

LINGENFELTER **C8** EXCLUSIVE

p Performance Design
CARBON
pTR



**ENGINEERED FOR THE TRACK
BRED FOR THE STREET**

**pTR CARBON INTAKE MANIFOLD SYSTEM
INSTALLATION INSTRUCTIONS**

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INSTALLATION QUESTIONS?

EMAIL sales@lingenfelter.com

INTRODUCTION

Performance Design Carbon pTR Intake Manifold System

After a year of intense development, rigorous testing, and proven validation, the Performance Design Carbon pTR Intake Manifold is ready for the street as well as the track and available exclusively through Lingenfelter Performance Engineering.

Producing an additional 25 horsepower at the rear wheels on average when used with the Lingenfelter 95 mm Throttle Body, the Performance Design Carbon pTR Intake Manifold takes stock C8 LT2 Corvettes to the next level with style and performance. It features a great-looking 5-layer carbon fiber upper and a durable heat-resistant glass-reinforced nylon lower while embracing lightweight tunnel ram architecture.

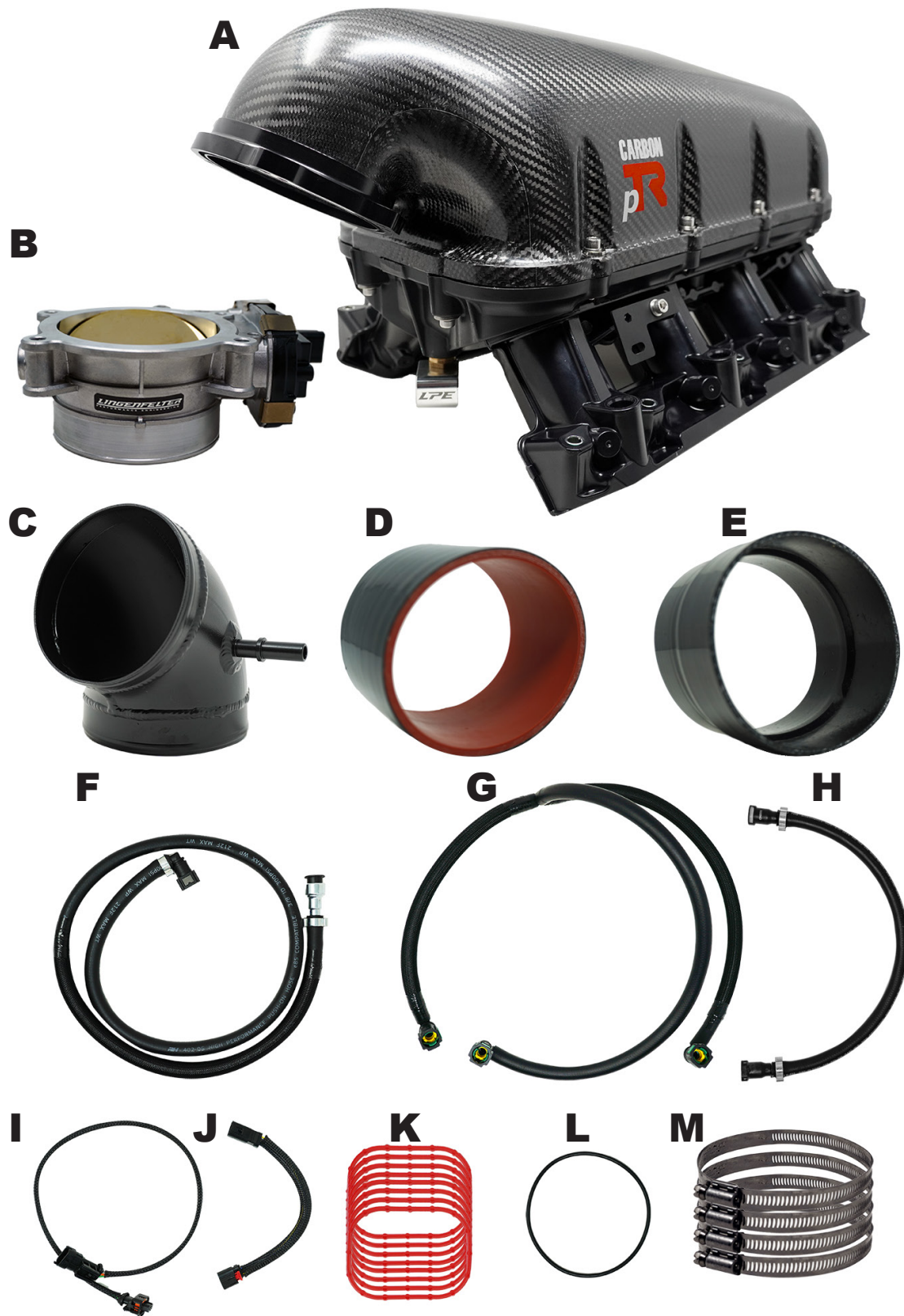
Innovative engineering allows for complete ECM integration using the factory connectors, and there is no calibration required.

The Performance Design Carbon pTR Intake Manifold is an all-inclusive, technically advanced system with absolutely everything, from the pressure tested Performance Design Carbon pTR Intake Manifold to the high-performance Lingenfelter 95 mm Throttle Body (if required). In addition, this advanced system includes the appropriate couplers, hoses, harnesses, gaskets, fasteners, and connectors which were specifically designed to work with the factory-installed connections and fittings on all C8 LT2 Corvettes. (Does not fit convertibles)



*Cars vary in base horsepower. The Performance Design Carbon pTR Manifold increases the horsepower by 25 at the rear wheel on average.

PARTS LIST



INSTALLATION SYSTEM PARTS LIST

- A. Performance Design Carbon pTR Intake Manifold (1)
- B. Lingenfelter 95 mm Throttle Body (Optional)
- C. Metal Elbow (1)
- D. Straight 4" Coupler (1)
- E. Tapered 4" to 4.25" Coupler (1)
- F. Purge Solenoid Hose (1)
- G. Fresh Air PCV T-Hose (1)
- H. Valley Cover PCV Hose (1)
- I. 24" MAP Extension Harness (1)
- J. Throttle Body Extension Harness (1)
- K. Manifold Gaskets (8)
- L. Throttle Body O-Ring (1)
- M. Hose Clamps (8)
- N. Zip Ties (8)
- O. Intake Manifold Fasteners (10)
- P. Intake Manifold Washers (10)
- Q. Throttle Body Fasteners (4)
- R. Throttle Body Washers (4)
- S. LPE Purge Line Disconnect Tool

TOOLS NEEDED

Safety Glasses
Screwdriver
Ratchet
Socket Extension
Sockets - 10 mm & H5
Socket - T40 (Only if Carbon Fiber Covers Installed)
Razor Knife
Torque Wrench
Loctite Medium-Strength Blue Threadlocker
Painter's Tape



INSTALLATION INSTRUCTIONS | STEP 1-5

Before you begin, make sure the motor and transmission are cool to the touch and wear appropriate eye protection.

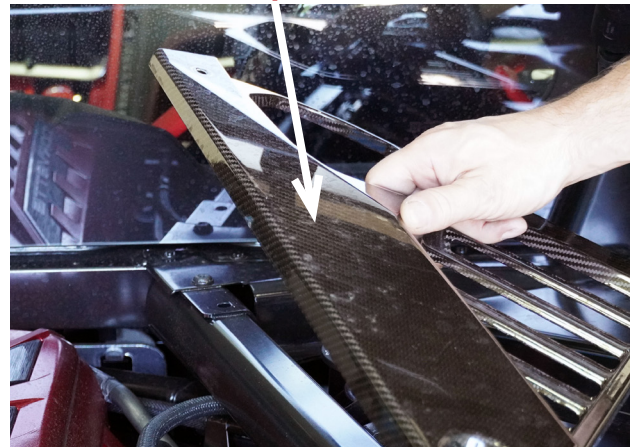
1. Disconnect the battery.
2. Remove the carbon fiber cover on the passenger side if equipped.
3. Disconnect the purge line clip from on the passenger side of the engine brace.
4. Disconnect the connection for the purge line using the included LPE Purge Line Disconnect Tool.
5. Remove the stock purge line clip and rubber spacer from the stock passenger side purge line and set them aside for future use.



