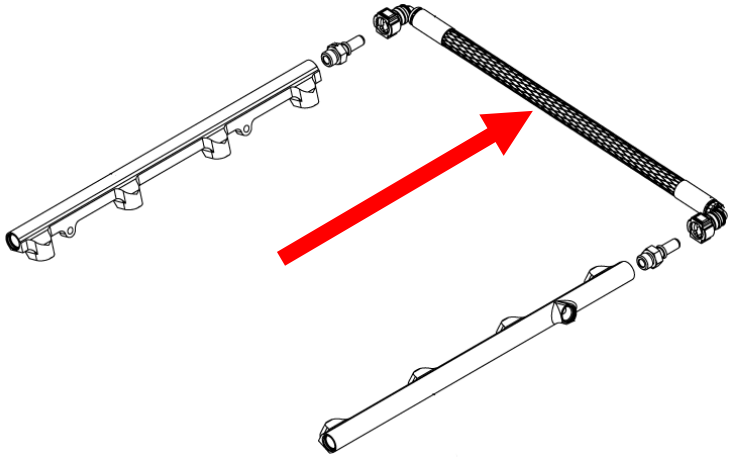
73. Install the (2) #2-906-V75BR orings to the (2) -6 180deg 9.49mm quick connect fittings, apply light amount of grease to orings to ease installation. Install these to the front of each fuel rail.



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



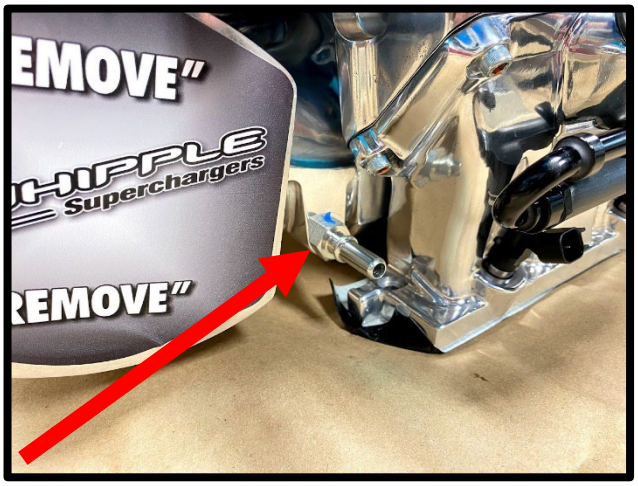
75. Install the supplied fuel cross over hose with dual 90deg to the rear side of each fuel rail. Click and secure in place. **CAUTION:** Ensure fuel fitting clicks and locks in place.



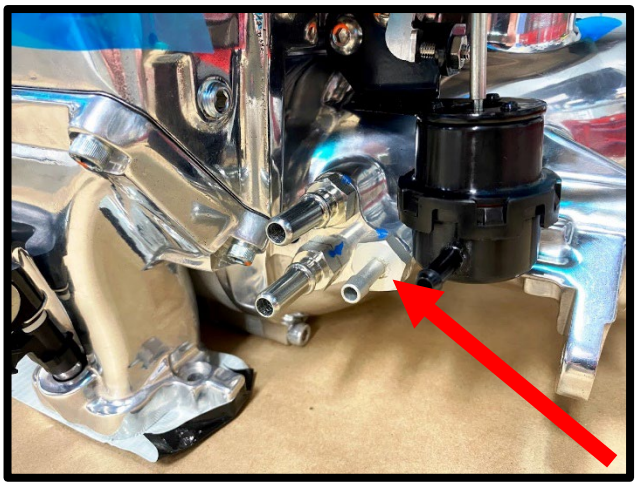
76. Install the 3/8" x 50" fuel front cross over hose, around the back of the supercharger and connect to both previously installed 180deg fittings. **CAUTION:** Ensure fuel fitting clicks and locks in place.

77. Remove the factory oil fill cap from intake manifold, transfer to supercharger assembly.

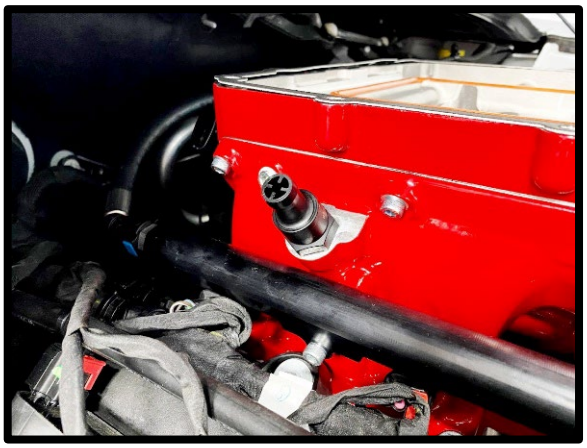
78. Install the (1) 9.89mm fitting in the LH side of SC inlet. Apply light amount of grease to oring to ease installation.



79. Install the (2) 9.89mm fittings and (1) 7.49mm quick connect fittings to SC inlet. **NOTE:** 7.49mm fitting goes to front port (red arrow). Apply light amount of grease to oring to ease installation.



