



N O S T R U M
H I G H P E R F O R M A N C E



Ford Mustang 5.0 H086-1438-2 Install Guide Rev 2

PRODUCT PART SKU#: H086-1438-2

WARNING! PLEASE FOLLOW ALL WARNINGS AND INSTRUCTIONS FOUND IN YOUR VEHICLE OWNER'S 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.

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Required Tools:

- Socket Wrench
- 7mm Socket
- 8mm Socket
- 10mm Socket
- 12mm Socket
- 13mm Socket
- 17mm Wrench
- 18mm Wrench
- 18mm Crows Foot
- 5mm Allen Wrench
- Trim Removal Tool

Expendables:

- Absorbent Towels

1. Turn retainment clips clockwise to remove them from the cowl cover over the battery. Remove the cowl cover.



Figure 1

2. Use a 10mm socket to disconnect the negative battery terminal.



Figure 2

3. Use a towel to separate the terminal from the battery.

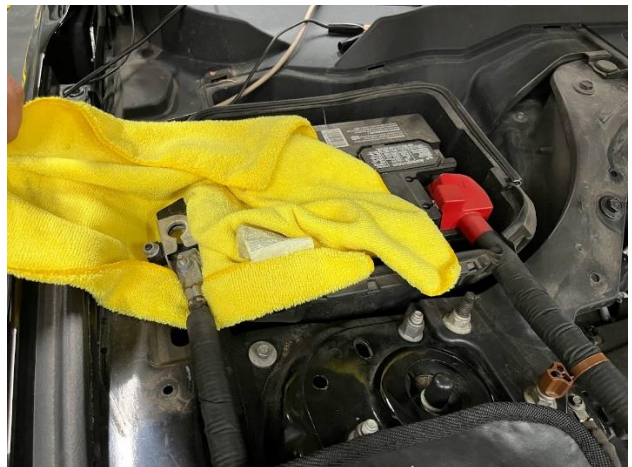


Figure 3

4. Disconnect the pump solenoid connector by pulling out the red tab and squeezing it to release.



Figure 4

5. Use a 12mm socket to remove the single bolt holding the crash bracket in place.



Figure 5

6. Remove the crash bracket from the engine bay.



Figure 6

7. Pull off the sound damping foam from around the high-pressure fuel pump.



Figure 7

8. Push the white tab out of the low-pressure fitting on the fuel pump. Disengage tab with slight pressure with a pick or flathead screwdriver

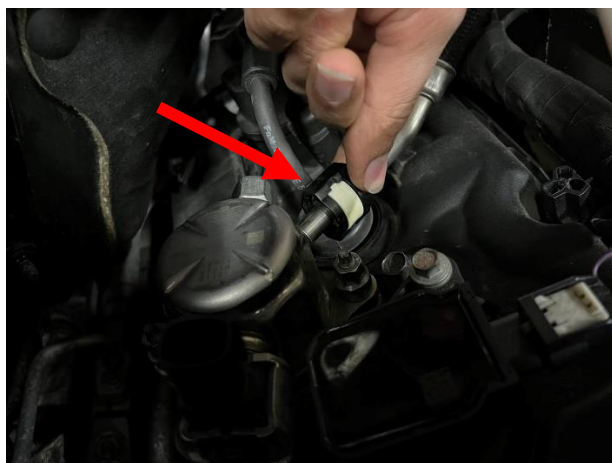


Figure 8

9. Once the white tab is pushed out of the fitting the line can be disconnected from the pump.

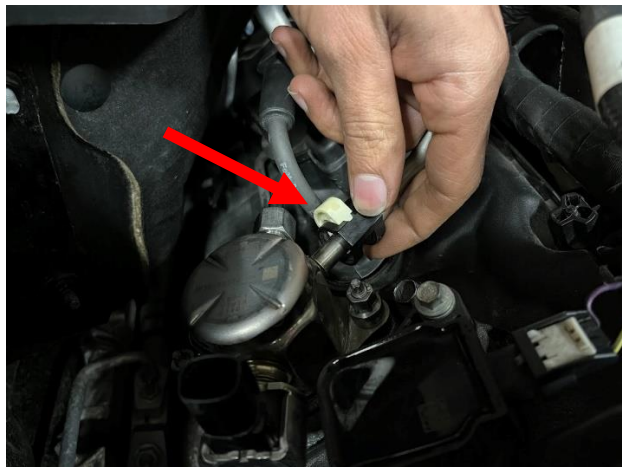


Figure 9

10. Use a 17mm wrench to remove the nut of the pump side of the fuel line.



Figure 10

11. Use a 10mm socket to remove the bolts retaining the pump to the cylinder head.



Figure 11

12. Pull the pump out of its housing and remove it from the engine bay.



Figure 12

13. Disconnect the 3 vacuum hoses connected to the air intake pipe and intake manifold. All 3 connectors are shown in figures 13,14, & 15. Push on black retainment clip to release fitting.