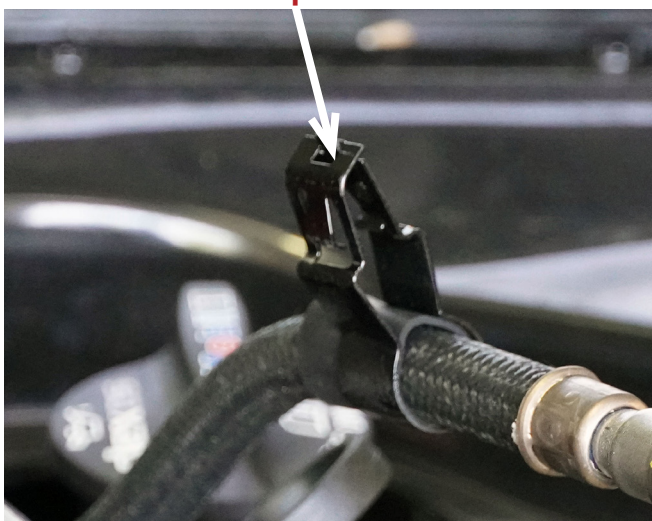
STEP 1



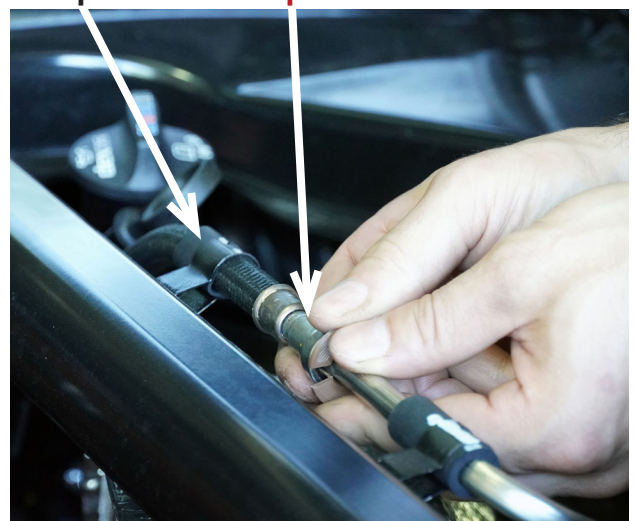
STEP 2



STEP 3

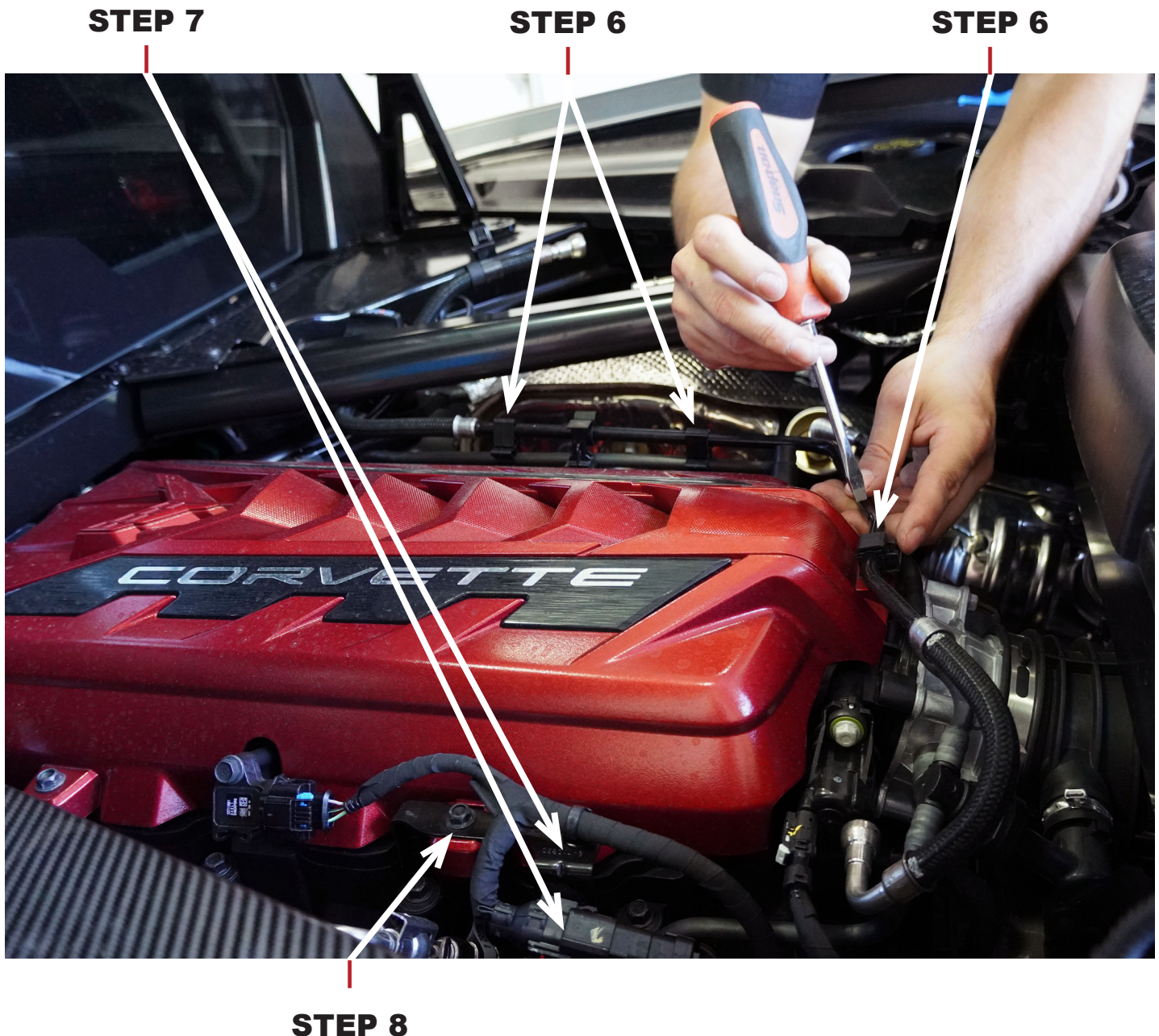


STEP 5 STEP 4



INSTALLATION INSTRUCTIONS | STEP 6-8

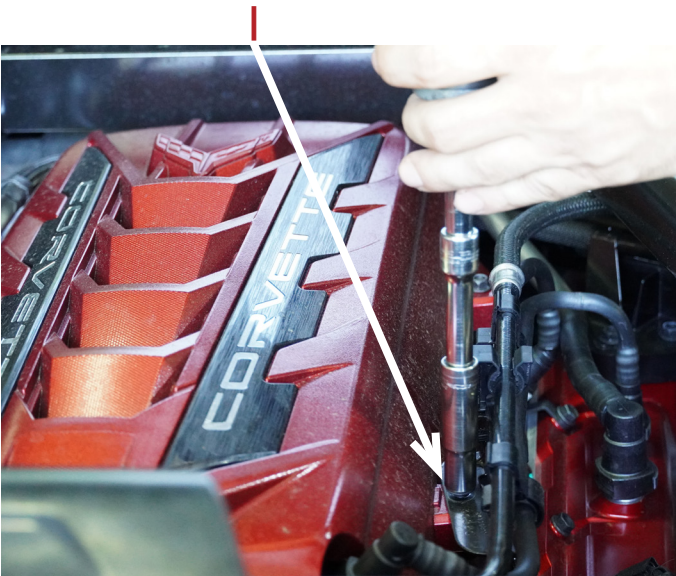
6. Remove purge line from clips on the passenger side and the rear of the engine cover.
7. Remove the electrical harness fur trees from the stock metal bracket on the driver and passenger side, taking care not to break the fur trees.
8. Remove the fastener and electrical bracket on the driver side.



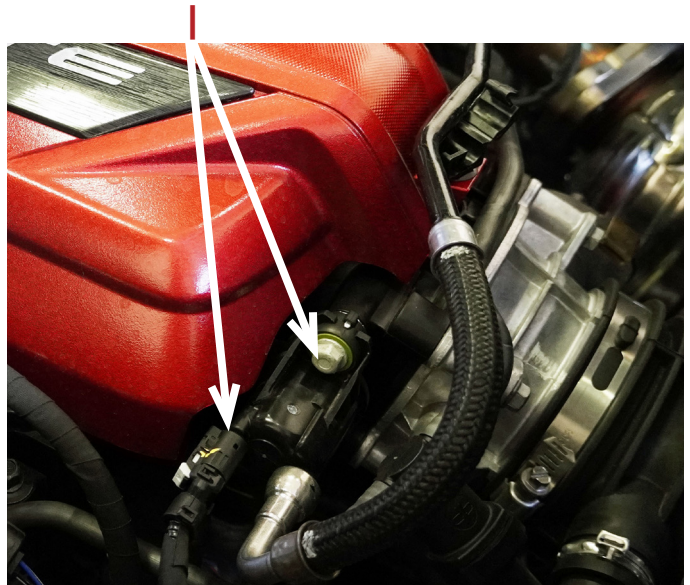
INSTALLATION INSTRUCTIONS | STEP 9-12

9. Remove the fastener from the passenger side electrical bracket.
10. Remove the purge solenoid fastener and disconnect the electrical connection at the purge solenoid.
11. Remove the purge line and purge solenoid from the car.
12. On your workbench, use the included Lingenfelter Purge Line Disconnect Tool to remove the purge line from the purge solenoid. This tool was specifically designed for this step as a regular tool will not fit.

