
# Edelbrock E-Force Supercharger
# 2018-19 Ford F-150 5.0L
## Part #'s: 15812, 158120, 15836, 158360


## WARNING!

*The supercharger bypass valve is factory installed and adjusted intended to be vacuum operated only. DO NOT move the solenoid actuator lever by hand or adjust the stop point. Moving the lever manually will damage the solenoid and the system will not function properly. Damage to the bypass assembly from manual movement will not be covered under manufacture warranty.*

**Edelbrock Supercharger System**
**2018-19 Ford F-150 5.0L**
**PN 15812, 158120, 15836, 158360**
**Installation Instructions**

# INTRODUCTION

Thank you for purchasing the Edelbrock E-Force Supercharger System for the 2018-19 Ford F-150 5.0L. This Edelbrock E-Force Supercharger System utilizes Eaton's Gen VI 2650 TVS Supercharger rotors, featuring a 4 lobe design with a 170° twist for maximum flow, minimum temperature rise, quiet operation, and superior reliability. The inverted design places the supercharger down low in the valley allowing for extra long runner lengths to maximize low end torque. A high-flow cold air intake system allows the supercharger to breathe easy resulting in cooler air intake temperatures and increased power potential. The industry leading air-to-water DP-3C intercooler paired with a massive front-mount low temperature radiator will ensure your engine is breathing cool air even in the most extreme conditions. With its ground pounding low end torque and high efficiency cooling system, the Edelbrock E-Force supercharger is the perfect match for your 5.0L F-150 truck.

Installation time: 9 Hours

## TOOLS & MATERIALS REQUIRED

- Jack and Jack Stands
  **OR** Service Lift
- Panel Pullers
- Ratchet and Socket Set including 7mm, 8mm (deep), 10mm, 10mm (deep), 12mm, 13mm, 15mm, 18mm (deep)
- 5mm & 6mm Allen Sockets
- Allen Wrench Set
- 3/8" Breaker Bar
- Screwdrivers
- Side cutters and or Dremel Tool
- Spark Plug Gaping Tool
- 90° Power Drill
- 1/4" Drill Bit
- Pliers **OR** Hose Clamp Pliers
- Blue Thread Lock Fluid
- O-ring Lube
- Masking Tape
- Wire Ties (Zip Ties)
- Shop Rags
- Torque Wrench
- Utility knife
- Heat Gun
- 2 Gallons Motocraft Antifreeze/Coolant
  VC-3DIL-B Orange Pre-Diluted

**Edelbrock LLC, 2700 California Street, Torrance, CA 90503**
**Toll-Free Tech Line: 1-800-416-8628**

## IMPORTANT WARNINGS

***Before beginning the installation, use the enclosed checklist to verify that all components are present in the box. Then inspect each component for damages that may have occurred in transit. If any parts are missing or damaged, contact Edelbrock Technical Support, not your parts distributor.***

**WARNING**: Installation of this supercharger will result in a significant change to the performance characteristics of your vehicle. It is highly recommended that you take some time to familiarize yourself with the added power and how it is delivered. It is highly recommend to do this in a controlled environment. Take extra care on wet and slippery roads, as the rear tires will be more likely to lose traction with the added power. It is never recommended to turn off your vehicles traction control system.

***Proper installation is the responsibility of the installer. Improper installation will void all manufacture's standard warranties and may result in poor performance and engine or vehicle damage.***

Due to the complexity of the Edelbrock E-Force Supercharging system, it is recommended that this system only be installed by a qualified professional with access to a service lift, pneumatic tools, and a strong familiarity with automotive service procedures. To qualify for the optional supplemental warranty, it is necessary to have this system installed by a Certified ASE Technician, Ford Dealership, or an Authorized Edelbrock Installer. Failure to do so will void and/or disqualify any and all optional supplemental warranties offered with this system. Please contact the Edelbrock Technical Support department if you have any questions regarding this system and/or how your installer of choice will affect any warranty coverage for which your vehicle may qualify.

***Any previously installed aftermarket tuning equipment must be removed and the vehicle returned to an as stock condition before installing the supercharger.***

Any equipment that directly modifies the fuel mixture or ignition timing of the engine can cause severe engine damage if used in conjunction with the Edelbrock E-Force Supercharger System. This includes, but is not limited to: ignition boxes, air/fuel controllers, OBDII programmers, and any other device that modifies signals to and/or from the ECU. Aftermarket bolt-on equipment such as underdrive pulleys or air intake kits will also conflict with the operation of the supercharger and must be removed prior to installation. Use of any of these products with the E-Force Supercharger could result in severe engine damage.

***Edelbrock periodically releases improved versions of the calibration file found on the supplied handheld programmer. Check the website to ensure you have the latest version.***

## IMPORTANT WARNINGS (CONTINUE)

***The supercharger manifold includes a 1/8 NPT port to accommodate the installation of a boost gauge or pressure transducer. Remove the plug and replace it with a fitting to attach your gauge or sensor.***

The supercharger has been pre-drilled and tapped for a 1/8" NPT fitting at the rear of the passenger side intake runner flange. There is currently a plug sealing the hole, which can be removed, and replaced with a fitting to adapt to your sensor. **CAUTION:** Never cut into the vacuum lines leading to the bypass actuator for the purpose of tapping in a boost gauge. This can result in boost pressure readings that are higher than what is actually present in the intake plenum.

***Do not use a wideband oxygen sensor in place of the rear O2 sensor when dyno testing this supercharger system. The voltage signal will cause the fuel system to run lean and possibly cause engine damage.***


***91 octane or higher gasoline is required at all times. If your vehicle has been filled with anything less, it must be run until dry and refilled with 91 or higher octane gasoline twice prior to installation.***

***Failure to use the required 91 octane gasoline or higher could permanently damage your engine. Any failures associated with not using premium 91 octane gasoline or higher, will be ineligible for warranty repairs.***

**WARNING**: Advanced Driver Assistance Systems (ADAS) often require post-repair calibrations/targeting/aiming. ADAS Systems include:

- Forward Collision Warning
- Auto braking
- Lane Departure Warning
- Lane Keeping Assist
- Blind Spot Warning
- Rear Cross Traffic
- Rearview Camera
- And various other OEM ADAS Equipment

Installation of this supercharger and charge air cooler may require removal and replacement of front grille, front bumpers, or other pieces which may be equipped with ADAS sensors. It is the responsibility of the installer to ensure that all necessary ADAS systems that require post-repair calibrations/targeting/aiming is performed by qualified repair facilities.

### Edelbrock Authorized Installer Disclaimer

*Authorized installers of Edelbrock products are independent companies over which Edelbrock has no right of control. Edelbrock LLC makes no claims regarding the abilities, expertise or competency of individual employees of any authorized installer. Each authorized installer is an independent company and makes its own independent judgments. Edelbrock LLC specifically disclaims any responsibility to any party including third parties for the actions, or the failure to act, of individuals, agents or a company authorized in the installation of Edelbrock LLC products.*

# INSTALLATION HARDWARE IDENTIFICATION GUIDE

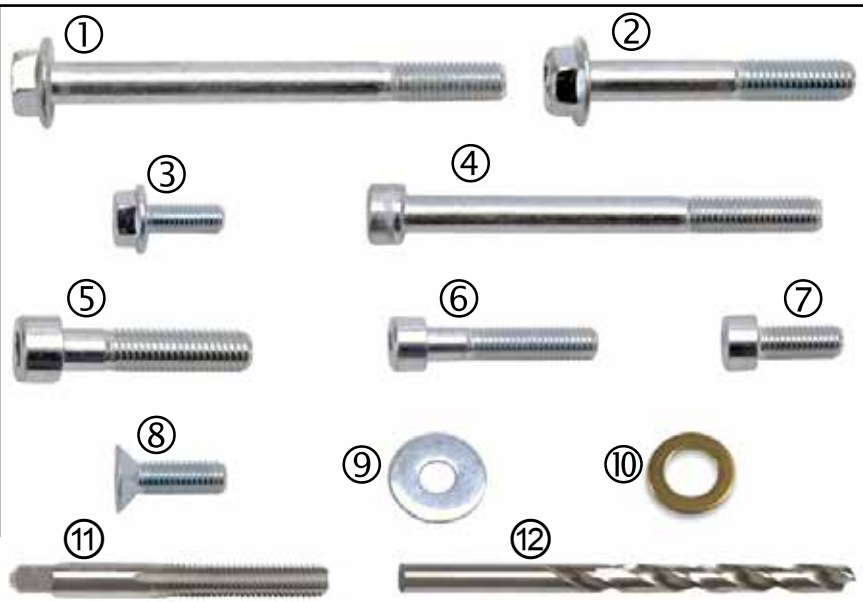
*(Parts Are Not To Scale)*

**BAG #1 - MANIFOLD HARDWARE**

| Item | P/N | QTY. | Description | Torque Spec |
|---|---|---|---|---|
| 1 | 36-1508 | 10 | Bolt, Hex Flange, M6 x 30mm | 8 ft/lbs |
| 2 | 36-1575 | 2 | Bolt, Hex Flange, M6 x 25mm | 8 ft/lbs |
| 3 | 38-0186 | 8 | Bracket, Injector | N/A |
| 4 | 68-0095 | 8 | Bolt, BHCS, M4 x 4mm | N/A |
| 5 | 36-1507 | 4 | Bolt, SHCS, M6 x 16mm | N/A |
| 6 | 51-4226 | 1 | O-Ring, Throttle Body (not pictured) | N/A |

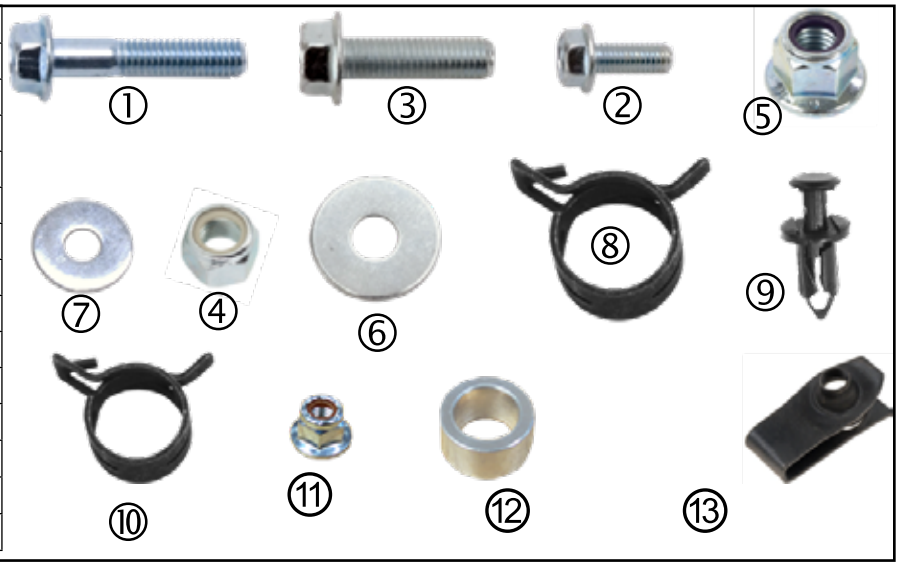

**BAG #2 - FEAD HARDWARE**

| Item | P/N | QTY. | Description | Torque Spec |
|---|---|---|---|---|
| 1 | 36-4056 | 1 | Bolt, Hex Flange, M10 x 110mm | 32 ft-lbs |
| 2 | 36-4012 | 1 | Bolt, Hex Flange, M10 x 65mm | 32 ft-lbs |
| 3 | 36-4018 | 3 | Bolt, Hex Flange, M8 x 20mm | 22 ft-lbs |
| 4 | 36-3812 | 3 | Bolt, SHCS, M8 x 90mm | 22 ft-lbs |
| 5 | 36-4013 | 1 | Bolt, SHCS, M10 x 45mm | 32 ft-lbs |
| 6 | 36-1578 | 1 | Bolt, SHCS, M10 x 35mm | 32 ft-lbs |
| 7 | 36-4063 | 1 | Bolt, SHCS, M10 x 20mm | 32 ft-lbs |
| 8 | 36-4017 | 1 | Bolt, Countersunk, M10 x 30mm | 32 ft-lbs |
| 9 | 82-0120 | 3 | M8 Washer | N/A |
| 10 | 36-4068 | 1 | Shim | N/A |
| 11 | 51-7125 | 1 | Tap, 10 x 1.50, D6 Pitch, 4 Flute | N/A |
| 12 | 51-6000 | 1 | Size 8.5mm Drill Bit | N/A |




