NOSTRUM
HIGH PERFORMANCE

Ford 3.0L Ford Explorer ST Stage 1 DI Injectors Installation Guide

Part Sku#: H703-1255

WARNING! PLEASE FOLLOW ALL WARNINGS AND INSTRUCTIONS FOUND IN YOUR VEHICLE OWNERS MANUAL. THE FOLLOWING INSTRUCTIONS MUST BE READ AND FULLY UNDERSTOOD BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN VEHICLE DAMAGE, PERSONAL INJURY OR DEATH. IF THESE INSTRUCTIONS ARE NOT FULLY UNDERSTOOD, DO NOT ATTEMPT INSTALLATION.

- Socket wrench
- 13mm socket
- 15mm socket
- Wiper removal tool
- 8mm socket
- 10mm socket
- Socket extension
- 10mm ratchet wrench
- 3/8” quick connect removal tool
- Channel locks
- Trim removal tool
- 7mm socket
- 6 Allen wrench
- 5 Allen wrench
- 10mm wrench
- 17mm wrench
- 18mm wrench
- Pick

Expendables:

- Absorbent towels
- Dielectric grease
- Engine oil

1. Remove battery cover and unscrew negative battery terminal from the battery using a 10mm socket.

Figure 1

2. Remove crossbar by removing bolts mounting it the engine bey with a 13mm socket. (Torque Spec: 30 Nm)

Figure 2

3. Remove cap over windshield wiper.

Figure 3

4. Remove nut holding the windshield wiper in place with a 15mm socket.

Figure 4

5. Use wiper removal tool to pull the wipers off their studs. Place jaws around the outside of the wiper and secure them then torque the screw down over the wiper to pull it away from the stud.

Figure 5

6. Remove Cowel Cover by removing all plastic fasteners holding the cowl in place.

Figure 6

7. Once all fasteners are removed pull the cowl covers out by hand.

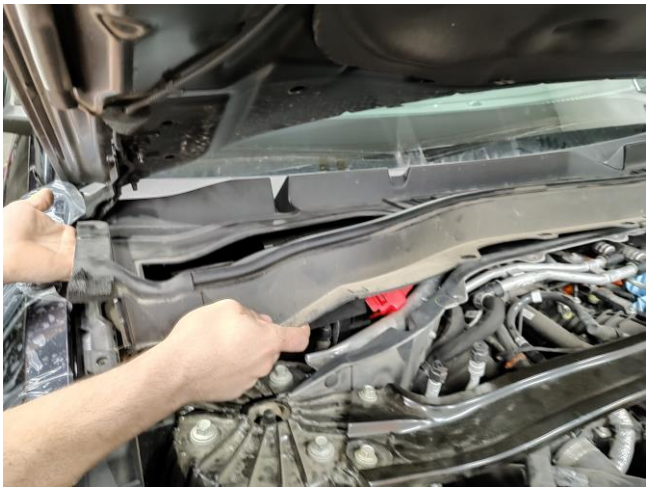


Figure 7

8. Remove bolts retaining the wiper actuator using an 8mm socket. **(Torque Spec: 7 Nm)**

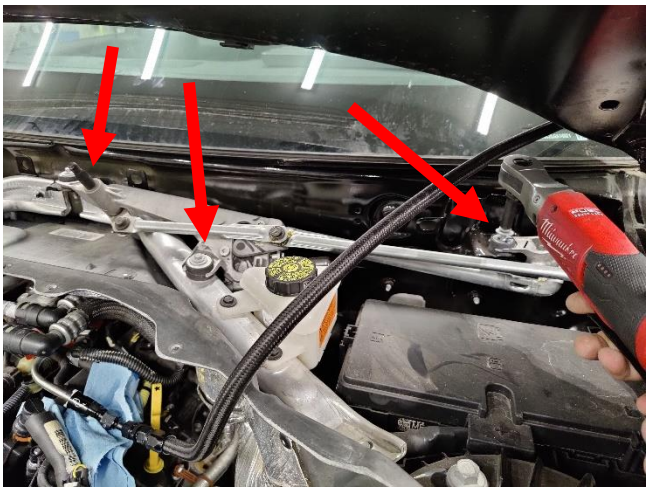


Figure 8

9. Remove wiper connector at the back of the wiper actuator.

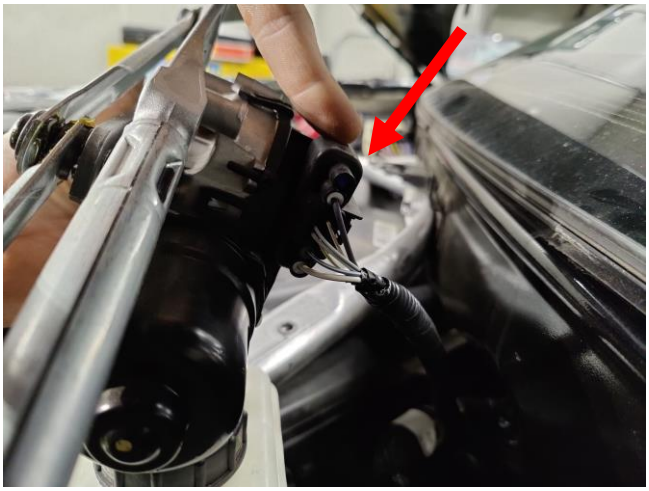


Figure 9

10. Use 10mm socket to remove bolts holding the brake fluid container from the brace.

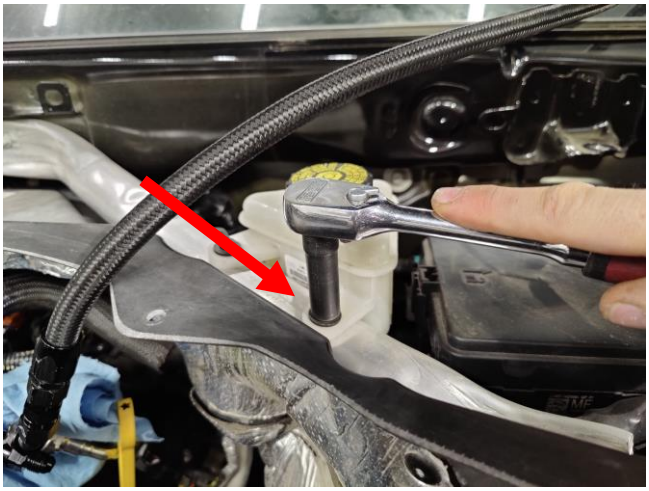


Figure 10

11. Use 10mm socket to remove bolt holding the bracket in place. Move the wire connector out of the way so the brace can be removed.