Figure 13



Figure 14



Figure 15

14. Unclip the green clip on the tank vent solenoid connector to release it from its fittings. Pull the connector free from its fitting.

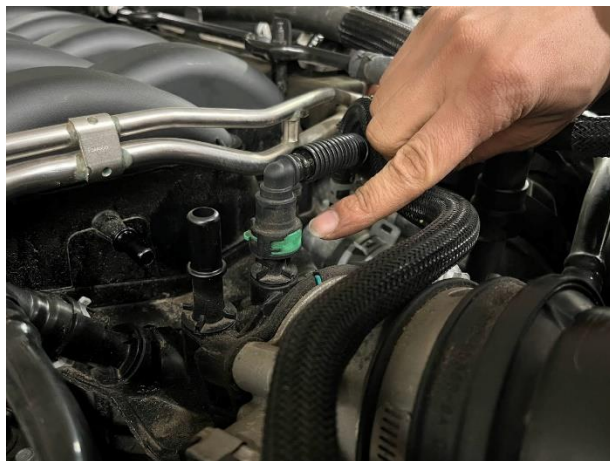


Figure 16

15. Disconnect the connector for the crankcase vent tube. Pull the grey tab towards the front of the engine to disengage.

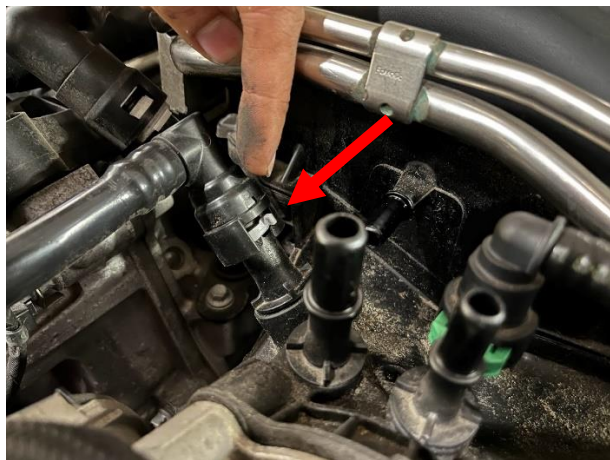


Figure 17

16. Use a 7mm socket to loosen the hose clamp over the intake tube connected to the throttle body.



Figure 18

17. Pull the intake tube out of the throttle body to disconnect it from the throttle body and intake manifold.



Figure 19

18. Disconnect the throttle body electrical connector.

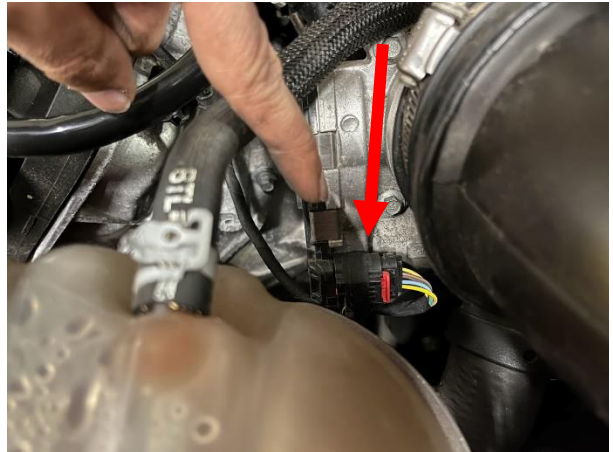


Figure 20

19. Remove the bolts holding the heater hose supports in place using a 10mm socket. (Torque Spec: 7 Nm)



Figure 21

20. Disconnect the intake fuel line on the driver side of the intake. Squeeze both sides of the green tabs. Push through the housing to release the clip from the fitting.