**BAG #3 - INTERCOOLER HARDWARE**

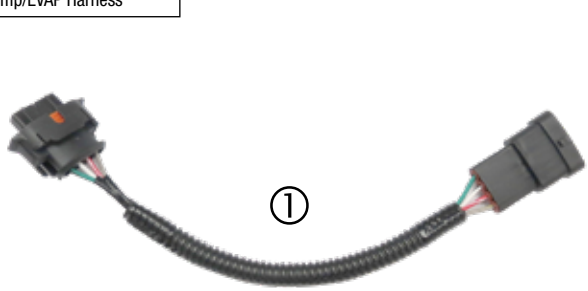
| Item | P/N | QTY. | Description | Torque Spec |
|---|---|---|---|---|
| 1 | 36-1508 | 3 | Bolt, Hex Flange, M6 x 30mm | N/A |
| 2 | 36-1552 | 8 | Bolt, Hex Flange, M6 x 10mm | N/A |
| 3 | 36-4018 | 3 | Bolt, M8 x 20mm | N/A |
| 4 | 60-1508 | 4 | Nut, M6 | N/A |
| 5 | 60-9399 | 3 | M8 Nut | N/A |
| 6 | 82-5240 | 2 | 3/8 Washer | N/A |
| 7 | 82-2897 | 3 | 5/16 Washer | N/A |
| 8 | 46-2155 | 11 | 3/4" Hose Clamp | N/A |
| 9 | 52-4199 | 1 | Push Pin | N/A |
| 10 | 51-7045 | 2 | 1/2" Hose Clamp | N/A |
| 11 | 36-6081 | 1 | Nut, M5 | N/A |
| 12 | 12-3033 | 1 | Spacer, 3/4" OD | N/A |
| 13 | 60-0101 | 4 | Nut, Clip Style | N/A |



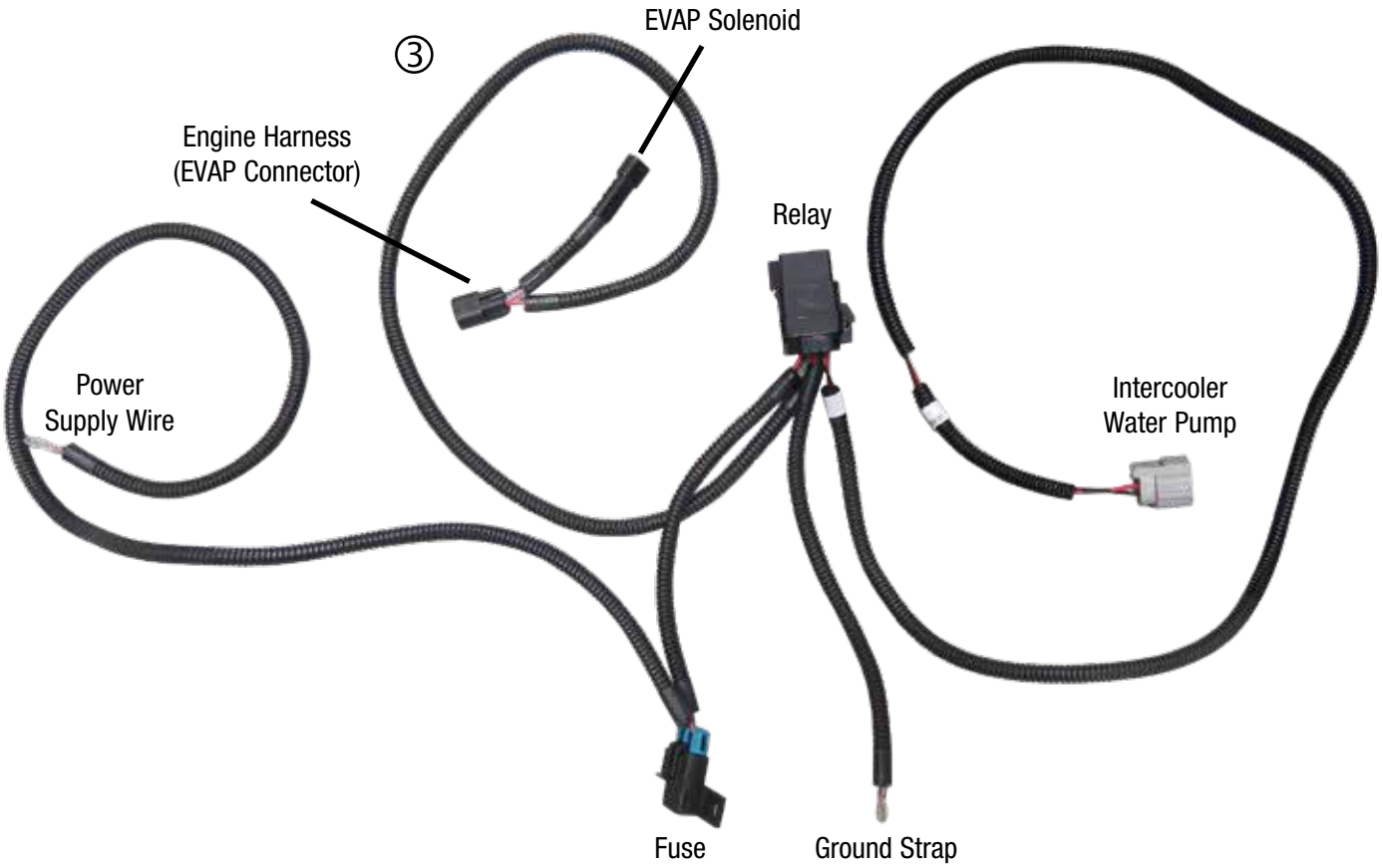
| INTERCOOLER AND PCV HOSES | | | |
|---|---|---|---|
| Item | P/N | QTY. | Description |
| 1 | 56-1558 | 1 | Hose, LTR to SC |
| 2 | 56-1559 | 1 | Hose, SC to Surge Tank |
| 3 | 56-1533 | 1 | Hose, Water pump to LTR |
| 4 | 56-1575 | 1 | Hose, Surge Tank to Water pump |
| 5 | 56-1576 | 1 | Hose, Coolant Bleed |
| 6 | 56-1602 | 1.5’ | Hose, 1/2” Cadbar P/S PCV |
| 7 | 56-1602 | .72’ | Driver Side PCV |
| 8 | 56-1601 | .5’ | Hose, Aspirator to Elbow |
| 9 | 56-1602 | .21’ | Hose, Brake Booster |
| 10 | 22-4183 | 1 | Nose to Brake Booster |
| 11 | TBD | 1 | Brake Booster to Intake Tube |
| 12 | 22-4613 | 1 | Brake Booster Elbow |
| 13 | 56-1602 | 2“ | Hose, 1/2” Cadbar P/S PCV |
| | 56-1527 | 2’ | Heater Hose, 3/4” |
| | 56-1600 | .5’ | Hose, 3/8” EVAP |

## WIRE HARNESS GUIDE

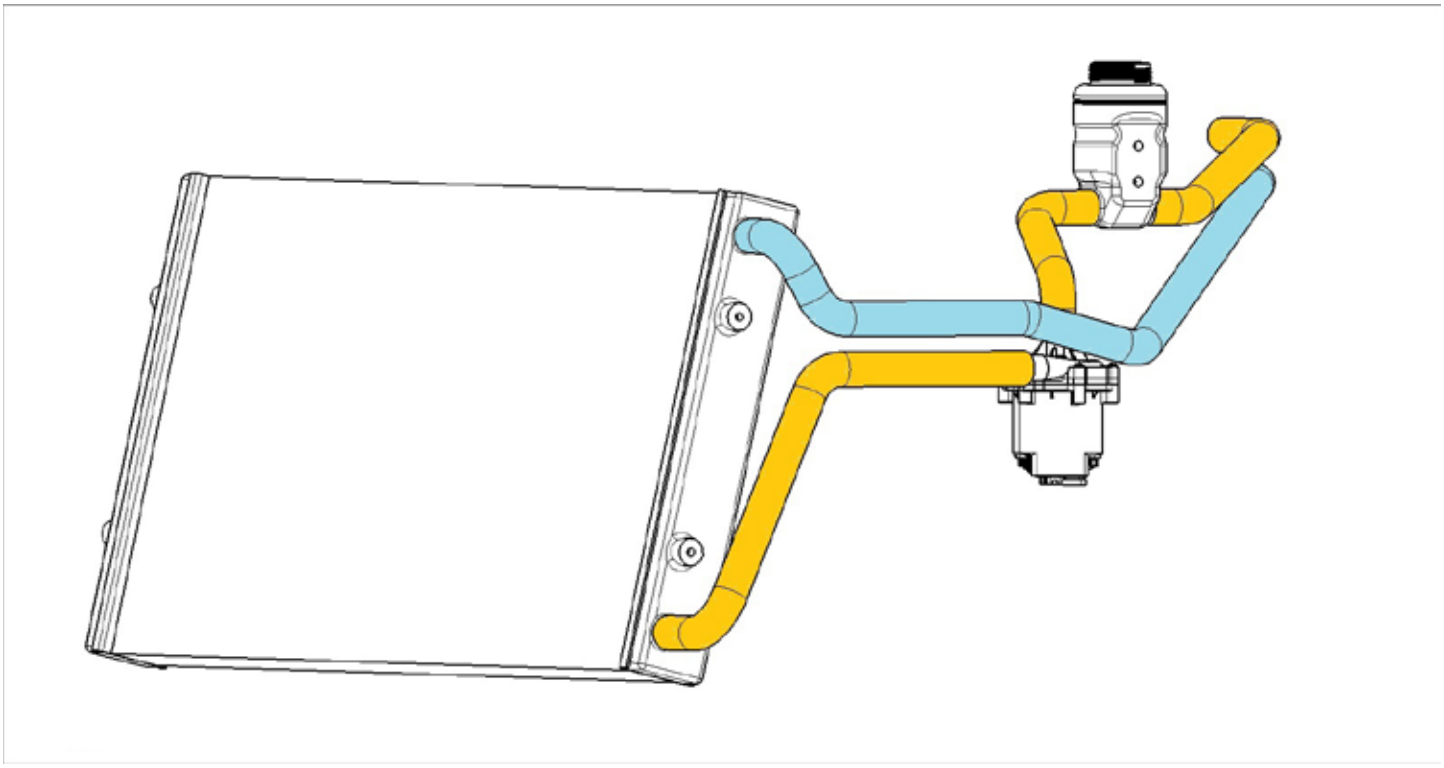
| WIRE HARNESSES | | | |
|---|---|---|---|
| Item | P/N | QTY. | Description |
| 1 | 37-1573 | 1 | T-MAP Sensor Harness |
| 2 | 37-6626 | 1 | ETC Extension Harness |
| 3 | 37-1562 | 1 | Water Pump/EVAP Harness |