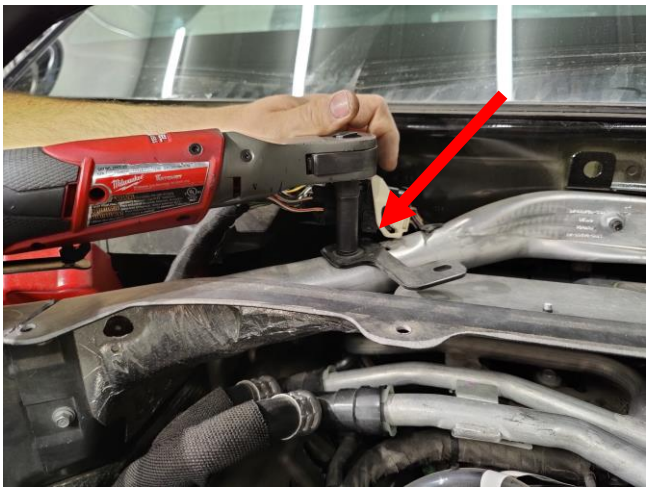


Figure 11

12. Remove both drivers side and passenger side brace using a 13mm socket to remove retainer nuts and bolts.

Figure 12

13. Remove lower cowl cover by removing the retainment bolts using an 8mm socket and

Figure 13

14. Remove Bracket holding the coolant hoses in place using a 10mm socket.

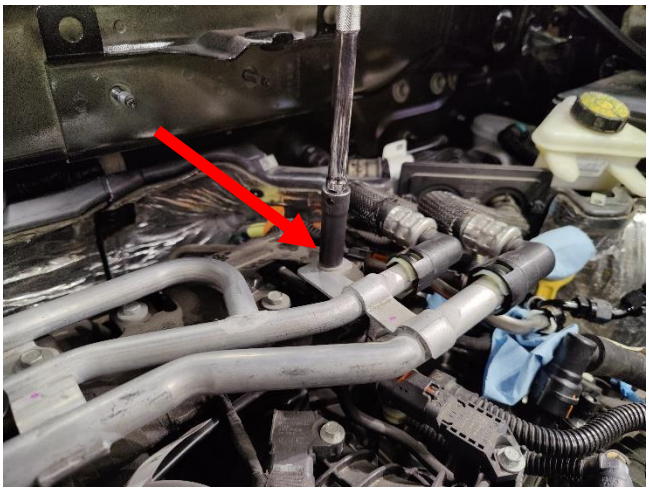


Figure 14

15. Remove the zip tie retainer from the foam cover. Located underneath the coolant lines seen in the image above.

Figure 15

16. Remove the Quick connect coolant fittings on the passenger side of the engine to allow access to the fuel pump area. Push both tabs on either side of the QC and pull away from hard coolant time to release it.

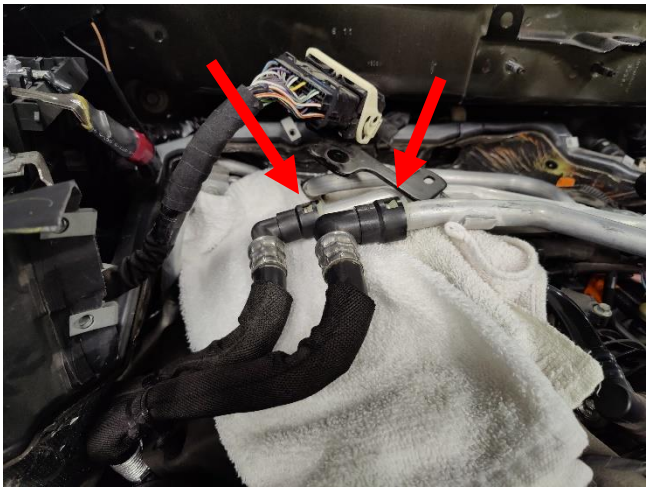


Figure 16

17. Remove sound dampening foam cover that fits over top of the crash bracket.

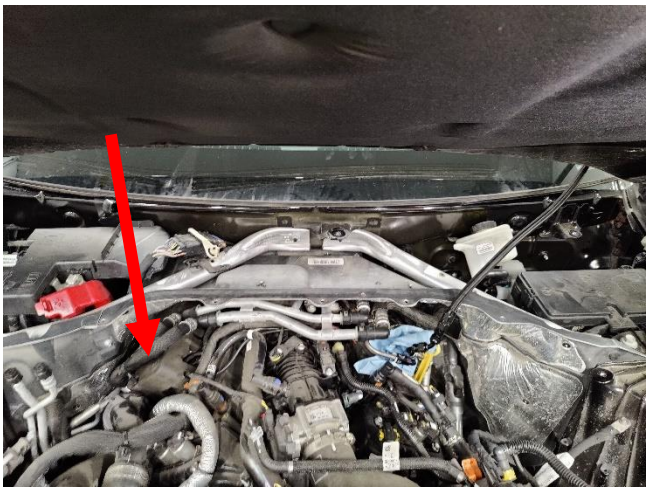


Figure 17

18. Remove nuts holding the crash bracket with a 13mm socket and extension.

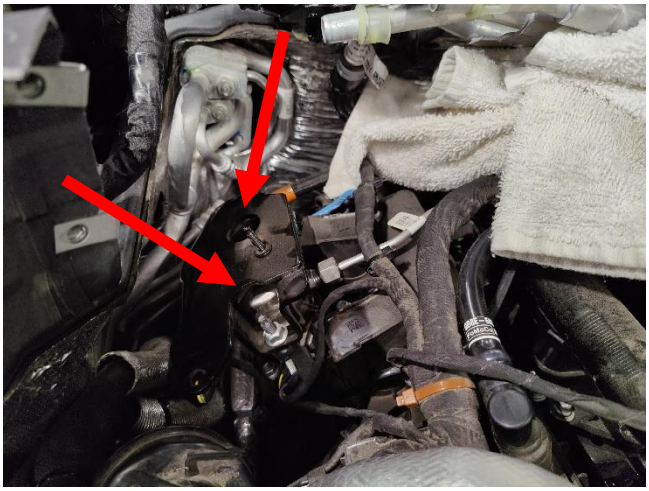


Figure 18

19. Remove the nut underneath the crash bracket below the pump with a 10mm ratchet wrench. The easiest way to remove nut is to fit the wrench through the side of the crash bracket seen in the corresponding image. The arrow signifies the direction to approach the bolt from.

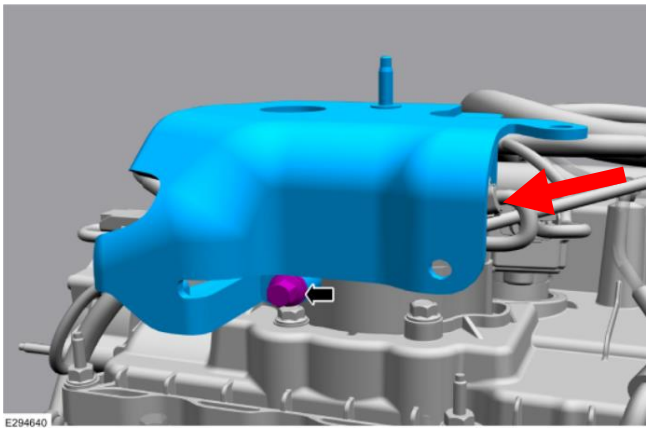


Figure 19

20. Using quick connect removal 3/8th tool to remove low-pressure fitting from the pump seen at the back of the pump facing the cabin.

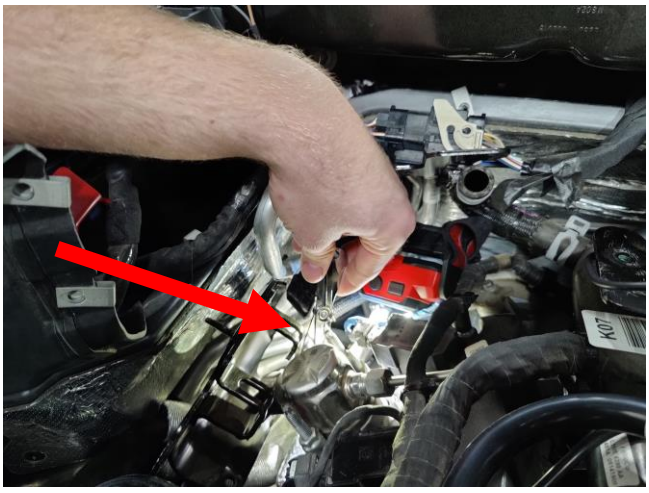


Figure 20

21. Remove coolant hose at the back of the engine coming off the main coolant tube by pushing the hose clamp down the line with channel locks. Pull the hose off the main coolant tube.

