



## Edelbrock E-Force Supercharger Stage II Upgrade for #1580 2005-09 Mustang 4.6L GT Installation Instructions

**PLEASE** study these instructions carefully before beginning this installation. Most installations can be accomplished with common tools and procedures. However, you should be familiar with and comfortable working on your vehicle. If you do not feel comfortable performing this installation, it's recommended to have the installation completed by a qualified mechanic. If you have any questions, please call our Technical Hotline at: **1-800-416-8628**, 7:00 am - 5:00 pm, Pacific Standard Time, Monday through Friday.

**IMPORTANT NOTE: Proper installation is the responsibility of the installer. Improper installation will void your warranty and may result in poor performance and engine or vehicle damage.**

### KIT CONTENT

- 3.25" High Boost Pulley
- Edelbrock Competition Air Intake System
- 60 lb/hr Fuel Injectors with Adapters
- GT500 Fuel Pump

### TOOLS REQUIRED

- Ratchet and Socket Set
- 1/2" Breaker Bar
- 5/8" Fuel Line Removal Tool
- Torque Wrench
- 5mm Hex
- T-20 Torx
- O-ring Lube

### IMPORTANT WARNINGS

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

**WARNING: Please note that this Stage II upgrade is intended for racing and off road applications only. Use of this kit with an E.O. Legal Supercharger (#1580) will negate its street legal status and void the optional extended warranty.**



**WARNING:** Installation of this Stage II upgrade 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, 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.

**Please note that this Stage II upgrade comes with a custom calibration file. In order to receive the calibration file specific for this upgrade, the disclaimer form included in this kit must be filled out completely and sent back to Edelbrock. This disclaimer form can also be completed and submitted online at: ([www.edelbrock.com/automotive\\_new/mc/superchargers/high-hp-kits/](http://www.edelbrock.com/automotive_new/mc/superchargers/high-hp-kits/)). It is highly recommended to complete this process prior to starting the installation.**

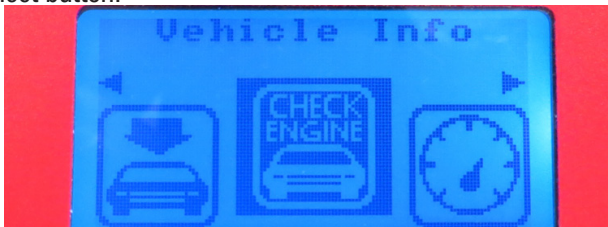


## Edelbrock E-Force Supercharger Stage II Upgrade for #1580 2005-09 Mustang 4.6L GT Installation Instructions

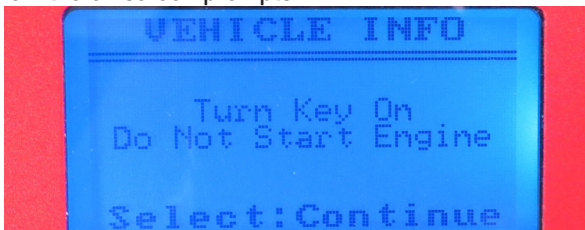
### ECU Flash Procedure

**WARNING:** Please note that this Stage II upgrade comes with a custom calibration file. In order to receive the calibration file specific for this upgrade, the disclaimer form included in this kit must be filled out completely and sent back to Edelbrock. This disclaimer form can also be completed and submitted online at: ([www.edelbrock.com/automotive\\_new/mc/superchargers/high-hp-kits/](http://www.edelbrock.com/automotive_new/mc/superchargers/high-hp-kits/)). It is highly recommended to complete this process prior to starting the installation.

- Original Equipment Manufacturers often release updates to the computer programming for your vehicle. Edelbrock highly recommends that you verify, with your new car dealer, that your vehicle is equipped with the latest software version from your vehicle manufacturer, before proceeding.
- Begin by downloading the SCT device updater software to your computer. It can be downloaded from: <http://www.sctflash.com/software/SCTDeviceUpdater.exe>
- Put the car into Acc mode, but don't start the vehicle.
- Connect the supplied PCM cable to the OBD-II connector located below the steering wheel and to the left of your knee.
- Use directional pad to highlight **Vehicle Info** and press the Select button.



- Use directional pad to highlight **Vehicle Info** again and press the Select button.
- Follow the on screen prompts.



- The programmer will connect to the vehicles ECU. On the first screen, verify the vehicle's Vin number is correct and press select.