Figure 22

21. Pull the heater hose away from the port injector rail. This allows access to the sound dampening foam.

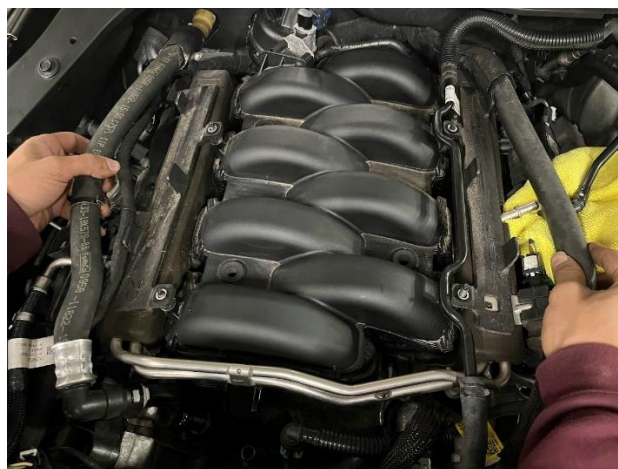


Figure 23

22. Pull the evaporative emission tank purge solenoid from its metal clip on the driver side heater hose support. This is located on the driver side of the manifold.



Figure 24

23. Pull the heater hose away from the port injector rail. This allows access to the sound dampening foam.



Figure 25

24. Remove the fuel rail insulators from either side of the fuel rail.



Figure 26



Figure 27

25. Disconnect the injector solenoid electrical connectors on all 8 injectors on both sides of the port injection rail.



Figure 28

26. Remove the bolts holding the fuel rail in place using a 10mm socket. There are 2 bolts on either side of the fuel rail. (**Torque Spec: 10 Nm + 90°**)

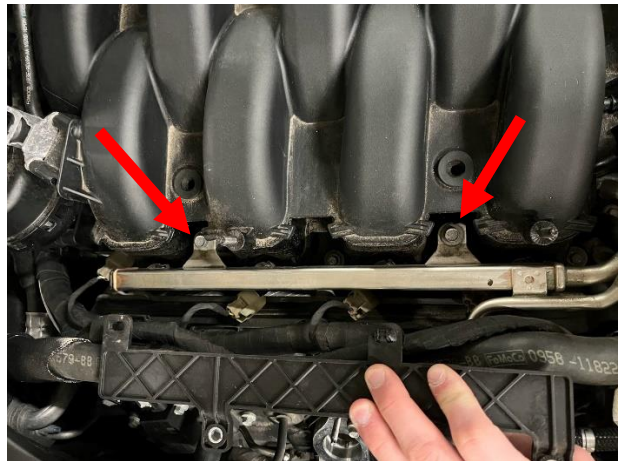


Figure 29

27. Disconnect the fuel rail pressure sensor.

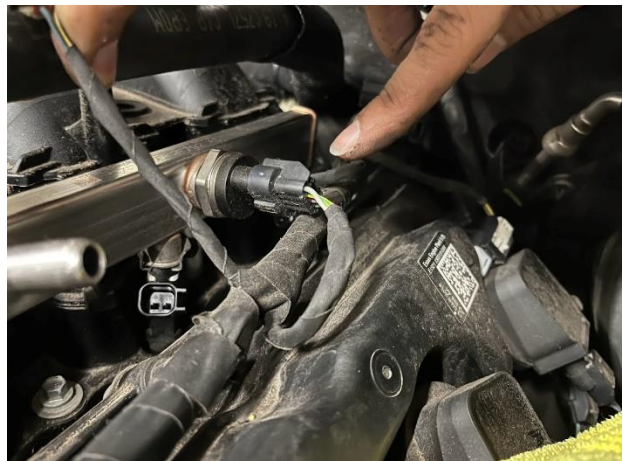


Figure 30

28. Pull the fuel rail out of the engine bay.



Figure 31

29. Disconnect the 6 manifold bolts using a 8mm socket. (**Torque Spec: 11.5 Nm + 35°**)



Figure 32

30. Disconnect the blue wire harness electrical connectors located at the back of the intake manifold.



Figure 33

31. Disconnect the black wire harness electrical connector at the back of the intake manifold next to the blue connector.

