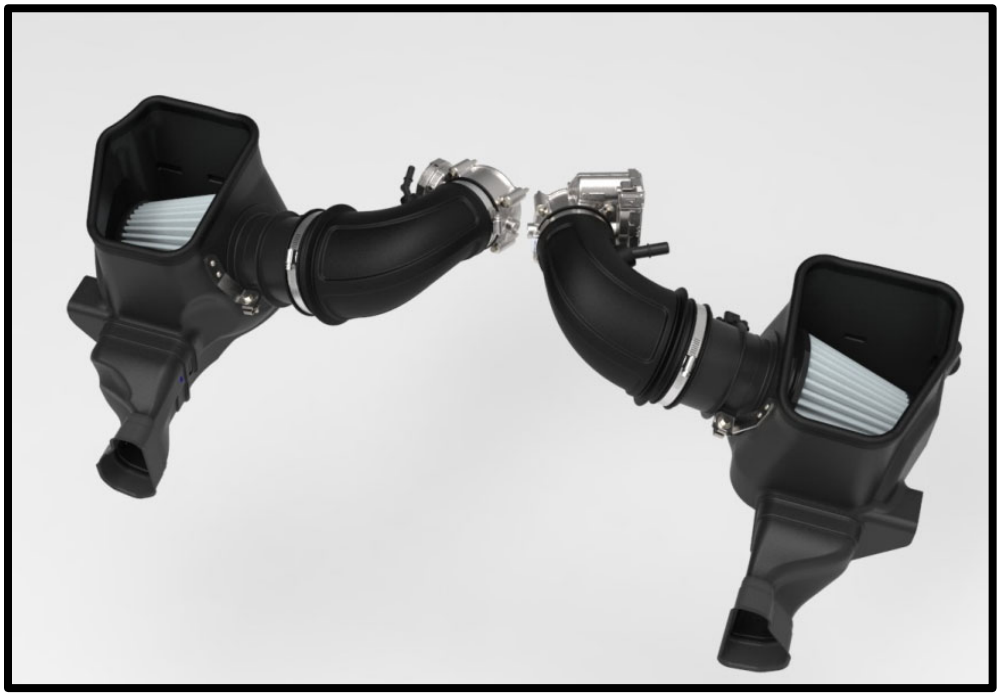
WHIPPLE PERFORMANCE UPGRADE INSTALLATION MANUAL

2024-2026 S650 FORD MUSTANG
PN: 91-70015, 91-70016, 91-70018



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A COLOR PDF OF THIS MANUAL IS AVAILABLE, EMAIL
TECH@WHIPPLESUPERCHARGERS.COM FOR A COPY

Model Year 2024-2026 CARB EO D-231-155

INTRODUCTION

Before beginning installation, please read this manual and important notes:

- Please read the installation manual and verify that all items are present. If you are missing hardware or have any questions, please contact your dealer or Whipple before you start installation.
- Premium fuel (US 91-93 octane) RON+MON/2 is required to achieve optimum results.
- Supply your VIN number to Whipple ahead of installation so your PCM calibration can be built prior to the installation. This will help minimize any down time.
- **COMPETITION BASED PRODUCT MAY BE USED SOLELY ON VEHICLES USED IN SANCTIONED COMPETITION WHICH MAY NEVER BE USED UPON A PUBLIC ROAD OR HIGHWAY, UNLESS PERMITTED BY SPECIFIC REGULATORY EXEMPTION (VISIT THE "EMISSIONS" PAGE AT HTTP://WWW.SEMASAN.COM/EMISSIONS FOR STATE-BY-STATE DETAILS.**
- **COMPETITION BASED PRODUCT IS LEGAL IN CALIFORNIA ONLY FOR RACING VEHICLES WHICH MAY NEVER BE USED, OR REGISTERED OR LICENSED FOR USE, UPON A HIGHWAY.**
- **IT IS THE RESPONSIBILITY OF THE INSTALLER AND/OR USER OF THIS PRODUCT TO ENSURE THAT IT IS USED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.**

RECOMMENDED TOOLS AND SUPPLIES

The following items are not included in this supercharger kit and it is strongly recommended that they're used for ease of installation or maximum performance:

Tools

¼" ratchet with 4" or similar extension
T20 torx, 3mm allen socket or similar
7mm, 8mm, 10mm sockets
5/16" nut driver or socket
Small wire cutters, Trim removal tool, Flat head screwdriver

SAFETY PRECAUTIONS



CAREFULLY READ THE IMPORTANT SAFETY PRECAUTIONS AND WARNINGS BEFORE PROCEEDING WITH THE INSTALLATION!

