



FORD PERFORMANCE

M-9603-M8B

2018 – 20MY Mustang 5.0 GT Cold Air Kit with Cal.

Instruction

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For questions, Call the FORD PERFORMANCE Techline 1-800-367-3788

Please visit <https://www.performanceparts.ford.com> for warranty information

Kit contains:

- 1 – Ford Performance Cold Air Intake
- 1 – Ford Performance ProCal 4
- 1 – ProCal 4 Voucher
- 1 – 87 mm Throttle Body
- 4 – Throttle Body Bolts (Hex Head)
- 1 – Throttle Body Adaptor
- 4 – Throttle Body Adaptor Bolts (Socket Head)
- 1 – Throttle Body Adaptor Seal
- 1 – EO Label
- 1 – Foam Seal
- 1 – Air Inlet
- 1 – Sound Symposer Plug
- 1 – Premium Fuel Label
- 2 – Wiring Stud Retainers

Warning: Read ProCal voucher before starting installation!

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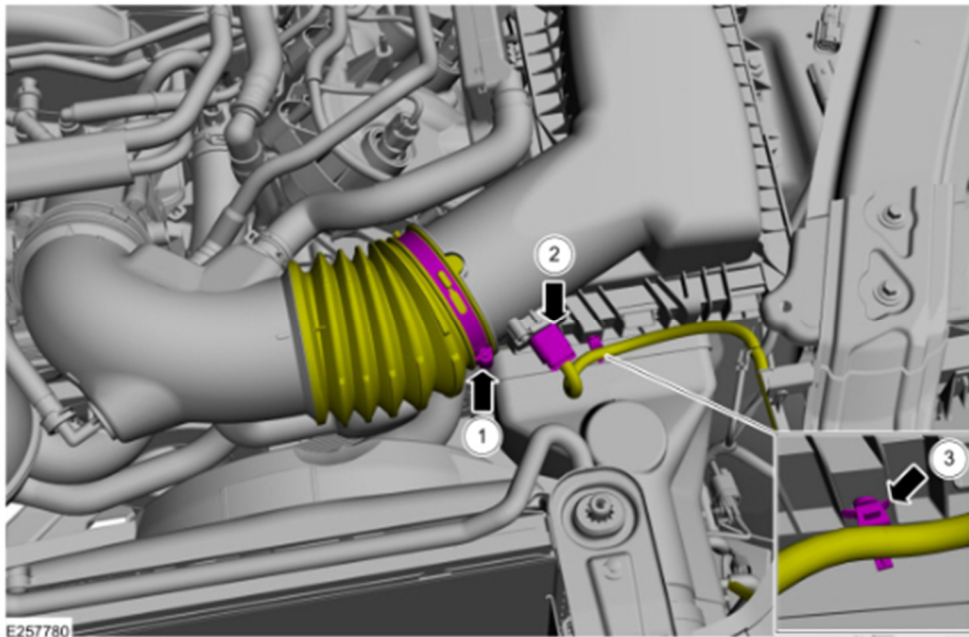
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NOTE: Removal steps in this procedure may contain installation details.

Disconnect the battery ground cable.

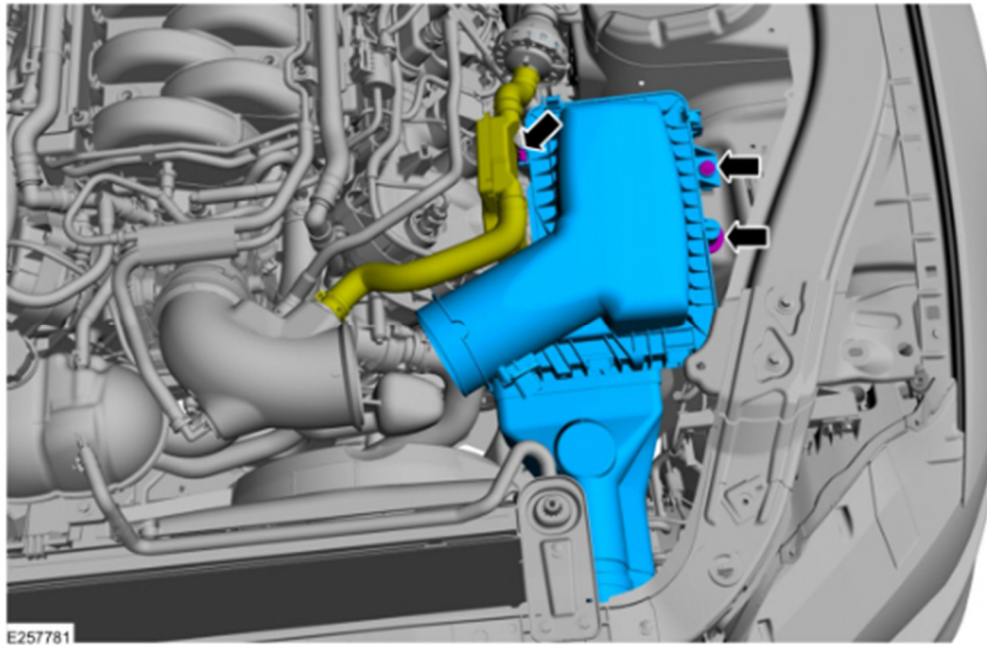
Disconnect the battery positive cable.

1. Loosen the clamp and position the air cleaner outlet pipe from the air cleaner.
Torque: 44 lb.in (5 Nm)
2. Disconnect the MAF sensor electrical connector. CAUTION ! Connector may have a clip locking feature to be disengaged before connector clip can be depressed.
3. Detach and position the wire harness from the air cleaner.