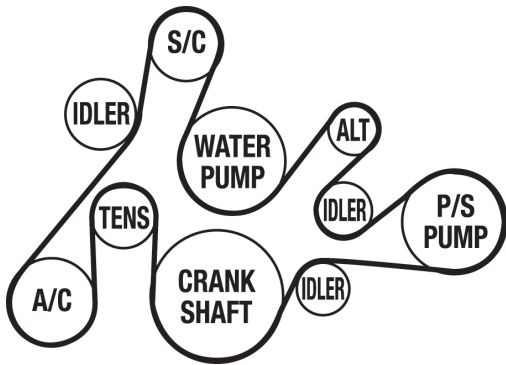
- On the second screen, write down the 7 digit Strategy Number (Cal ID). This number, along with the vehicle's Vin number and the Programmer's Serial number are required in order to receive your calibration.
- Complete the disclaimer form and send it back to Edelbrock. This disclaimer form can also be completed and submitted online at: ([www.edelbrock.com/automotive\\_new/mc/superchargers/high-hp-kits/](http://www.edelbrock.com/automotive_new/mc/superchargers/high-hp-kits/)).
- Once you receive the calibration file from Edelbrock. The file can be installed into your programmer using the following steps:
  1. Save the attached .cef file to a location you can remember on your computer.
  2. Open the SCT Device updater program and click on Load Custom Tune File.
  3. Browse to the location you saved the attached .cef file and select it.
  4. Select File 1 and give it a name, then press program and it will write the tune to the programmer.
  5. Once this is finished, put the car into Acc mode, but don't start the vehicle.
  6. Hook the programmer up to the vehicle, select Program Vehicle, then select Custom Tune and choose the file you named.
  7. Read disclaimer then press Select to continue.
  8. Verify ignition is in the 'Key On' position but that the engine is not running then press Select.
  9. Use directional pad to highlight Begin Program then press Select.
  10. Depending on your specific drivetrain configuration, several separate operations may take place during this step. Completion of each operation will cause the progress bar to reset to zero.
  11. DO NOT unplug the programmer until prompted.
  12. Turn the car off when prompted to do so by the handheld programmer.
  13. Read parting message from programmer then press Select to continue.
  14. Unplug the programmer cable from the OBD-II port.
  15. Your vehicle's ECU has been flashed, you may now proceed with the installation.



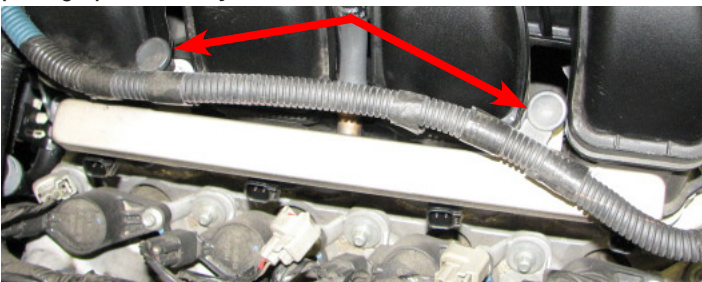
## Edelbrock E-Force Supercharger Stage II Upgrade for #1580 2005-09 Mustang 4.6L GT Installation Instructions

### Stage II Upgrade Installation

1. Use an 8mm socket to remove the negative battery terminal clamp. Tuck the terminal to the side to prevent any accidental contact with the negative battery terminal.
2. Install the supplied GT500 dual fuel pump kit per the instructions included with the fuel pump kit. These instructions can also be found on the Ford Racing's website or using this direct link: [www.fordracingparts.com/download/instructionsheets/FordInstShtM-9407-GT05.pdf](http://www.fordracingparts.com/download/instructionsheets/FordInstShtM-9407-GT05.pdf)
3. Using a 1/2" breaker bar, rotate the tensioner to remove the drive belt. The drive belt will not be reused.
4. Remove the tamper-proof seal on the supercharger pulley hub and remove the four bolts securing the stock pulley using a 5mm hex tool. Be aware that these bolts are secured by red loctite.
5. Install the new pulley onto the supercharger hub. Coat the threads of all four pulley bolts with red loctite and securely fasten in a star pattern. Torque all bolts in a star pattern to 8 ft-lbs (91 in-lbs).
6. Route the supplied serpentine belt according to the diagram provided below by using a 1/2" breaker bar to twist the belt tensioner enough to allow the belt to slide into place.



7. Detach the battery cable anchors from the fuel rail bolts by pulling upward firmly.



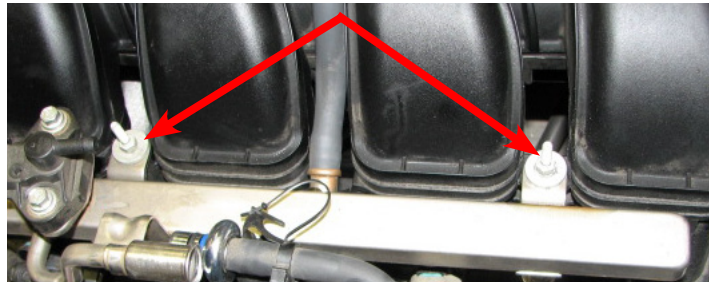
8. Remove the fuel line lock clip.