Appropriate disassembly, assembly methods and procedures are essential to ensure the personal safety of the individual performing the kit installation. Improper installation due to the failure to correctly follow these instructions could cause personally injury or death. Read each step of the installation manual carefully before starting the installation.

- Always wear safety glasses for eye protection.
- Place the ignition switch in the off position.
- Always apply the parking brake when working on vehicle.
- Block the front and rear tire surfaces to prevent unexpected vehicle movement.
- Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- Do not smoke or use flammable items near or around fuel system.
- Use chemicals and cleaners only in well-ventilated areas.
- Batteries can produce explosive hydrogen gas which can cause personal injury. Do not allow flames, sparks or flammable sources to come near the battery.
- Keep hands and any other objects away from the radiator fan blades.
- Keep yourself and your clothing away from moving parts when the engine is running.
- Do not wear loose clothing or jewelry that can be caught in rotating or moving parts.

WARNING

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

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

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

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

The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. Whipple Superchargers reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

INSTALLATION INSTRUCTIONS

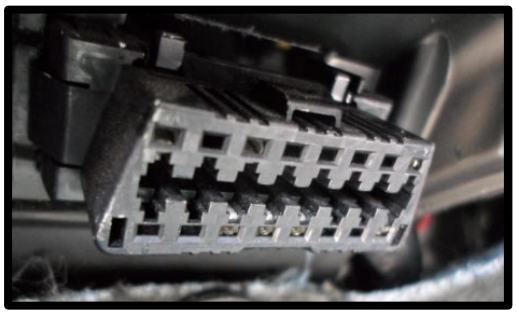
It is strongly recommended that you read through this guide **before** you begin installing your performance parts. **NEVER START YOUR INSTALLATION WITHOUT HAVING CALIBRATION IN HAND.**

1. Go to the HP Tuner website: https://www.hptuners.com/downloads/. Download the latest VCM Suite **BETA**. If you run into any issues installing the software, email **support@hptuners.com** for resolution. Issues with calibration or data logging, please contact us @ support@whipplesuperchargers.com

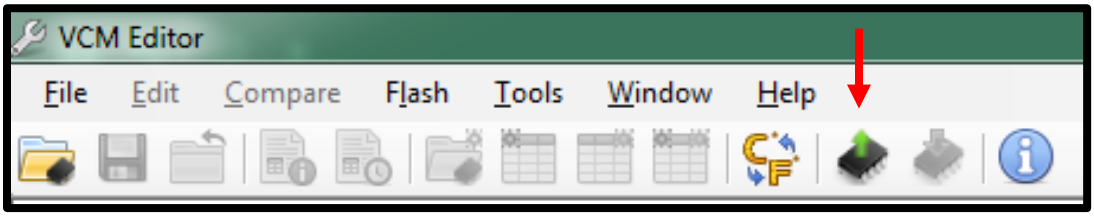
2. Open VCM Editor program by clicking the wrench icon.



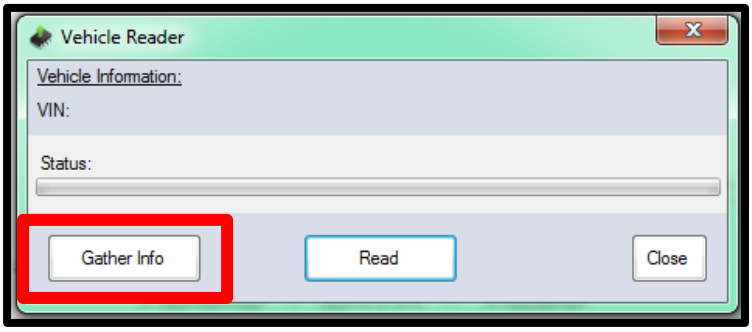
3. Connect to the OBDII port with the MPVI flash tool.