STEP 9



STEP 10



STEP 11

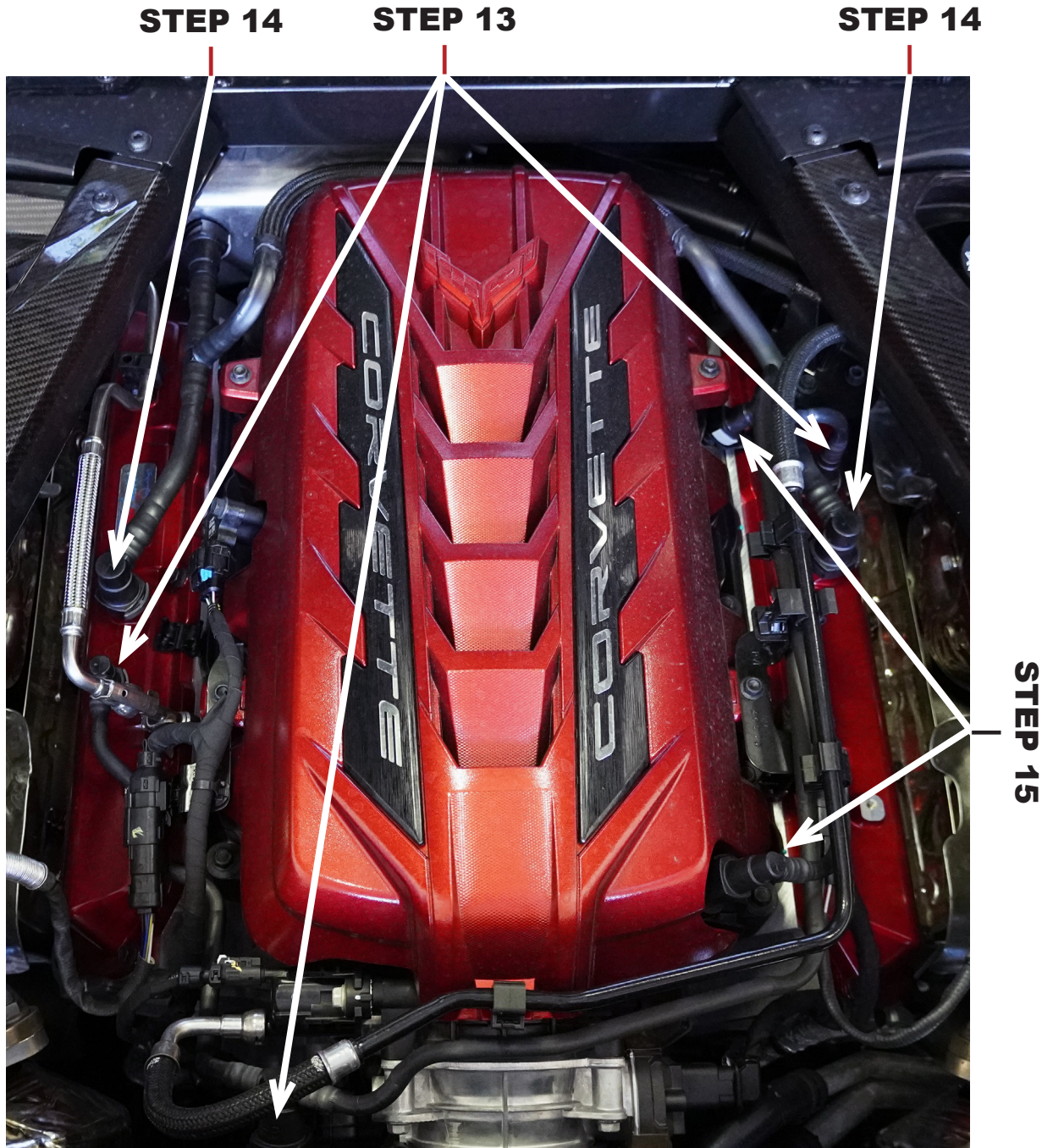


STEP 12



INSTALLATION INSTRUCTIONS | STEP 13-15

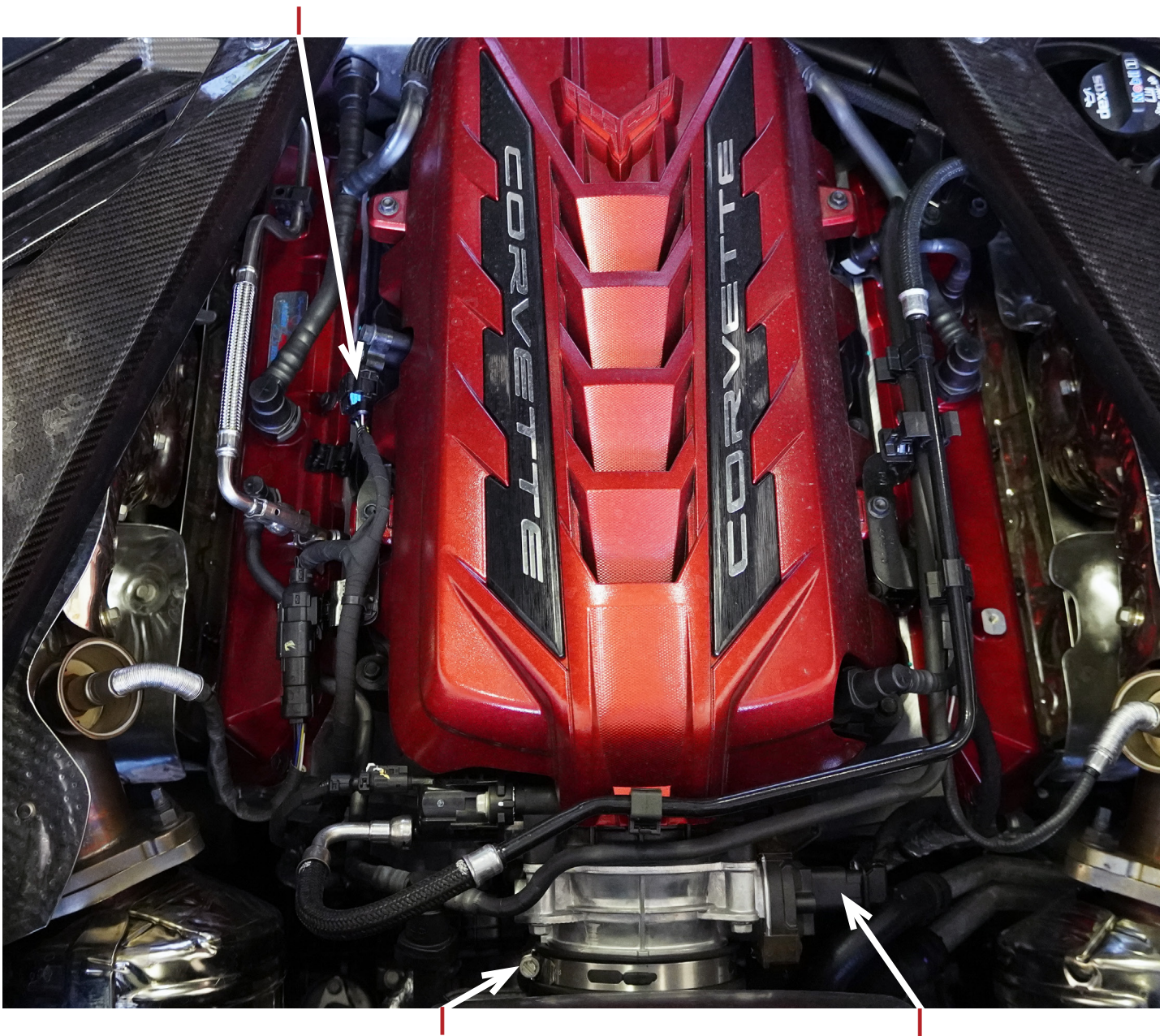
13. Disconnect clean side stock PCV line at the three quick disconnects and remove it from the car.
NOTE This line will be replaced.
14. Disconnect the PCV line from the dry-sump connectors on the driver side and passenger side of the valve covers.
15. Disconnect the stock valley cover PCV line on the passenger side of the car and remove it.
NOTE This line will be replaced.