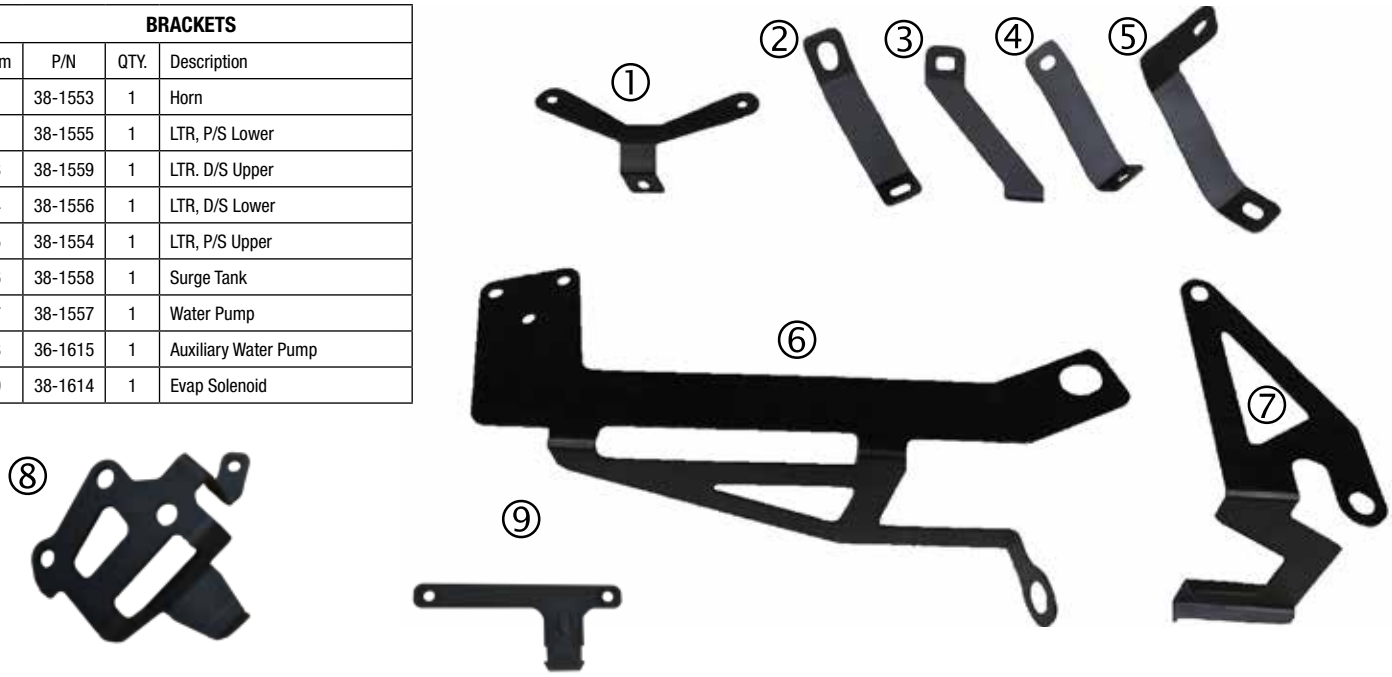


## INTERCOOLER HOSE ROUTING GUIDE



## KIT BRACKETS

| BRACKETS | | | |
|---|---|---|---|
| Item | P/N | QTY. | Description |
| 1 | 38-1553 | 1 | Horn |
| 2 | 38-1555 | 1 | LTR, P/S Lower |
| 3 | 38-1559 | 1 | LTR. D/S Upper |
| 4 | 38-1556 | 1 | LTR, D/S Lower |
| 5 | 38-1554 | 1 | LTR, P/S Upper |
| 6 | 38-1558 | 1 | Surge Tank |
| 7 | 38-1557 | 1 | Water Pump |
| 8 | 36-1615 | 1 | Auxiliary Water Pump |
| 9 | 38-1614 | 1 | Evap Solenoid |



# 2018-2019 SCT BDX Instructions

**WARNING: Battery must be sufficiently charged before starting the PCM flashing procedure.**

**Do not flash the PCM until you are ready to install the supercharger. Once the PCM is flashed, DO NOT START the engine until the installation of the E-Force supercharger is complete.**


**Figure 1**

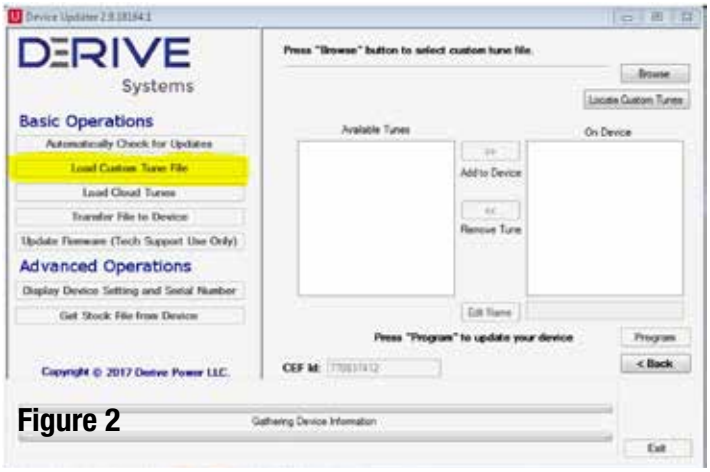



**Figure 2**

**1.** Begin by downloading the SCT device updater software: http://cdn.derivesystems.com/software/SCTDeviceUpdater.exe

**2.** With the device updater open, connect the BDX to your PC with the supplied USB cable and verify it is up to date by selecting ***AUTOMATICALLY CHECK FOR UPDATES.*** *(Figure 1)*

**3.** Once any updates have been completed, use the supplied OBD cable to connect the BDX to the vehicles OBD port.

**4.** Put the vehicles ignition into ACC mode but do not start the engine.

**5.** Select VEHICLE INFO to find the ECU strategy number. This number, along with the vehicle information, will need to be emailed to: calibration@edelbrock.com

a. Model Year
b. Transmission Type (auto or manual)
c. Fuel Octane Desired (91 or 93)

***NOTE:*** *If there is a message which reads "Calibration not supported", see page 31.*

**6.** Once you have received the updated supercharger calibration file, reconnect the BDX to your PC and open the SCT device updater software. Recheck for updates by clicking AUTOMATICALLY CHECK FOR UPDATES once more.

**7.** Once any updates have completed, save the updated supercharger calibration from the Edelbrock email to your PC. Then select LOAD CUSTOM TUNE FILE. *(Figure 2)*

**8.** Select BROWSE to find the updated supercharger calibration file you just saved to your PC. *(Figure 3)*

**9.** Once the file is located, highlight the supercharger calibration (EForce) and select ADD TO DEVICE. Then click PROGRAM to complete the transfer. (*Figure 4)*

*(CONTINUED ON NEXT PAGE)*

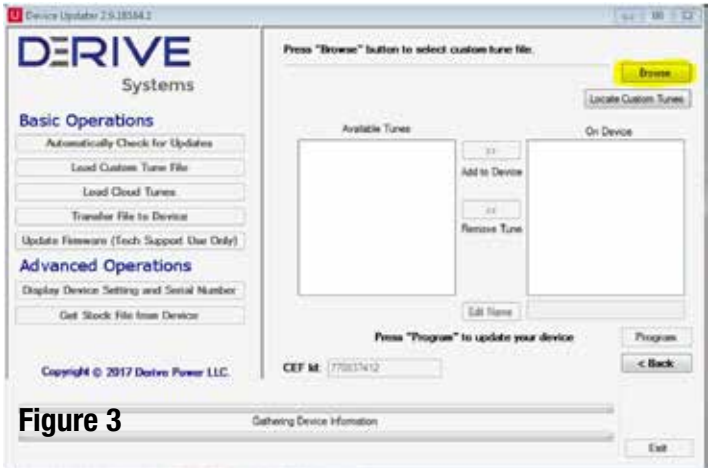



**Figure 3**

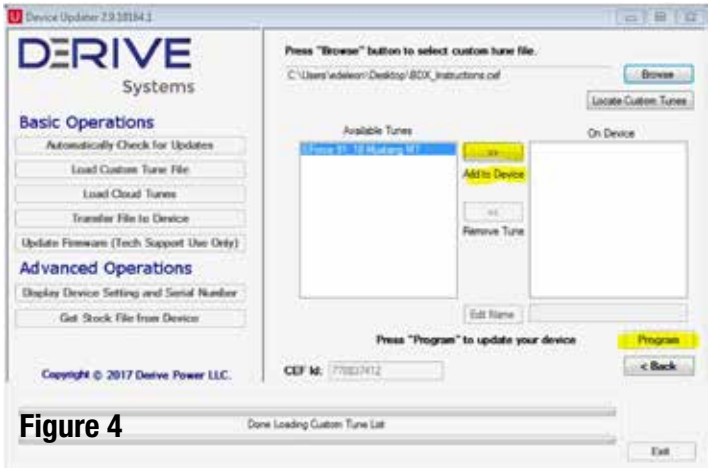
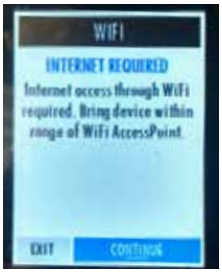



**Figure 4**

## 2018-2019 SCT BDX Instructions (Continued)




**10.** After verifying the VIN# you will be prompted to connect the BDX to WIFI.


**11.** Select the available WIFI network and follow the prompts to complete the connection. With a successful WIFI connection established, the programmer will begin updating files and firmware for the BDX.


**12.** Once all WIFI updates are completed, a ***CLOUD SYNC*** screen will appear. Select ***SKIP,*** as we will be emailing the E-Force calibration file to you.


**13.** After selecting ***SKIP*** for the ***CLOUD SYNC,*** the ***STREET USE NOTICE*** will appear. Select ***CONTINUE*** and then ***CUSTOM TUNES,*** then the EFORCE file for your vehicle.

Follow the prompts given by the programmer to complete the flash

INFORMATION NEEDED:

E-Mail Address:
Vehicle Year:
Vehicle Make:
Vehicle Model (Specify if Z06, Z51, etc..):
Engine Size:
Transmission:
Fuel Octane (91 or 93 ONLY):
Supercharger System Part Number:
Supercharger Serial Number:
Programmer Serial Number:

## SUPERCHARGER INSTALLATION

1. Unplug the programmer cable from the OBD-II port. This concludes the PCM flashing procedure. DO NOT start the engine until the supercharger installation is complete.

2. Using a 10mm socket, remove the negative battery terminal and place it away from the battery. Cover the terminal with a shop rag to avoid accidental contact during the installation.