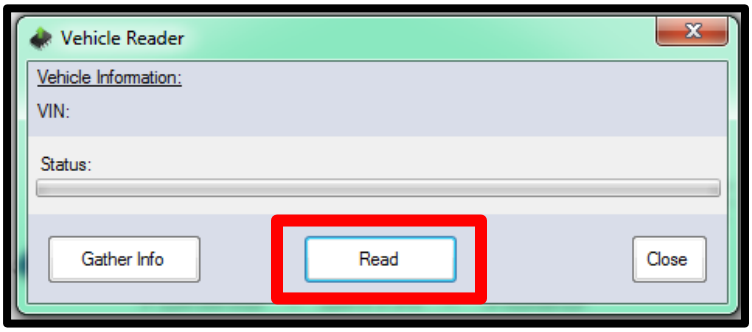
4. With the vehicle ignition in RUN position, engine not running, click the **green arrow** icon to **READ** the file in the PCM.



5. Click the "Gather Info" icon to populate the PCM data.



6. Once the info is gathered by HP Tuners, click the "Read" icon.

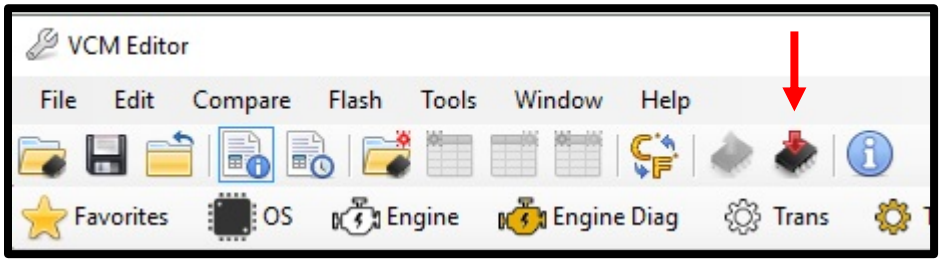


7. Once the file is uploaded, save this file in an easy to find location (example: mydocuments/HP Tuners/cals and logs). Create a file name with VIN number, Customer name and engine size. Example: **2C3CDXCT1FH737913_John Smith_6.2L_Stock**. If you want to keep the file name shorter, use only the last 4 digits of the VIN but keep the same information. We will supply a similar name but with SC in the file to help distinguish between them. NOTE: Always keep the stock file. If you are a dealer/installer, email the file to the customer for future access. Whipple does not store stock files.

8. Go to the Whipple website, click the **Calibration Request** tab and follow the instructions on sending file. This may take 24-48 hours for your calibration so this is important to do before you start the supercharger installation. Each calibration is locked to the supplied MPVI serial #. If you use a different tool, you will not be able to use the file.

    a. Include the following with the calibration:
        i. Octane fuel being run (87, 89, 91, 92, 93, 94).
        ii. List any modifications to the stock engine such as air intake, exhaust, etc.

9. Once calibration is supplied, save to your PC in the same location as the stock file. Open VCM Editor. Open the calibration by clicking file, connect to vehicle, turnkey to engine run (do not start engine) and follow the on-screen commands.



10. HP Tuners supplies a free data logging program, VCM Scanner **BETA**. With foot off brake, hold the push button ignition for 10 seconds until the green light turns on, this is Diagnostic mode. Using VCM scanner, click the check engine icon, then "READ CODES". Once it populates, click CLEAR CODES. Once done, turnkey off, open door to power vehicle off, from here you're ready to run.

11. If required, you may use VCM Scanner Suite for diagnostic purposes, to check codes, read monitors and data log important parameters. Whipple has pre-made channel list for proper data logging. If logging, please request a data log channel list.

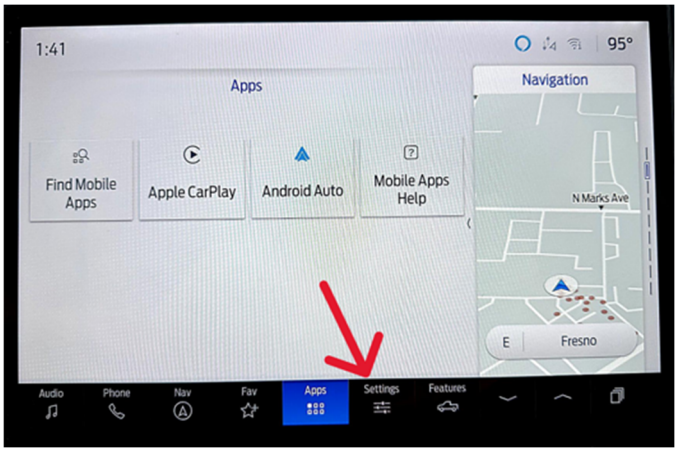
12. Once the vehicle is flashed, turnkey off for 10 seconds (follow on screen instructions). The vehicle is now ready to start and operate.

