Edelbrock E-Force Stage II Supercharger Upgrade
2018-19 Ford Mustang 5.0L
Part #'s: 15883

INTRODUCTION

Thank you for purchasing the Edelbrock E-Force Stage II Supercharger Upgrade for the 2018 Ford Mustang 5.0L. This upgrade utilizes a new 103mm throttle body and adapter, optimizing airflow to the supercharger. It also features a larger high-flow cold-air intake with a reusable element.

Installation time: 3 Hours

STAGE II FEATURES:

- 103mm Throttle Body
- High Flow Intake System with 113mm MAF
- 47lb/hr. Port Fuel Injectors
- Fuel Pump Voltage Booster
- 8-rib Belt Drive

TOOLS REQUIRED

- Jack and Jack Stands
  OR Service Lift
- Panel Pullers
- Ratchet and Socket Set including 7mm, 8mm (deep), 10mm, 10mm (deep), 12mm, 13mm, 15mm,
- 5mm & 6mm Allen Sockets
- T25 Socket
- 3/8" Extension
- 19mm Wrench
- 3/8" Breaker Bar
- Screwdrivers
- Pliers **OR** Hose Clamp Pliers
- Impact Wrench
- 90° Pick
- Blue Thread Lock Fluid
- O-ring Lube
- Masking Tape
- Torque Wrench

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's 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: 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 Advanced Driver Assistance Systems (ADAS). ADAS Systems include, without limitation:

- 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

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 assumes no liability whatsoever with respect to any damages or losses with respect to any ADAS systems.

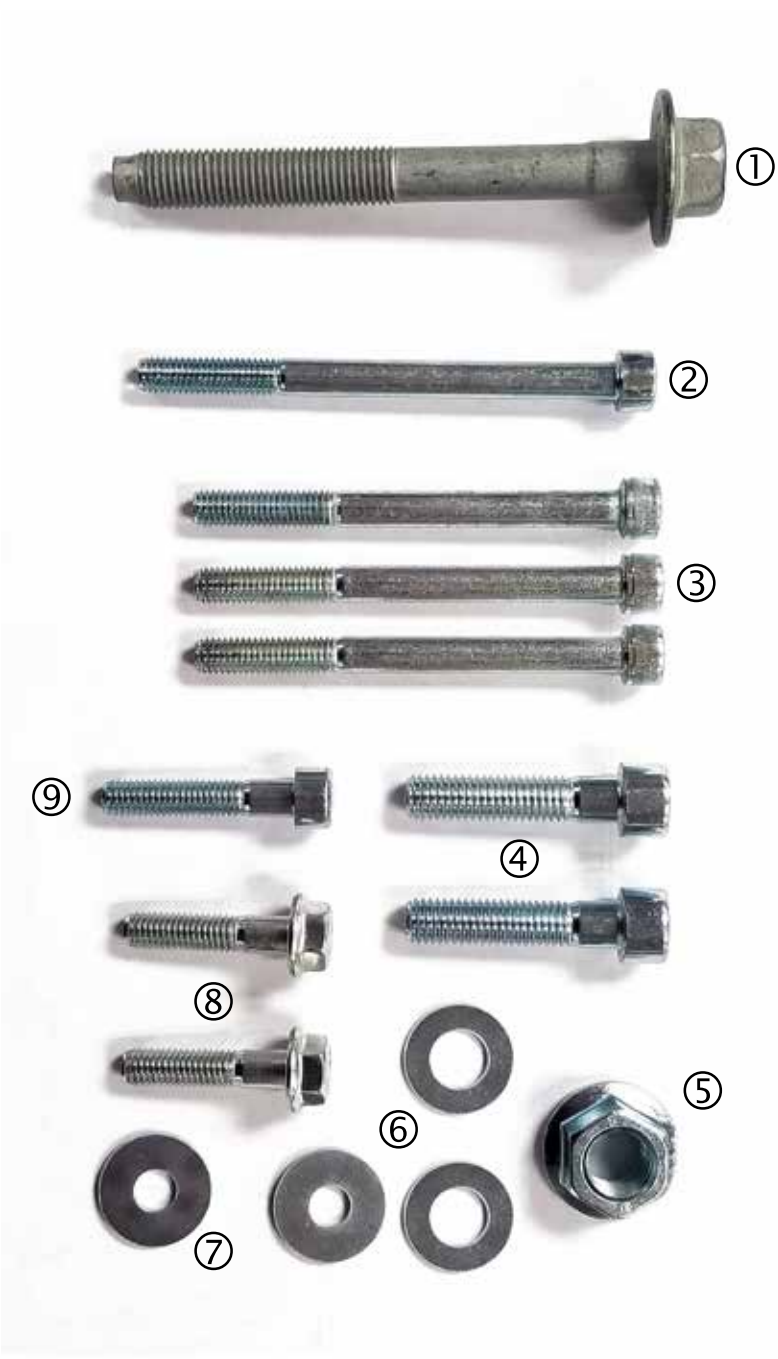
Edelbrock Authorized Installer Disclaimer