Figure 21

22. To avoid coolant leaking into the engine bay evacuate the radiator of coolant. If you cannot empty the radiator have absorbent towels or rags available to absorb coolant that leaks when the coolant tube is removed.

Figure 22

23. Remove small coolant line at the front of the engine by push hose clamp down the line with channel locks. Pull hose off main coolant tube.

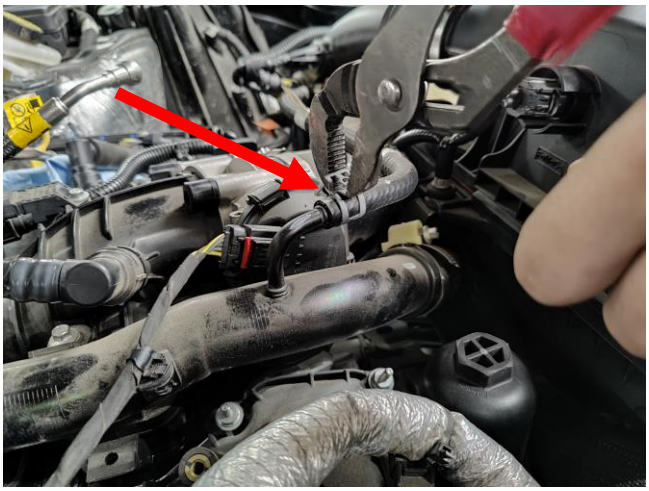


Figure 23

24. Pull red tab on throttle body connector. Pull on connector to remove.

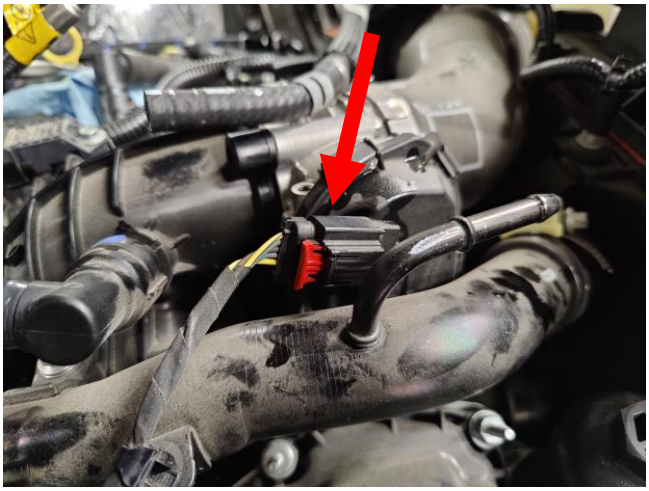


Figure 24

25. Remove Zip tie clip that holds the throttle body connector wire in place.

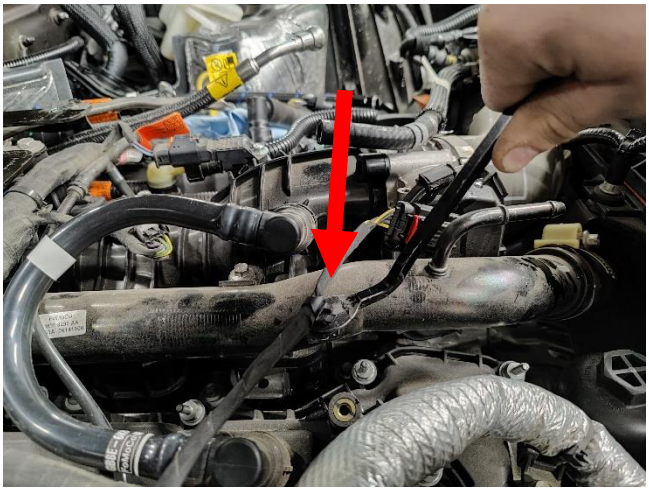


Figure 25

26. Remove Zip tie clip from wiring harness that is above the coolant tube using a trim removal tool.

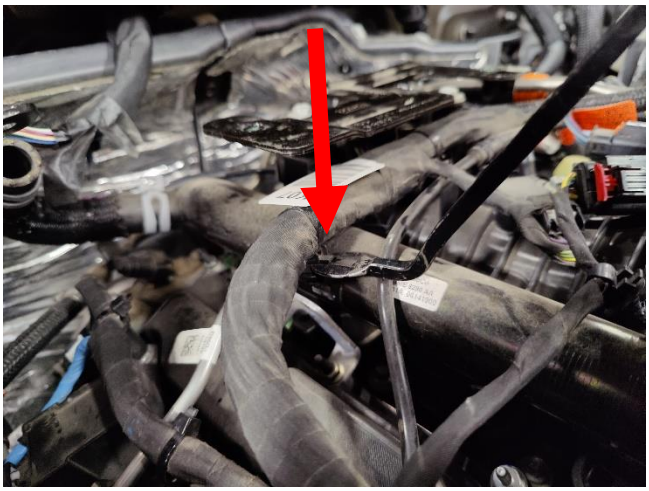


Figure 26

27. Remove manifold absolute pressure connector located in the middle of the intake manifold.

Figure 27

28. Disconnect the injector connectors located near the back of the manifold.

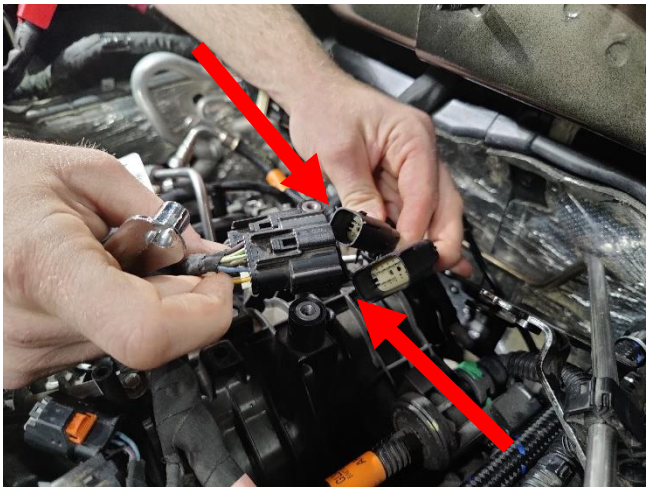


Figure 28

29. Disconnect the manifold absolute pressure connector located near the throttle body.

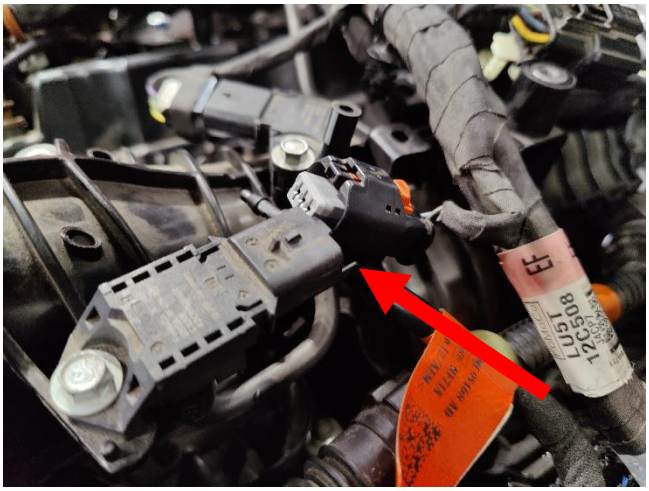


Figure 29

30. Disconnect quick connect Evap system tube.

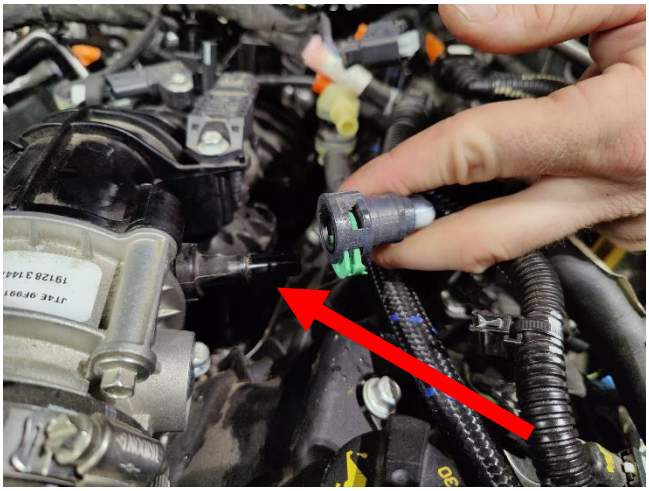


Figure 30

31. Disconnect quick connect purge solenoid to fresh air intake tubing.

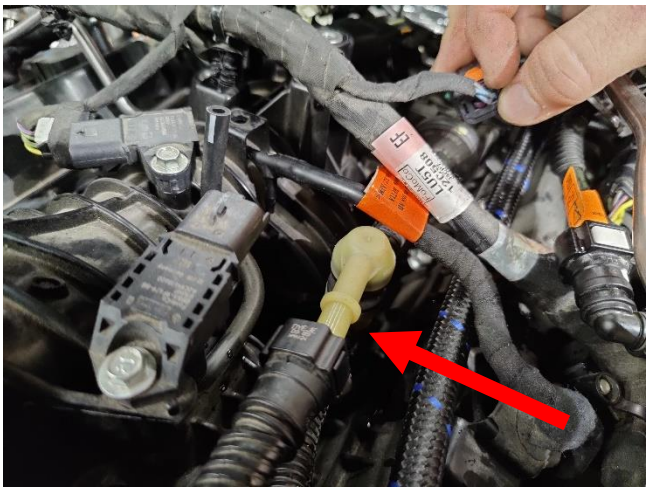


Figure 31

32. Pull evap purge solenoid away from the intake manifold.

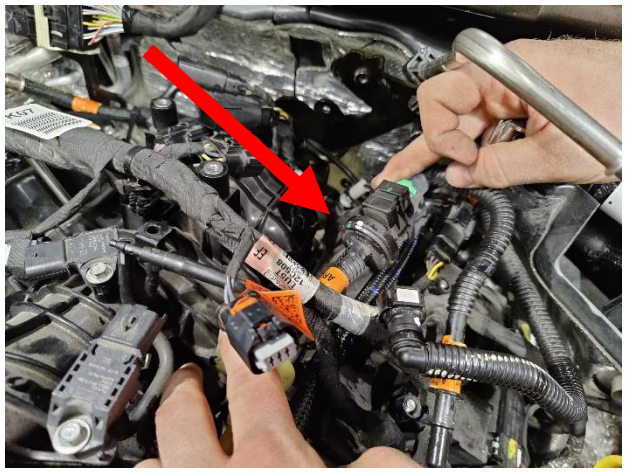


Figure 32

33. Remove the PVC Tube fitting by pulling the blue tab across to release the fitting. Pull the PCV tube to one side to make room for the removal of the coolant tube.