13. With your HP Tuners installation, you get the free data logging program, VCM Scanner. If required, you may use this for diagnostic purposes. Whipple has pre-made channel list for proper data logging. If logging, please request a data log channel list from support@whipplesuperchargers.com.

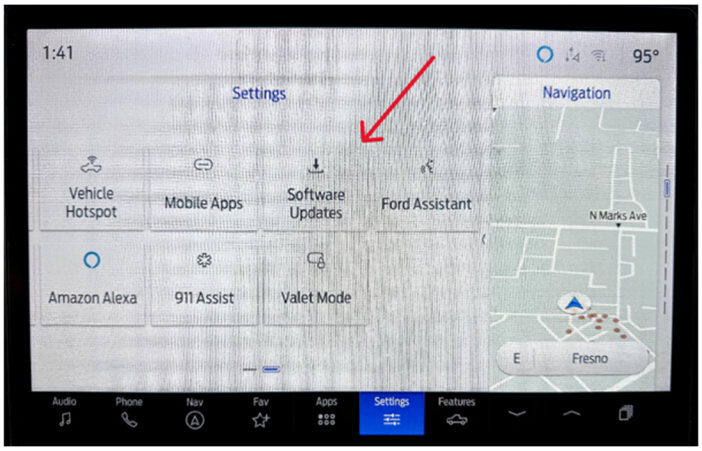
OTA BASED VEHICLES

1. Toggle ignition to **ON**.

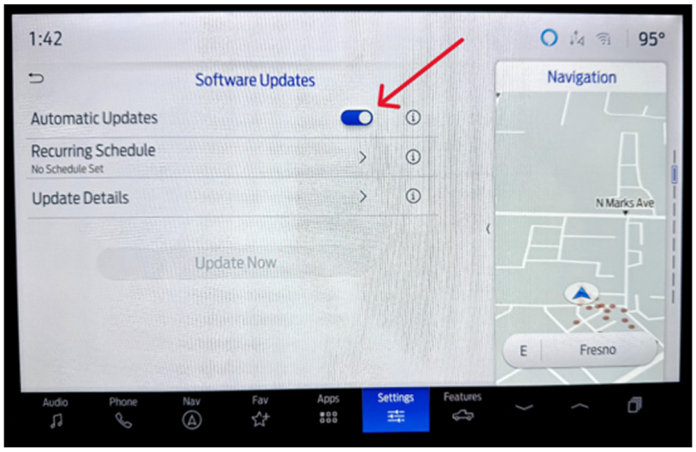
2. Select **Settings** on your SYNC infotainment screen.



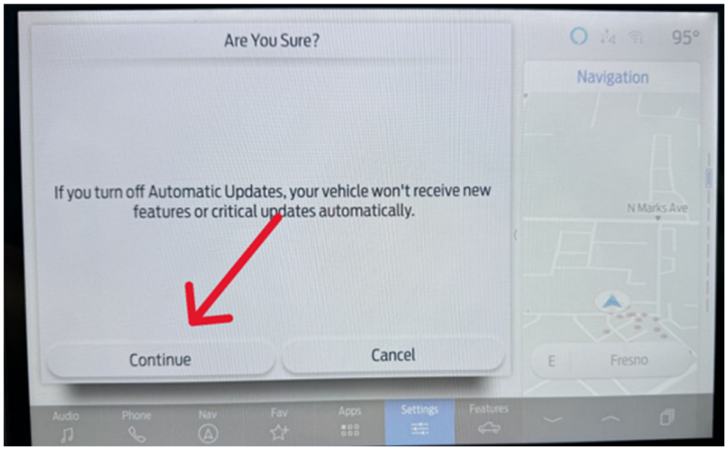
3. Scroll through menu, select **Software Updates**.