INSTALLATION INSTRUCTIONS | STEP 16-18

16. Disconnect the MAP sensor connector on the driver side. **IMPORTANT NOTE** Take care as the secondary latch is fragile.
17. Disconnect the throttle body connector on the passenger side.
18. Loosen the hose clamp holding the stock air box coupler to the stock throttle body.

STEP 16



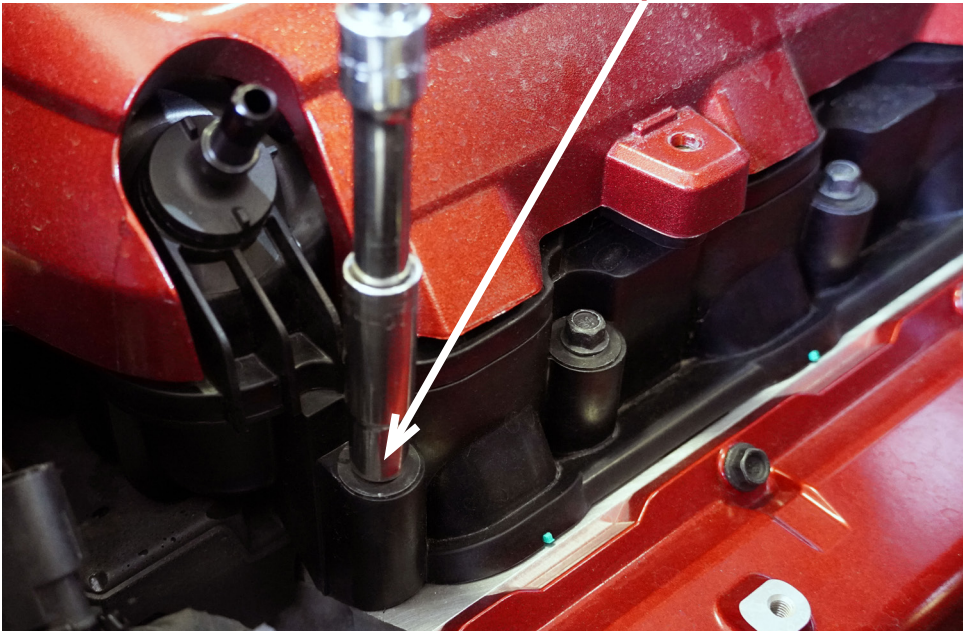
STEP 18

STEP 17

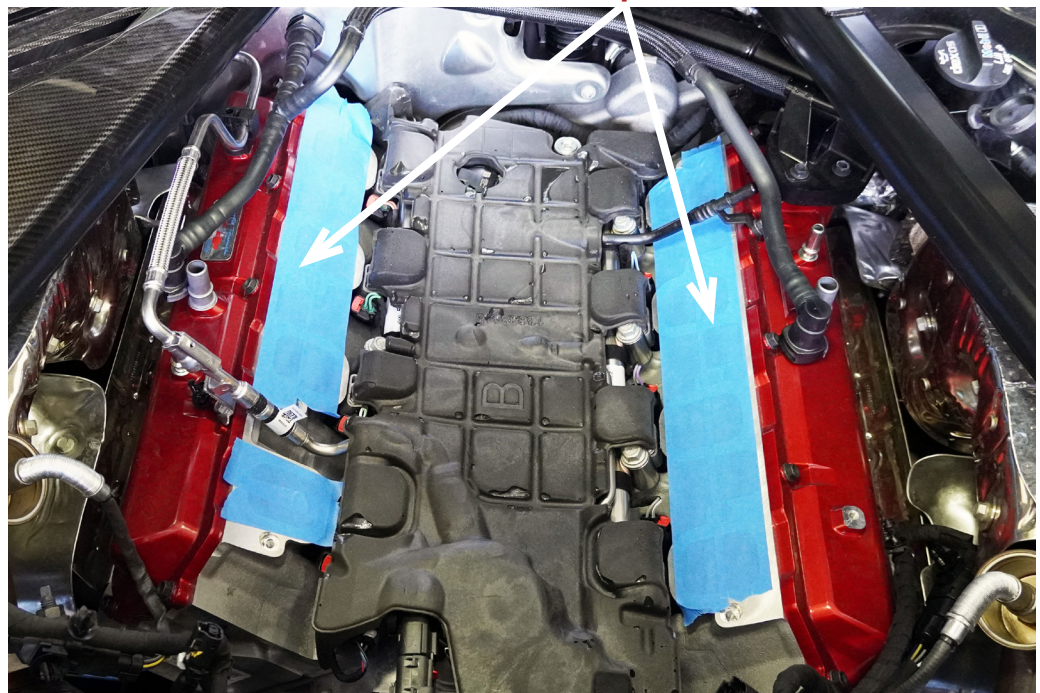
INSTALLATION INSTRUCTIONS | STEP 19-20

19. Remove all ten of the stock intake fasteners and stock intake.
20. Use painter's tape to tape up the intake runners on the head to prevent anything from falling into the motor. NOTE You may need to clean up oil residue on the heads for the tape to stick.

STEP 19



STEP 20



INSTALLATION INSTRUCTIONS | STEP 21-22

21. Remove the stock valley cover sound pad.
22. Using a razor knife or equivalent, cut the stock valley cover sound pad in a straight line as shown in red, then cut out the contours and the angled section as shown in the illustration.

BEFORE



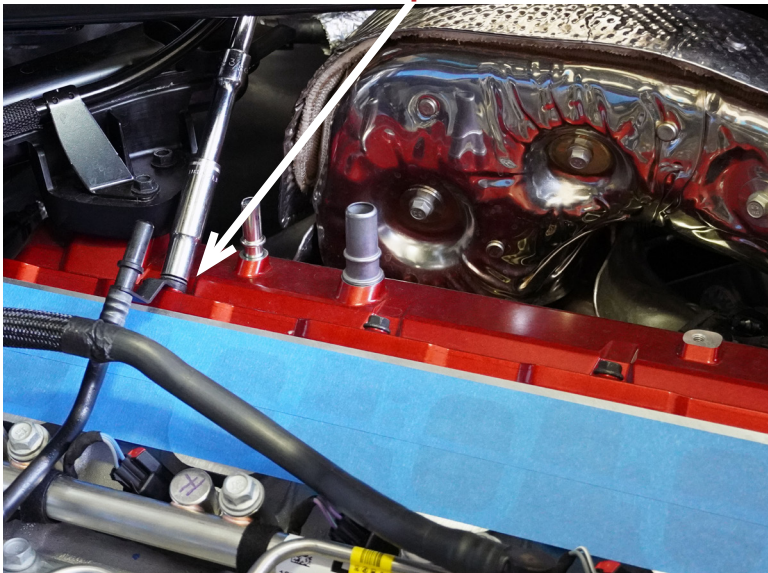
AFTER



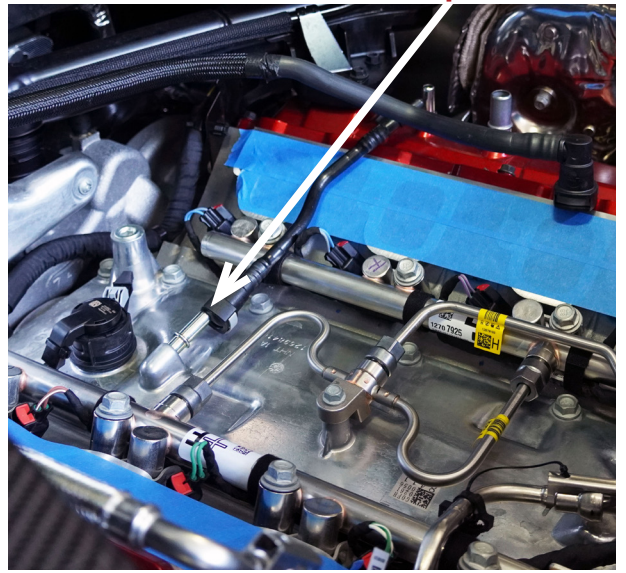
INSTALLATION INSTRUCTIONS | STEP 23-26

23. Remove the fastener holding the PCV bracket to the valve cover.
24. Disconnect the stock PCV line quick connect on the top of the valley cover and remove it from the car.
25. Reinstall the valve cover fastener and torque it to 10 Nm or 89 lbs.-in.
26. Loosen the remaining hose clamp holding the stock air box coupler and remove the coupler from the car.