Figure 33

34. Remove coolant bracket on top the manifold by remove retainment bolts with a 10mm socket.

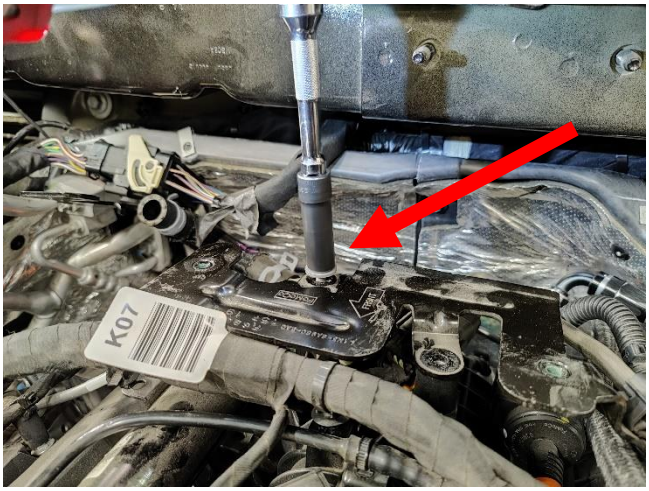


Figure 34

35. Remove both bolts that hold the coolant tube in place using an 8mm socket. **(Torque Spec: 12 Nm)**

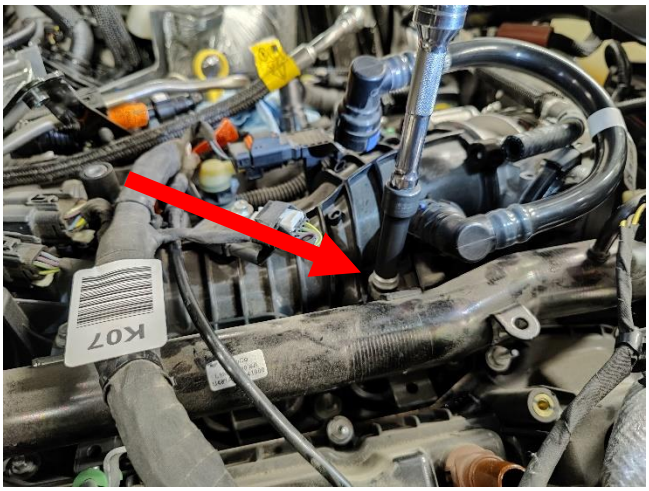


Figure 35

36. Use 7mm socket to loosen hose clamp that connects to the coolant tube at the front of the engine.

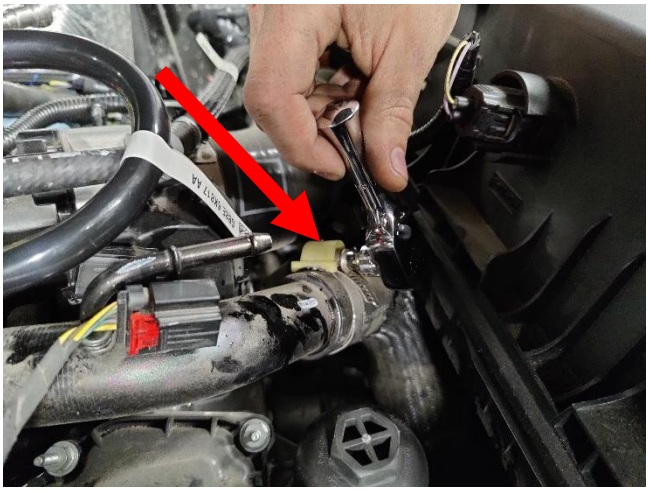


Figure 36

37. Remove zip tie clips holding the low-pressure line to the coolant tube.

Figure 37

38. Pull coolant tube out of its seated position at the back of the engine. It will come loose of its seal.

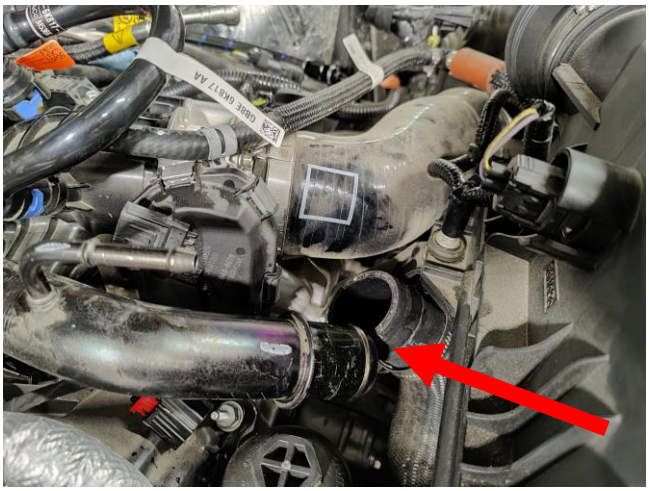


Figure 38

39. Loosen hose clamp on the charge tube connected to the throttle body using a 7mm socket.

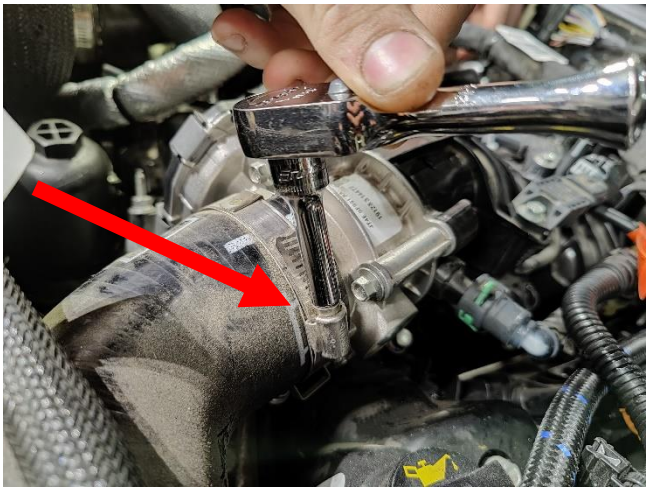