4. Toggle Automatic Updates to **OFF**.

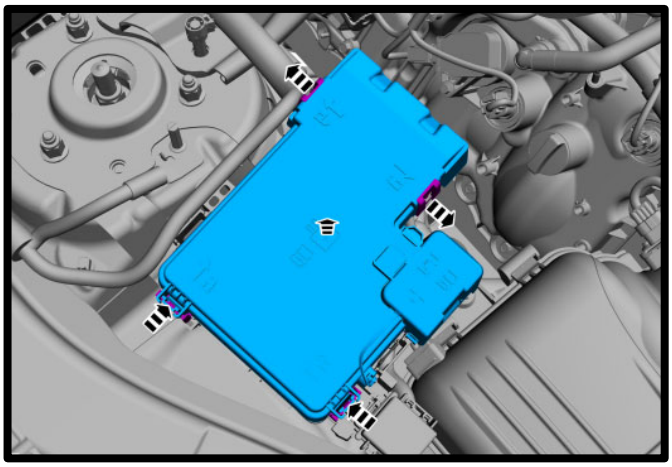


5. Select **Continue** on the following menu.

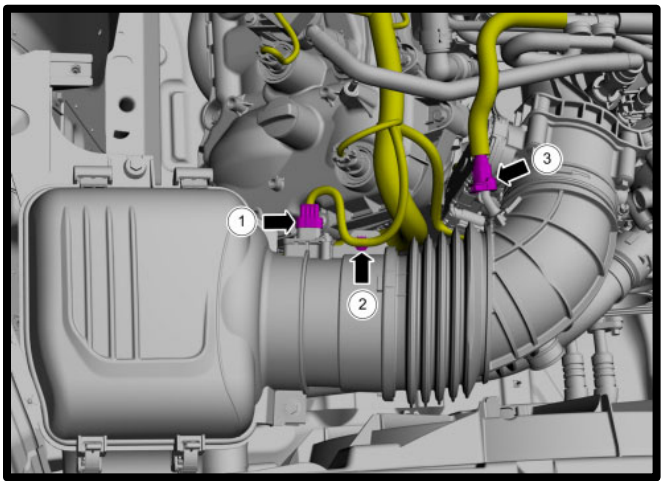


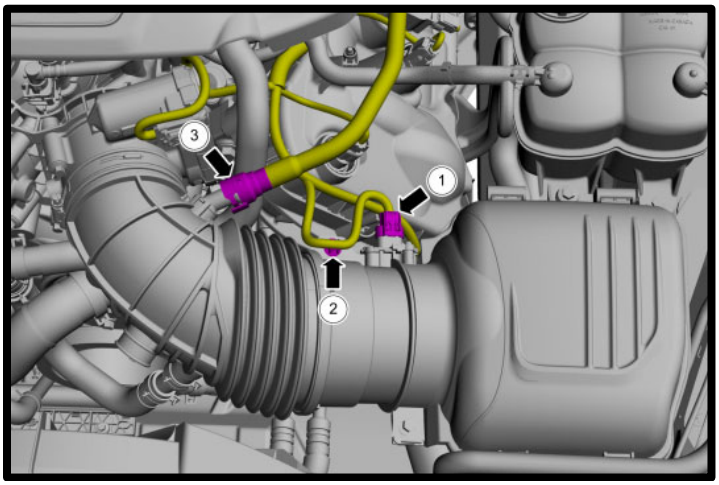
WARNING Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel-related components. Highly flammable mixtures are always present and can be ignited, resulting in personal injury.

