NOSTRUM
HIGH PERFORMANCE

BMW S63 Upgraded Injector Install Guide

PRODUCT PART SKU#: H750-1611

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.

Please note that this product does require vehicle calibration. Please ensure provisions are made prior to installation, Nostrum Tuning Guides are available upon request. If you are already in touch with a tuner, please have them reach out to support@nostrumshop.com or access the Tuning Guide via the dealer portal on the Nostrum website. If you do not currently have a tuner, we will gladly connect you with someone within the Nostrum dealer network.

Required Tools:

- Socket wrench
- 6mm socket
- 8mm socket
- 10mm socket
- 14mm crow's foot
- 17mm wrench
- T30 torx bit
- Klein electricians mini ratchet
- ¼" wrench
- 15/16" wrench
- Injector seal compression tool
- BMW S63 injector removal tool
- Safety glasses

Consumables:

- Absorbent towels
- Clean engine oil
- Rubber gloves

1. In the trunk of the vehicle remove the carpeted layer.

Figure 1

2. Use a 10mm socket to remove the bolts holding the lower carpeted layer partially covering the battery. Pull up the carpet to allow full access to the battery.

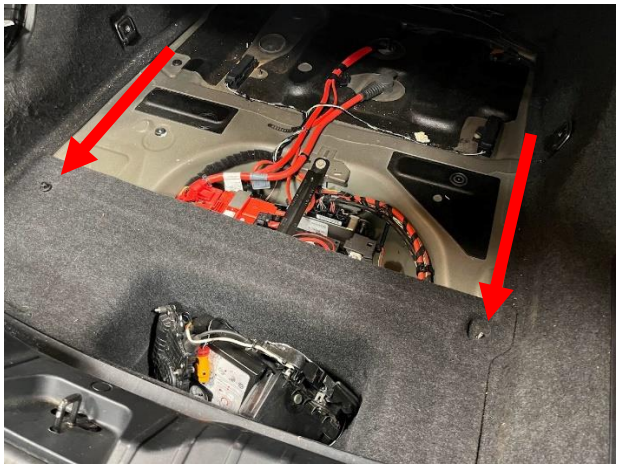

Figure 2

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

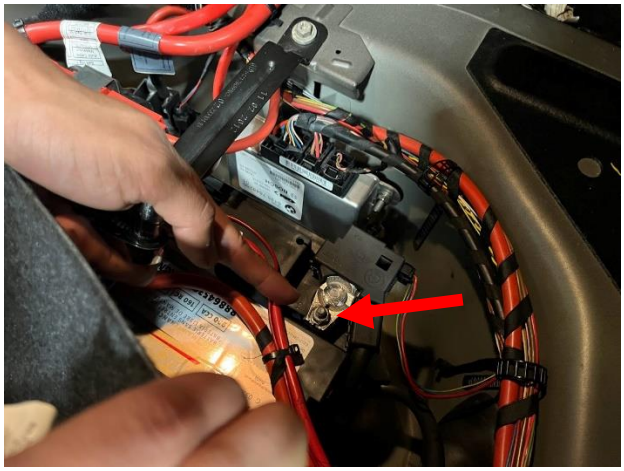

Figure 3

4. Use a towel to separate the terminal from the battery to prevent any accidental connections.

Figure 4

5. Use a 6mm socket to loosen the hose clamp connecting the air box to the intake pipes. Repeat this step for both air boxes.

Figure 5

6. Pull out the grey tab on the mass airflow sensor. Press down on the tab and pull out to disconnect the connector. Repeat this step for both connectors on each air box.

Figure 6

7. Use a 10mm socket to remove the bolt holding the air box to the engine bay. This bolt is located on the outer edge of the air box facing the tires. Repeat this step for both airboxes.

Figure 7

8. Pull the airbox out of the engine bay by unseating it from its rubber grommet on the bottom of the air box. Repeat this step for both airboxes.

Figure 8

Figure 9

9. Disconnect the low-pressure fuel feed line by pushing the black tab in towards the female fitting while pushing the 2 fuel lines together. Once the black tab is released the 2 lines will come apart. It is important to wear safety glasses during this step. Fuel may be pressurized and could spray.