STEP 23



STEP 24



STEP 25



STEP 26



INSTALLATION INSTRUCTIONS | STEP 27-30

27. Remove the MAP sensor from the stock intake and reinstall it on the Performance Design Carbon pTR Intake Manifold on the driver side in the location shown in the illustration using the stock MAP sensor fastener. Be sure the connector is pointing down and apply o-ring lube to help with the install.
28. Route the 24" MAP Extension Harness through the rear opening between the runners on the driver side.
29. Install the included Throttle Body O-Ring into the machined groove on the inlet of the Performance Design Carbon pTR Intake Manifold.
30. Install the Lingenfelter Throttle Body onto the Performance Design Carbon pTR Intake Manifold using the included Throttle Body Fasteners and Washers, then torque to 10Nm or 89 lb.-in. **IMPORTANT NOTE** Be sure the throttle body motor is installed on the passenger side of the car.

STEP 27



STEP 28



STEP 27

STEP 29



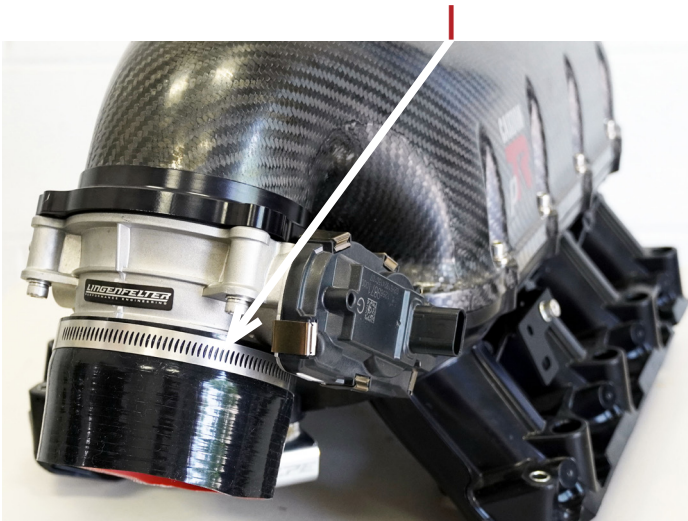
STEP 30



INSTALLATION INSTRUCTIONS | STEP 31-35

31. Using one of the included Hose Clamps, install the 4" Coupler onto the Lingenfelter Throttle Body and tighten to secure.
32. Install the eight red Manifold Gaskets into the grooves on the bottom of the Performance Design Carbon pTR Carbon Intake Manifold.
33. Using one of the included Hose Clamps, install the 4"-4.25" Air Duct Coupler with the 4.25" end onto the stock air box and tighten to secure.
34. Insert the Metal Elbow pointing up with hose fitting on the driver side in the 4"-4.25" Coupler with the included Hose Clamp but do not tighten at this time.
35. Place the remaining included Hose Clamp on the Metal Air Duct and do not tighten at this time.

STEP 31



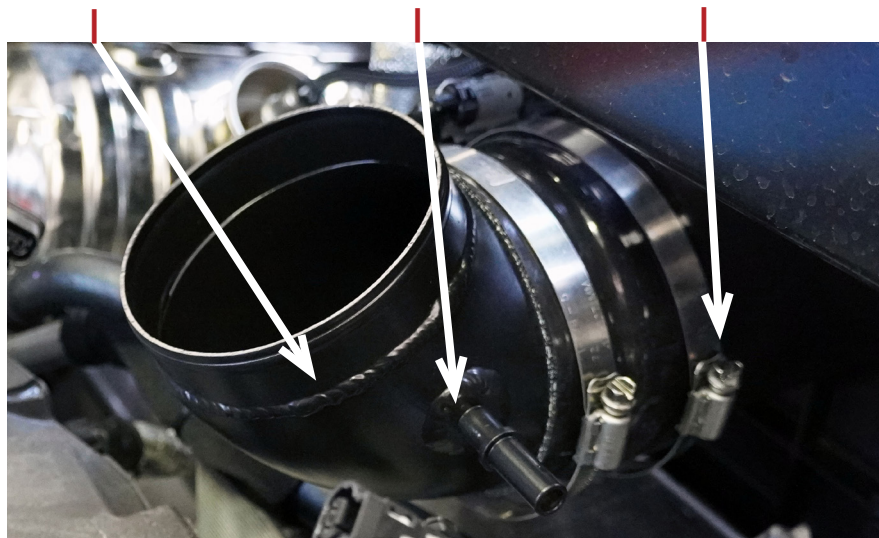
STEP 32



STEP 35

STEP 34

STEP 33



INSTALLATION INSTRUCTIONS | STEP 36-39

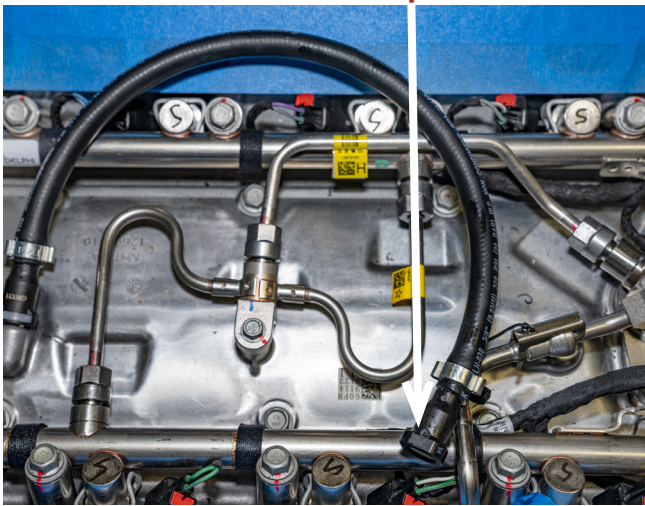
36. Install the Valley Cover PCV Hoser.

37. Reinstall the modified valley cover sound pad and place the Valley Cover PCV Hose so that it is sticking out of the angled cutout as shown.

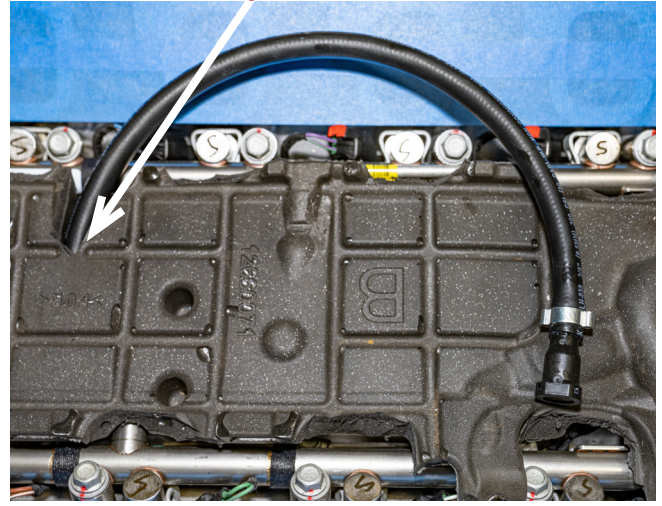
38. Connect the straight metal connector of the included Purge Solenoid Hose onto the passenger side pipe connection.