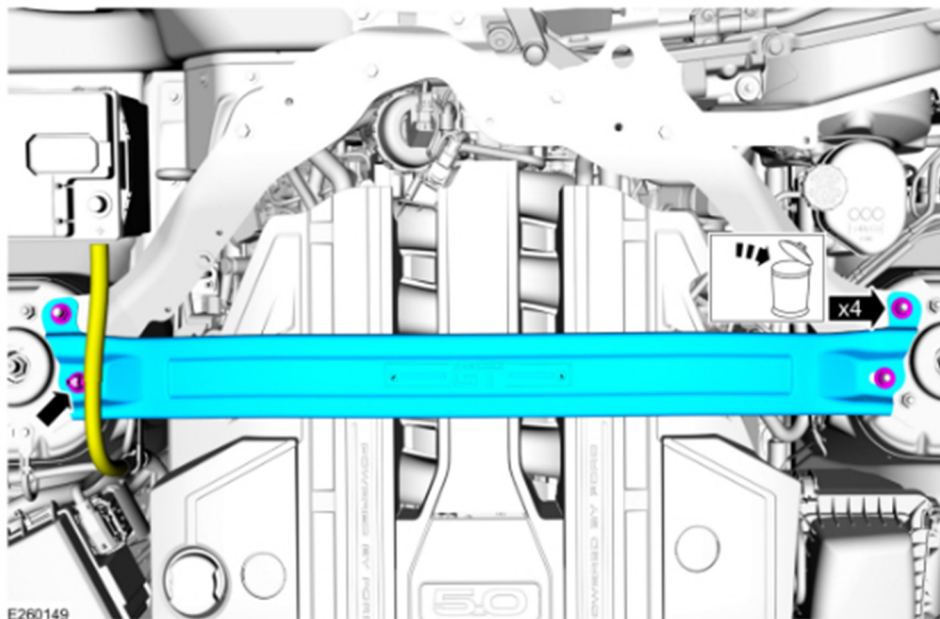


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4. Detach and position the sound symposer from the air cleaner.
5. Remove the bolt and the air cleaner. **Save fastener for installation**



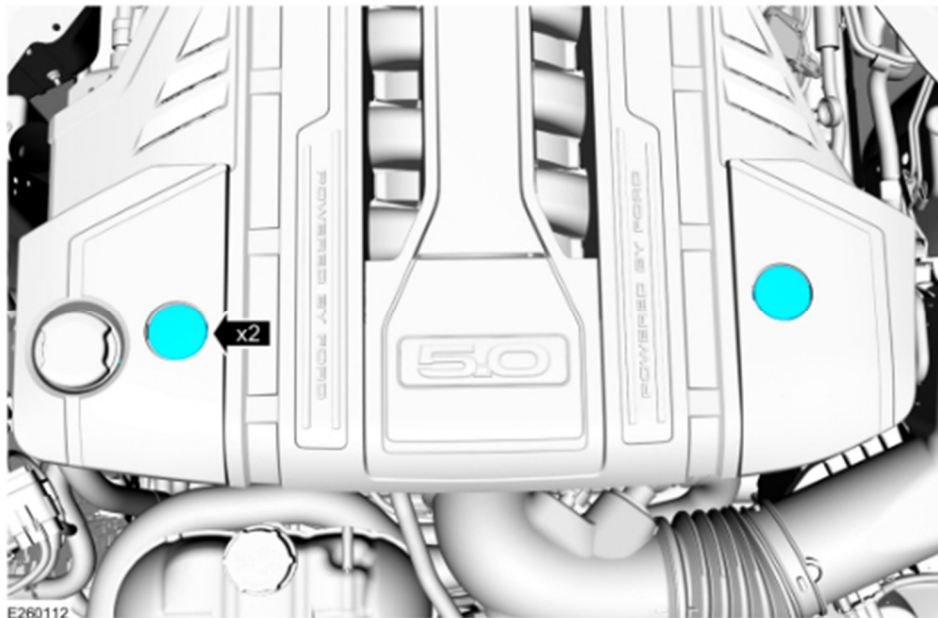
6. If equipped
Remove the strut tower cross brace.
Torque: 41 lb.ft (55 Nm)



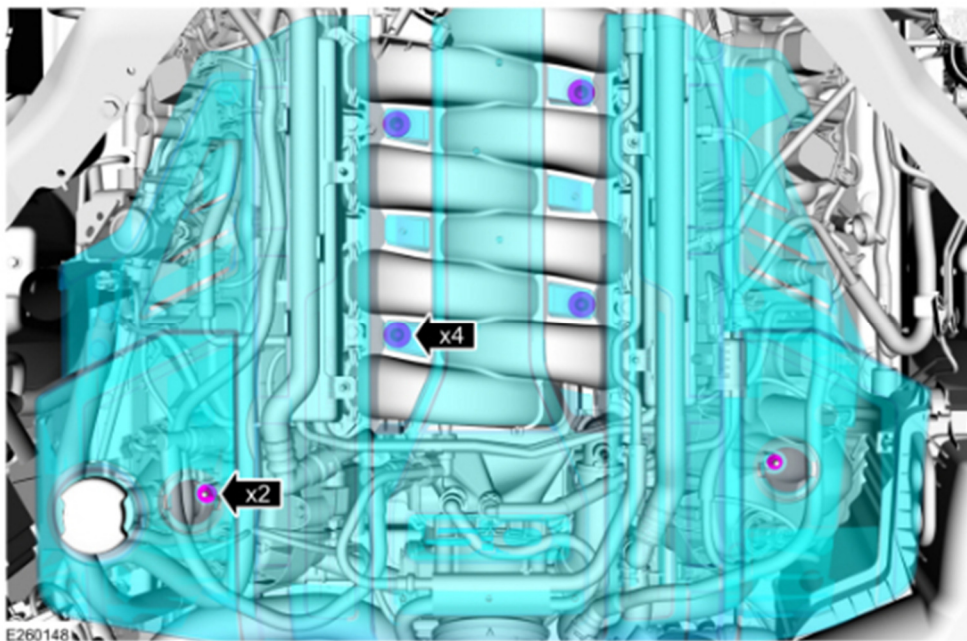
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7. Remove the engine appearance cover caps.