1. Release the tabs and remove the fuse box cover.

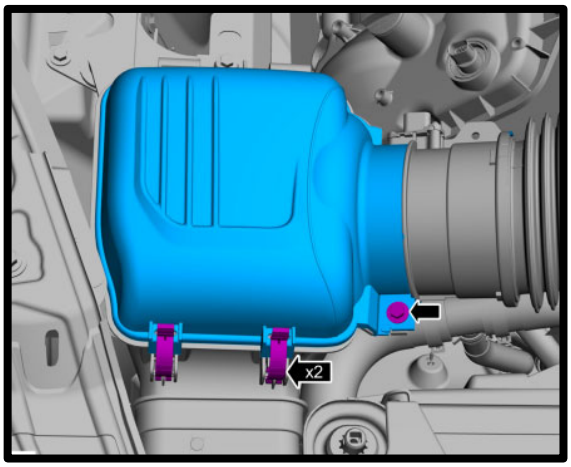


2. Disconnect the MAF sensors, MAF sensor retainers and remove make up air hose from air tubes.

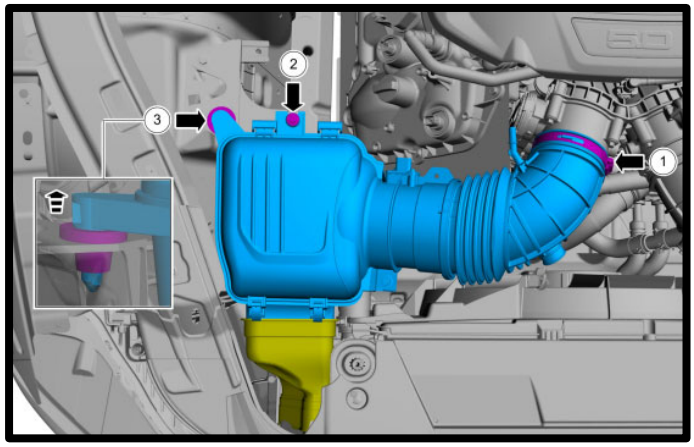


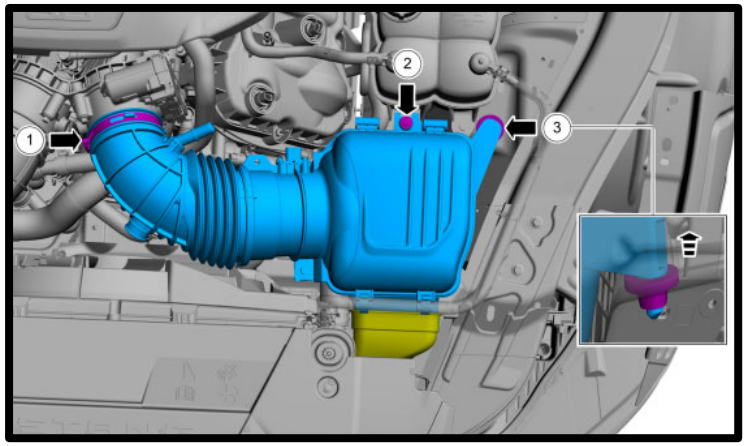


3. Remove the airbox lid bolt using a 10mm socket. Release the locking tabs and remove the airbox lid.



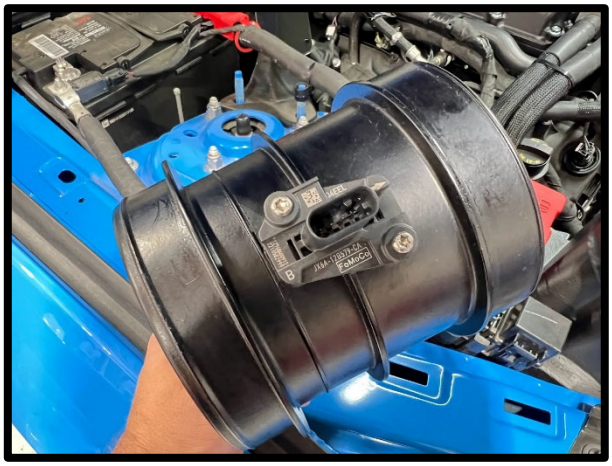
4. Loosen the hose clamps from throttle bodies using nut driver. Remove the air cleaner bolts. Detach the air cleaner boxes from grommets and remove the air cleaner assemblies.



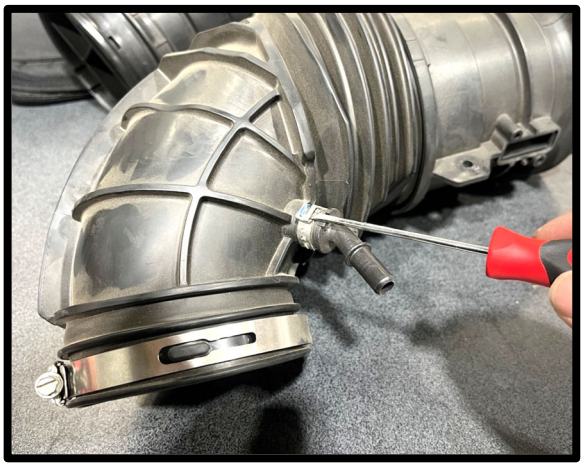


5. Remove the MAF sensor using a 10mm socket. Install factory MAF sensors to the new MAF housing using supplied (4x) 4mm x 10mm SHCS. Torque to 17 lbs-in. ****DO NOT USE STOCK BOLTS**. *NOTE: Verify arrow position for airflow direction.**





6. Using a small flat head screwdriver, remove the clamp securing fitting in air inlet tube. Using flat head screwdriver, remove the stock plastic fittings from air inlet tubes.





7. Install the stock fittings into the supplied inlet tube, orient them in the same stock positions by lining up the gaps.