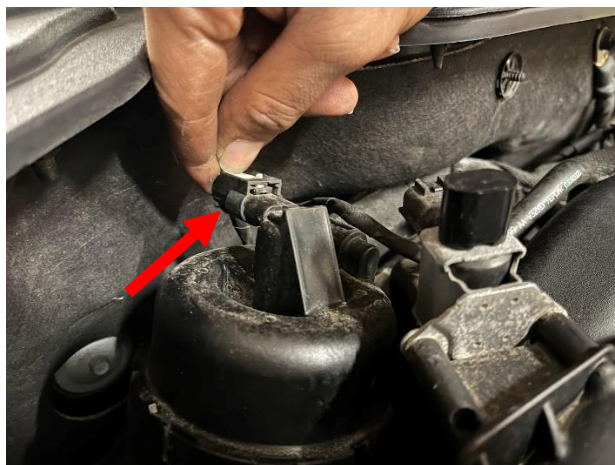


Figure 34

32. Pull the manifold out of its seated position. This will allow better access to the back of the intake manifold. This is needed to access a few clips and a connector that are still holding the manifold to the rest of the engine.
33. Disconnect the lower black wire harness connector at the back of the intake manifold. Also disconnect the wire harness clips at the back of the manifold using a trim removal tool.

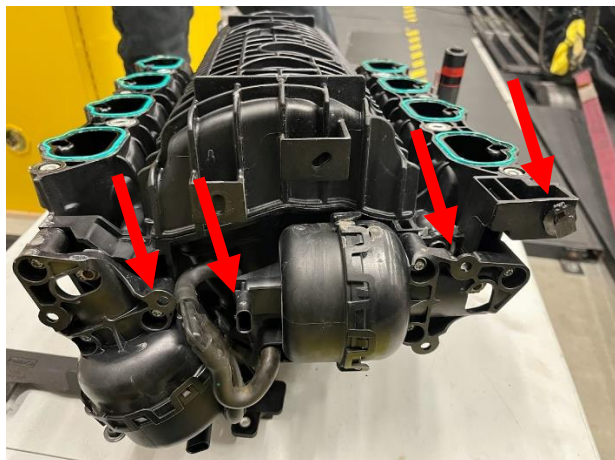


Figure 35

34. The air intakes for each cylinder are now exposed. Use absorbent towels to cover the holes and prevent unwanted materials from entering the combustion chamber.

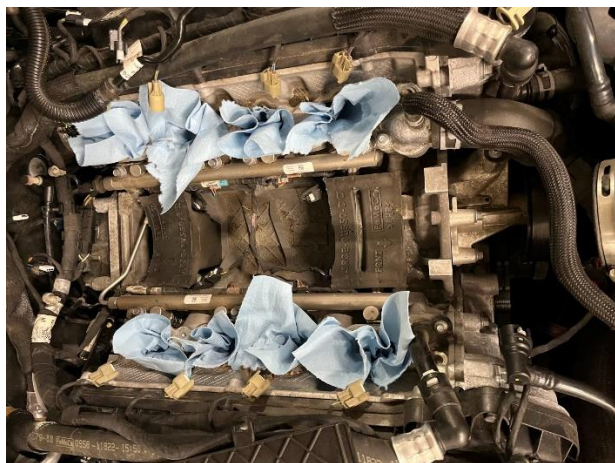


Figure 36

35. The rail side of the high-pressure fuel line is now accessible. Use a 17mm wrench to disconnect the compression nut. Place an absorbent towel around the fitting to prevent fuel from spraying out when the line is disconnected from the rail.