80. Install the #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.

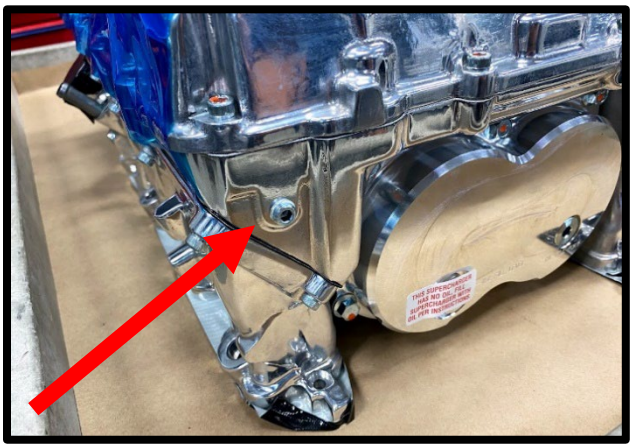



81. Install the stock TB adapter to the supercharger inlet using the supplied TB adapter, supplied gasket and the (4) 6mm x 25mm FHCS. Torque to 75 in-lbs. Install the stock throttle body oring to TB adapter, then install the throttle body using the (4) 6mm x 35mm HHFCS bolts. Use **Blue Loctite #243**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

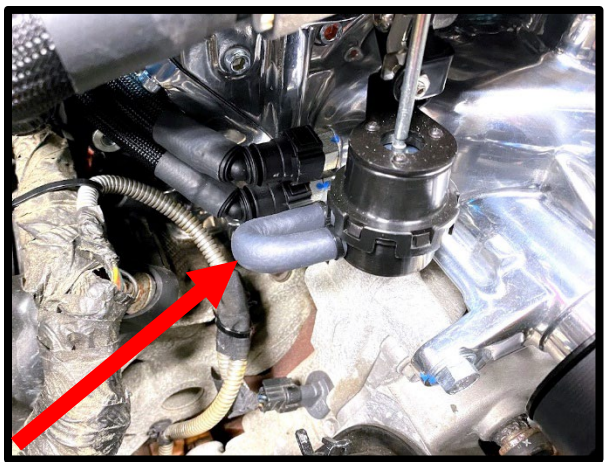

82. Install filler reservoir bracket to the LH side of supercharger lid. Use supplied (2) 6mm x 12mm HHFCS. Torque to 89 in-lbs using 10mm socket.

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

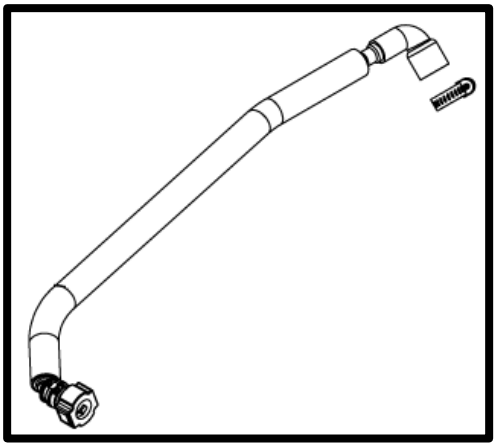
84. Install the supplied 1/8" x 45" rubber line to the 1/8" OD barb fitting located on the back of the lower intake manifold (fuel pump booster reference line). Temporarily route this line down, behind the engine on the passenger side. This will be finished later during the fuel pump booster installation. If you are not using the supplied fuel pump booster, this line will not be used and the 1/8" barbed fitting needs to be removed and replaced with a 1/8" plug, with light amount of pipe sealant.



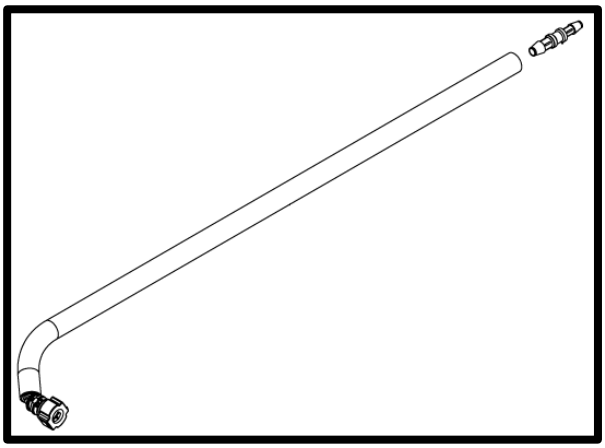
85. Install the supplied u-bend bypass hose to bypass actuator and ¼" fitting.



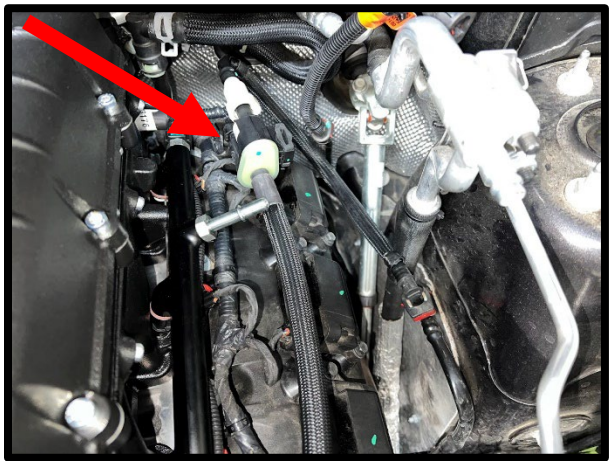
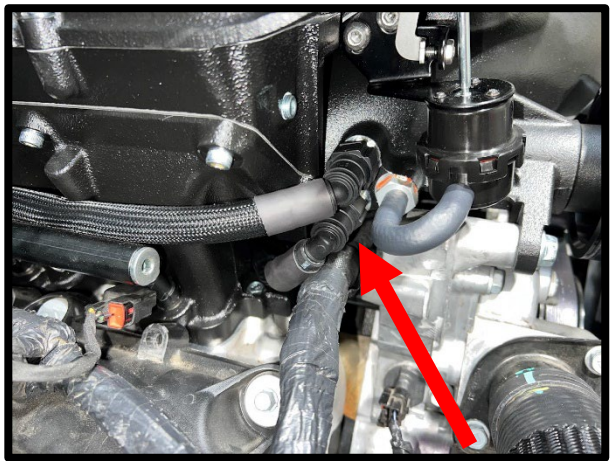
86. Install supplied 3/8" molded hose with 90deg end from SC inlet bottom 9.89mm quick connect fitting to PCV valve previously installed. Secure 90deg rubber hose with supplied #6 worm clamp.