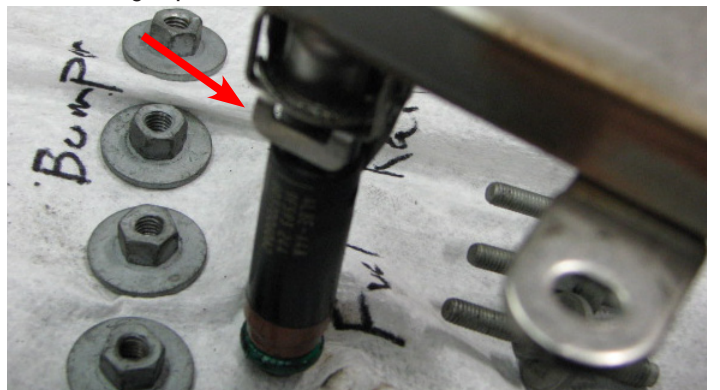
9. Use a 5/8" fuel line removal tool to disconnect the fuel supply line from the fuel rails. Use a shop rag wrapped over the connection to absorb the fuel remaining in the system.



10. Loosen the four studs that hold down the fuel rails. The rails and injectors can then be removed together.



11. Apply o-ring lube to all of the o-rings on the supplied 60 lb/hr injectors. Remove the injector retaining clips and replace the installed injectors with the supplied 60 lb/hr injectors. Reinstall the retaining clips.





## Edelbrock E-Force Supercharger Stage II Upgrade for #1580 2005-09 Mustang 4.6L GT Installation Instructions

12. Reverse the fuel rail removal procedure to reinstall the fuel rails.

13. Connect the injector harnesses to the injectors using the supplied harness adapters.

14. Remove the stock airbox by first unclipping the MAF sensor from the wiring harness, then loosen the hose clamp that secures the silicone elbow to the throttle body. Unclip the air cleaner cover from the airbox, then remove it with the silicone elbow and the stock air filter. Remove the bolt that secures the stock airbox in place and remove the airbox. Remove the small rubber grommets at the bottom of the air box and reinstall them in their provisions in the engine bay.

15. Install the MAF housing by inserting it into the large hole in the supplied shroud with the sensor provision oriented towards the rear of the vehicle. Secure it in place with three M6 x 12mm bolts supplied in the kit.

16. Using a T-20 Torx driver, install the MAF sensor using the two supplied #8-16 x 3/8" Torx screws so that the arrow on the sensor points back to the throttle body.

17. Install the supplied edge trim along the top of the shroud then install the filter onto the back of the MAF housing tightly against the edge trim and secure it with the supplied large clamp.

18. Remove the bolt that secures the ABS proportioning valve bracket. Insert the aluminum bushing (supplied in the kit) into the hole at the back of the supplied air box and position the new airbox, filter and MAFS assembly into place. Reinstall the proportioning valve bolt through the airbox and bracket and tighten it down. Use the supplied washer and factory bolt to secure the air box at the aluminum bushing location.

19. Install the new silicone elbow onto the MAF housing and throttle body. Rotate the elbow as needed to achieve best fit then secure it with the supplied hose clamps. Plug the MAF wiring harness connector into the new MAF sensor.

**IMPORTANT NOTE:** An Edelbrock calibration is supplied with this system. However, in the event that a custom tune is required, the transfer function values provided in the table below can be used for reference. It is always required that you verify the Air/Fuel ratio with a wideband lambda sensor, installed in front of the catalytic converter, while running the vehicle on a chassis dyno through the entire RPM & load range.

Frequency	Lb / Min	Frequency	Lb / Min
1485	0	207	7.7263
650	0.5023	200	8.3808
635	0.5315	193	9.2718
605	0.5742	188	9.8093
590	0.6022	183.5	10.4823
540	0.7071	178	11.5846
500	0.8168	173	12.6664
450	1.0423	160.5	15.8482
410	1.2679	150	19.9931
360	1.8043	143.5	21.9437
330	2.2919	139	23.9374
320	2.4382	136	25.4466
290	3.1940	132	27.9213
275	3.7304	128	31.3117
259	4.3278	123	34.9811
242	5.1202	119.8	36.9873
226	6.2118	114	42.3269
220	6.6748	107	50.3937
215.5	6.9517	101	58.6262
210	7.4370	83.3	82.8984

20. Connect the driver side PCV hose from the valve cover to the intake elbow .



21. Reinstall the negative battery terminal.

22. If you have access to a diagnostic scan tool, run a 'Key On, Engine Off' test to verify that all connectors are properly installed, otherwise move on to the next step.

23. Start the vehicle and verify a smooth idle. If you are using a diagnostic scan tool, run a 'Key On, Engine Run' test.

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