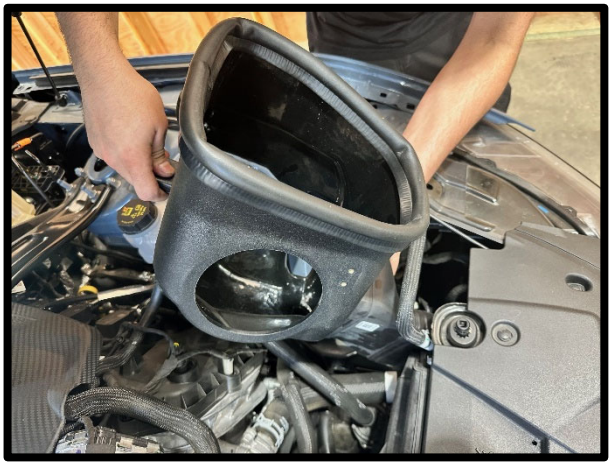
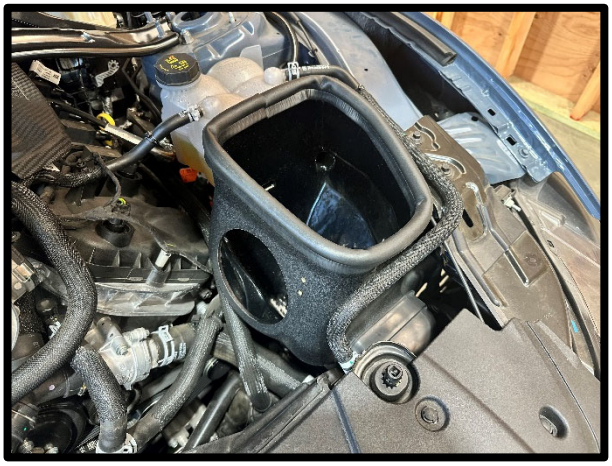

8. Remove stock airbox snorkel from air cleaner assemblies. Transfer to new airboxes.



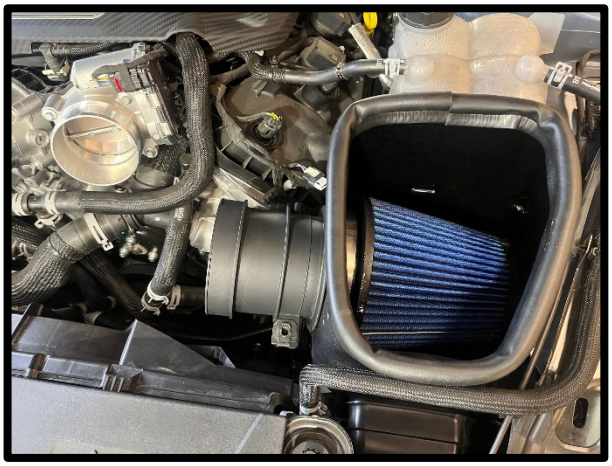

9. Install the airbox trim seal pieces to the new airbox top flange. Start in the middle, rear of box for a clean installation. **NOTE:** RH requires trim seal to be shortened ½" using cutting shears.