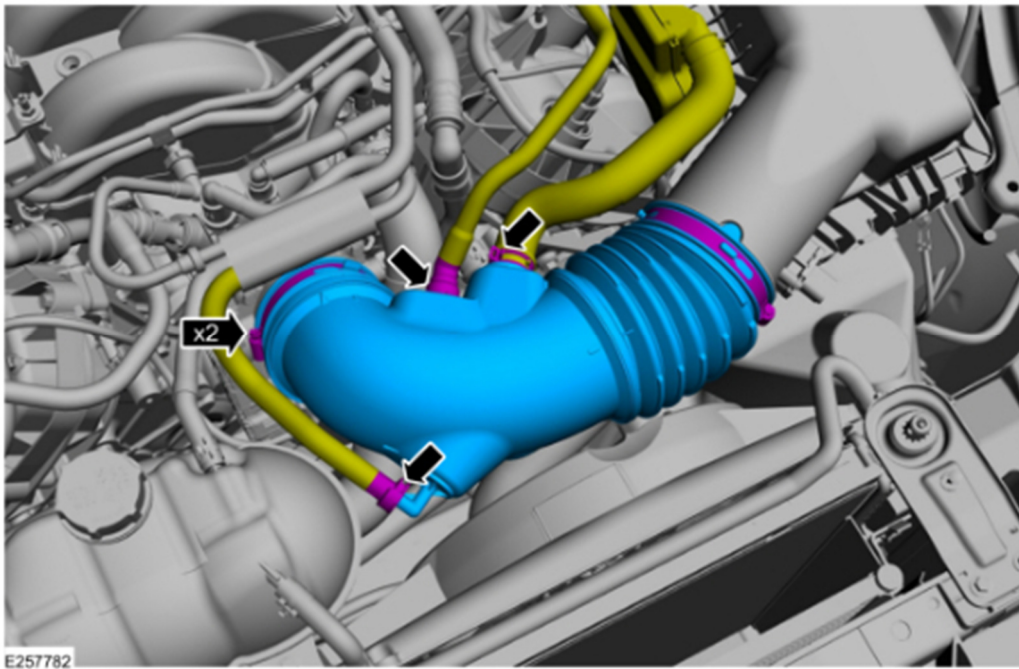
8. **NOTE:** The engine appearance cover rubber grommets may remain on the cover. If so, remove the grommets from the cover and install them on the intake manifold before installing the cover.
Remove the nuts and the engine appearance cover.
Torque: 35 lb.in (4 Nm)



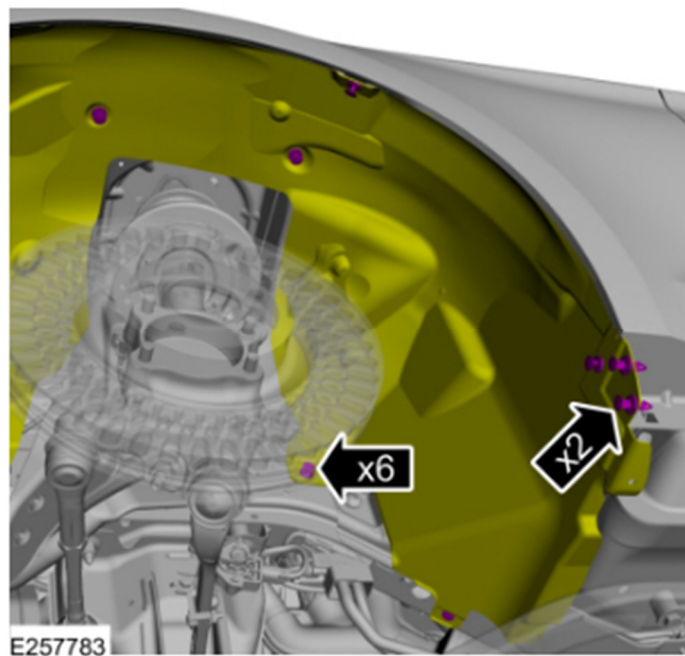
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9. Disconnect and position aside the brake booster tube, crankcase ventilation tube and resonator air inlet tube.
10. Loosen the throttle body clamp and remove the air cleaner outlet pipe.
Torque: 48 lb.in (5.4 Nm)