Figure 39

40. Disconnect the low-pressure quick connect with the 3/8 quick connect removal tool.

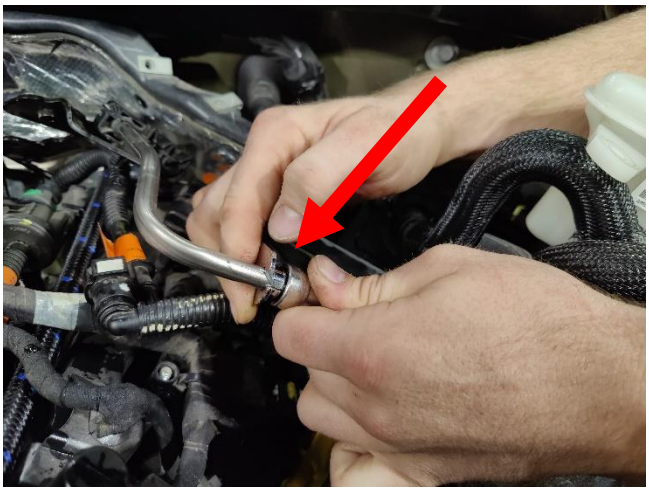


Figure 40

41. Remove the retainment bolts for the intake manifold as seen in the image below using an 8mm socket then pull the intake out of the engine.

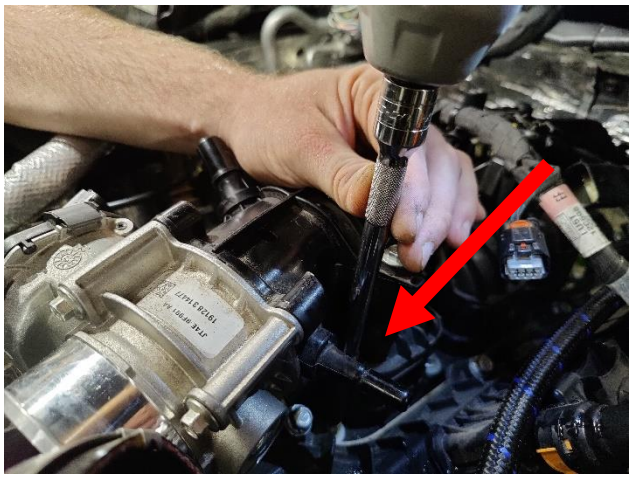


Figure 41

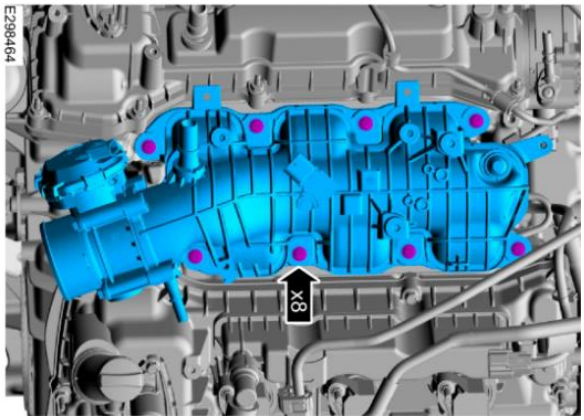


Figure 42

42. Loosen Compression nut on both pump and fuel rail side of the high-pressure fuel pump using a 17mm wrench. **(Torque Spec: 10 Nm, 25 Degrees)**

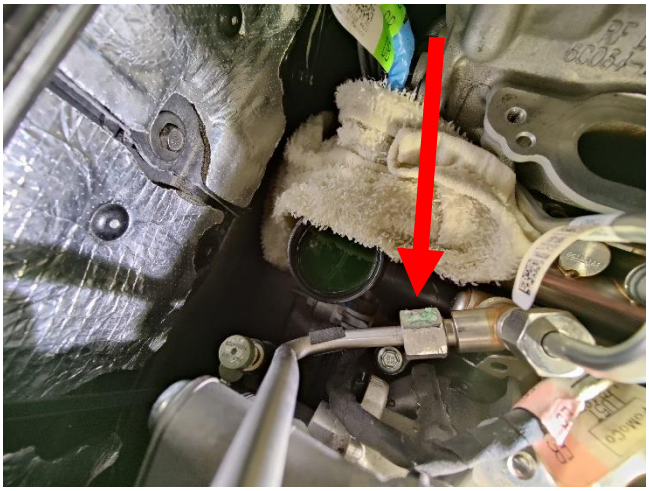


Figure 43

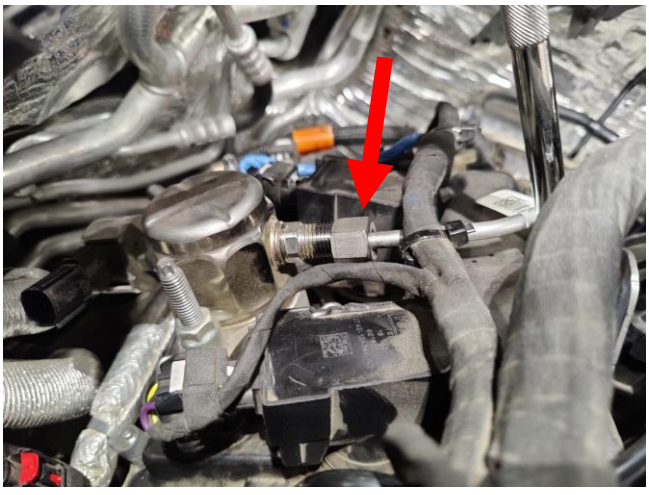


Figure 44

43. Remove nut that holds the high-pressure fuel line to the bracket on the engine using a 10mm socket at both locations.
44. Pull the high-pressure tube out of the vehicle.