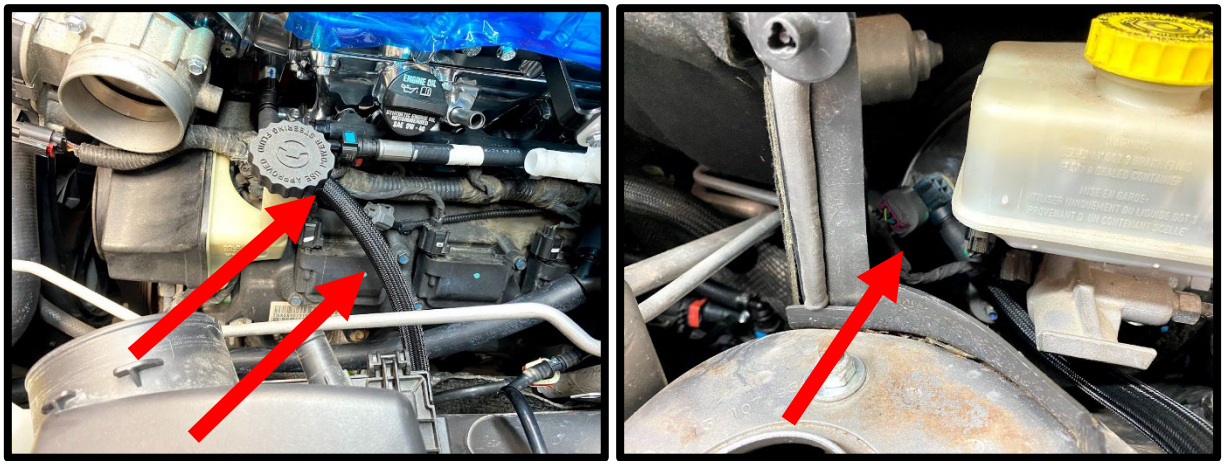
87. (Rear mount EVAP solenoid) Install supplied 3/8" hose to SC inlet top 9.89mm quick connect fitting previously installed. In applications with 5/16" barb fittings on EVAP solenoid, use the supplied 3/8" to 5/16" adapter, use factory rubber 5/16" fitting to adapter, then install on solenoid. Install the supplied 3/8" to 5/16" reducer to end of hose. Install supplied stock EVAP 90deg to end of hose. Secure to EVAP solenoid.

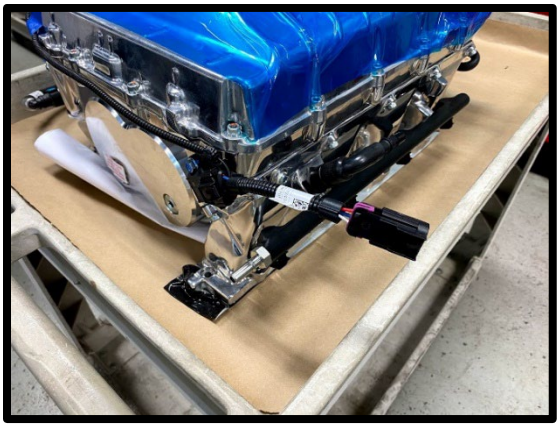
88. Remove rear coil bolt and install EVAP bracket. Install EVAP solenoid to bracket. Install the supplied 3/8" x 33" EVAP hose with 90deg 9.89mm quick connect fitting. Route to front of fuel rail, under SC inlet and connect to bottom quick connect fitting previously installed. **NOTE:** PCV needs to go to top port on this type of installation.

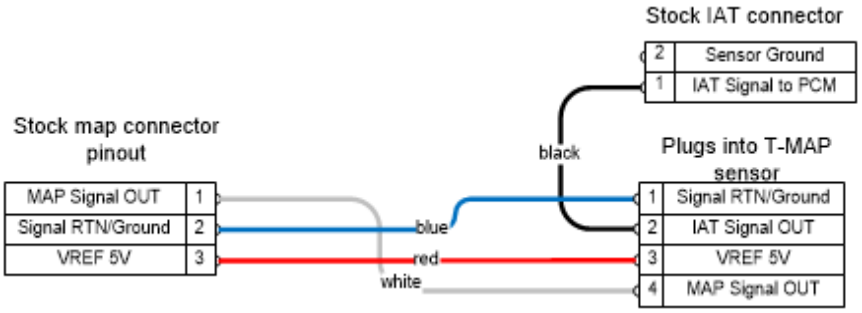



89. Install the supplied 3/8" hose to LH previously installed 9.89mm quick connect fitting in SC inlet. Route hose to brake booster fitting/sensor.

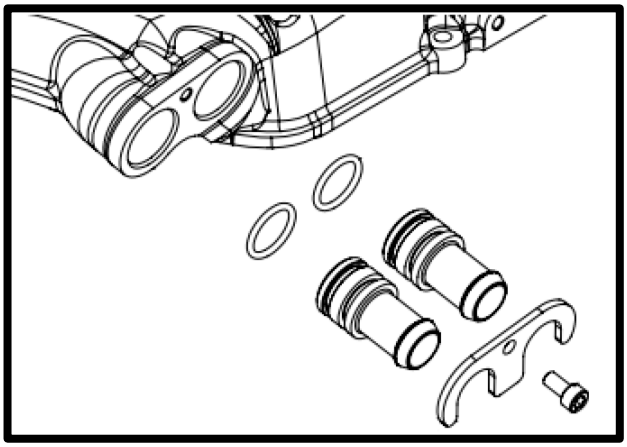


90. Install the supplied TMAP pigtail from factory MAP sensor to TMAP. Connect 4-way end to TMAP previously installed. Route single wire to LH side of engine. Connect to stock IAT sensor connector.