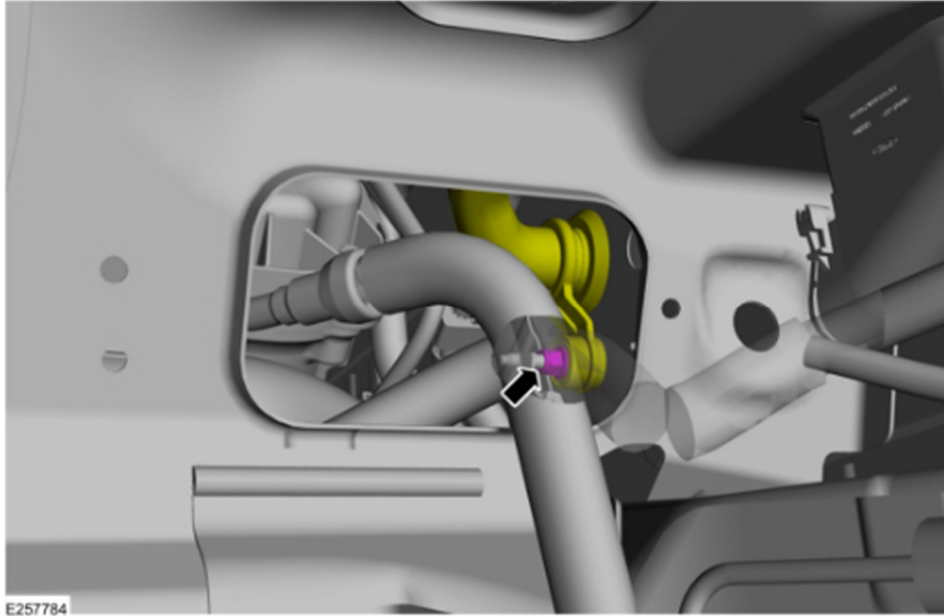
11. Remove the push pins and position aside front wheel arch liner.



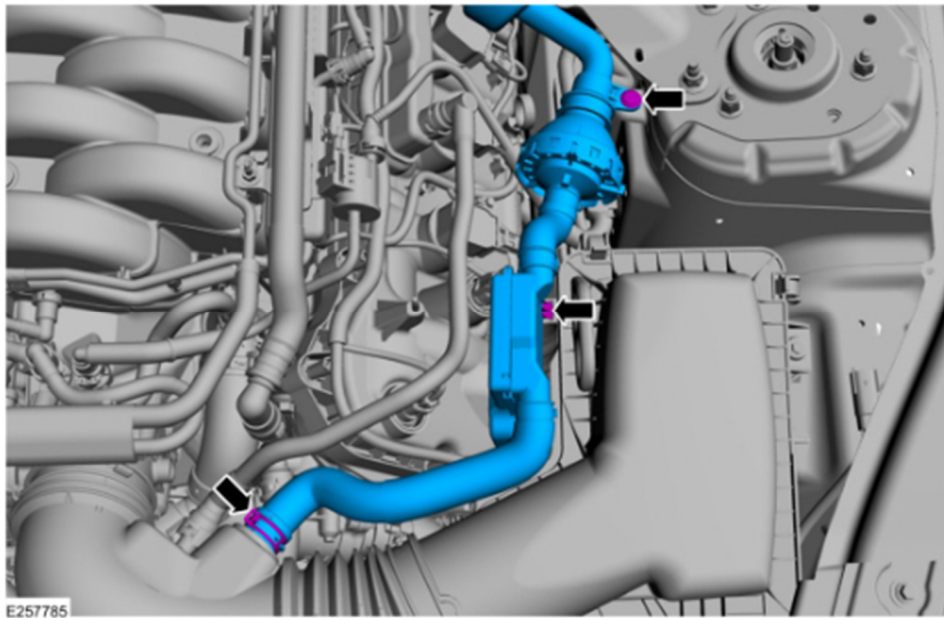
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12. Remove the nut and position aside the sound symposer assembly.
Torque: 62 lb.in (7 Nm)



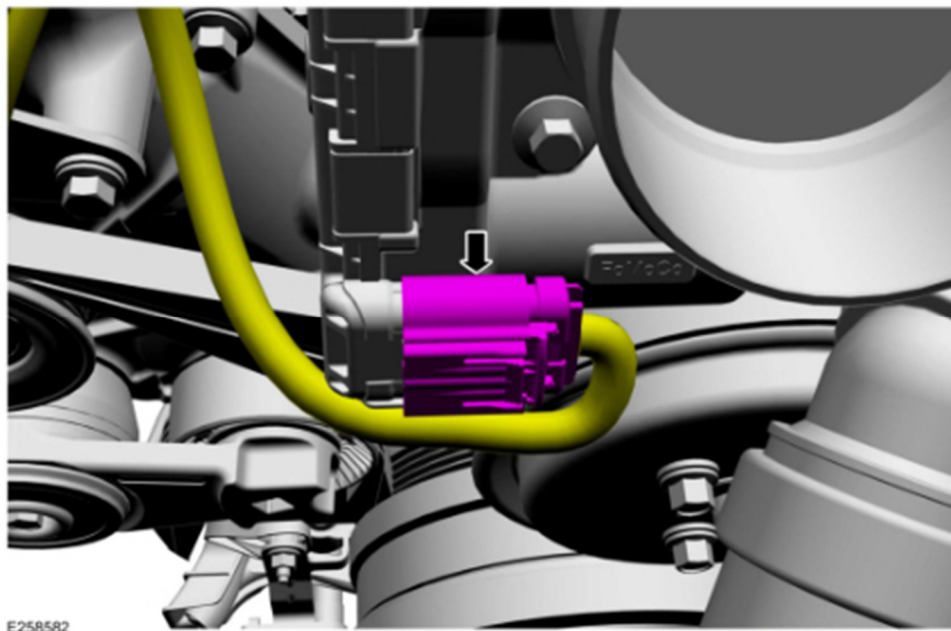
13. Install the Sound Symposer plug
14. Reinstall the front wheel arch liner
15. Remove the push pin, remove the clamp and sound symposer assembly.