39. Place the stock clip and rubber spacer onto the included Purge Solenoid Hose and snap the clip back into place.

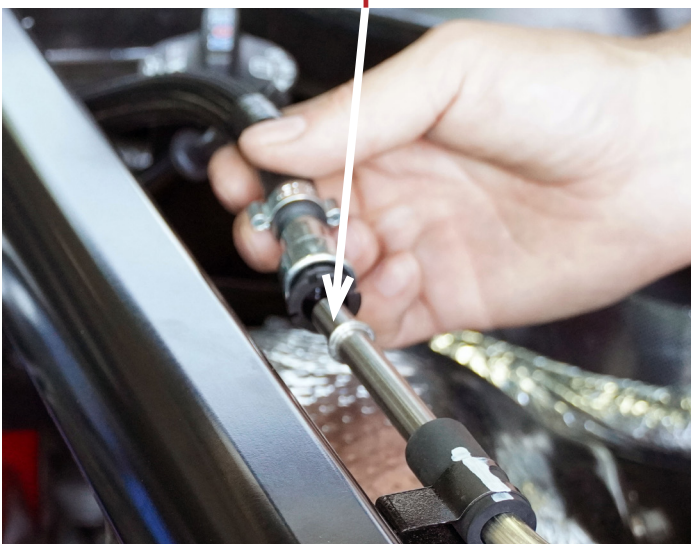
STEP 36



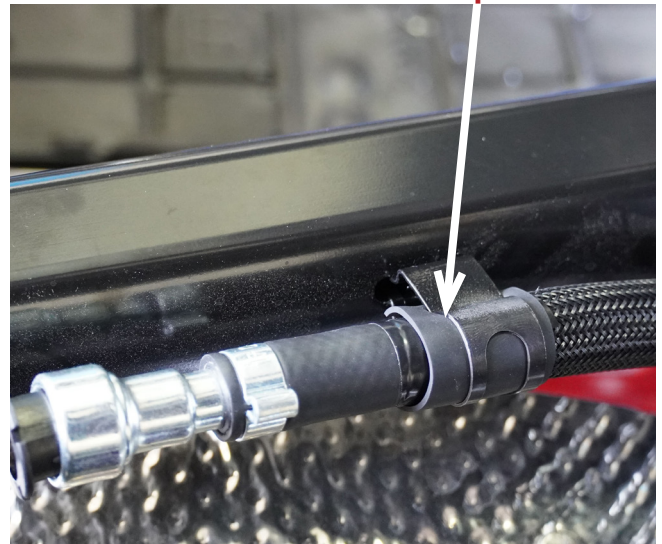
STEP 37



STEP 38

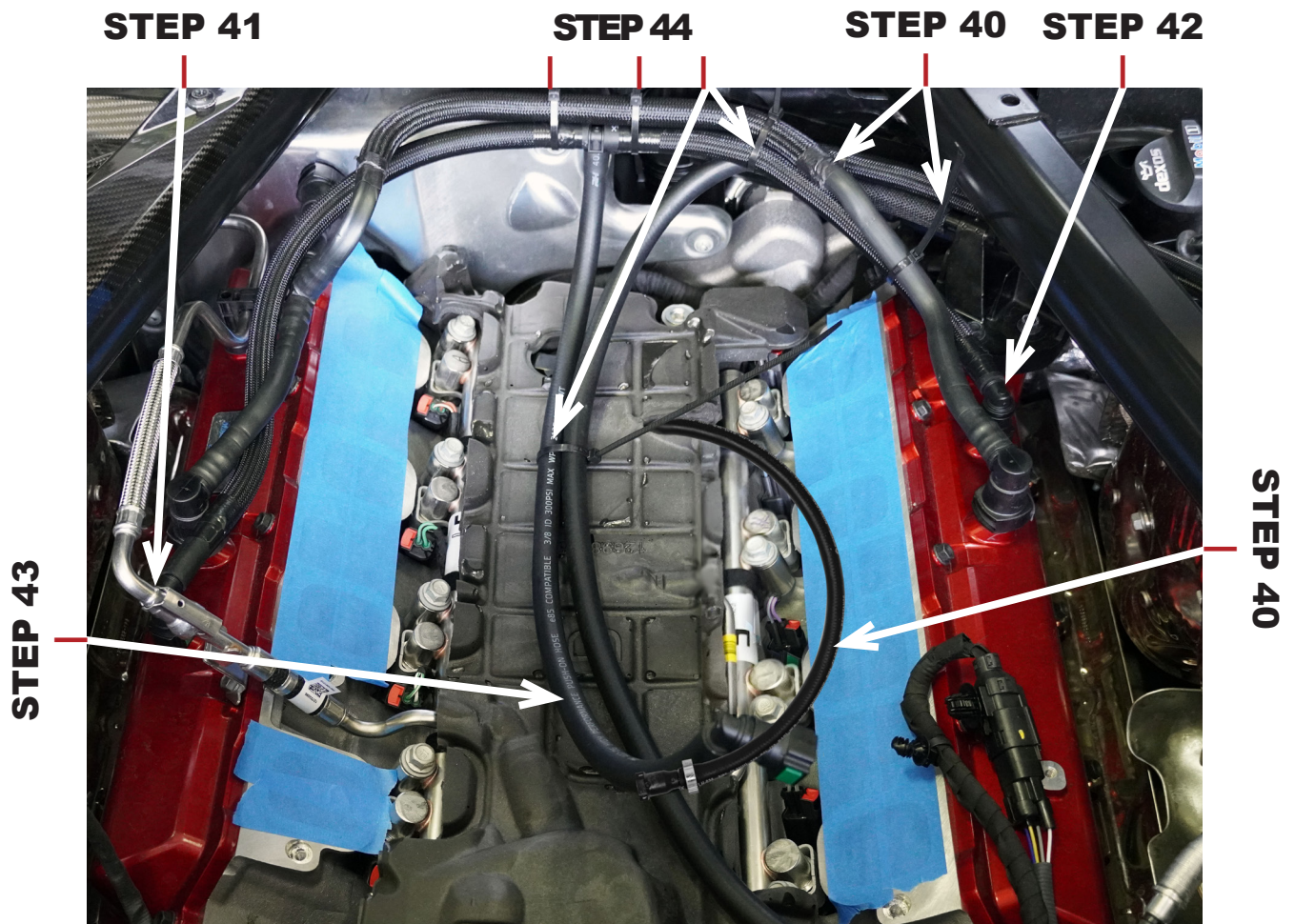


STEP 39



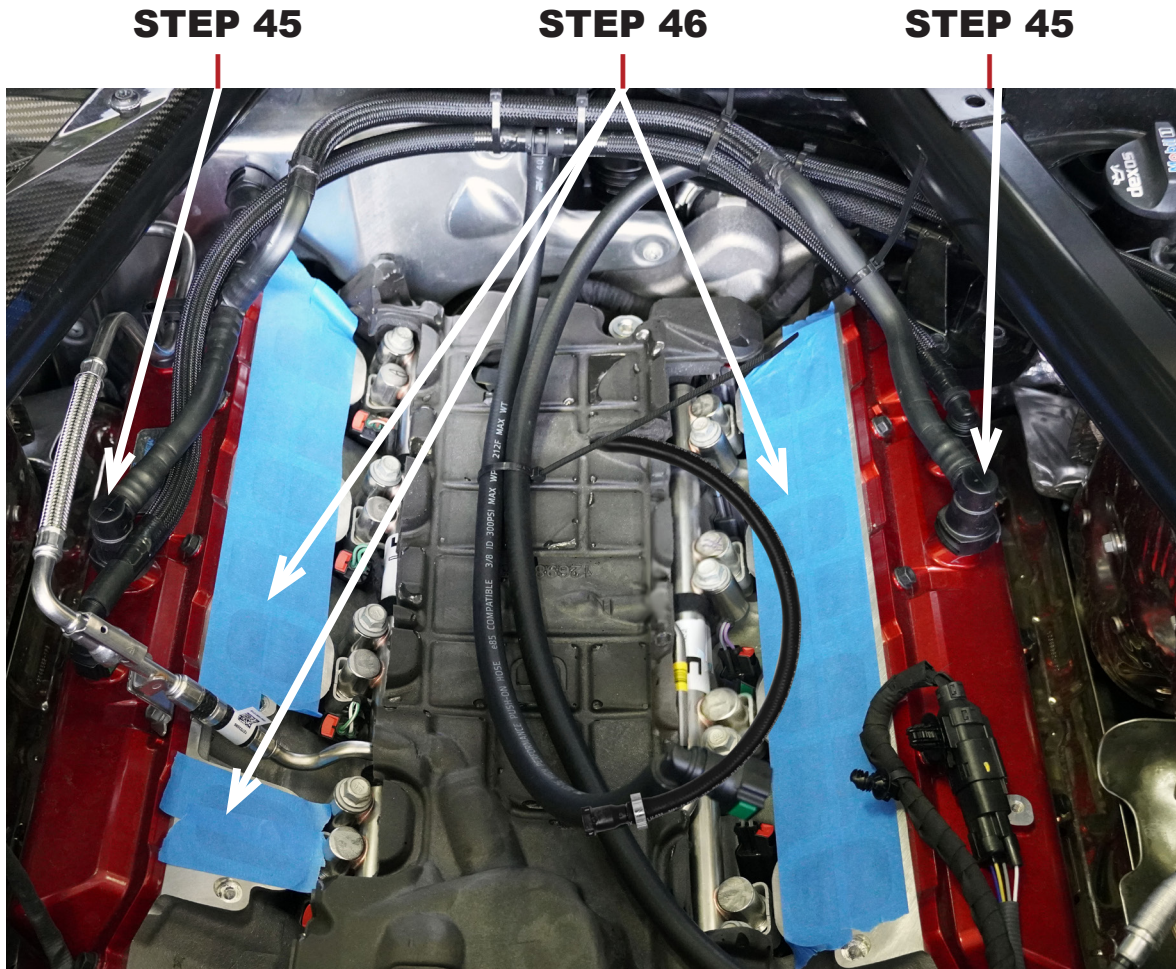
INSTALLATION INSTRUCTIONS | STEP 40-44

40. Route along and secure the Purge Solenoid Hose to the dipstick tube with two of the included zip ties to hold the hose in place. Leave the remaining end of the hose lying on the passenger side of the modified valley cover sound pad. NOTE Clip off the excess ends of the zip ties.
41. Route the medium-length leg of the included Fresh Air PCV T-Hose on the driver side of the motor and seat the quick connect to the valve cover. See the illustration below for proper routing.
42. Route the shortest leg of the Fresh Air PCV T-Hose on the passenger side of the motor and seat the quick connect to the valve cover.
43. Leave the longest leg of the Fresh Air PCV T-Hose laying on the valley cover sound pad towards the rear of the car.
44. Use the included zip ties to secure the Fresh Air PCV T-Hose to the stock PCV hose and Purge Solenoid Hose. NOTE Clip off the excess ends of the zip ties.