Figure 45

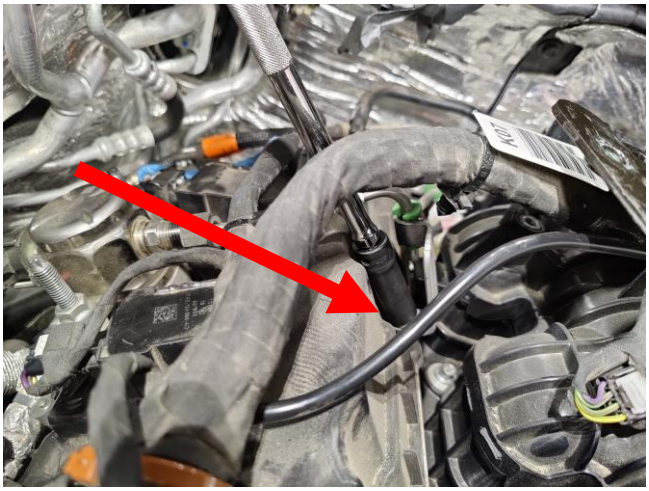


Figure 46

45. Loosen the compression nut on the fuel line connecting the individual fuel rails with a 17mm wrench. **(Torque Spec: 10 Nm, 25 Degree Turn)**

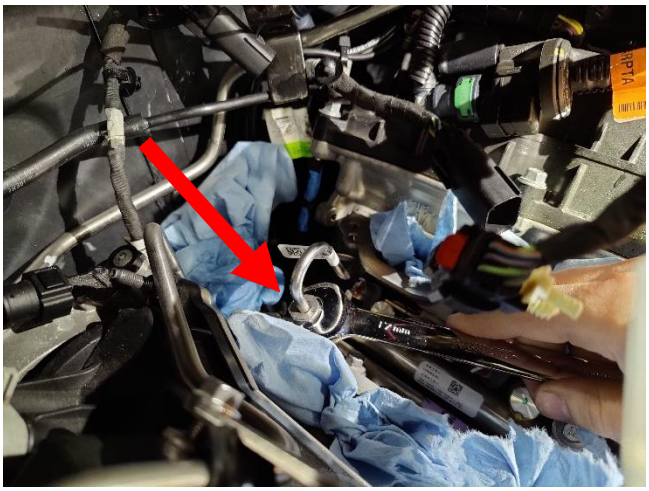


Figure 47

46. Loosen compression nut on the driver's side fuel rail line that connects the fuel line to the passenger side fuel rail. **(Torque Spec: 10 Nm, 25-degree Turn)**

Figure 48

47. Use a 10mm socket to remove the bolts holding the fuel line in place. Remove the bolts on both separate fuel rails. **(Torque Spec: 24 Nm)**

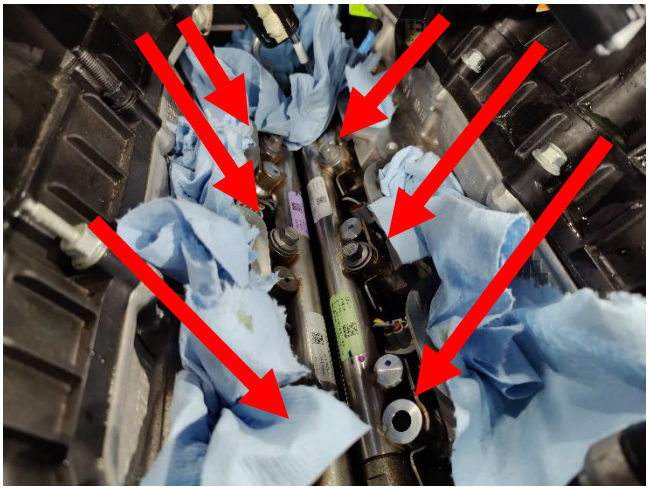


Figure 49

48. Remove fuel rail pressure sensor connector.

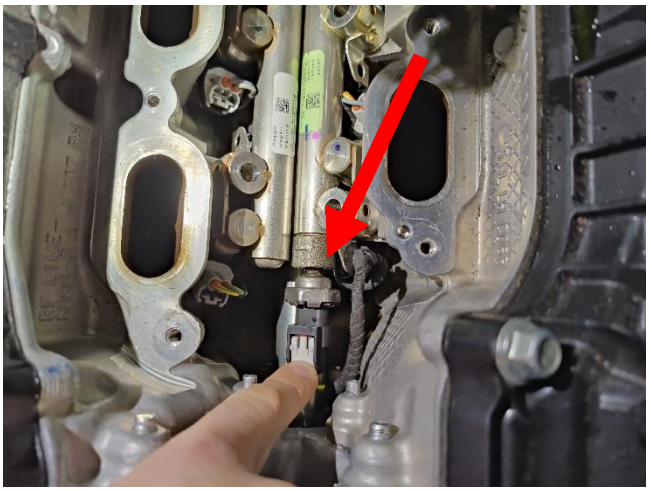


Figure 50

49. Remove the clips that hold the injector wire harness to the engine block using a trim removal tool. This way the wire harness' for the fuel rails can be removed with the fuel rails.

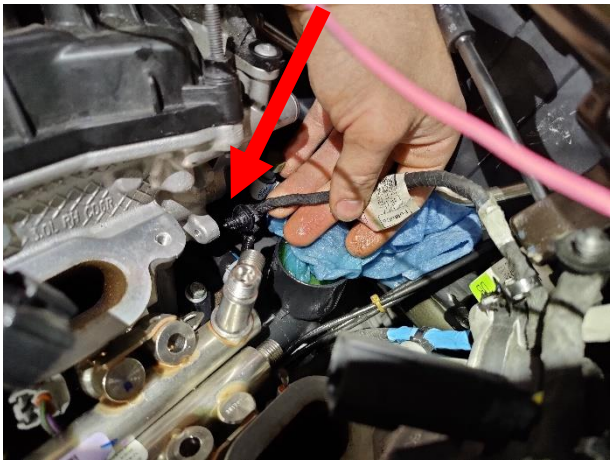
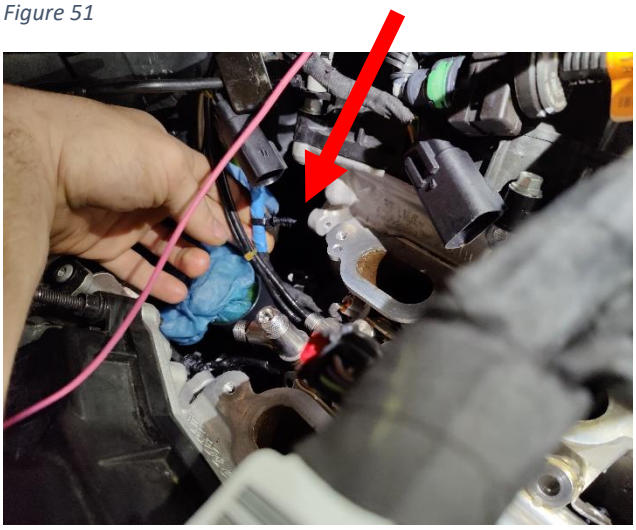


Figure 51



50. Pull the fuel rails out of the engine bay. Pull any injectors out of their seated position in the cylinder head if they do not pull away with the fuel rail.