Figure 37

36. Use a trim removal tool to remove the 3 wire harness retainers from the high-pressure fuel line shield.

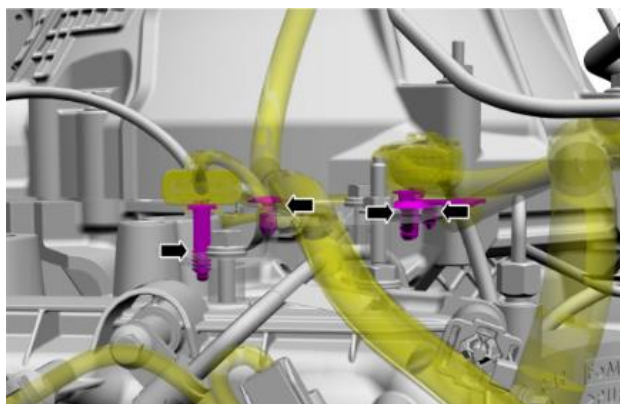


Figure 38

37. Remove the 2 retainment bolts and 1 nut holding the fuel line shield in place using a 10mm socket.

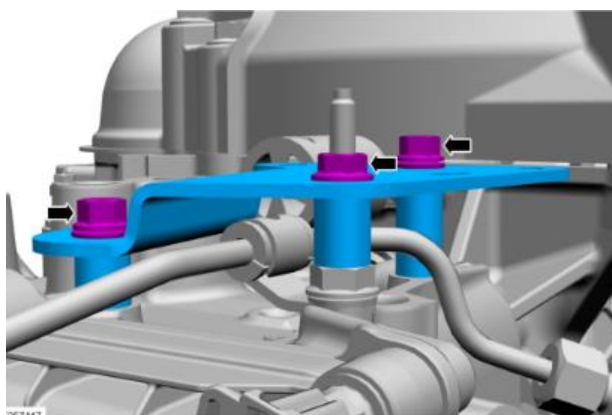


Figure 39

38. Use an 8mm and 13mm socket to remove the bolts holding the brackets securing the fuel line. Pull the fuel line out of the engine bay.

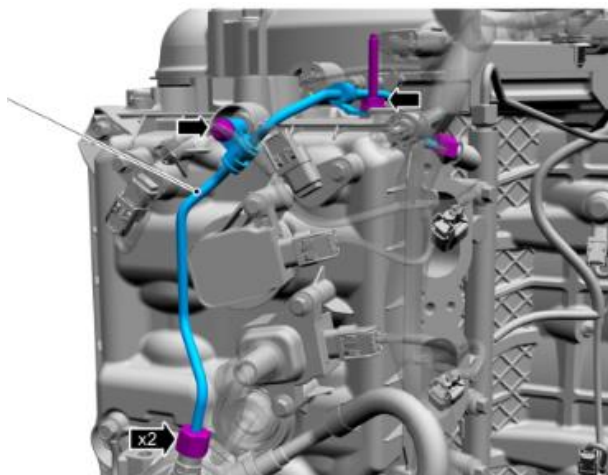


Figure 40

39. Place the Nostrum pump flange on the fuel pump head on the cylinder head. Place the flange alignment tool in the center of the flange. This will align the flange with the seated position of the fuel pump.
40. Use a 10mm socket to tighten the nuts to secure the flange to the pump head. (Torque Spec: 10Nm + 30°)



Figure 41

41. Use a 5mm Allen wrench or socket to secure the Nostrum pump to the flange. (Torque Spec: 14 Nm)



Figure 42

42. Seat the globe fitting for the HP fuel in the fuel rail's fitting. Partially thread the compression nut on using an 18mm wrench. Ensure that the fuel line and the fuel rail fitting are concentric. This means that the axis of the straight section of the fuel line connecting to the globe fitting is in line with the axis of the fitting on the rail. Make sure to verify that they are in line from multiple angles and not just from one viewpoint. You should be able to draw a straight line through the center of the rail fitting and continue through the center of the fuel line. This is needed to ensure that the line seals with the fitting.



Figure 43

43. Ensure that when you secure the fuel rail side of the fuel line that the opposite end of the fuel line is also concentric with fuel pump fitting. Ensure that both ends are concentric with their respective fittings before torquing down their compression nuts. Hand tighten the compression nut on the pump side of the line.

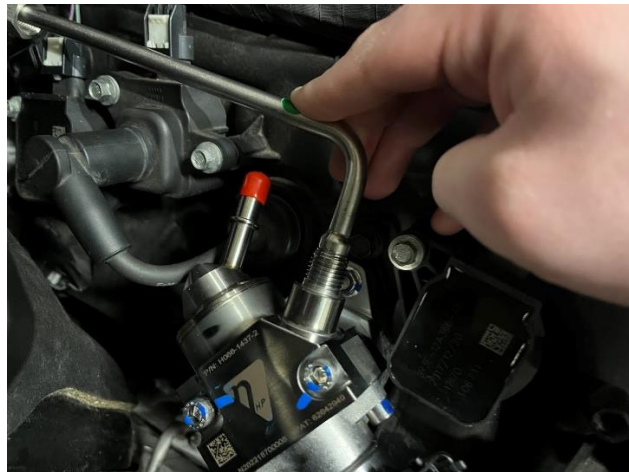


Figure 44

44. Using a 13mm socket or wrench secure the OEM bolt/stud over the Nostrum fuel line bracket closest to the fuel rail. (**Torque Spec: 10 Nm + 30°**)