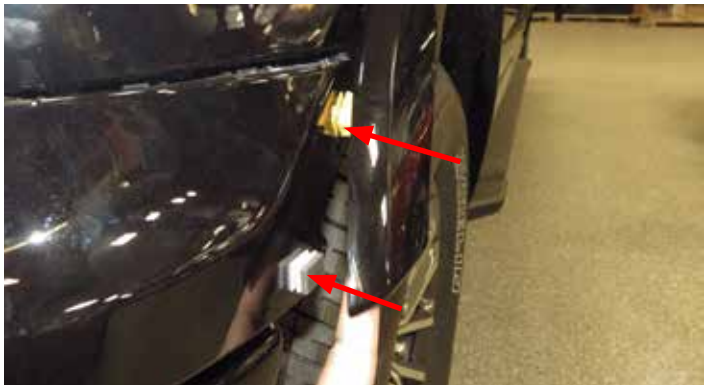
3. Drain the coolant by loosening the petcock located on the driver side of the radiator. ***TIP:*** *Placing a hose onto the drain spout will reduce potential coolant spillage.*

4. Using a panel puller, remove fourteen (14) push pins securing the top radiator shroud. Remove the shroud and set aside.

5. Using an 8mm socket, remove four (4) bolts securing the grille.

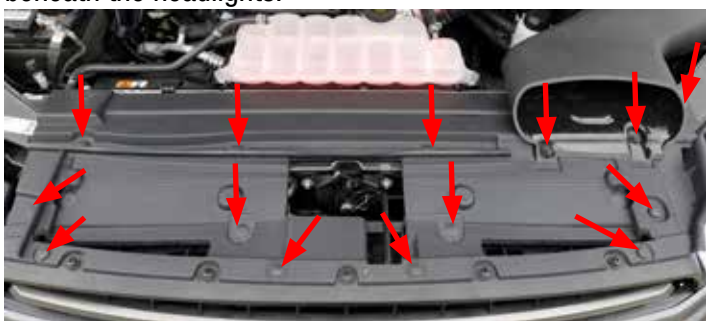
6. Remove the two (2) bolts per side, securing the fender flares to the wheel well.

7. Pull on fender flare until the indicated clips disengage from the flare.



8. Remove plastic bumper cover by pulling outward until panel detaches. Take clips from step 18 out of bumper cover by pressing in the tabs on the inside of the bumper cover.

9. Remove the one (1) bolt per side securing the grille beneath the headlights.



10. Pull outward on the grille tabs located in the center of the headlights. The grille should no longer be held in place by them.

11. Unplug the grille shutter control and ambient temp sensor located in front of the hood latch. Using a panel puller, remove harness from grille. **Remove grille by lifting up and out and set aside.**

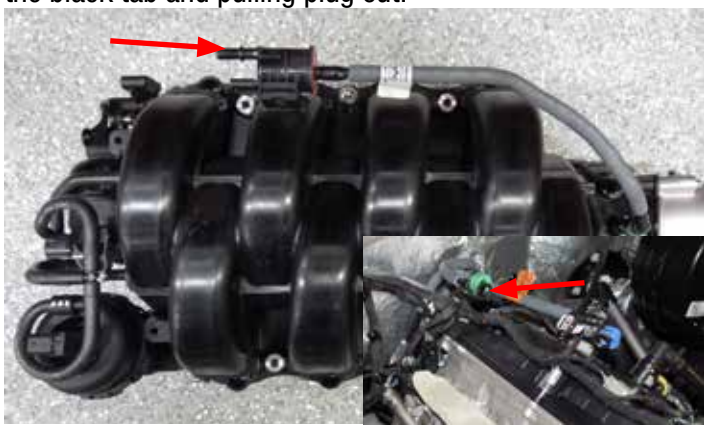
12. Loosen the two (2) intake tube clamps with 7mm socket and remove coolant bleed tube from intake tube holster.

13. Remove the brake aspirator and driver side PCV hose from the back of the intake tube. Remove PCV hose from driver side valve cover and set aside. **TIP:** The brake hose is removed by pushing down the yellow clip and pulling out on connector. The PCV hose is removed by pushing out on the grey tab and pulling the connector out.

14. Remove the air box bolt using a 13mm socket. Remove intake tube and air box assembly from truck. The air box will be reused.

15. Remove the brake booster hose assembly by pushing down the white clip on the connector to the booster and remove the three (3) pinch clamps indicated by the red arrows. Set hose assembly aside as some parts will be reused later.

16. Disconnect the evap line from the solenoid by squeezing the green clip together at the bottom and lifting the tab up. Disconnect evap harness by pushing down the black tab and pulling plug out.



17. Remove the passenger side PCV hose by pushing the grey tabs out and pulling up on the connectors.

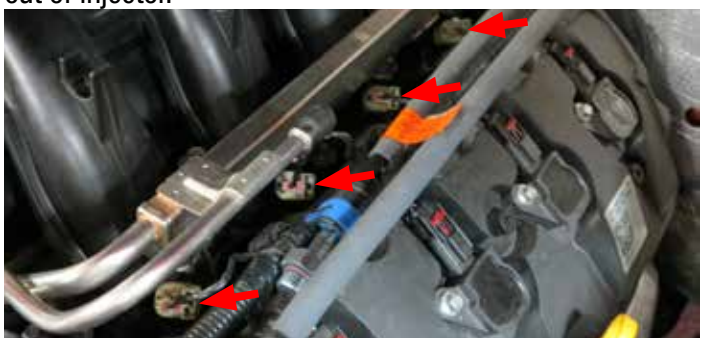
18. Disconnect the throttle body harness by pulling the red locking tab out and push down on the black tab as you pull the plug out.

19. Remove the foam fuel rail isolators and discard.

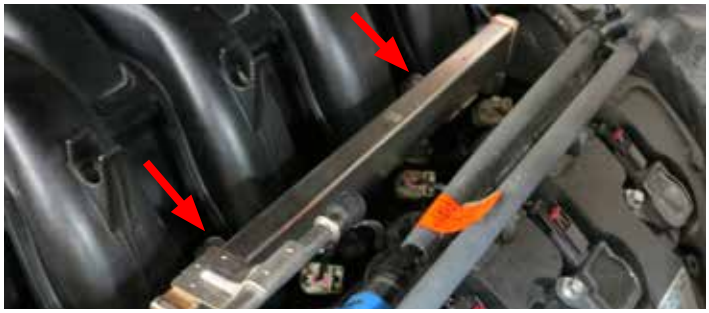
20. With the vehicle **COMPLETELY** cooled. Put rags under the fuel rail fitting and remove the fuel line from the rail. Cap off the fuel rail and fuel line with appropriate cap and plug to prevent spillage. Clean up any spilt fuel before proceeding.

21. Repeating spill protection procedures from step 31, remove the fuel line from the passenger side fuel rail. Use a 3/8" fuel line disconnect tool to remove the line.

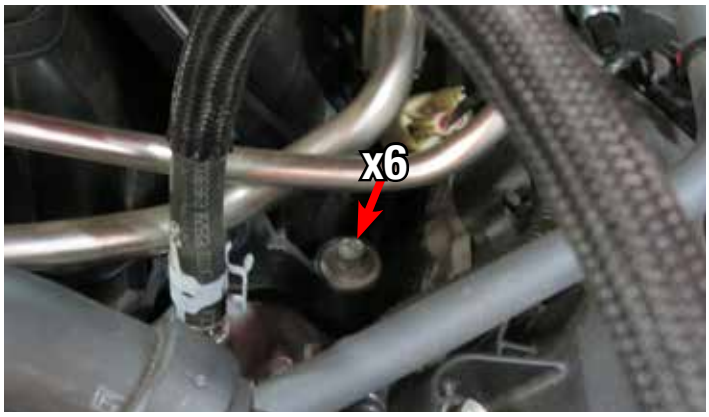
22. Unplug the eight (8) fuel injector connections (driver side shown) by pushing down on the tab and pulling plug out of injector.



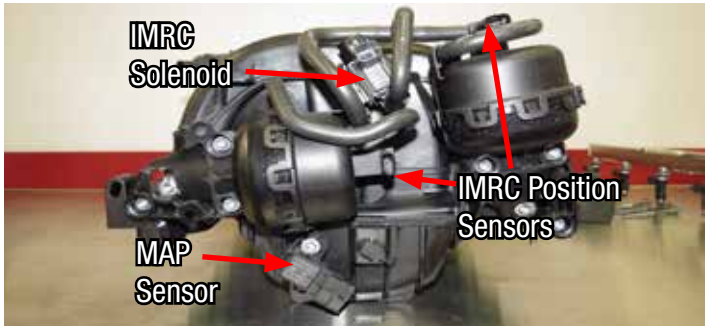
23. Using a 10mm socket, remove four (4) fuel rail bolts (driver side shown). Firmly and evenly lift up on fuel rail from both sides and remove from intake manifold.



24. Using an 8mm socket, loosen the remaining six (6) intake manifold bolts. Note: Bolts can not be removed from manifold. Loosen enough so threads are disengaged from the cylinder head.




25. With the stock manifold remaining in the vehicle, rotate and manipulate it until you are able to remove the 4 connectors from the rear of the manifold as shown below. Disconnect any plastic anchors from the back of the manifold.



26. Make sure the IMRC harness is completely disconnected from above locations and remove the manifold. Clean the cylinder head surfaces and tape off intake ports so nothing can mistakenly fall into any of the cylinders.

27. Remove the IMRC Solenoid from the manifold. Reconnect to the harness and zip tie out of the way. The solenoid will not be used but MUST be plugged in for proper engine operation.

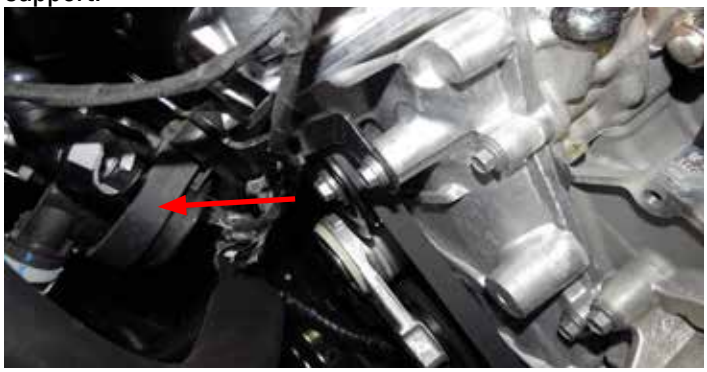
28. Tape up the end of the two (2) IMRC position sensor plugs and secure plugs to the main harness out of the way. These will not be reused.

29. Using a 15mm socket, release the tension from the primary drive tensioner by rotating the tensioner counter-clockwise. Remove the primary drive belt and discard. Then use a 13mm socket to remove the primary tensioner from the front cover.

30. Using a 3/8" breaker bar or equivalent, release the tension from the secondary A/C drive tensioner and remove the A/C drive belt and discard.

31. Use a 10mm and 15mm socket to remove the secondary A/C drive tensioner and the idler pulley. **NOTE: Carefully bend AC line away from tensioner just enough to allow tool clearance.**

32. Remove the auxiliary water pump from the rubber support.

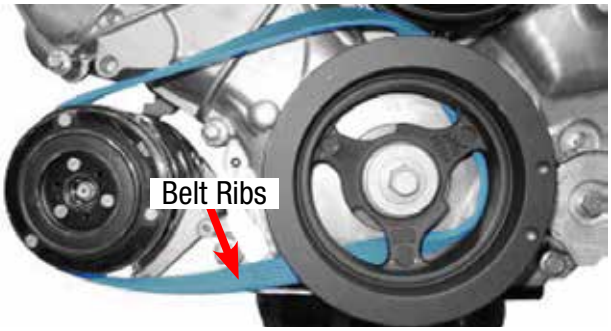


33. Remove the auxiliary water pump bracket from the front of the engine by removing the two (2) bolts and one nut securing it. The second bolt (not shown) is located further down on front of engine.