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 #2 - FEAD HARDWARE			
Item	P/N	QTY.	Description
1	36-6407	1	Crank Bolt, Coyote 5.0L (Ford BR3Z-6A340-A)
2	36-4029	1	Bolt, M8 X 100MM
3	36-3812	3	Bolt, M8 X 90MM
4	36-4013	2	Bolt, M8 x 45mm
5	36-6082	1	Nut, M14 X 21mm
6	82-0120	2	Washer, M8 x 24mm O.D. X 2mm
7	82-5592	2	Washer, 7/16 X 7/8 X 0.075, Flat, Zinc
8	36-1531	2	Bolt, M8 x 35mm
9	36-4041	1	Bolt, M8 x 40mm



Part #15388

Brochure #63-15883
Rev. 5/13/19 - TB

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

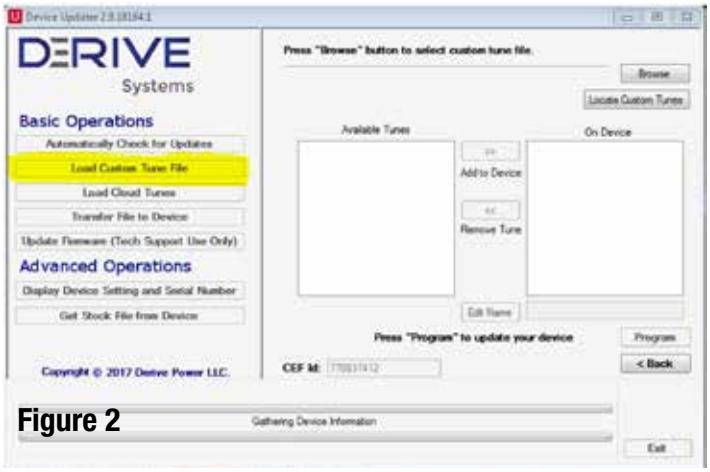


Figure 2

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 16.*

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)