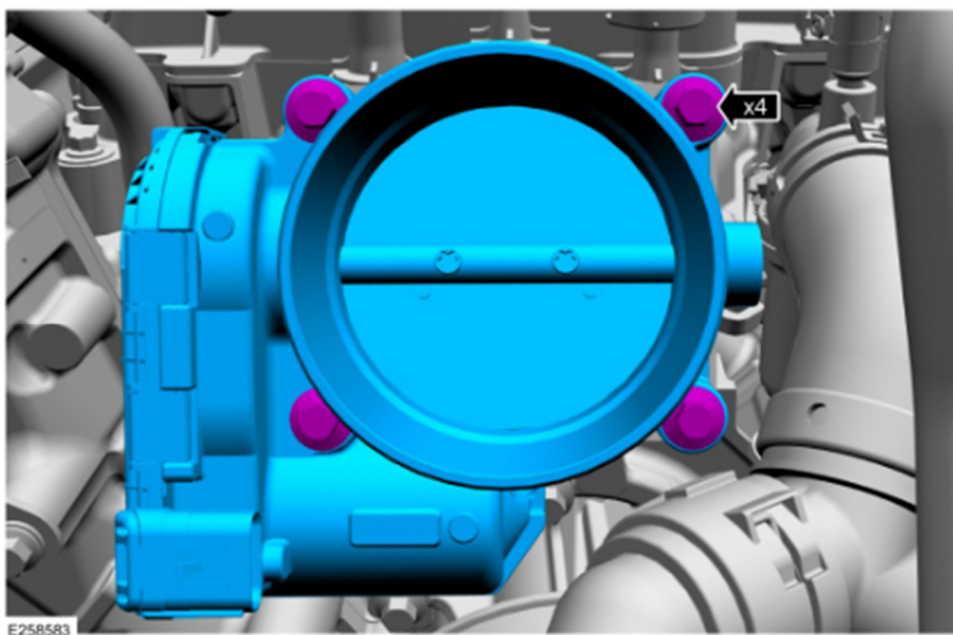
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16. Disconnect the throttle body electrical connector.



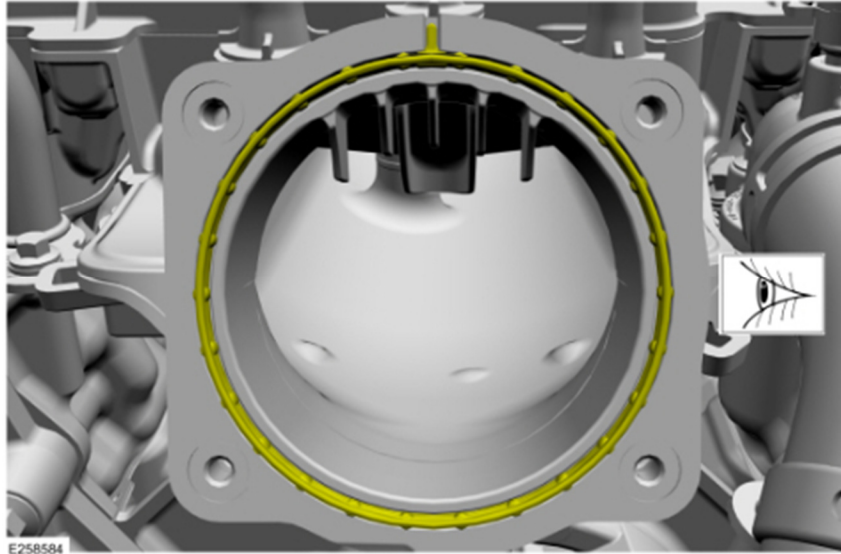
17. Remove the throttle body retaining bolts, then remove the throttle body.



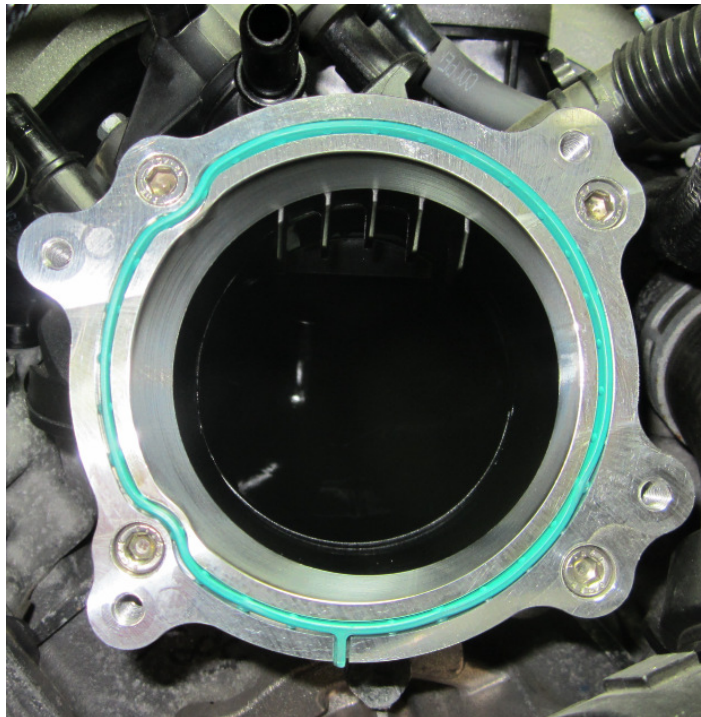
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18. Inspect the throttle body gasket, clean and replace the throttle body gasket as needed.