INSTALLATION INSTRUCTIONS | STEP 45-47

45. Connect the stock PCV connectors from the dry sump to the top of the valve covers.
46. Remove all of the painter's tape from the intake runners on the head.



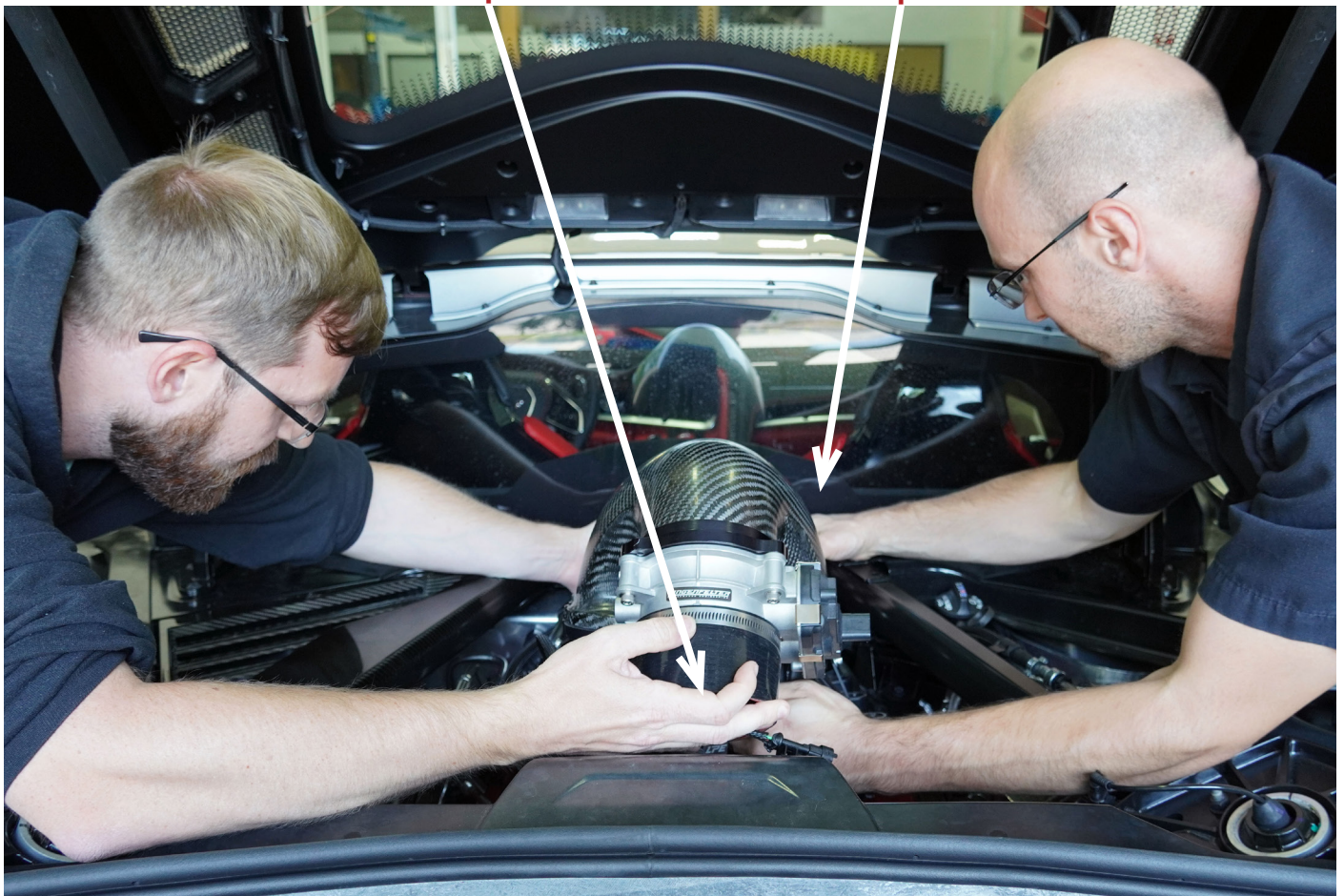
INSTALLATION INSTRUCTIONS | STEP 47-48

47. Lower the front of the Performance Design Carbon pTR Intake Manifold onto the motor and have a friend connect the Valley Cover PCV Hose fitting to the manifold fitting on the passenger side.

48. Place the Performance Design Carbon pTR Intake Manifold on the motor and at the same time fit the 4" Coupler onto the Metal Elbow. **IMPORTANT NOTE** Be sure the Fresh Air PCV Hose is on the driver side of the purge solenoid block, and the Purge Solenoid Hose lays on the passenger side when the Performance Design Carbon pTR Intake Manifold is placed on the motor.

STEP 48

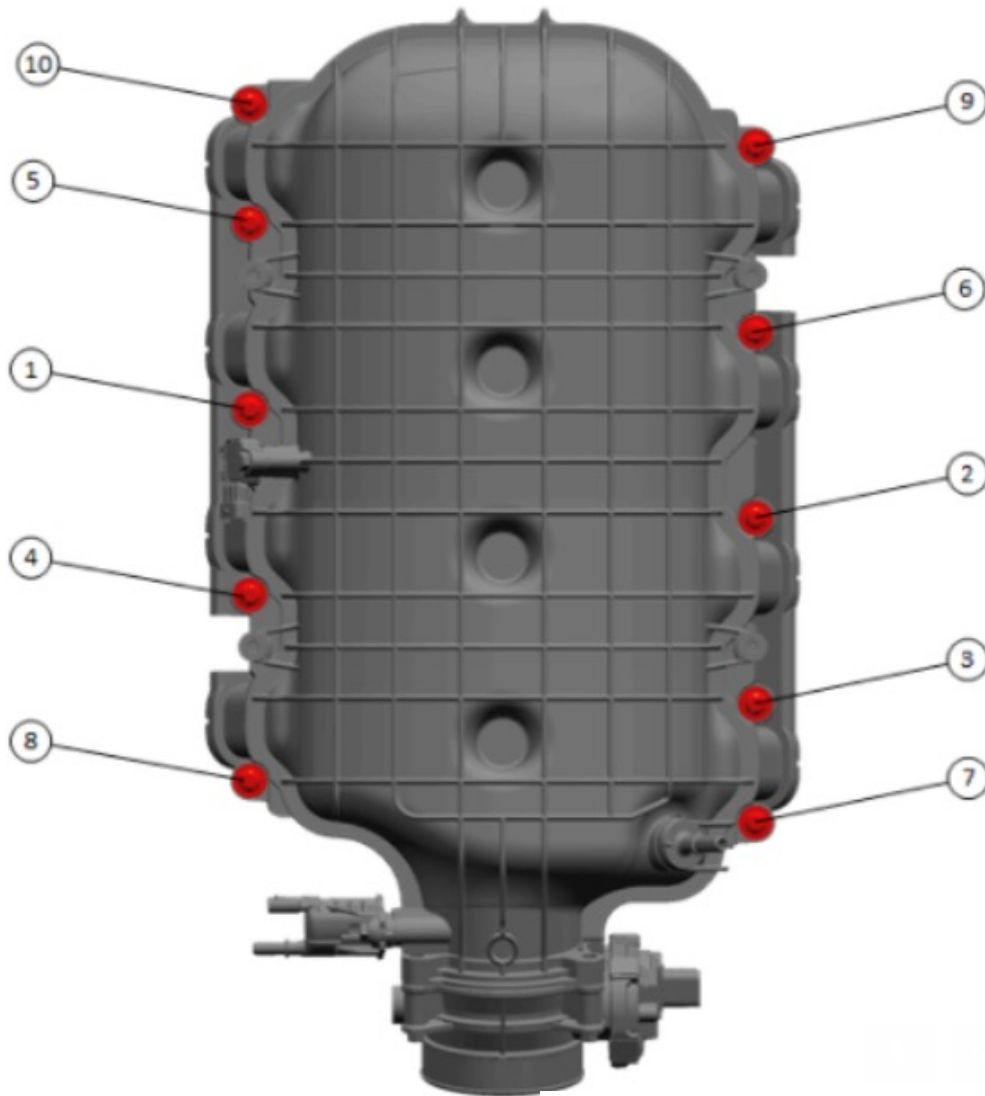
STEP 47



INSTALLATION INSTRUCTIONS | STEP 49

49. Secure the Performance Design Carbon pTR Intake Manifold with the included Intake Manifold Fasteners and Washers and torque the Manifold Fasteners at 45 lbs.-in. on the first pass, then 89 lbs.-in. on the final pass in the sequence shown in the illustration below. |

IMPORTANT NOTE Use Locktite Medium-Strength Blue Threadlocker on the Intake Manifold threads before installation.