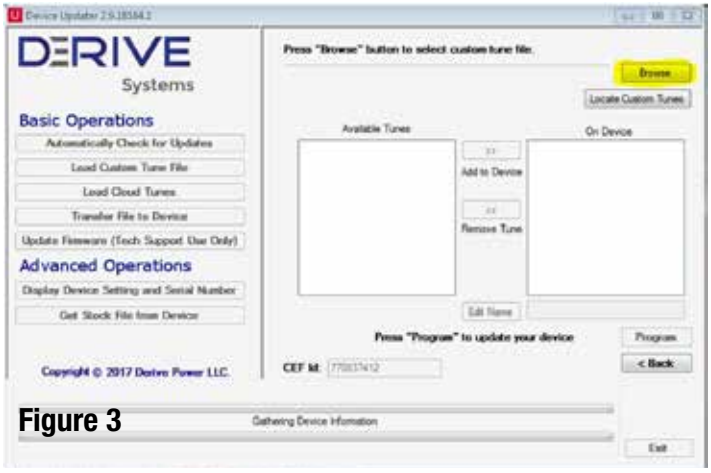


Figure 3

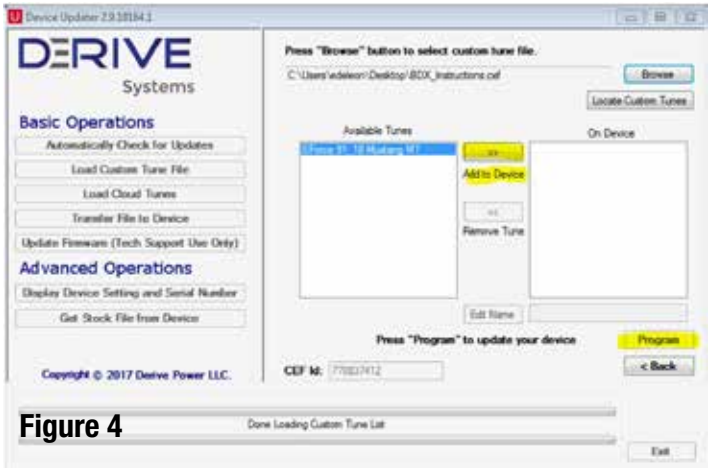
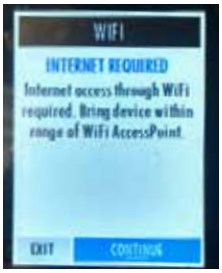


Figure 4

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. At this time, disconnect the cable to your original throttle body.

13. Plug in the new 103mm throttle body and place it on the radiator support as shown here. ***THIS IS REQUIRED FOR THE FLASH TO BE EFFECTIVE.***

Use the supplied OBD cable to connect the BDX to the vehicles OBD port.

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

14. 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.

15. 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 GT, Shelby, Bullit, etc..):
Engine Size:
Transmission:
Fuel Octane (91 or 93 ONLY):
Supercharger System Part Number:
Supercharger Serial Number:
Programmer Serial Number:

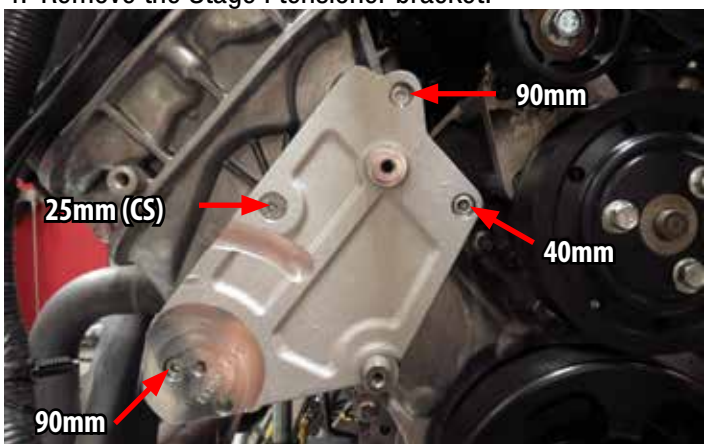
STAGE II UPGRADE INSTALLATION

1. Using a 10mm socket, remove two (2) bolts securing the coolant reservoir.

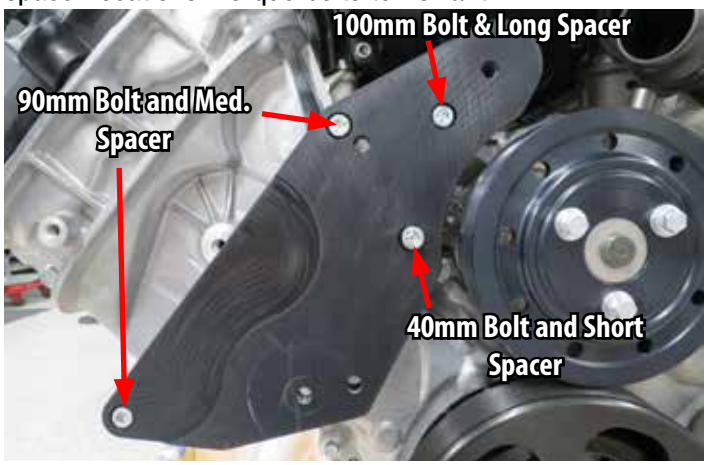
2. Position the coolant reservoir tank out of the way to access the drive belt tensioner.

3. Rotate the belt tensioner clockwise using a 3/8" breaker bar, then remove the drive belt.

4. Remove the Stage I tensioner bracket.



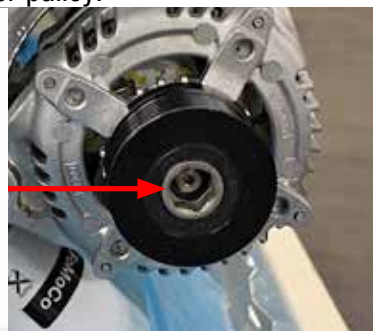
5. Install the 8-Rib FEAD bracket using the provided bolts and spacers. Use the image below as a guide for bolt and spacer locations. Torque bolts to 18 lb/ft.