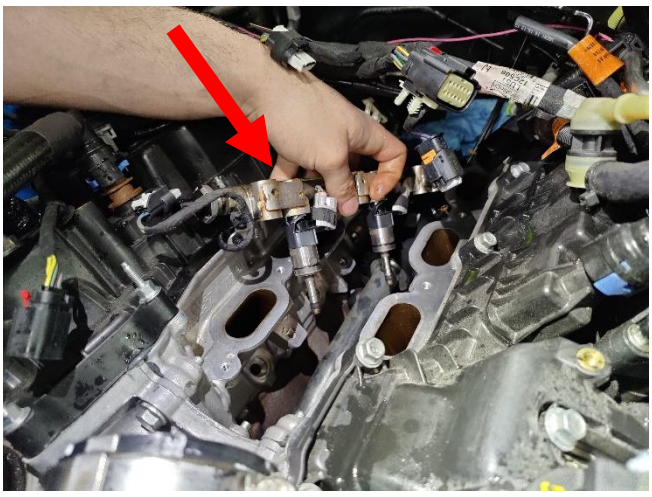


Figure 52

51. Place the 2 fuel rails on absorbent towels in a clean space.

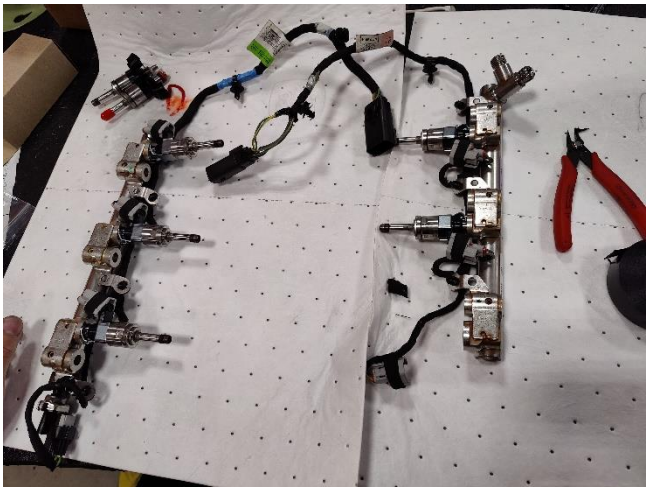


Figure 53

52. Pull the injector connectors out of their solenoids.

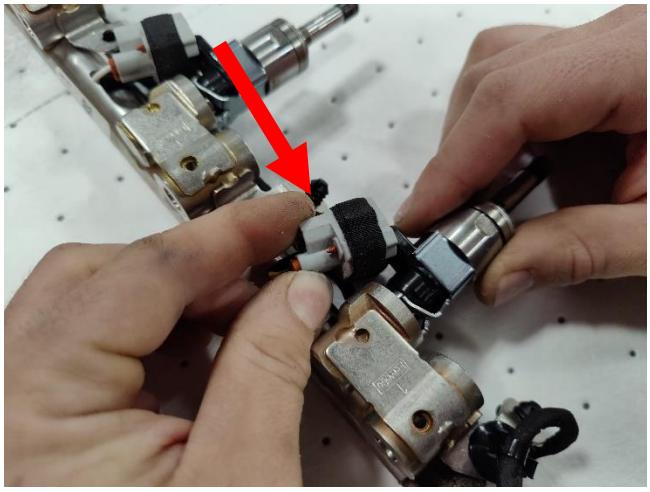


Figure 54

53. Pull the stock injectors out of their seated position in the fuel rail.

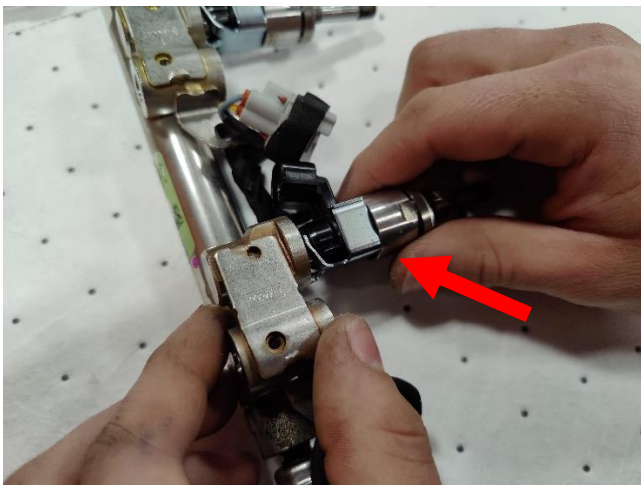


Figure 55

54. Make sure the O-ring also comes with the injector when pulling it from the rail. If not use a pick to pull the O-ring out.

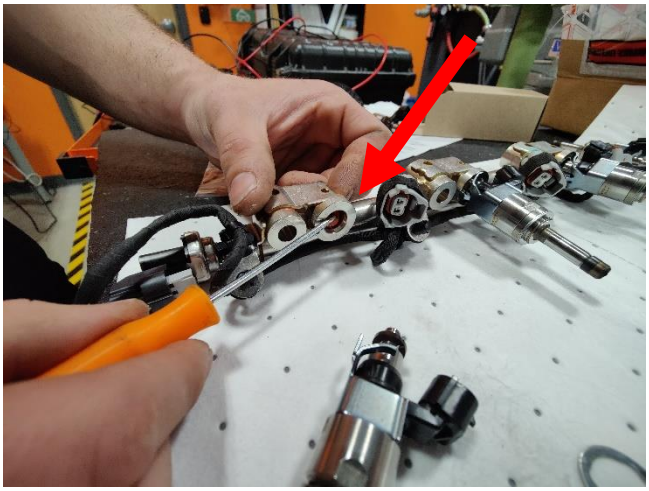


Figure 56

55. Pull the retainer located at the back of each injector off the stock injectors.

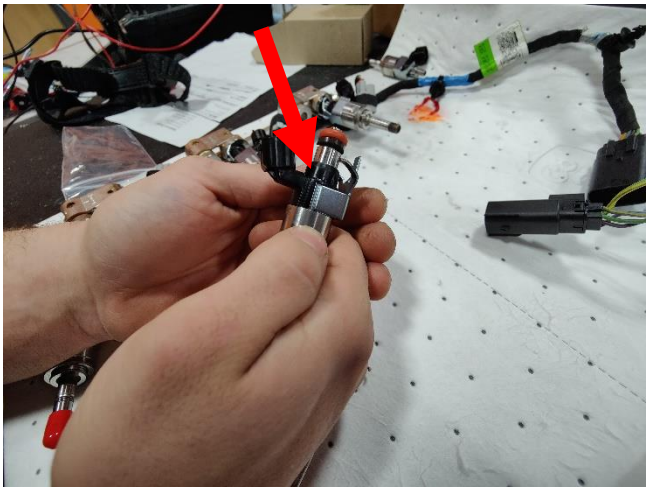


Figure 57

56. Push the retainers onto the Nostrum Injectors in the same location as stock in line with the injector connector.

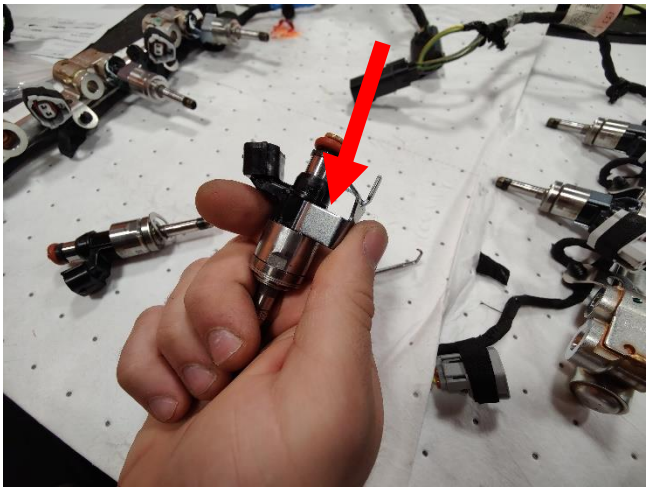


Figure 58

57. Take the compression tool and press it down over the stem of the injector make sure to push and twisting clockwise as you place the tool on the injector.