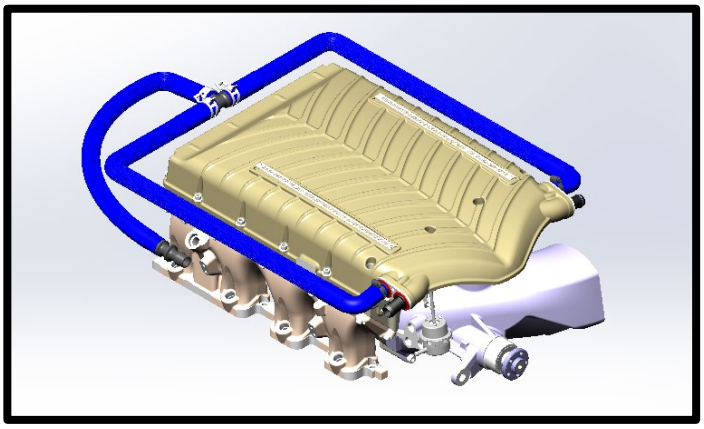
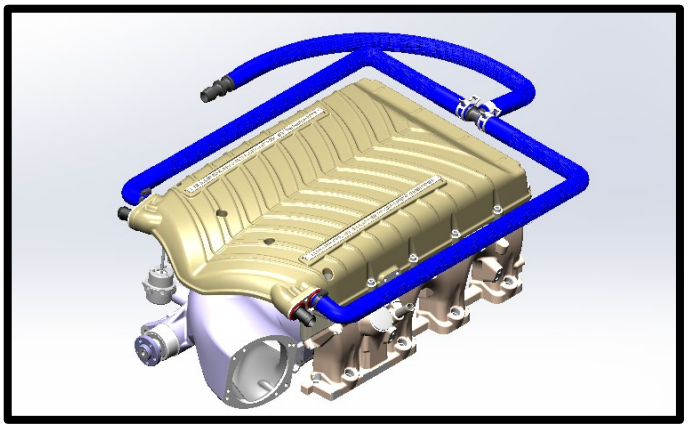




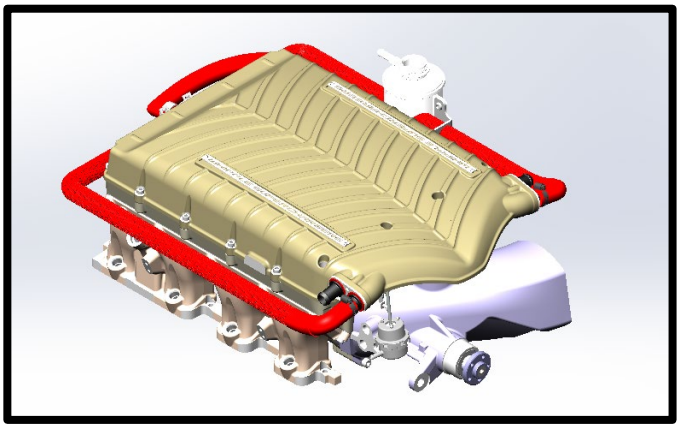
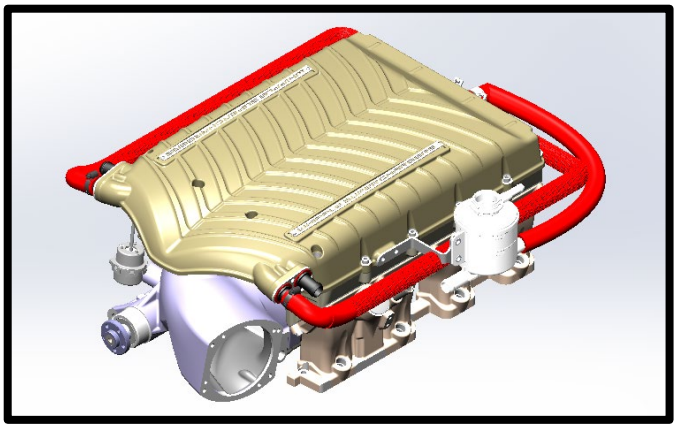
91. Install the (4) 2-117 IC fitting orings to the (4) IC fittings. Apply grease to the (4) 2-117 IC fitting orings. Slide fittings into lid. Secure fittings with supplied fitting retainer bracket and 6mm x 12mm SHCS bolt. Torque to 80 in-lbs.



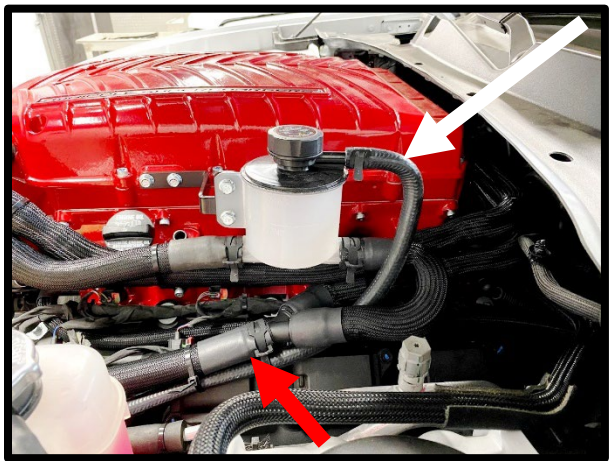
92. Install the supplied intercooler feed supply hoses, #3103182 to the LH and RH rear most intercooler fittings. Secure both fittings with supplied #12 black worm clamps at IC inlet fittings. Secure both hoses to the supplied tee using #16 pinch clamps. Install the 36.5" #3103184 hose to tee and route to RH side of engine for later connection.