6. Install one of the 74mm idlers onto the FEAD bracket using one (1) M10 x 45mm socket head bolt, one (1) 7/16" washer and one (1) idler mounting boss. Torque bolt to 22 lb/ft.

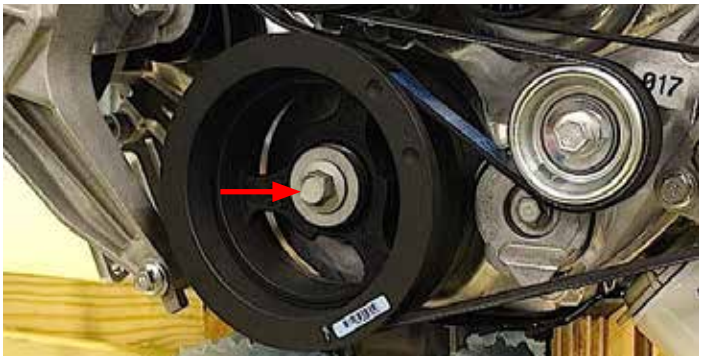
7. Install the 63mm idler onto the FEAD bracket using one (1) M10 x 45mm socket head bolt, one (1) 7/16" washer and one (1) idler mounting boss. Torque bolt to 22 lb/ft.

8. Using a 17mm Allen socket and impact wrench, remove the factory alternator pulley.

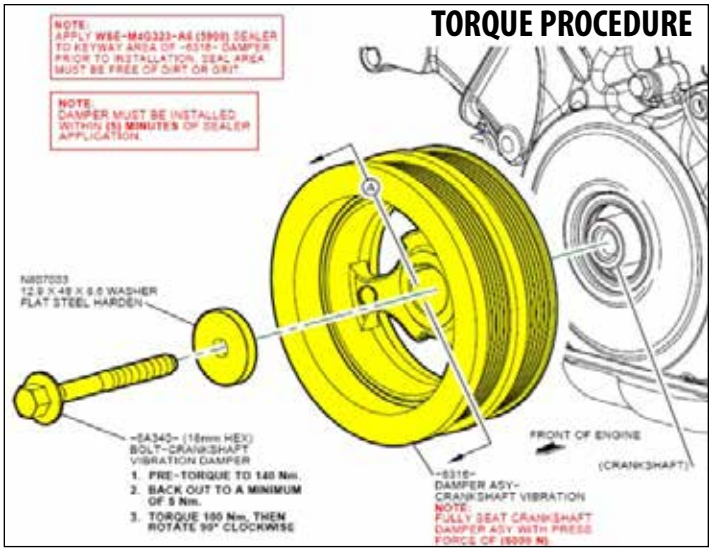


9. Remove the A/C belt.

10. Using an 18mm socket and impact wrench, remove the factory harmonic damper bolt. Save the washer and discard the bolt.



11. Using a pulley puller, remove the factory harmonic damper from the crankshaft.



12. Completely clean the provided harmonic balancer and crankshaft snout, then apply Loctite SI 5900 or equivalent to the damper keyway area.

13. Using a pulley installation tool, install the 8-Rib balancer making sure that it is fully seated on the crankshaft.

14. Using the provided damper bolt and factory washer saved during step 10, secure the damper to the crankshaft using the torque procedure in the diagram **(Torque to 103 lb/ft, Back out to 3 lb/ft, Torque to 74 lb/ft, rotate 90° clockwise)**.

15. Assemble the 2-piece crank pulley before installation. Completely clean the provided harmonic balancer and crankshaft snout, then apply Loctite SI 5900 or equivalent to the damper keyway area.

16. Using a pulley installation tool, install the 8-Rib balancer making sure that it is fully seated on the crankshaft.

17. Position the A/C compressor belt on the crank pulley grooves nearest the engine first. Using a screwdriver or pry bar, feed the belt on to the A/C pulley while turning the crankshaft pulley using an 18mm socket with a long rachet until fully seated.