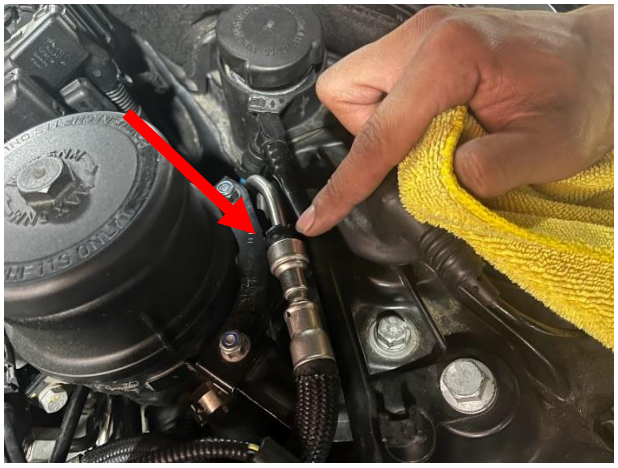

Figure 10

Figure 11

10. Use a 10mm socket to remove the nuts holding the filter housing in place.

Figure 12

11. Disconnect the vacuum hose located near the low-pressure fuel line feed.

Figure 13

12. Pull the filter housing out of the way of the fuel rail underneath it.

Figure 14

13. Use an 8mm socket to remove the bolt holding the coolant reservoir in place.

Figure 15

14. Pull the reservoir clear of its rubber grommet located on the bottom of the reservoir.

Figure 16

15. Pull the reservoir out of the way of the ECU and fuel rail.

Figure 17

16. Pull up on the tab on the connector at the back of the ECU on the passenger side.

Figure 18

17. Pull the connector out to disconnect it. It is important to remember which connector is placed in each socket on the ECU. To ensure that each is reinstalled to its original socket it is recommended that you mark each connector to its corresponding socket. Use different colors for each connector.

Figure 19

18. Now move to the next connector up on the ECU. Push on the tabs on each side of the connector and pull out to disconnect it from the ECU.