93. 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.

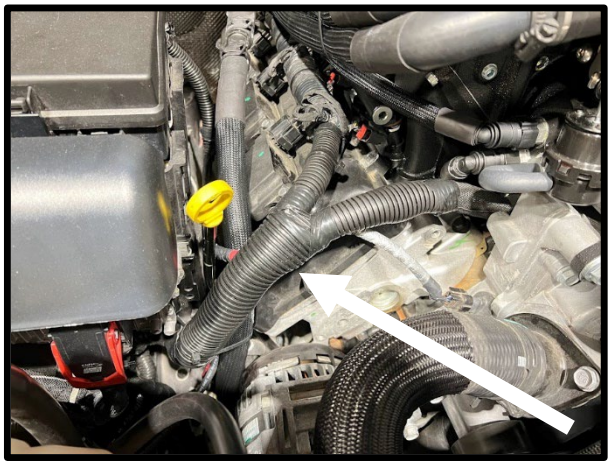



94. Connect the previously routed IC pump outlet hose to the filler reservoir Y fitting. Connect the filler reservoir breather hose to the filler reservoir top fitting. Secure ends with supplied constant tension clamps. Route down along the filler outlet hose, down away from exhaust. **NOTE: This can burp if system exceeds 10psi, do not run next to exhaust.**

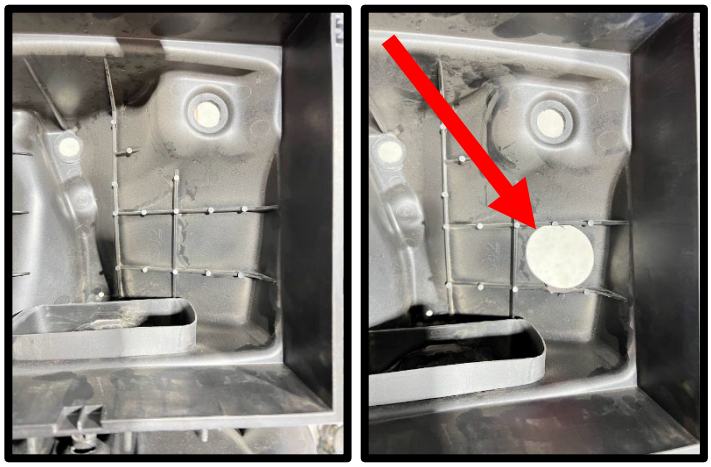


95. Connect all (8) factory injector connectors until they click and lock in place.

96. Install the supplied split loom over wiring previously removed. Use electric tape for clean installation.

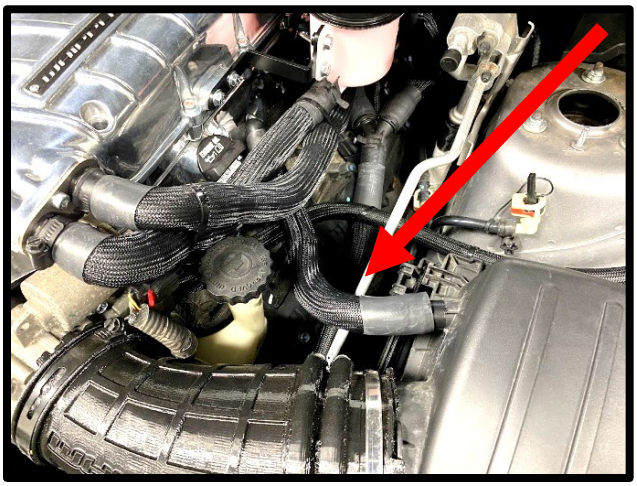


97. (**Stock air box**) Using a 3.0" hole saw (larger preferred), drill a hole in the front/upper corner of the airbox. Failure to do so will limit airflow and power as the stock snorkel cannot flow enough air. Clean debris.

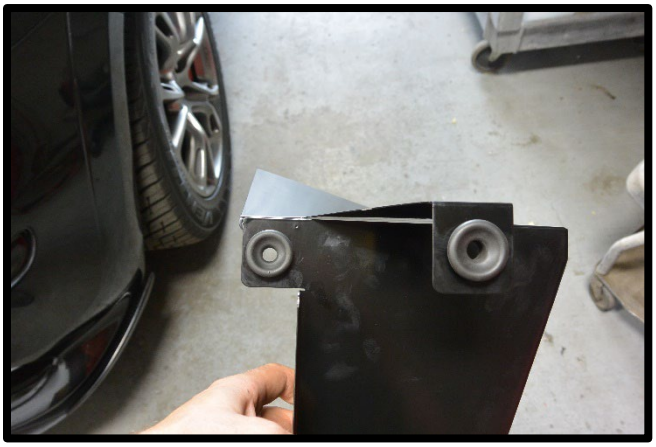


98. (**Stock air box**) Install high flow filter element to stock airbox. Reinstall stock airbox lid. Install supplied rubber inlet hose using the stock clamps.