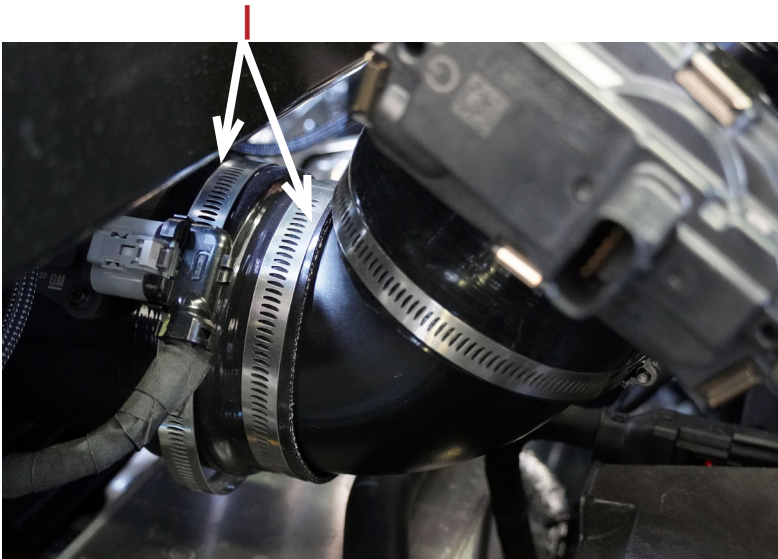
**INTAKE MANIFOLD FASTENERS
& WASHERS**



INSTALLATION INSTRUCTIONS | STEP 50-53

50. Tighten both of the previously placed Hose Clamps to secure Couplers to the Metal Elbow.
51. Install the stock purge solenoid into the LPE Purge Solenoid Adapter Block on the driver side using the stock purge solenoid fastener and torque to 10 Nm or 89 lb.-in.
52. Connect the 90° quick connect fitting from the Purge Solenoid Hose to the purge solenoid.
53. Connect electrical purge solenoid connector to the purge solenoid and seat secondary lock.

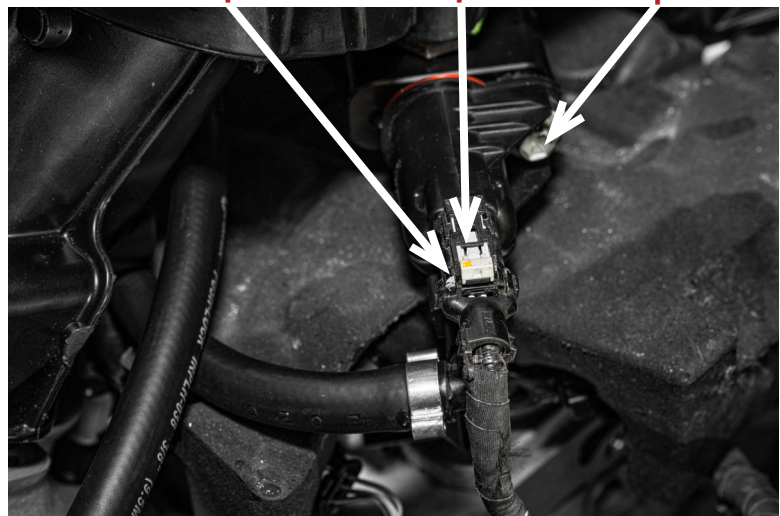
STEP 50



STEP 52

STEP 51

STEP 53



INSTALLATION INSTRUCTIONS | STEP 54-58

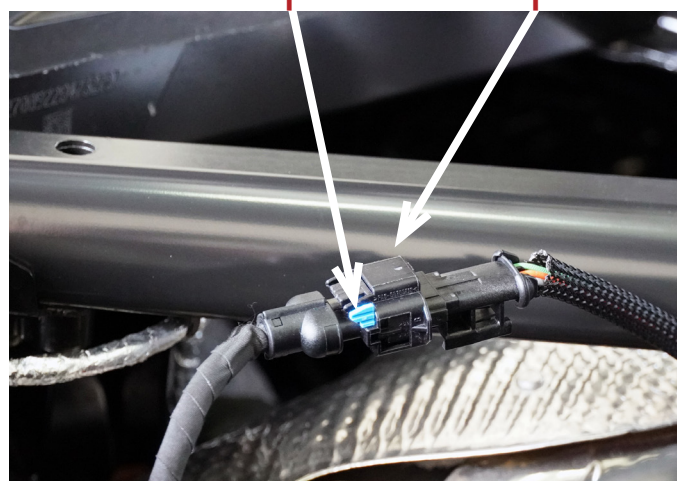
54. Connect the Fresh Air PCV Hose quick connect to the metal inlet tube.
55. Remove secondary from the stock MAP connector while taking care not to break it then connect the electrical connection for the MAP Extension Harness to the engine harness. NOTE This could be a tight fit and may require some pressure to get it snapped into place.
56. Reinstall and seat secondary for the stock MAP connector.
57. Tuck the excess portion of MAP Extension Harness under the Performance Design Carbon pTR Intake Manifold.
58. Connect the Throttle Body Extension Harness to the stock harness and throttle body.

STEP 54



STEP 56

STEP 55



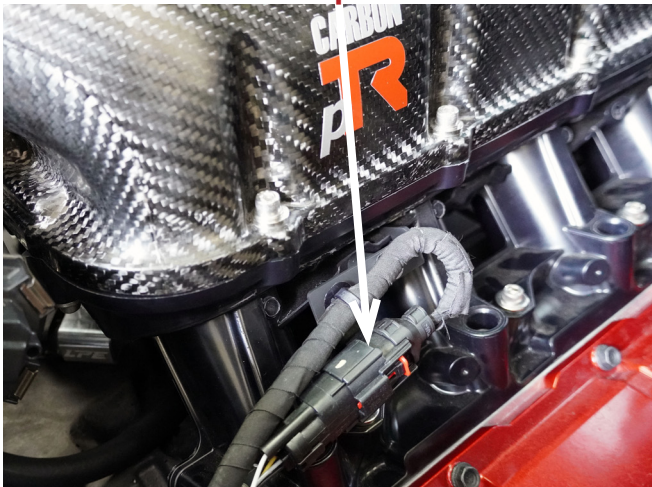
STEP 58



INSTALLATION INSTRUCTIONS | STEP 59-62

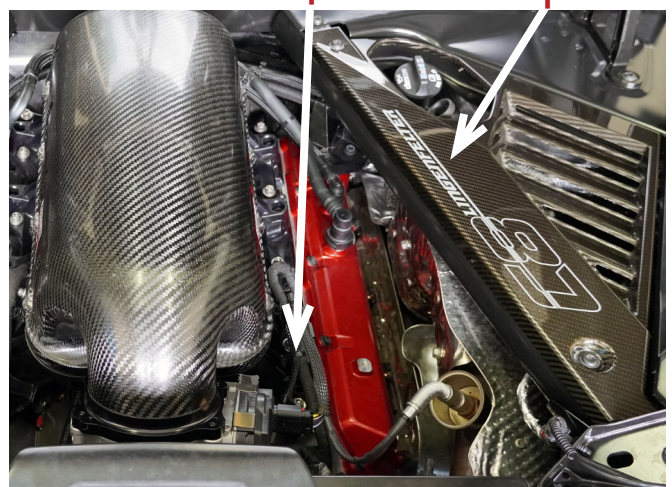
59. Seat the oval and round fur trees for the 02 sensor connectors into the brackets that are already installed on the driver and passenger side of the Performance Design Carbon pTR Intake Manifold.
60. Use an included zip tie to secure the Throttle Body Extension Harness to the 02 sensor wire.
61. If equipped, reinstall the passenger side carbon fiber cover and torque to 23 Nm or 17 lb.- ft.
62. Reconnect the battery.

STEP 59



STEP 60

STEP 61



STEP 62



Congratulations! Your hard work has paid off, the Lingenfelter Exclusive Performance Design Carbon pTR Manifold is installed and it not only looks great, your horsepower has been increased by on average 25 more horsepower at the rear wheels. Take your C8 out for a drive and enjoy!



47451 Avante Drive | Wixom, MI 48393

7819 Lochlin Drive | Brighton, MI 48116

1557 Winchester Road | Decatur, Indiana 46733

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