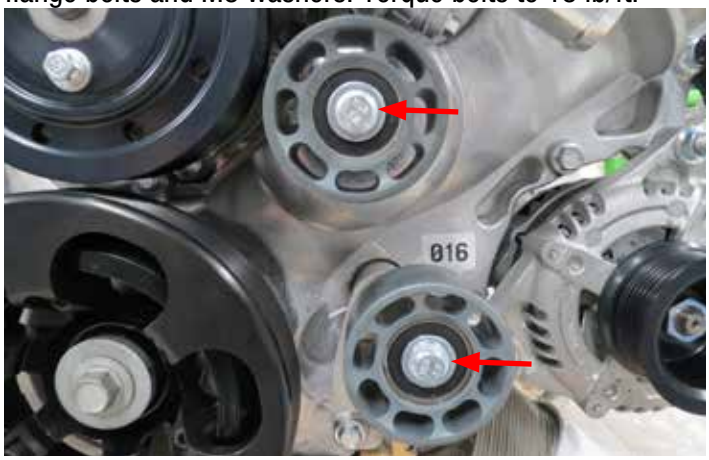
18. Rotate the crankshaft clockwise 1 full rotation to verify the A/C compressor belt has correctly seated onto the crankshaft and A/C compressor pulley. Inspect the belt for any damages before proceeding.

19. Remove the 6-Rib water pump pulley and replace with the provided 8-Rib pulley using the existing hardware. **NOTE:** ***Bolts should be installed with Blue Loctite.***

20. Install the 8-Rib alternator pulley using the provided M14 nut. **NOTE:** ***Nut should be installed with Blue Loctite.***

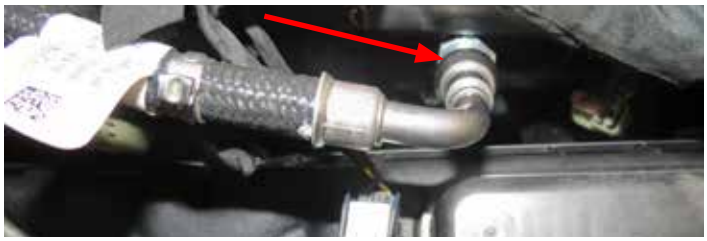
21. Wrap the 8-Rib belt around the tensioner pulley first, then install the new tensioner onto the bracket using the included M10 bolt. Verify that the tensioner is clocked correctly by aligning the index pin with the hole on the bracket, then torque the bolt to 32 lb/ft.

22. Remove the Stage I idler pullers and Install the two (2) 74mm idler pulleys using the provided M8 x 35mm hex flange bolts and M8 washers. Torque bolts to 18 lb/ft.



23. Remove the Supercharger coil covers on each valve cover to access the fuel injectors.

24. Place a rag under the driver side and passenger side fuel line. Remove the fittings from the fuel rail on both sides.



25. Remove the supercharger fuel rails by removing the (4) M6 x 16mm bolts. Gently pull up until the fuel rails have been removed. **NOTE:** Be cautious of fuel remaining in the injectors and fuel rails.

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

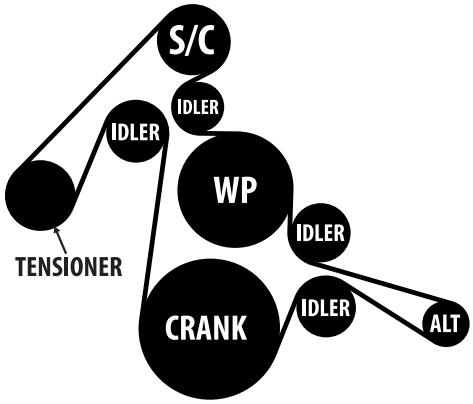
27. Reinstall injector orientation brackets using the M4 x 4mm screws.

28. Reinstall the fuel rails and secure using four (4) M6 x 16mm bolts. 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.**

29. Reconnect the injector connectors to the appropriate fuel injectors.

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

31. Use a 3/8" breaker bar to rotate the tensioner clockwise, finish installing the supplied belt according to the routing diagram shown below.