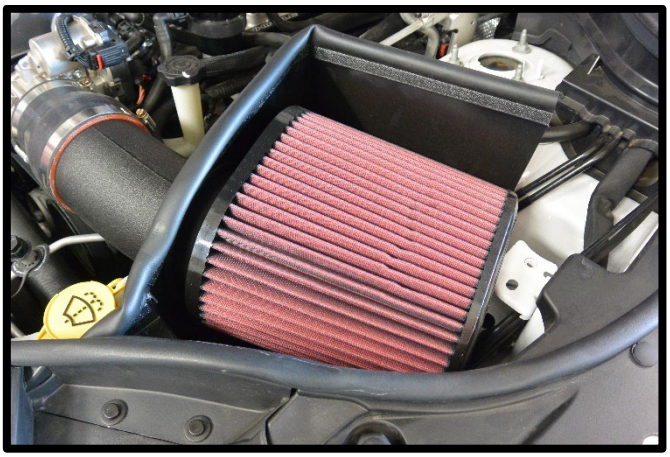
99. (**Stock air box**) Install the supplied ½" 90deg rubber fitting and ½" coupler to stock vent hose. Install stock vent hose to airbox and barb coming from SC housing.

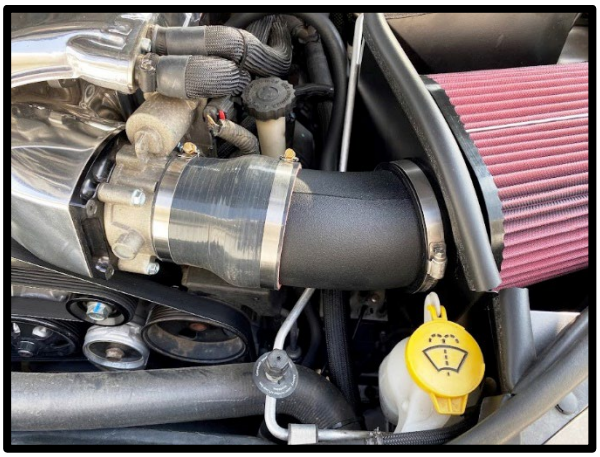


100. (**CAI option**) Remove the rubber grommets from stock airbox. Install in new airbox. Install the supplied airbox into the factory location.

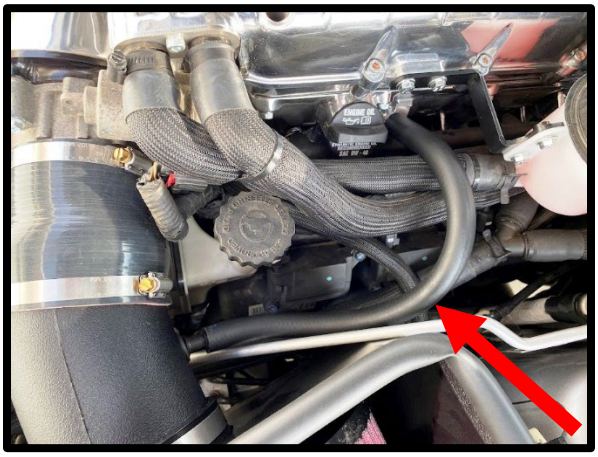


101. (**CAI option**) Install the supplied plastic weather strip around the ID of the air filter box round air tube opening. Install the supplied air filter and inlet tube.

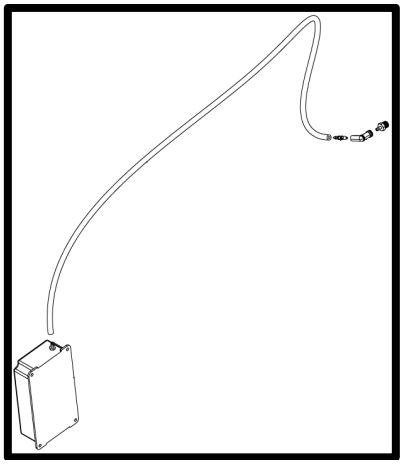


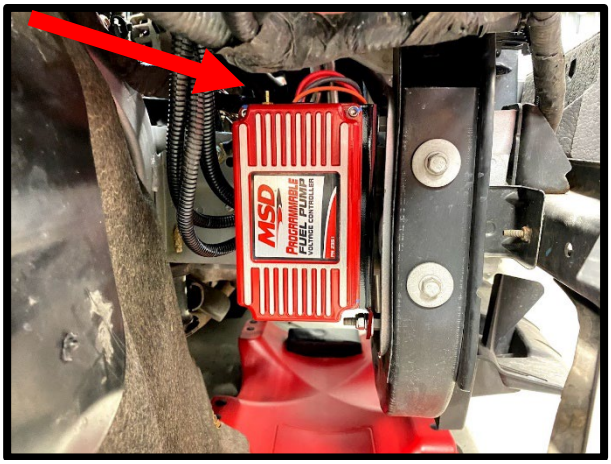


102. (**CAI option**) Install the supplied rubber grommet to inlet air tube. Install ½" barb fitting to grommet. Install the supplied ½" ID hose and route to the intake manifold vent on LH runner.

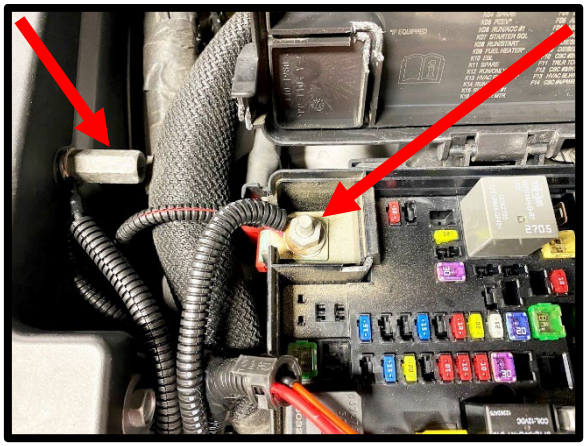


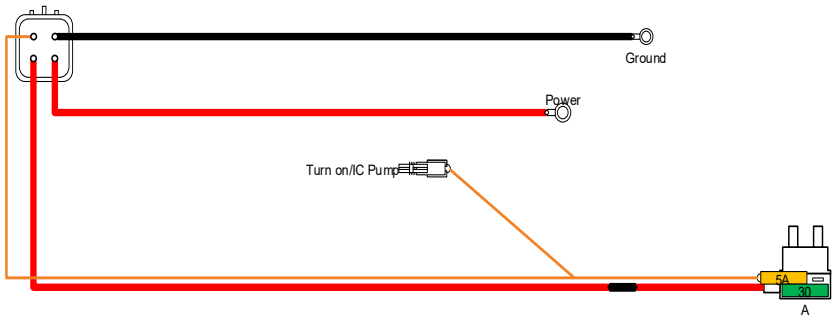
103. Connect the previously routed 1/8" ID boost reference line to the fuel pump booster barbed 1/8" OD fitting. Secure hose to fitting with a zip-tie.