34. Remove rubber support from factory bracket and install into provided bracket as shown.

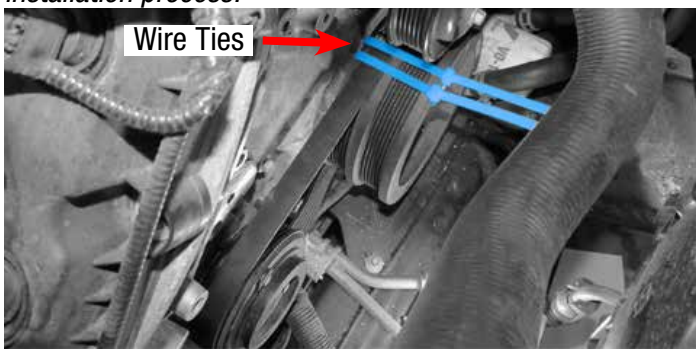
***CAUTION**: The following A/C compressor belt installation procedures must be followed very closely to avoid damaging the stretchy a/c compressor belt. If you have any questions please contact Edelbrock's Tech Hotline at 800-416-8628.*

35. Position the A/C compressor belt behind the crankshaft pulley with the belt ribs facing towards the front of the vehicle. Carefully position the belt onto the A/C compressor pulley as shown.




36. Position the A/C compressor belt onto the top of the crankshaft pulley. Using wires ties, securely hold the belt onto the crankshaft pulley at the 12 o'clock position. Do this by feeding the wire ties through the crankshaft pulley spokes, up and over the A/C compressor belt and then securely tighten the wire ties.

***CAUTION:** To avoid damaging the A/C compressor belt, make sure the belt is above the oil pan flange at all times during the installation process. The oil pan flange is very sharp and may cut into the belt if contact is made during the installation process.*




***CAUTION:** It is crucial to maintain the belt alignment with A/C compressor pulley when rotating the crankshaft pulley. This is done by carefully pulling the belt towards the front of the vehicle, with your free hand, while rotating the crankshaft pulley. The belt will have a tendency to skip a groove if not done so; resulting in an unusable belt.*

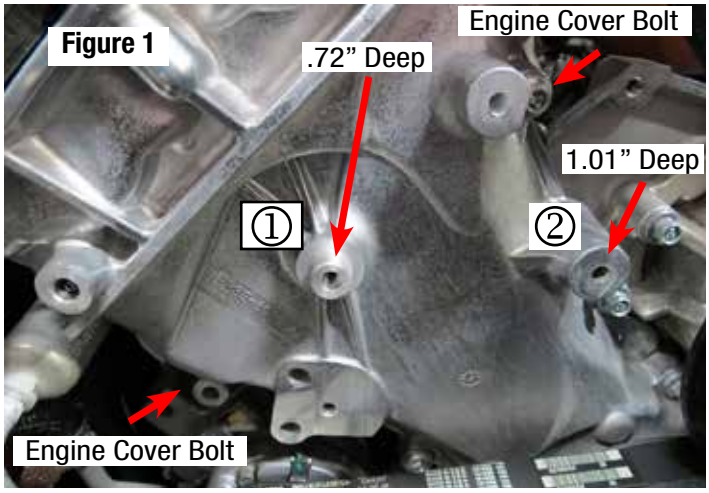
37. With the A/C compressor belt positioned above the oil pan flange, slowly rotate the crankshaft pulley clockwise using a 18mm socket with a long ratchet or breaker bar. Continue rotating until the wire ties are at the 6 O'clock position.

38. Remove the tie straps and rotate the crankshaft clockwise 1 full rotation to verify the A/C compressor belt has correctly seated onto the crankshaft and A/C compressor pulley. Inspect the belt for any damages before proceeding.

***NOTE: Carefully read Steps 50-52 below as it pertains to Figure 1 and the procedure to properly prep the new tensioner bracket mounting location on the passenger side engine cover.***

39. Remove the indicated engine cover bolts using a 10mm socket. *DO NOT drill or tap these bolt locations.*

40. Use a 90˚ drill and the 8.5mm drill bit supplied in Bag #2, drill out holes #1 and #2 on the front engine cover (See Figure 1). Hole #1 should be drilled to .72" deep. Hole #2 should be drilled to 1.01" deep.




41. Tap hole #1 and #2 with the M10 x 1.5 tap from Bag #2. **Remove all metal shavings from engine bay.**

***NOTE: Steps 53-58 refers to Figure 2 below.***

42. Secure the new tensioner bracket to the bosses that were just drilled and tapped with bolts supplied in Bag #2.

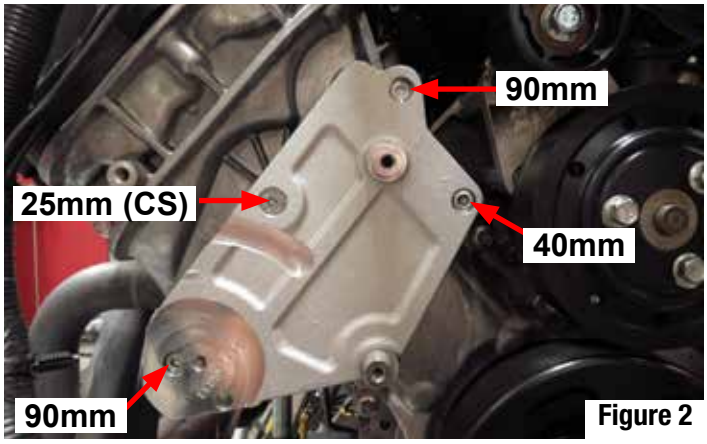
***NOTE: A .045" thick shim from Bag #2 is supplied to bridge the gap between the engine cover and the tensioner bracket. This location is secured using the M10 x 30mm countersunk bolt from Bag #2. Test fit the tensioner bracket to verify if the shim is not required before proceeding.***

43. Apply blue Loctite or equivalent, to threads and loosely install the following four (4) bolts, starting with the M10 x 30mm countersunk bolt into the countersunk feature of the bracket located on the left side of the bracket.

44. Loosely install the M8 x 90mm bolt through the engine cover hole at the top, then loosely install the M10 x 35mm bolt through the hole below and to the right.

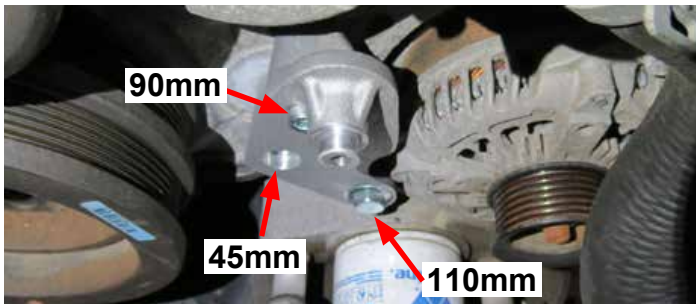
45. Loosely install the M8 x 90mm bolt in the counter bore feature at the lower left section of the bracket.

46. Proceed by tightening the countersunk bolt first and then tightening the remaining surrounding bolts. Torque all bolts to 32 ft-lbs.



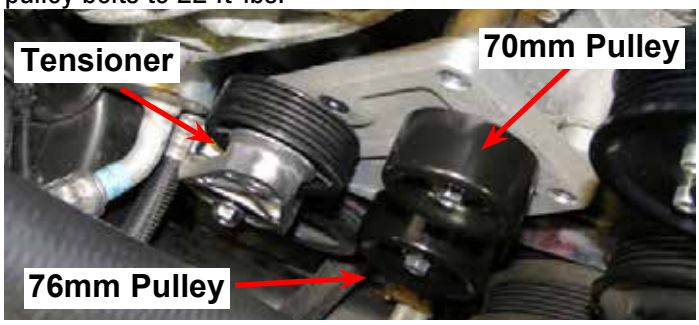

Using a 15mm and 10mm socket, remove the lower bolt securing the alternator and the front cover bolt directly above the tensioner bolt hole.


47. Using the bolts supplied in Bag #2, secure the small idler bracket by installing the M10 x 110mm bolt through the ear of the alternator, the M8 x 90mm bolt into the top front cover hole and the M10 x 45mm bolt through the center hole that was used to secure the stock tensioner. Torque M10 x 110mm bolt to 32 ft/lbs and the other two bolts to 22 ft-lb.



48. Install the supplied tensioner with one (1) M10 x 65mm bolt from bag #2. Leave the tensioner bolt loose until the belt is installed. **NOTE: AC line should be CAREFULLY bent away from the tensioner to allow clearance as shown below.**

49. Install two (2) idler pulleys, one (1) 76mm and one (1) 70mm, with two (2) M8 x 20mm bolts and washers from bag #2. The smaller 70mm pulley should be installed on the uppermost boss on the tensioner bracket. Torque both idler pulley bolts to 22 ft-lbs.




50. Using one (1) M8 x 20mm bolt and one (1) M8 washer from bag #2, install the 65mm pulley to the small idler pulley bracket. Torque to 22 ft-lbs.

51. Using hose clamp pliers, remove factory coolant bleed hose and discard. Use the factory clamps to install the included hose show below.

52. Using an 8mm socket, remove the ignition coils to access the spark plugs. Remove all eight (8) spark plugs with a 5/8" spark plug socket and discard. Gap the provided spark plugs to .035". Torque spark plugs to 9 ft-lbs., Then reinstall the ignition coils.

53. Install TMAP harness extension and tuck out of the way in preparation for supercharger installation.

54. Remove the O-ring manifold gaskets from the factory manifold and install them onto the supercharger runners. Apply a small amount of O-ring lubricant to the exposed area of the gaskets. This will help prevent tears during installation of the supercharger .

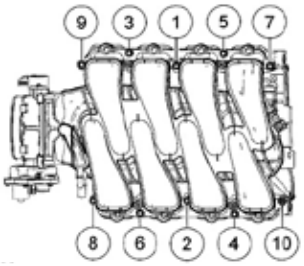
55. Apply blue thread lock fluid onto the threads of the eight (8) M6 x 12mm SHCS bolts from the side cover kit and loosely screw on the side cover brackets to the underside of the supercharger lid.

56. For proper bracket alignment, test fit the side covers onto the brackets using eight (8) M6 X 25mm bolts from the side cover kit. While pushing the side covers forward, fully tighten the bracket bolts. Once all brackets are aligned and tightened, remove the side covers.


57. Be sure that the engine bay is clean and free of debris, then remove the masking tape used to protect the intake ports from contamination.

58. With the help of an assistant, carefully lower the supercharger assembly onto the cylinder heads angling the back of the supercharger in first. Be especially careful not to pinch any wires between the supercharger and the cylinder heads. **At this time, connect the TMAP harness to the sensor located on the driver side rear of the supercharger.**

59. Secure the supercharger manifold to the cylinder heads using a 10mm swivel socket to install ten (10) M6 x 30mm intake manifold bolts supplied in hardware Bag # 1. Using the torque sequence below, torque the bolts to 8 ft-lbs.




60. Apply O-ring lube to both ends of the OEM fuel injectors, then install them into the supplied fuel rails, oriented so the electrical connectors will face away from the supercharger.

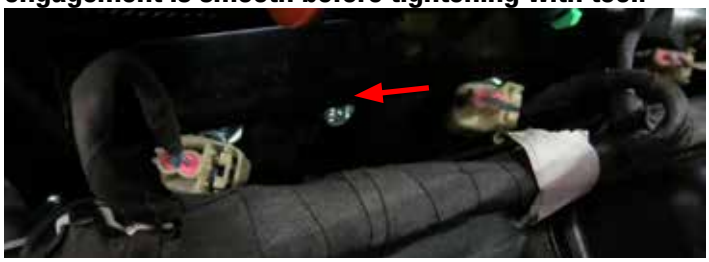
61. Install injector orientation brackets using the M4 x 4mm screws from Bag # 1.