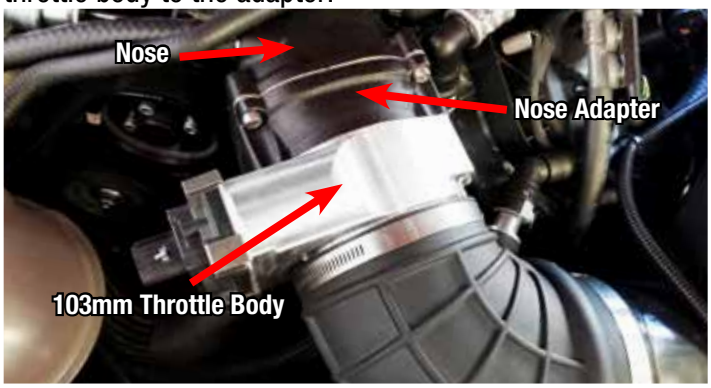


32. Using the two (2) factory bolts, reinstall the coolant reservoir with a 10mm socket.

33. Disconnect the MAF sensor harness by pulling back the red locking tab and depressing the locking clip.

34. Make sure the MAF harness is free from the lower air box. Then, remove the factory air box bolt and remove the air box from the vehicle. Save the bolt.

Unplug and remove the factory throttle body and the Edelbrock nose adapter. Remove the throttle body extension cable. (It's not needed on Stage II kits) Using the supplied gaskets and (4) M6x20mm bolts, install the adapter to the supercharger nose as pictured below. Use the (4) bolts supplied in the throttle body box to attach the 103mm throttle body to the adapter.



35. Assemble the MAF housing into the new air box using the provided M6 x 12mm bolts located in bag #5.

36. Remove the MAF sensor from the factory air box lid and reinstall into the new MAF housing using the provided pan head screws in bag #5.

37. Remove the rubber mounting grommet from the factory air box and install into the frame of the vehicle.

38. Using the provided worm clamps, secure the silicone intake elbow to new the air box. Then, lower the air box and tube assembly into place and secure with the factory bolt set aside earlier. Tighten the clamp holding the intake elbow to the throttle body. **TIP:** You may need to loosen the MAF housing to install the hose. Connect the MAF harness to the MAF sensor located on the new filter housing.

39. Install the conical air filter onto the MAF housing inlet using the provided clamp.

40. Install the air box lid using the six (6) 1/4"-20 cap screws located in bag #5.

41. Connect the brake aspirator to the lower fitting on the silicone elbow.

42. Connect the 90° fitting on the driver side PCV hose to the driver side valve cover. Connect the other end to the fitting on the silicone elbow.

41. To remove the back seat, press on this tab underneath the seat cushion, located on each side. Lift up & out.

42. Through the trunk, feed the booster pump cable underneath the driver side seat-back as shown here. Be sure the "T" end is towards the front of the vehicle.

43. Remove the spare tire cover and feed the cable underneath the carpet as shown.

43. Mount the booster module to the metal floor (as shown below) using the supplied self-tapping screws.
OPTIONAL: Clean the floor thoroughly with alcohol, or soap and water, and stick the module to the floor using double stick tape or velcro.

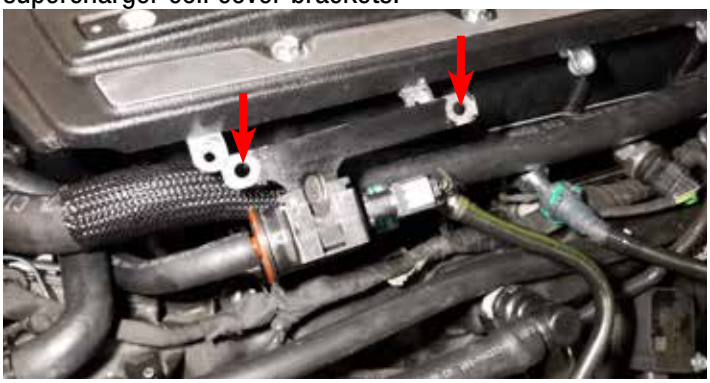
44. Remove the rear trunk cover by removing the 4 thumb screws, 2 on each side.

45. Attach the ground wire to the 8mm screw pictured here. Once finished, reattach the rear trunk cover and place the trunk floor back into position.

46. Under the back seat, disconnect the fuel pump cable located underneath the back seat on the driver side of the vehicle.

47. Connect the “T” cable as shown here. The “T” will be between the factory plugs. Reinstall the lower back seat when finished.

48. 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.



49. 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.**

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

Congratulations on the installation of your new Edelbrock E-Force Stage II Supercharger System. If you have any questions, please call our Technical Support hotline 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.