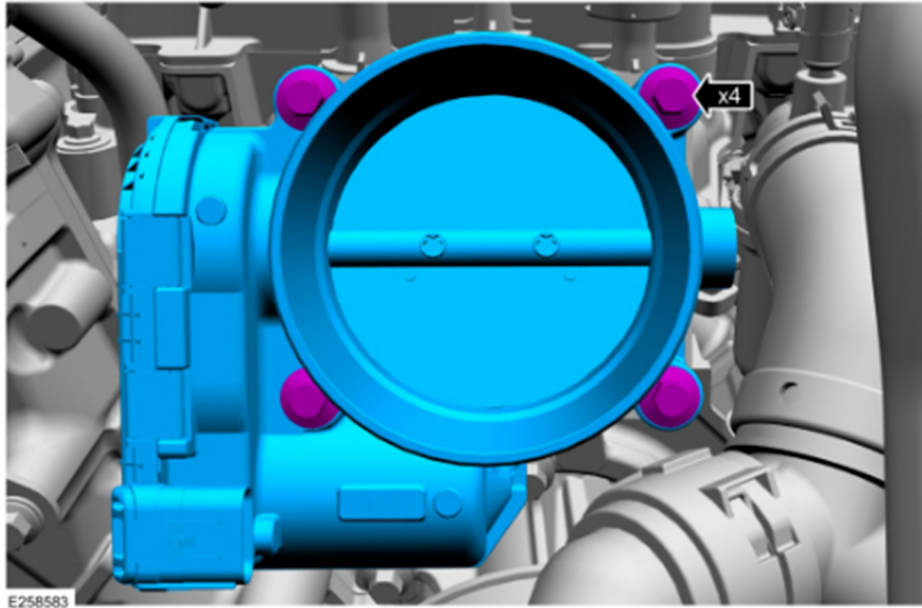
19. Install throttle body adapter.
20. Torque Throttle Body Adapter Bolts (socket head) to 7 ft. lbs.
21. Install supplied throttle body gasket to adapter.



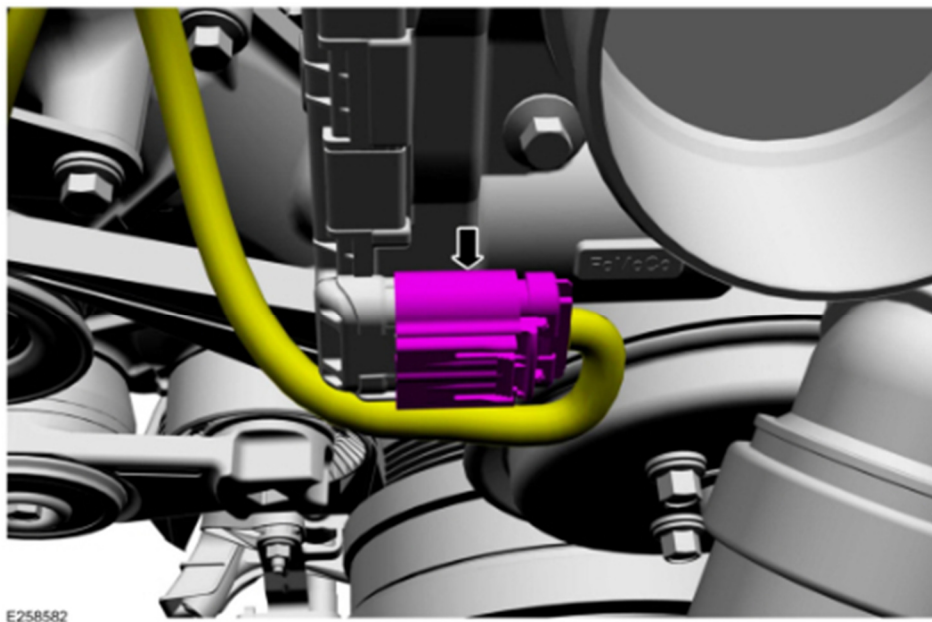
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22. Install the 87 mm throttle body, then install and tighten the throttle body retaining bolts in the following 2 stages.
Torque:
Stage 1: 62 lb.in (7 Nm)
Stage 2: 60°



23. Connect the throttle body electrical connector.



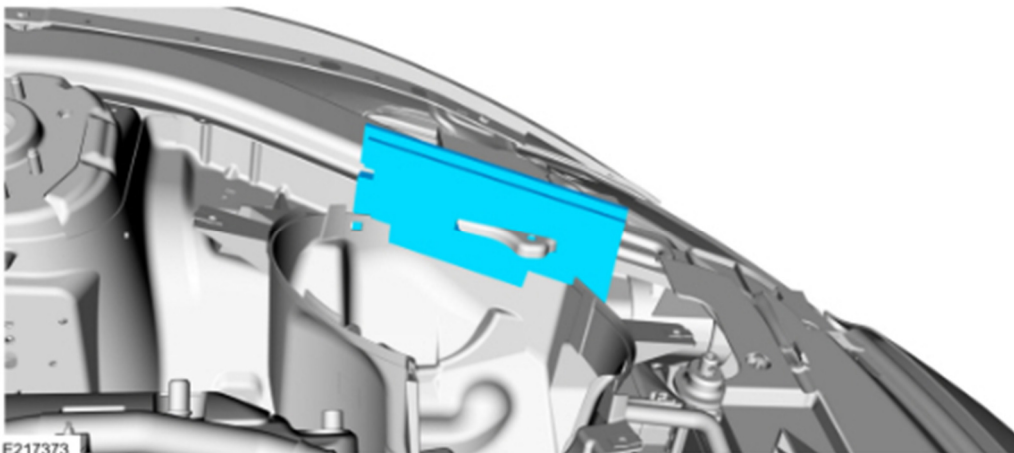
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24. On the MAF wiring, remove the two wiring harness retainers
25. Wiring harness may need to be extended for new MAF location. Be careful not to damage wiring when doing so