62. Remove the factory fuel pressure sensor from the driver side factory fuel rail.

63. Apply fuel resistant thread sealer to the threads of the fuel pressure sensor adapter. Thread the adapter into the supercharger fuel rail until snug. **Ensure not to overtighten and strip threads.** Apply the same thread sealer to the fuel pressure sensor and thread it into the adapter. Prevent the adapter from twisting in further with a second wrench. Optionally continue to twist the sensor once snug until it aligns with fuel rail.

64. Using O-ring lube, install the fuel caps onto the fuel rails. Attach the supplied fuel crossover to the rear of both rails. Insert the straight fittings into the fuel rails as shown.


65. Install the fuel rails and secure using four (4) M6 x 16mm bolts from Bag # 1. Bolt holes are located beneath the fuel rail. **Start fuel rail bolts BY HAND first and make sure thread engagement is smooth before tightening with tool.**



66. Reconnect the fuel injectors and fuel rail pressure sensor. ***WARNING: Never attempt to rotate the injectors***.

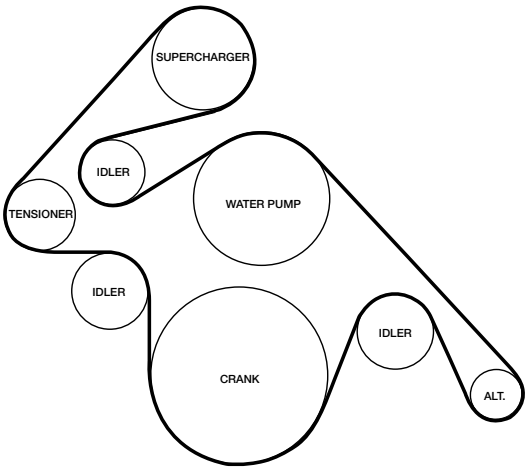
67. Connect the factory fuel lines to the straight fittings on the driver and passenger side fuel rails.

68. Remove the evap solenoid from the factory manifold. Using two (2) M6 x 25mm bolts Install the evap bracket to the supports. Install the solenoid onto the bracket using the factory rubber grommet. **NOTE: These bolts will be need to be removed later when installing the side covers.**

69. Install the provided hose onto the evap solenoid and connect the 90° fitting to the fitting on the supercharger inlet. Connect the factory evap line to the rear of the solenoid.

70. Using an 8mm socket, remove the throttle body from the stock manifold and install it onto the supercharger manifold using the supplied O-ring gasket, factory bolts and included extension harness.

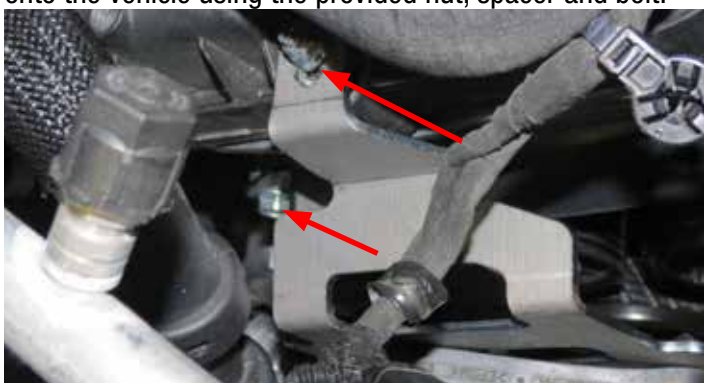
71. Install the supplied belt onto the tensioner then torque the tensioner bolt to 32 ft/lbs. Use a 3/8" breaker bar to rotate the tensioner clockwise, then finish installing the belt according to the routing diagram shown below.




72. Remove the heater hose directed toward the driver side from the auxiliary water pump.

73. Install the 3/4" straight fitting into the factory heater hose. Install provided 2' section of 3/4" heater hose onto other end of the straight fitting. Secure hoses with provided hose clamps. Reposition hoses along the ABS unit to ensure belt clearance.

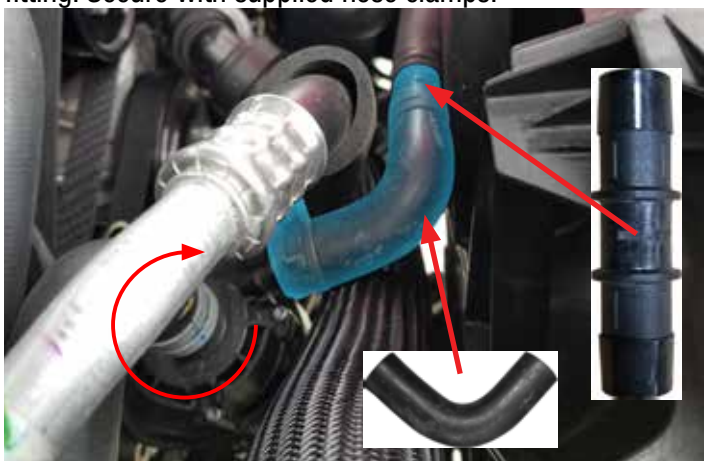
74. Install the auxiliary water pump bracket and isolator onto the vehicle using the provided nut, spacer and bolt.



75. Reinsert the pump into the isolator on the newly installed bracket.

76. Pass the hose across the radiator towards the factory auxiliary water pump on the passenger side of the vehicle.

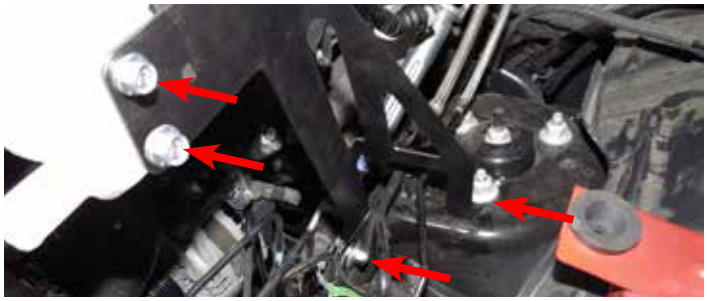
77. Clock the factory auxiliary water pump so the coolant output is pointing towards the radiator. Install the 90° elbow on to the pump outlet and splice together to the rest of the heater hose using the 3/4" straight fitting. Secure with supplied hose clamps.



78. Install the intercooler pump damper onto the pump then install pump bracket into damper as shown below.

79. Locate the two (2) holes on the driver side air box support and install intercooler pump and bracket assembly using the M8 x 20mm bolt and Nut located in bag #3. **NOTE: The bolt on the left can be loosely installed at this time. The intercooler relay ground wire will connect to this point later.**

80. Remove the indicated strut tower nut and install intercooler reservoir bracket over stud. Loosely tighten the strut tower nut. Using the supplied M8 x 20mm bolt, washers and nut located in bag #3, fasten the bracket to the hole on the back of the control arm mount. Install intercooler overflow tank on bracket using the supplied M6 x 10mm bolts and align bracket so tank is sitting upright. Tighten all hardware. **Do not overtighten bolts securing tank to bracket.**



81. Install the supercharger to surge tank hose as shown using the supplied pinch clamps in bag #3.

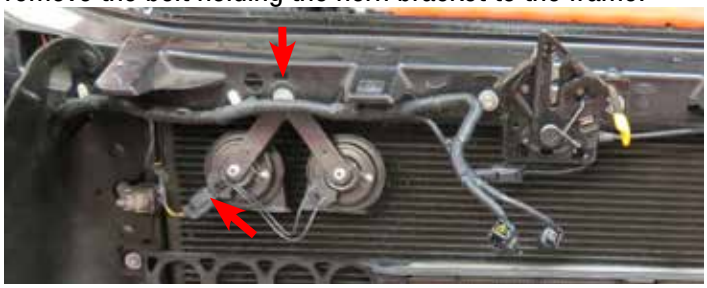
82. Install the surge tank to water pump hose as shown using the supplied pinch clamps in bag #3.

83. Install supercharger to LTR hose using the supplied pinch clamps in bag #3 and route through radiator shroud as shown.

84. On 2019+ models, trim the cowl side piece as shown here.

85. Install water pump to LTR hose using the supplied pinch clamps in bag #3 and route through the radiator shroud as shown.

86. Disconnect the harness from the horn assembly and remove the bolt holding the horn bracket to the frame.



87. Disassemble the horns from the factory bracket and reinstall on the included, new bracket as shown.

88. Install the LTR brackets by first removing the plastic push pins in locations #1, #3 and #4. Orient the brackets as shown below and secure with the supplied hardware. Leave hardware slightly loose for adjustment later. **Note: The brackets should be mounted under the rubber radiator shroud. The bolt and washer will hold the shroud and bracket in place. All hardware is located in bag #3.**

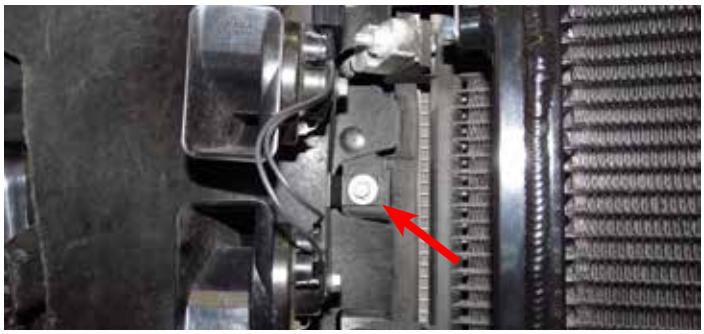
**Location #1** will use the supplied clip nut along with the M6 x 30mm bolt and washer. **Location #2** will use the factory bolt to secure the bracket to the original A/C condenser mounting point. Leave this bolt slightly loose as well so the bracket can be rotated. **Location #3 and #4** will use the supplied M6 x 30mm bolt, washers and nuts.


89. Install the LTR onto the brackets using the M6 X 10mm bolts from bag #3. Leave these bolts slightly loose for alignment.

90. Remove the blue caps from the LTR and install the hoses onto the fittings. Make sure the pinch clamps are installed on the hoses prior to installing onto the fittings.

91. Align the LTR and brackets so the LTR sits level and tighten all hardware.

92. Install the new horn assembly onto the passenger side shown using the factory bolt. Reconnect the horn harness.



93. Install the intercooler pump harness using steps A-D (harness ends are labeled for your convenience). **Note: All wires should be clear of any moving or potentially hot surfaces. Secure wires in a safe position with wire ties as necessary.**

A) Secure the power wire under the 10mm nut on the positive battery terminal.

B) Connect the engine harness to the relay harness and then connect the relay harness to the Evap solenoid.

C) Connect the relay harness to the previously installed intercooler water pump and fasten the ground strap to the pump bracket.

D) Position the relay on the driver side plastic wheel well as shown below. Make sure the wires have some slack and mark the area inside the metal tab attached to the relay. Drill a 1/4" hole on the mark and fasten the relay to the new mounting point using the supplied push pin in bag #3.

94. Using the factory 45° PCV connector, install the passenger side 1/2" PCV line as shown. Tip: A razor blade may be used to free the factory fitting from the original hard line. Heat the end of the supplied hose with a heat gun to install the factory fitting into the hose.