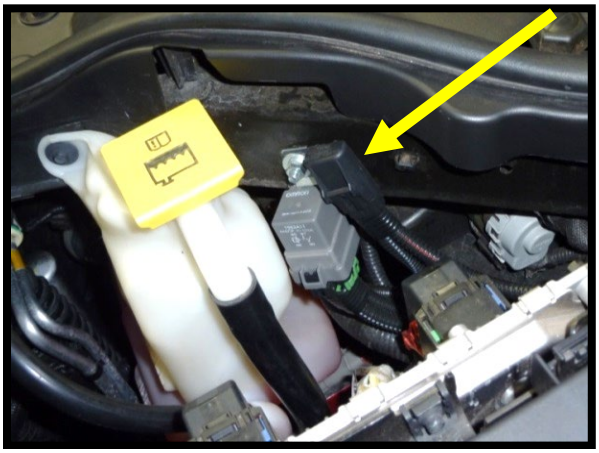


104. Open the fuse box and install the fuel pump booster and IC pump relay power wire eyelets to the factory power stud. Remove factory nut, slide both eyelets on the stud, secure with factory nut. Install the ground wire for the fuel pump booster and IC pump relay harness to the factory ground stud on the passenger side inner fender.

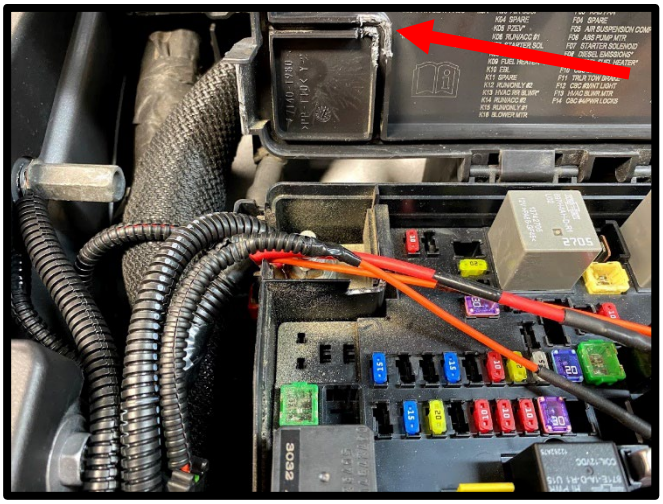




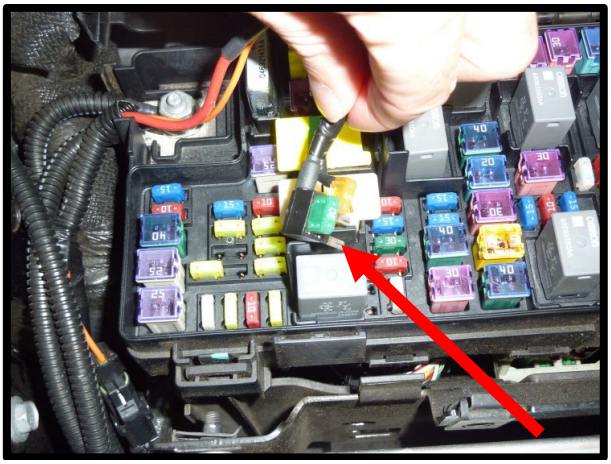
105. Install the supplied intercooler pump relay and fuse holder to the existing hole in the radiator support, next to the washer bottle (passenger side). Use the supplied 6mm x 18mm hex flanged bolt from the front side and secure with the supplied 6mm nyloc nut.