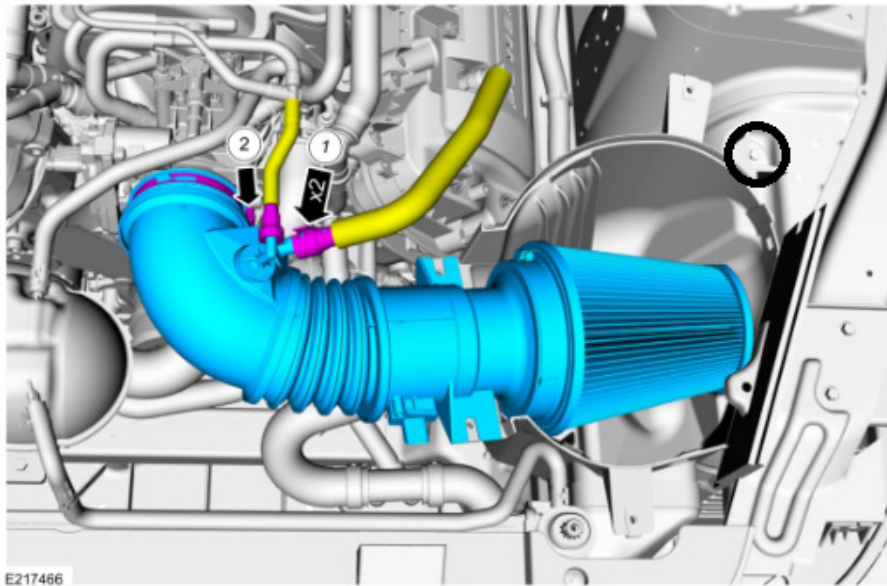
26. Place the foam seal in place



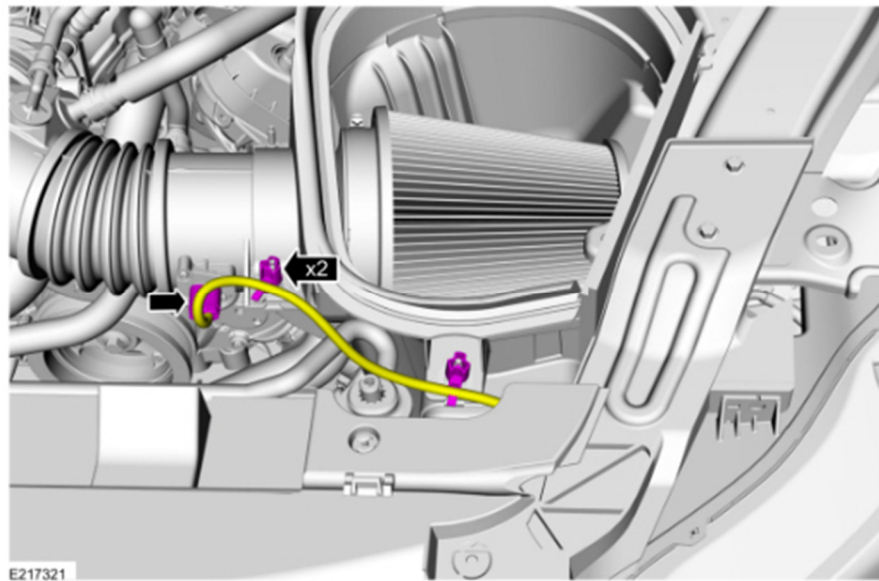
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27. Connect the dirty air inlet to the Ford Performance Cold Air Intake
28. Install the Ford Performance Cold Air Intake
29. Throttle Body Clamp: Torque: 48 lb.in (5.4 Nm)
30. Air Box Bolt: Torque: 71 lb.in (8 Nm) – **Reuse Fastener from Step 5**
31. Reconnect the brake aspirator and crankcase ventilation tubes



32. Connect MAF sensor
33. Install 2x Stud retainers on wiring harness. Connect to studs



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- 34. Modify engine appearance cover to clear brake aspirator tube
- 35. Reinstall engine appearance cover



- 36. If equipped, reinstall strut tower brace
- 37. Reconnect battery terminal
- 38. End

Enjoy your Ford Performance Cold Air Intake



FORD PERFORMANCE

M-12655-F PROCAL4 INSTRUCTIONS

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*****NOTE***** The ProCal 4 tool is shipped without a calibration; the end user must register with Ford Performance Parts (FPP) and download the ProCal 4 software and follow the instructions below. The software provided to install performance calibrations to the ProCal 4 tool is compatible only with Windows 7 or above and can be found at www.performanceparts.ford.com/downloads.