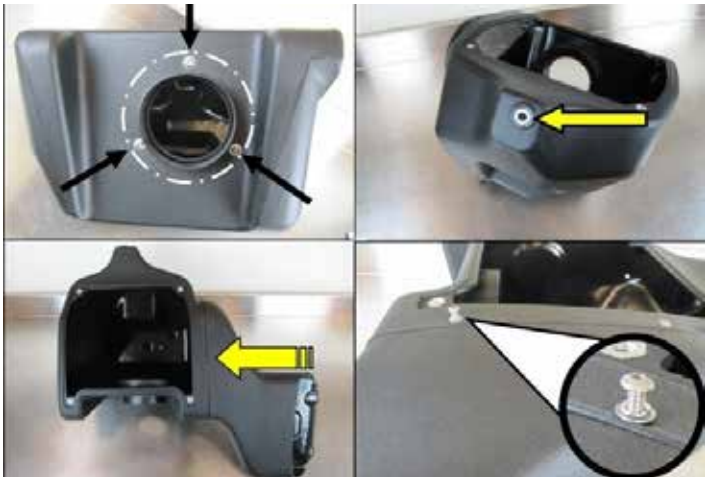
**2018 Model Air Filter Installation:**

**Follow Steps 95-100 to assemble and install the new air intake system.**

95. Mount the filter adapter inside of the air box as shown using the three (3) 1/4-20 screws and washers.

Insert the supplied 5/8" grommet and spacer into the opposite side of the air box.

Snap the new air scoop into the air box and secure with 8-32 button head screw, lock washer and flat washer as shown below.

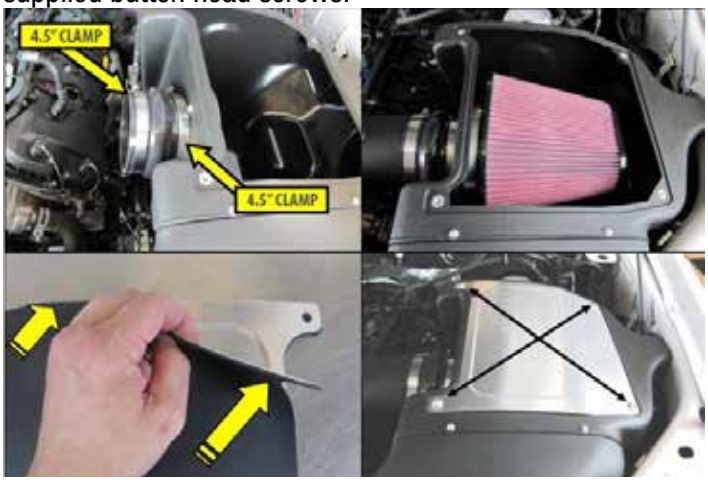


96. Place the air box assembly into the fender of the vehicle and make sure the box is properly seated in the rubber grommets. Secure the air box to the fender using the factory bolt saved in step 25.

97. Install the supplied rubber grommets in the new intake tube and insert the fittings as shown. **TIP: Lubricate the grommets with silicon lube to make installation easier and prevent tearing.**

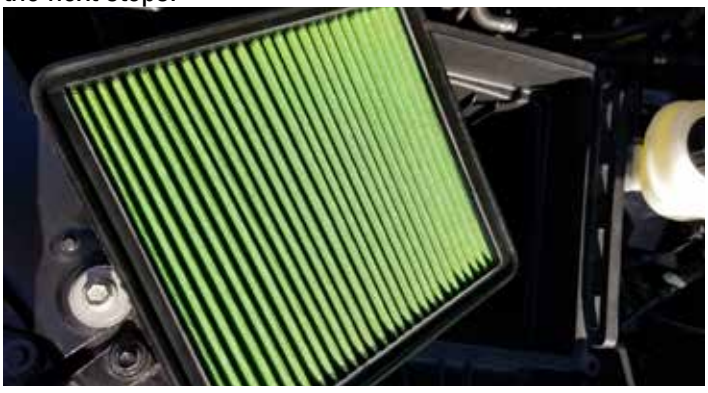
98. Install the inlet tube using the supplied boots and clamps as shown below. **Do not over tighten clamps.**

99. Install the air filter onto the adapter using the supplied clamp. Remove the protective film from the lid and prepare the underside by cleaning with alcohol or equivalent. Carefully apply the self adhesive gasket onto the lid as shown below. Mount the lid onto the air box using the supplied button head screws.




**2018 Model Air Filter Installation:**

100. Remove the factory air filter and install the Green Filter provided in this kit. Leave the lid off of the air box for the next steps.



101. Install the supplied rubber grommets in the new intake tube and insert the fittings as shown. **TIP: Lubricate the grommets with silicon lube to make installation easier and prevent tearing.**

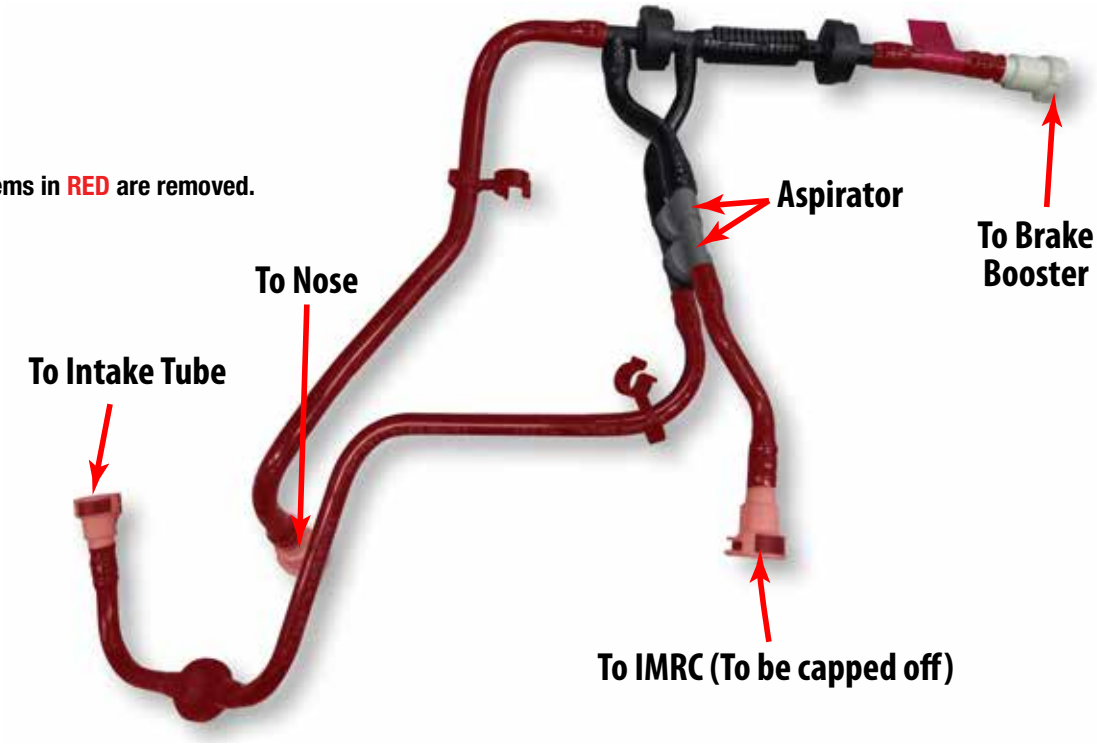
102. Install the inlet tube and air box lid using the supplied boots and clamps as shown below. **Do not over tighten clamps.**

103. Modify the brake booster assembly using the supplied hoses and rubber cap. Remove and discard parts highlighted in red on the stock assembly (top image on page 26 & 27) and replace with parts highlighted in blue on the finished, new assembly (bottom image on page 26 & 27). **Tip:** A heat gun or razor blade may be used to free the factory lines and fittings from the original hard line.

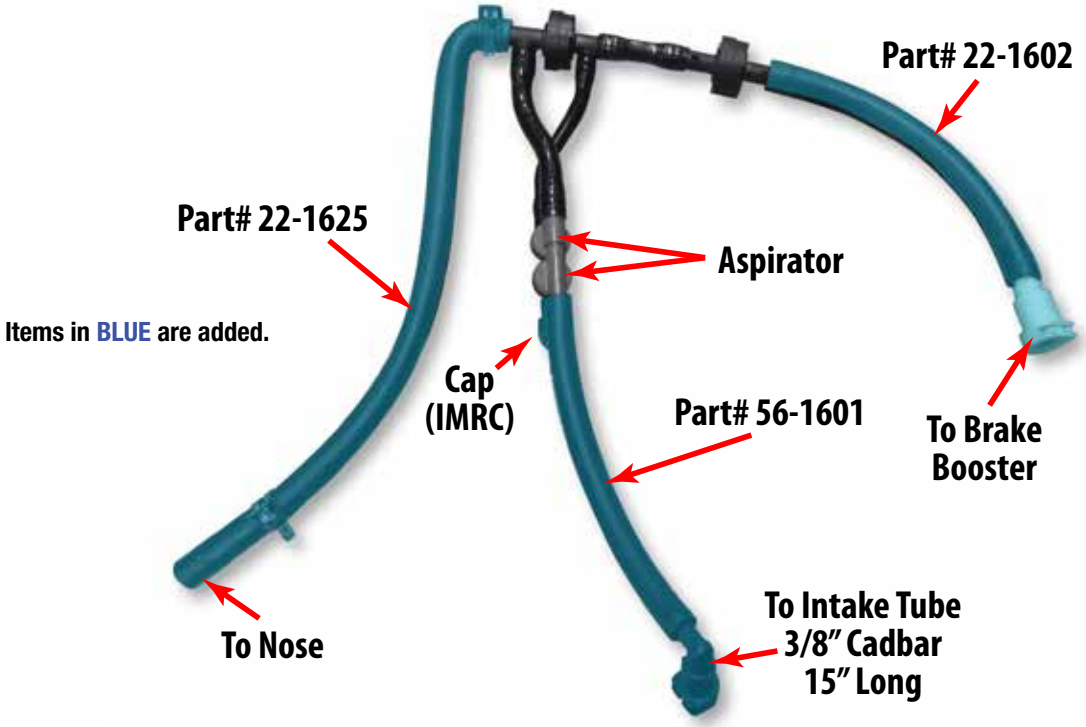
**See the next 2 pages for detailed diagrams of the hose modification.**

