



**Edelbrock E-Force Supercharger
2015-2017 Ford Mustang 5.0L Stage II
Upgrade Kit
Part #'s: 15884**



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.



CAUTION: This fuel pump module has been tested to ensure proper operation. Some residual testing fluid may be present in the system. Use caution when handling to avoid spills.



Edelbrock Supercharger System 2015-17 Ford Mustang 5.0L Stage II Upgrade Installation Instructions

INTRODUCTION

Thank you for purchasing the Edelbrock E-Force Supercharger Upgrade for the 2015-2017 Ford Mustang 5.0L. The Edelbrock E-Force Supercharger System utilizes Eaton's TVS Supercharger rotors, featuring a four lobe design for maximum efficiency, 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, maximizing low end torque.

Installation time: 9 Hours

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
- 19mm Wrench
- 3/8" Breaker Bar
- Screwdrivers
- 90° Power Drill
- 1.125" Hole-Saw Bit
- Pliers **OR** Hose Clamp Pliers
- Impact Wrench
- 90° Pick
- Blue Thread Lock Fluid
- O-ring Lube
- Masking Tape
- Torque Wrench
- 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



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Installation Instructions**

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 recommended 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 manufacturer'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.



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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.

2015-2017 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



Figure 3

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 12.

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)

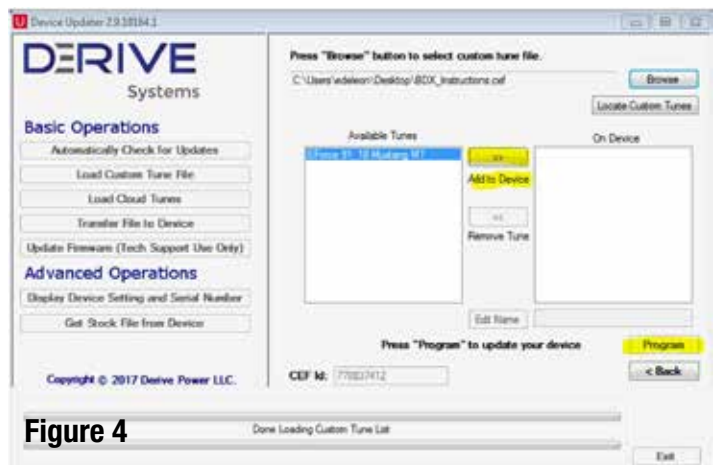


Figure 4

2015-2017 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

NOTE: Some of the following images and procedures may differ on RHD (right hand drive) vehicles.

The Fuel Pump replacement procedure.

NOTE: Before installing the supplied fuel pump, make sure the fuel level of the vehicle is below 5/8 of a tank to avoid fuel spillage in vehicle.

The fuel pump module must be installed in the same position as removed. This step must be performed correctly to prevent the float from contacting the side of the fuel tank.

1. Disconnect the fuel line from the fuel pump hat by disengaging the red locking tab and pulling the line off of the fitting.



NOTE: Prior to removing the fuel pump module, remove any dirt or debris around the fuel tank opening with compressed air or shop vac.

2. Using a fuel tank lock ring wrench (OTC 6599) or equivalent, remove the locking ring that secures the fuel pump module into the tank.



3. Carefully lift the fuel pump module out of the tank and disconnect the crossover line by depressing the yellow locking tab and pulling the line off of the fitting.



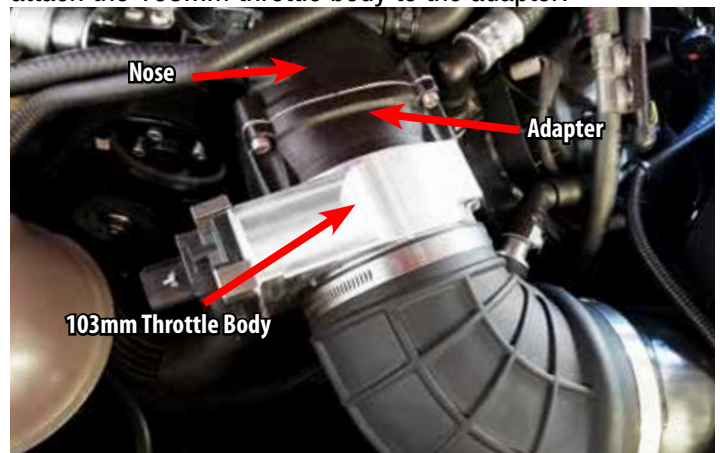
4. Remove the OEM fuel pump module from the vehicle being careful not to spill any fuel.

5. Install the provided replacement fuel pump by reversing the removal steps. Make sure to reconnect both fuel lines and the electrical harness connector.

6. Secure the rubber access plug back into place and reinstall the rear seats.

7. Remove the factory air filter enclosure and intake tube. Then, remove the factory throttle body and throttle body adapter. Remove the coil covers (if equipped).

8. 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.



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9. On the fuel rail, disconnect the (8) fuel injector connectors.

10. Remove the (4) SHCS M6 x 16mm that attach the fuel rails to the supercharger. There are (2) on each side.



11. Disconnect the fuel extension line to the fuel rail.
CAUTION: Use a rag underneath the connection to capture any fuel in the line.



12. Remove the fuel rails and injectors. Remove the (8) orientation clips and then the fuel injectors. **NOTE:** The new injectors do not require an orientation clip.

13. Clean the fuel rails and check for any debris in the fuel injector ports. **NOTE:** Be sure to clear any obstructions out before reassembly.

14. 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.



15. Install the fuel rail assembly onto the supercharger. Be sure the fuel crossover is to the rear of the engine and the inlet towards the front driver's side.

16. Reinstall the fuel rails using the (4) M6 x 16mm bolts from step 10.

17. Reconnect the fuel line.

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



19. 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.



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



21. 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.



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



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



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



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



26. Plug the MAF/Temp wiring harness into the Temp sensor located at the back of the manifold on the passenger side. Route the harness from the passenger side to the driver side behind the manifold. Then route the remaining length along the driver side heater hose.

27. Connect the engine harness to the connector on the MAF/Temp harness then attach the MAF/Temp harness to the MAF Sensor.





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28. Using the eight (8) M6 x 25mm bolts from the side cover hardware, secure the side covers to the side cover brackets.

Note: *The passenger side cover will have a clearance notch.*



WARNING: Launching the vehicle may cause wheel hop which will induce engine torquing. The engine movement may cause the passenger side coil/side cover to make contact with the strut brace. Available aftermarket Wheel Hop Eliminator kits should be considered if this problem occurs. Additional clearance may be required to alleviate any contact in the strut brace area.

Congratulations on the installation of your new Edelbrock E-Force 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.



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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.