Figure 45

45. Using a 18mm crows foot torque each compression nuts on each end of the fuel line to a torque spec of **45 Nm**.



Figure 46

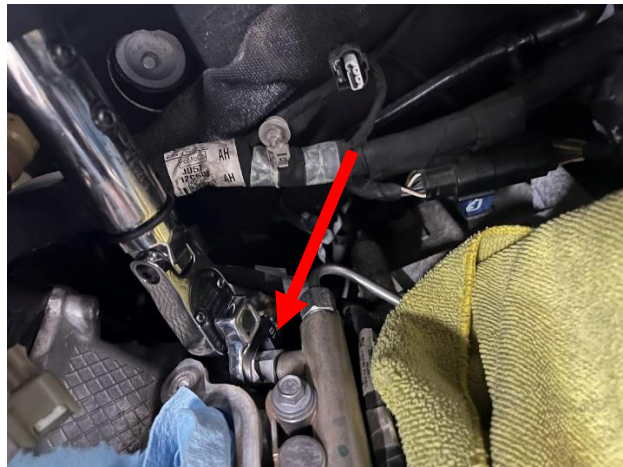


Figure 47

46. On the back of the passenger side cylinder head use a trim removal tool to remove the clip holding the wire harness to the stud.



Figure 48

47. Place the included Nostrum bracket over the stud. Place the smaller end of the bracket down over the stud. The bracket should be placed so that the bend end of the metal is facing the firewall and the bracket is parallel with the fuel rail. Tight down the included nut using a 10mm socket.



Figure 49

48. Use the included bolt and nut to secure the P clamp on the Nostrum fuel line to the Nostrum bracket. Use 8mm and 10mm wrenches and sockets to do so.



Figure 50

49. Reinstall the 2 retainment bolts and 1 nut holding the fuel line shield in place using a 10mm socket. **(Torque Spec: 10 Nm)**

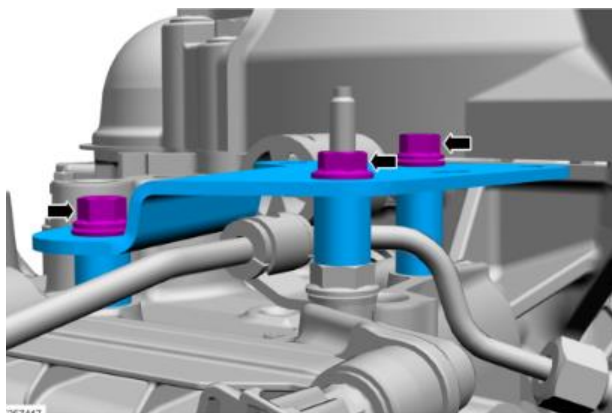


Figure 51

50. Plug in the Nostrum electrical adapter into the connector previously used for the stock fuel pump. Then plug the adapter in the Nostrum fuel pump's solenoid electrical connector.

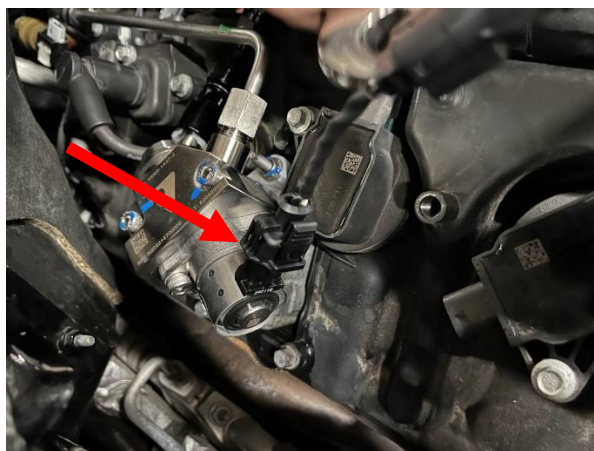


Figure 52

51. Once the connector adapter has been installed to the pump, reassembly of the vehicle can begin so that the low-pressure line can be installed to the pump. Repeat steps in reverse starting with step 33 through 13. 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. Once you have completed step 13 continue forward with step 53.

52. Plug the stock low-pressure fuel line female quick connect into the male QC on the Nostrum fuel pump.
53. Once the fuel line has been installed continue reassembling the vehicle by repeating steps in reverse starting with step 12 and working back to step 1.



Figure 53

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 will 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. Cycle the key to the ignition position 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)**

Revision	Notes	Date
Rev 1	Production Release	11/21/22
Rev 2	In-vehicle Install	2/7/23