Installing FPP ProCal 4 software on PC

1. Create account at www.performanceparts.ford.com/register
2. Upon account creation, log into account and navigate to "Download" page to download ProCal 4 software
3. Once software is downloaded, install software on PC

Preparing ProCal 4 tool for use

1. After software install is complete, connect ProCal 4 device to PC via supplied USB cable
2. Program should connect automatically with programmer displaying serial number, firmware version number, and automatically check for updates. Follow all on screen prompts and fully complete all updates for ProCal software and ProCal tool before connecting to vehicle

Before connecting the ProCal 4 tool to the vehicle

1. Turn off all accessories & unplug any electronic devices from any power or USB ports (A/C, radio, lights, etc.)
2. Ensure vehicle battery is sufficiently charged (12 volts or more)
*****NOTE*** IT IS HIGHLY RECCOMENDED TO CONNECT VEHICLE TO A BATTERY CHARGER/TENDER TO ENSURE ADEQUATE BATTERY VOLTAGE DURING CALIBRATION PROCESS**

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Saving Stock calibration to ProCal 4 tool

1. Turn ignition to "RUN" position
*****NOTE*** DO NOT start engine. Keep foot off brake/clutch to ensure engine does not start**
2. Connect tool to the vehicle OBDII port (Generally located on the bottom of the dash, to the right of the hood release)
3. Select "PROGRAMMING" option in the main menu and follow the on-screen prompts to read/save your stock calibration file. Do not turn off the ignition or unplug the tool until prompted to do so.

Downloading Performance calibration to ProCal 4 tool

1. Connect ProCal 4 tool to PC using provided USB cable
2. Open ProCal software and confirm VIN now displays within software
3. Software will prompt user to backup/save stock calibration to FPP servers for backup purposes, in case of ProCal 4 loss/damage/etc.
4. After successful backup of stock calibration, the software will download the FPP performance calibration.
 - a. Follow any on-screen prompts that may occur
5. Confirm software now shows Ford Performance calibration in addition to Stock file

Installing performance calibration in vehicle

*****NOTE*** ONCE CALIBRATION PROCESS HAS BEGUN, DO NOT PRESS ANY BUTTONS OR DISCONNECT TOOL UNTIL PROMPTED TO DO SO. ENSURE ALL ELECTRONIC ITEMS (RADIO, WINDOWS, DOORS, LIGHTS) ARE OFF AND ARE NOT OPERATED UNTIL CALIBRATION PROCESS IS COMPLETE**

1. Connect ProCal 4 tool to vehicle OBDII port
2. Ensure vehicle is in "RUN" position (Key on, Engine Off)
*****NOTE*** ENGINE MUST NOT BE STARTED/RUNNING UNTIL PROMPTED BY TOOL, OR CALIBRATION PROCESS IS COMPLETE**
3. Select "PROGRAMMING" option from main menu
4. Select "Preloaded calibration" Option on ProCal 4, and Drag/Click to select the desired calibration.
*****NOTE*** DURING CALIBRATION PROCESS, THERE WILL BE VARIOUS WARNING CHIMES/ALARMS (Check Engine light, TPMS light, etc). THIS IS EXPECTED, AND PART OF THE PROCESS.**
5. Follow ALL on-screen prompts, until "Clearing Codes, Finished, Key off for 3 seconds" is displayed, signaling the end of the procedure

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Diagnostic Features of ProCal 4Tool

1. Module Info

- a. Identified VIN, Vehicle description, calibration, and software installed in the PCM

2. Diagnostics and Tools

- a. Read DTC
 - i. Displays any Diagnostic Trouble Codes (DTC) stored in the vehicle PCM
- b. Clear DTC
 - i. Clears all DTC stored in the PCM

3. Service Functions

- a. Clear KAM
 - i. Clears all data stored in vehicle Keep Alive Memory (KAM)
*****NOTE*** THIS IS RARELY NEEDED OPTION, ONLY USE IF YOU EXPERIENCE DRIVABILITY CONCERNS (IRREGULAR SHIFTING, ETC)**
- b. Clear Adaptive KAM
 - i. Clears adaptive learning fuel related data stored in KAM
- c. Crank Relearn
 - i. Used to re-learn the misfire profile for the crank position sensor. Generally used if vehicle has misfire DTC after calibration procedure
- d. KOEO
 - i. Performs a Key on Engine off diagnostic self-test on the vehicle
- e. KOER
 - i. Performs a Key on Engine running diagnostic self-test on the vehicle
- f. Flash TRID
*****THIS OPTION IS ONLY TO BE USED WHEN DIRECTED TO DO SO BY FPP. MIS-USE OF THIS FEATURE MAY CAUSE ISSUES WITH THE VEHICLE*****
- g. Tire/Gear Adjust
 - i. Allows the end user to change the tire size or axle ratio stored in the PCM. Only to be used if installed tires or gears deviate from factory installed parts

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Datalogging

4. Gauges

- a. Allows user to monitor real-time data supported by the tool.
- b. Some examples of monitorable data
 - i. Air fuel ratio
 - ii. Spark timing
 - iii. RPM
 - iv. Temperature
- c. To utilize; select gauges, then select a channel, then select the desired function to be monitored

5. Datalog

- a. Allows recording of signals received in the “Gauges” screen. To utilize; first select a datalog file and pick a log file to record to. Once complete, select the “start recording” button. The selected logfile number will show up in red in the upper right corner of the screen. When complete, select the “stop recording” button. The logfile can be retrieved by plugging the tool into a computer, opening the ProCal 4 software, and navigating to the datalog tab. Data is stored in a .csv format.

*****NOTE***** If vehicle is equipped with an automatic transmission, several miles and/or days of driving may be required for all adaptive learning to complete. Do not be alarmed at shift quality immediately after installing of calibration. It is recommended to do light throttle driving until shift quality has stabilized.

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