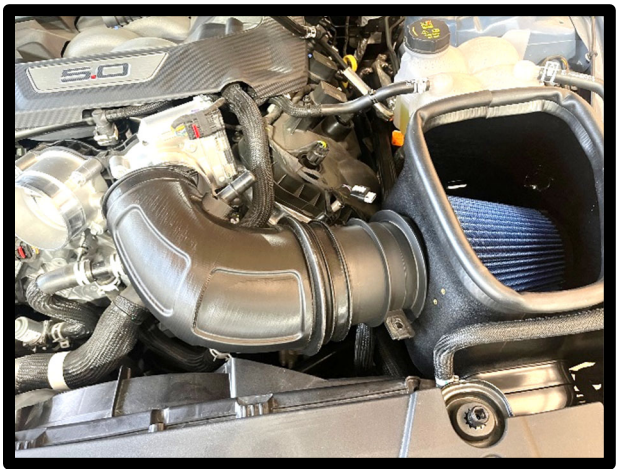

10. Set new airbox with snorkels into factory locations.

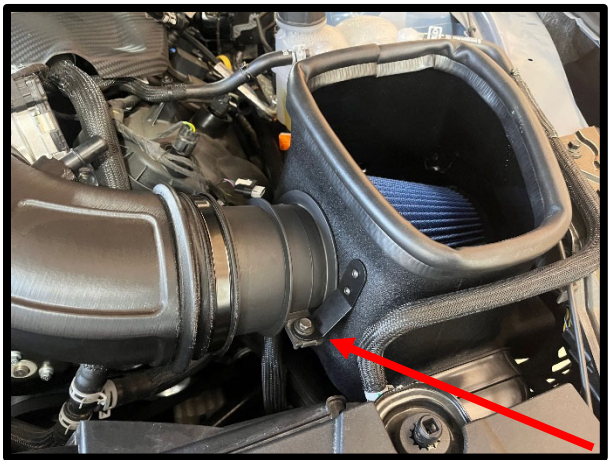
11. Set the air filter into the airbox, slide MAF housing through airbox. Slide the air filter over MAF housing. Secure with supplied clamp using 5/16" nut driver.

12. Install new air inlet tube from MAF to throttle body. Leave loose for now.



13. Install MAF housing bracket to airbox, using the (2x per) 4mm x 6mm bolts and 3mm allen. Secure MAF housing to bracket using stock fastener and 10mm socket.

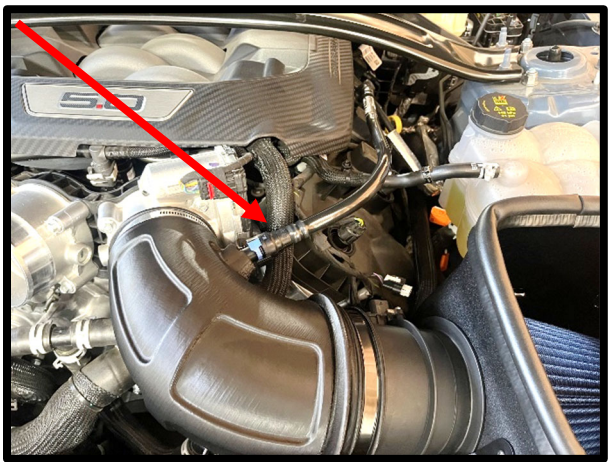



14. Secure air inlet tube to MAF using #80mm hose clamps. Secure air inlet tube to throttle body using #64mm hose clamps.



15. Reconnect factory PCV and fresh air connections to air inlet tube fittings.





16. Reinstall factory fuse box cover.

17. Reconnect factory MAF sensor connectors.

18. **Install supplied emissions CARB EO label to the hood next to the factory emissions (VECI) label. The installation of the CARB EO label is required for California's Smog Check program.**

IMPORTANT INFORMATION

DYNO INSTRUCTIONS

7th gear is 1:1 which will show the highest power value on inertia-based dynos on the automatic but will lead to unwarranted transmission failures. 5th gear is the safest for testing, 6th gear should be used once you have validated everything is in proper working condition. GT based manuals 1:1 is 4th gear. Dark Horse manuals 1:1 is 5th gear. Manuals should run 1 gear lower than 1:1 to minimize heat and tire speed. Always have adequate airflow to the vehicle to avoid overheating. Always cool down for a minimum of 5 minutes between runs to allow the engine and exhaust to properly cool off. Always listen for pinging/detonation, if you hear more than one ping, lift immediately. NOTE: Manual Mustangs can set ABS based codes on the dyno, if the wrench light is on, NEVER run on dyno with wrench light on, the vehicle will operate in a failure mode.

FUEL OCTANE

Peak power can only be achieved with 91-93 or higher-octane fuel. While 87, 89 can be run, the Ford PCM will adapt and lower power. The octane learning function will reset at every fill up or battery reset, then depending on the octane available, will consistently learn and adapt.

MAINTENANCE AND SERVICE

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

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

1. Use only premium grade fuel (91-octane or higher). RON+MON/2. The PCM calibration will automatically detect higher octane levels and will increase power accordingly.
2. Always listen for any sign of spark knock or pinging. If present, discontinue use immediately and consult your vehicle owner's manual.
3. Do not operate the vehicle at large throttle opening if the MIL lamp is on steadily. This indicates an electronic engine control malfunction: reduce throttle opening and consult your vehicle dealer.
4. Service or replace high-flow air filter element every 10,000 miles. Whipple oiled filter required.
5. Follow your factory service intervals for all maintenance items unless specified.

CAUTION: Any modification to your vehicle's new computer program may cause serious damage to the engine and/or drivetrain. The PCM is locked to the VIN, never let anyone, including dealerships install updates to the PCM.