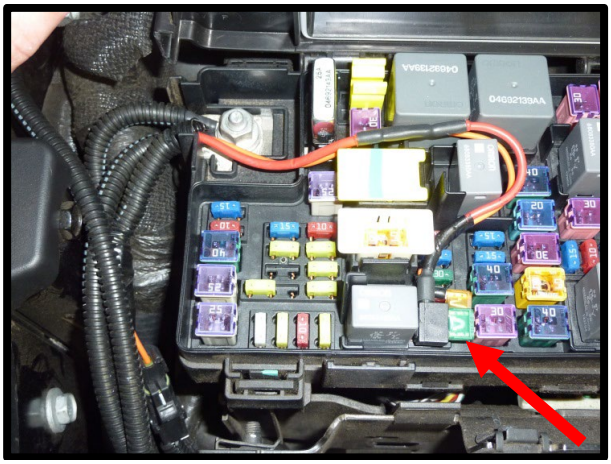


106. Use a small pair of wire cutters or dremmel tool to make a small notch for wire clearance on both the base and lid.

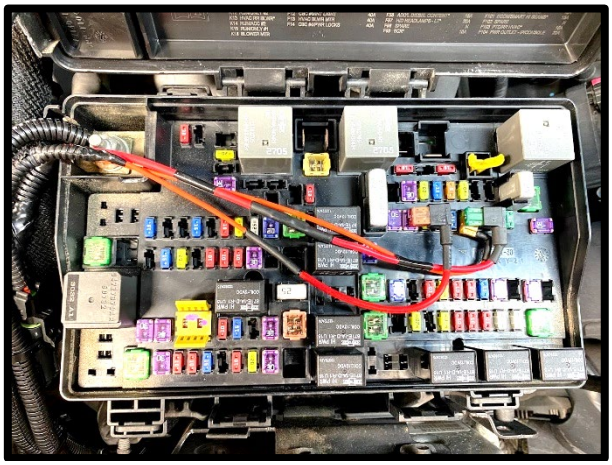
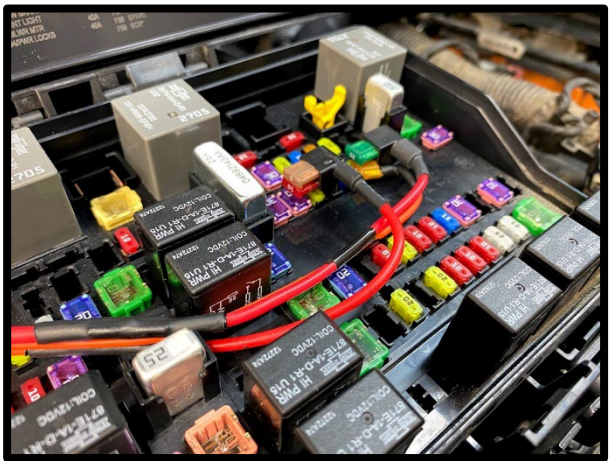


107. **(Jeep 2011-2012/Durango)** Remove the fuse from the factory **M25** position (use diagram on top of fuse cover lid). Install the fuse into the supplied fuse intercept for the fuel pump booster and IC pump. Carefully route the wires around the relays and out of the notch you previously made.

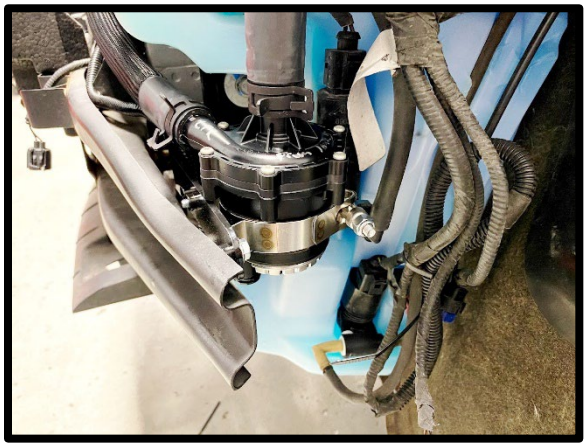




108. **(Jeep/Durango 2013+)** Remove the fuse from the factory **F66** and **F70** positions (use diagram on top of fuse cover lid). Install the stock fuse from **F66** to the IC pump add a fuse. Install this fuse in the stock **F66** position (Sunroof accessory). Install the fuel pump booster add a fuse to the **F70** (fuel pump) fuse position. Carefully route the wires around the relays and out of the notch you previously made.

109. Route the intercooler connector down from the radiator support to the intercooler electric pump below front bumper and connect to the electric intercooler pump. Press until it locks in place. Secure harness using zip-ties.



110. Connect the (3) one-way connectors from fuel pump booster and IC pump relay harness wiring as shown in previous diagrams. Secure fuel pump booster and IC pump relay harness wires/split loom with zip ties for a clean installation.

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

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

113. 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.

114. 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.

115. 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!***

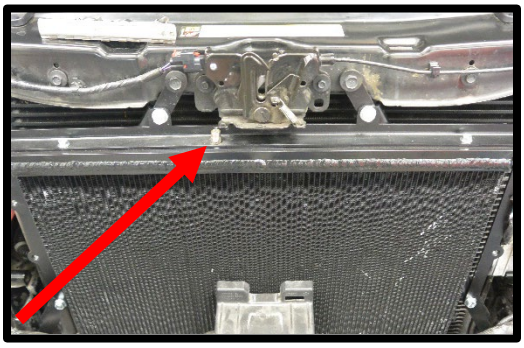
116. Several drive cycles may be required to completely purge the air from the intercooler system. During a drive cycle, the intercooler system will build up pressure as the supercharger temperature increases. Any residual air trapped in the system will have to be bled out when the cap is removed. Use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

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

117. Start the engine and let idle. The engine should idle normally between 600-750 rpm at normal operating temps. Inspect for leaks. You will need to remove the factory vent hose from the water pump to relieve air pockets.

118. 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. To remove the air pocket insert an air blow nozzle in the top of intercooler tank and wrap a clean cloth around the end of the nozzle and around the top of the tank and slightly pressurize the tank, this will force the trapped air out of the system. Add coolant to fill the system.

119. (**Durango**) Use the Schrader valve at the top of the LTR to help bleed the IC system.



120. Reinstall the front fascia assembly, follow the initial removal instructions to reinstall.

121. 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. Octane boosters are not recommended to take low grade fuel to high grade fuel. In certain applications, boosters such as Torco, Boostane and NOS can work but consistent use will degrade the spark plug life and could clog the fuel filter over time.

122. Do not use aftermarket air filters or ducts with the supplied Whipple calibration. The Whipple calibration is designed to work with the Whipple cold air intake system only. Changes to the air inlet system could cause potential issues with the calibration and performance. Aftermarket throttle bodies are not supported with the Whipple calibrations.

123. 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.

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

125. 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.

126. 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.

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

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

129. 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.

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

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

MAINTENANCE AND SERVICE

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

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

1. 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.
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 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). F

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. High mileage vehicles should always replace pump and filters (50k and above).

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. 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