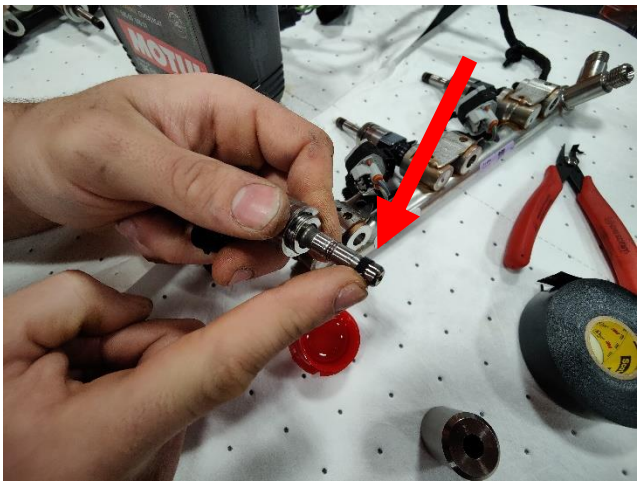


Figure 59

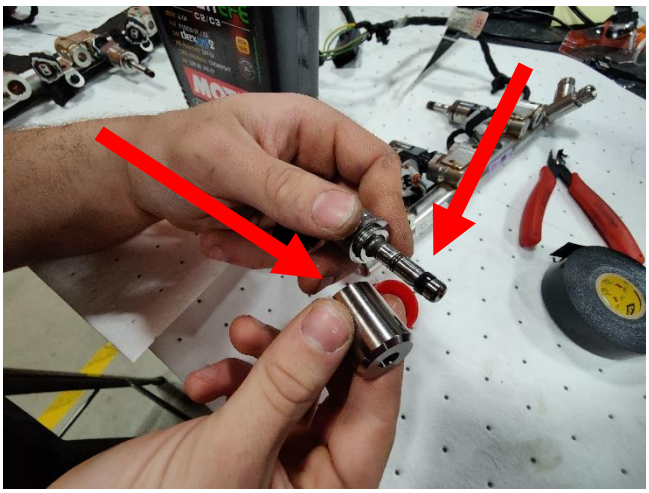


Figure 60

58. Once the compression tool is on and comes to a stop pull the tool off the injector stem twisting clockwise as you pull just like the previous step.

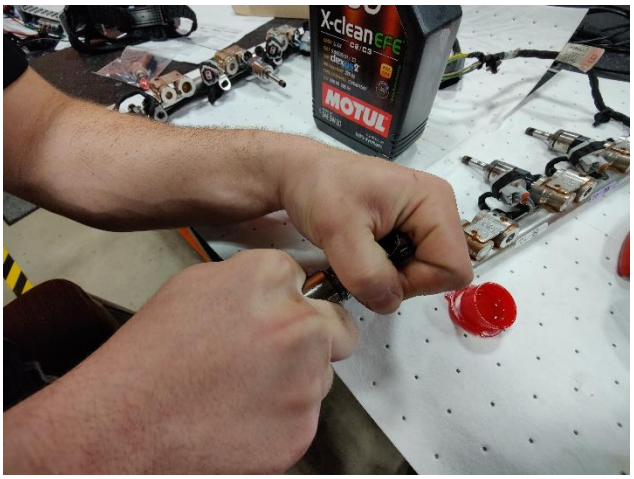


Figure 61

59. Place dielectric grease or engine oil onto the injector O-rings that seats into the fuel rail.

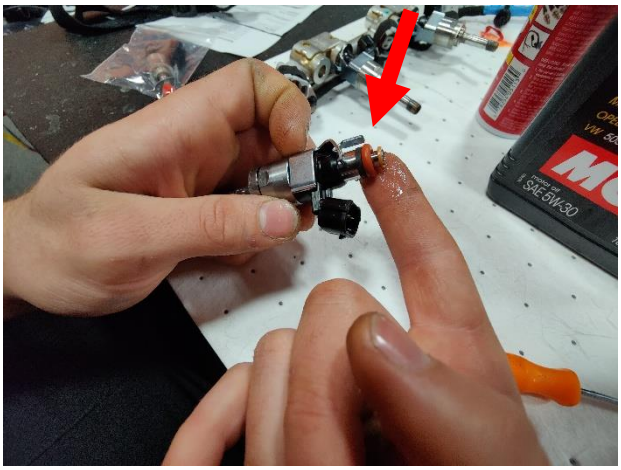


Figure 62

60. Press the injector in the fuel rail seat.

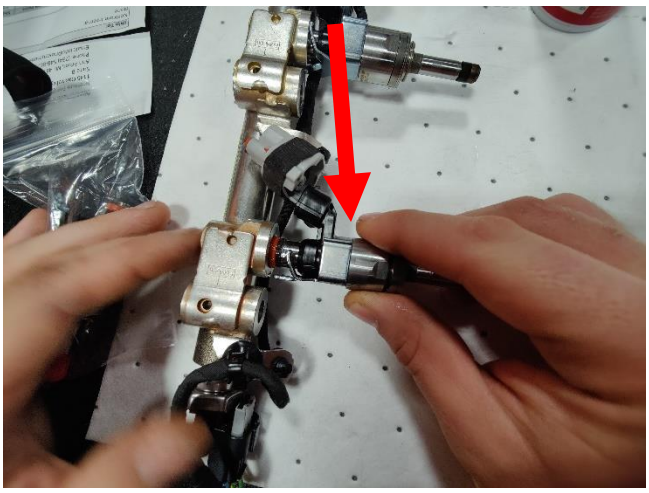


Figure 63

61. Repeat these steps for all 6 injectors. Once the Injectors have been installed in the fuel rail reassembly of the vehicle can begin. Repeat steps in reverse starting with step 50. Follow all Torque specs that are included in each step where applicable. If torque spec is not included in a step where it seems applicable assume snug fit with a wrench or socket wrench.

Figure 64

Hardware installation is complete.

First Start-Up

1. Be sure to remove all installation tools and loose items from the engine compartment. Follow good, safe
practices when working on your vehicle. Be sure to reassemble all parts and components according to your OE maintenance manual.

2. Key cycle the vehicle into the "Accessory On" position (do not go to Ignition position). The low- pressure fuel pump with activate and the low-pressure side of the pump will pressurize. Check the high-pressure fuel pump and the low-pressure side for leaks. If OK, proceed to step 3.

3. Key cycle to ignition and let the car attempt several start cycles. Remember that the fuel lines, pump and part of the fuel rail are filled with air, therefore this step is necessary to evacuate that air and get the system charged. If it starts, OK. If it does not, key off the vehicle. Check the high- pressure lines to the fuel rail, to the pump and the pump itself for leaks. If OK, proceed to step 4.

4. Key cycle one more time all the way to ignition. Engine should start-up and idle. If not, proceed with steps 2-4 again.

5. Let the car idle for a few minutes. Check for leaks on low and high-pressure portions again.

6. Installation is complete! **Time for a Tune!!**

NOTE: a fault code may appear at the first key cycle due to the long ignition time or the low pressure in the fuel rail, both due to the air in the fuel system.
This code should self-clear after the OEM defined quantity of key cycles.

NOTE: After driving the car and letting it cool, next day, check for fuel leaks again (from thermal expansion and contraction). Retighten fittings if needed.

For additional technical & software support please contact:

Email: support@nostrumshop.com
Phone: **734-548-8677 (during normal business hours)**