# BRAKE BOOSTER HOSE MODIFICATION, STYLE: A

## ORIGINAL HOSE ASSEMBLY

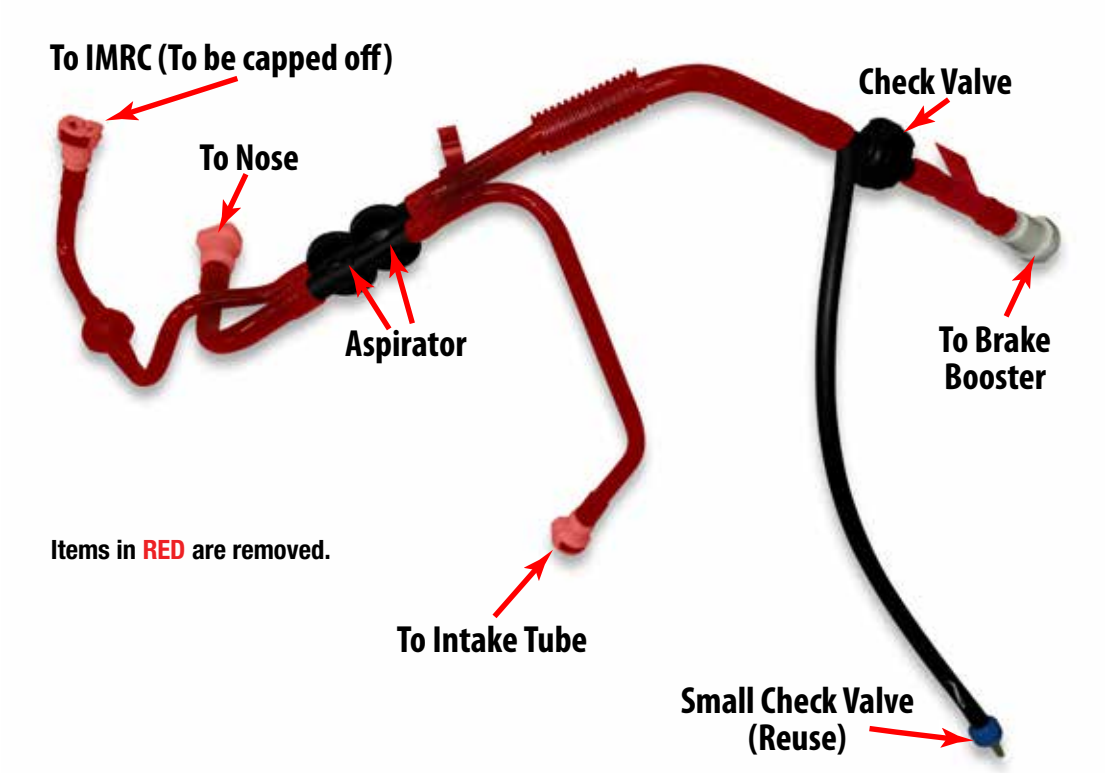



## MODIFIED HOSE ASSEMBLY

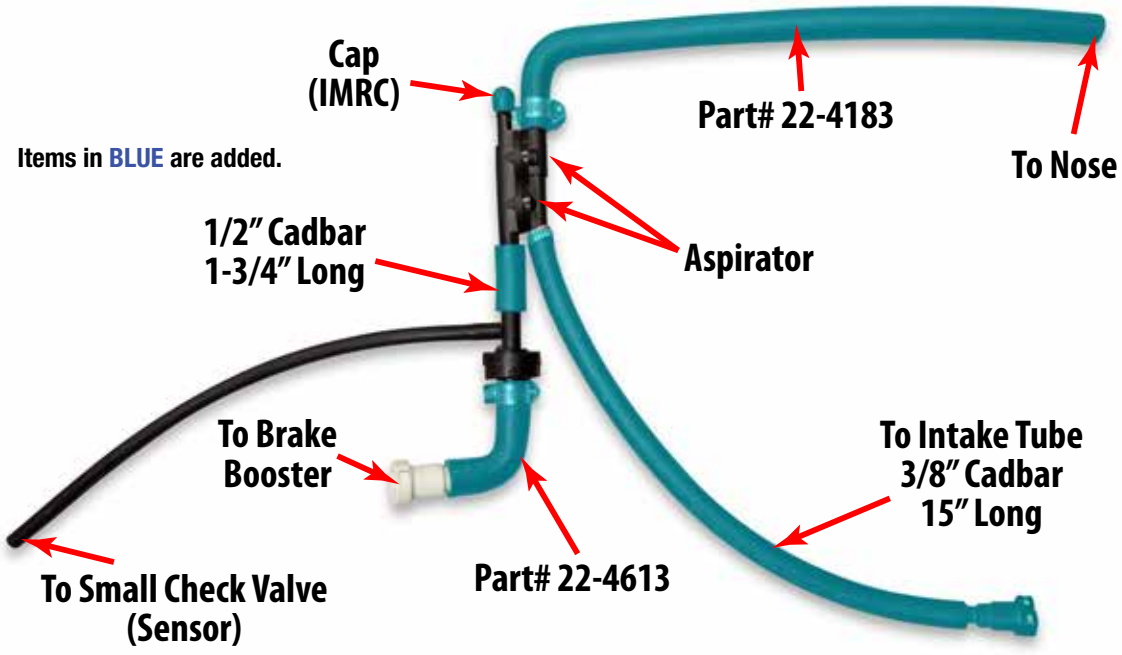


## BRAKE BOOSTER HOSE MODIFICATION, STYLE: B

### ORIGINAL HOSE ASSEMBLY



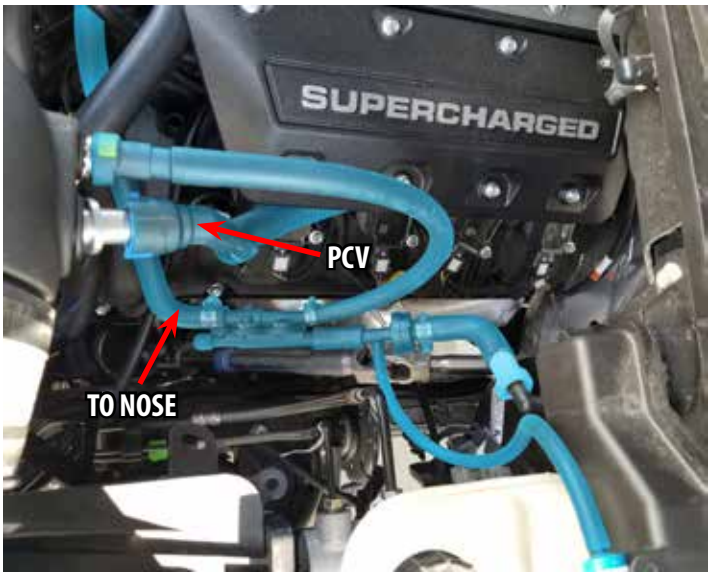

### MODIFIED HOSE ASSEMBLY



104. For early **2019** models, install the new brake booster hose assembly using the factory clamps to secure the rubber line to the supercharger fitting. Push the two (2) remaining connectors onto their respective fittings to lock them in place. Reconnect the 1/4" hose to the fitting on the line.

105. Reinstall the factory driver side PCV hose into the inlet tube as shown. Note: Twist the connectors until the hose matches the orientation shown below.

106. For later **2019** models, install the 90° hose and fitting to the brake booster. Connect the long hose on the opposite end of the assembly to the supercharger nose. Connect the hose with the push connector onto the smaller fitting on the intake tube. Reconnect the skinny hose to the brake boost sensor. Connect the remaining PCV hose to the air intake.




107. Verify that the coolant petcock is closed, then refill the coolant system. Use of a vacuum filler is recommended.

108. Fill the supercharger cooling system via the surge tank with a 50/50 coolant and water mixture.

109. Clearance the grille by sanding or grinding down the two (2) vertical plastic supports. Desired clearance shown below.

110. Reinstall the grille and radiator cover using the factory hardware and the two, new push pins that secure the air scoop as shows below. **Be sure to reconnect the grill shutter harness.**

111. Insert the factory plastic clips back into the fender flare as shown.`

112. Reinstall the plastic bumper cover by pushing the panel back into place.

113. Press fender flare back into place and reinstall the 2 factory bolts in the wheel well.

114. Reconnect negative battery terminal and turn the ignition key to the 'ON' position.

115. Verify that water is flowing briskly through the recovery tank, then install the cap. ***NOTE: Please see "How to Prime the Edelbrock E-Force Intercooler Systems" on page #30 for detailed steps.***

116. Turn the ignition key to the 'ON' position. Verify that water is flowing briskly through the recovery tank, then install the cap.

117. Once the installation has been verified, Prepare the coil covers for installation. Install the (8) M6 x 8mm decorative bolts onto the covers.


132. Place the evap in position for the coil covers. TIP: Place the bolts through the coil covers first, then feed the bolts into the evap bracket. Then thread the bolts into the supercharger coil cover brackets.

135. As a precaution, slice a 5" length of hose to wrap around the fuel line as pictured. This is to prevent the hose from rubbing on the edge of the coil cover. Secure with zip-ties.

136. Using the eight (8) M6 x 25mm bolts from the side cover kit, secure the side covers to the side cover brackets previously installed. **NOTE: Be sure to pass the 2 front bolts on the driver's side through the EVAP bracket before tightening.**


137. Repeat the same process for the passenger (right) side of the vehicle.


---

**Congratulations** on the installation of your new Edelbrock E-Force Supercharger System! If you have any questions, please call our Technical Support hot line and one of our technicians will be happy to assist you.

---

**CAUTION: Check ADAS sensors as described under the "Important Warning" section in the front of this document.**

## How to Prime the Edelbrock E-Force Intercooler Systems.

***The electric water pump used on this Edelbrock E-Force Supercharger 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 slower 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 with a 50/50 mixture of coolant and distilled water. If one is not available, the following procedure will be adequate.

1. Using the Lisle 24680 Spill-Free Funnel, or equivalent, secure the appropriate filler neck adapter to the surge tank.
2. Attach the funnel and fill with a 50/50 mixture of coolant and distilled water until the funnel is half full.
3. Turn the ignition to the ON position and listen for the pump's electric motor to cycle. Air bubbles will begin to purge from the system as the coolant level drops. Add coolant to the funnel as necessary. *NOTE: Do NOT let the coolant level in the funnel run empty as this may introduce air into the system.*
4. 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 purge the trapped air from the intercooler system.
5. Cycle the ignition OFF and wait a few seconds for the pump to come to a stop.
6. Cycle the ignition ON again and repeat until the sound of the electric pump is continuous without any pulsation. *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.*
7. Periodically inspect the water pump flow after a few drive cycles and re-fill the intercooler system as necessary.
8. 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 gradually bleed out of the surge tank as the system reaches a pressure above 5psi.

***WARNING: Always avoid removing the surge tank cap when the engine is hot. The hot coolant is under pressure and may spray out causing burns.***

## Email Edelbrock Your Stock Vehicle Calibration

**In the rare occurrence that you encounter an error message that reads "Calibration not supported" during the test flash procedure on page #9, you will need to email Edelbrock your stock vehicle calibration to Calibration@edelbrock.com. Otherwise, disregard this step.**

- Begin by downloading the SCT device updater software to your computer; it can be downloaded from: http://cdn.derivesystems.com/software/SCTDeviceUpdater.exe.

- Put the car into Acc mode but do not start it.

- Connect the supplied PCM cable from the tuner to the OBD-II connector.

- Select PROGRAM VEHICLE, arrow over to UPLOAD STOCK, press SELECT and follow the prompts on the screen.

- If the upload fails, you will be asked to AUTO DETECT, press SELECT and follow the prompts on the screen. If the auto detect fail, then please contact Edelbrock Tech support @ 800-416-8628

- Once the stock calibration has loaded, disconnect the programmer from the OBD-II connector and connect it to your PC using the supplied USB cable.

- Open the SCT software and select the button on the lower left hand side that reads GET STOCK FILE FROM DEVICE. Follow the instructions on the screen.

- Once the download is complete email your stock calibration to Calibration@edelbrock.com, or call 1-800-416-8628 and our tech support staff will assist you in e-mailing the file.
**NOTE:** The subject line of your email should be "file update needed", The file will automatically be labeled using your VIN # followed by ".sul " (XXXXXXXXXXXXX.sul)

- Once we have this file we can update the tune to work with your application, then we will e-mail you the custom tune which you may use until the release version is available. (This process can usually be completed within 1 to 2 business days)

- Download the new tune to the programmer using the directions received with the custom tune.

- Re-try the test flash procedure on page #9 using the custom tune.