Figure 20

19. Push on the tabs of the connector below to disconnect it from the ECU as seen in step 18.

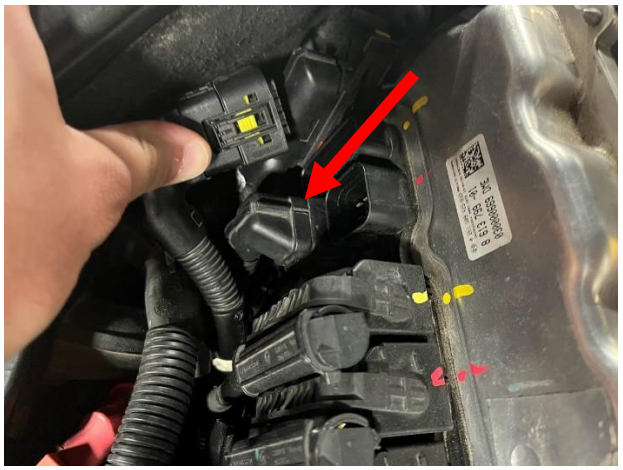

Figure 21

20. Use a flat head screwdriver to release the tab holding the lever on the next connector.

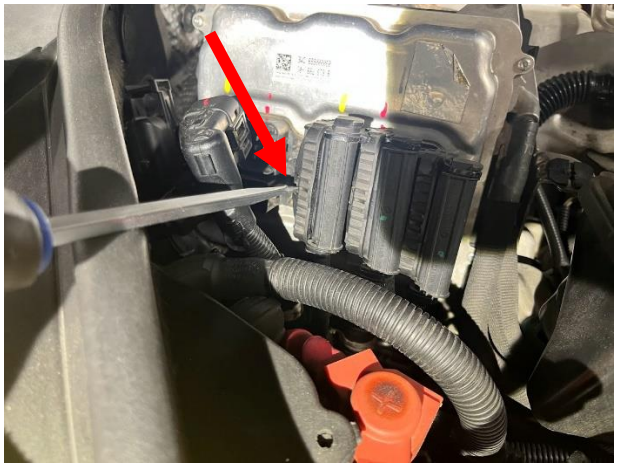

Figure 22

21. Push the lever down to release the connector.

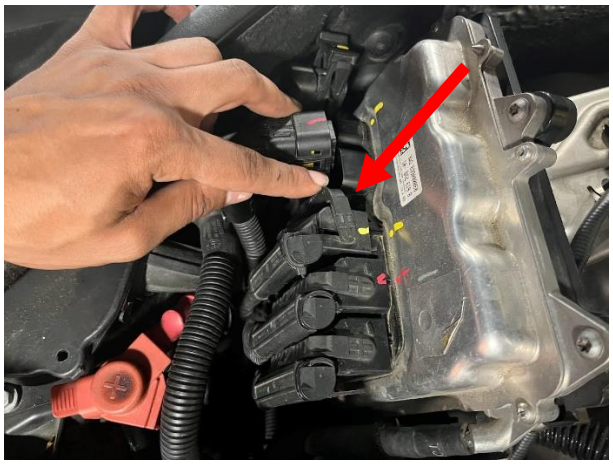

Figure 23

22. Pull the connector out to disconnect. Repeat steps 20-23 for all 3 connectors remaining on the ECU.
23. Repeat steps 16-22 for the driver side ECU.

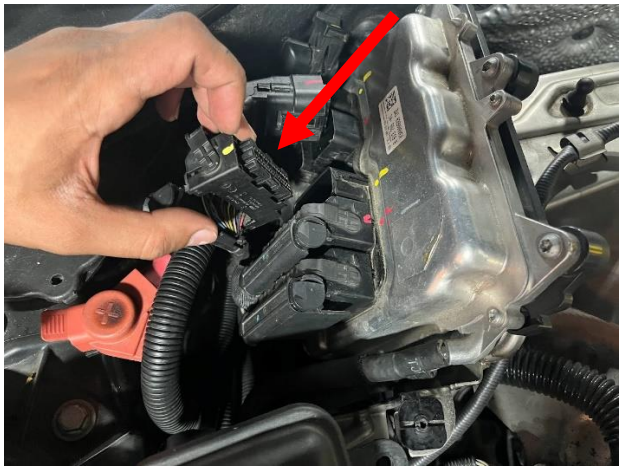

Figure 24

24. Use a 10mm socket to disconnect the ground wire on both ECU's.

Figure 25

25. Pull both ECU's from their rubber grommets.

Figure 26

26. Pull each ECU electrical connector harness from their plastic clips.

Figure 27

27. Pull each ECU out of the way of fuel rails underneath by placing them on the wiper cowl.

Figure 28

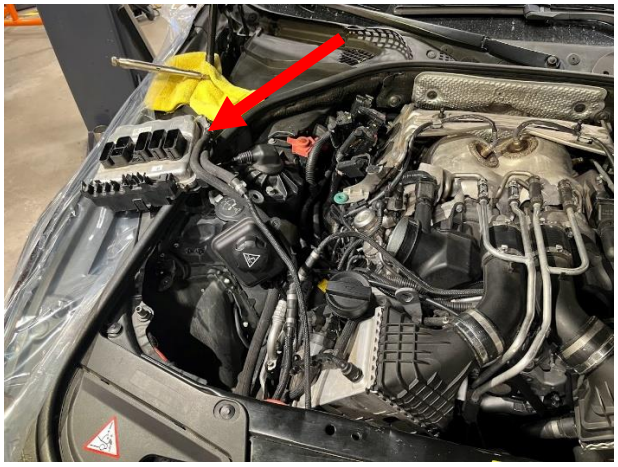

Figure 29

28. Pull the electrical wiring on top of the ECU bracket out of their clips.

Figure 30

29. Use a T30 Torx bit to remove the bolts holding the ECU bracket in place on either side of the bracket.

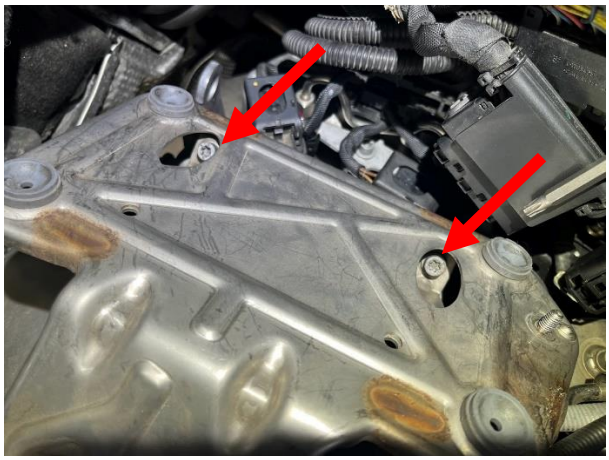

Figure 31

30. Once the bolts have been removed, pull the ECU bracket out of the engine bay.

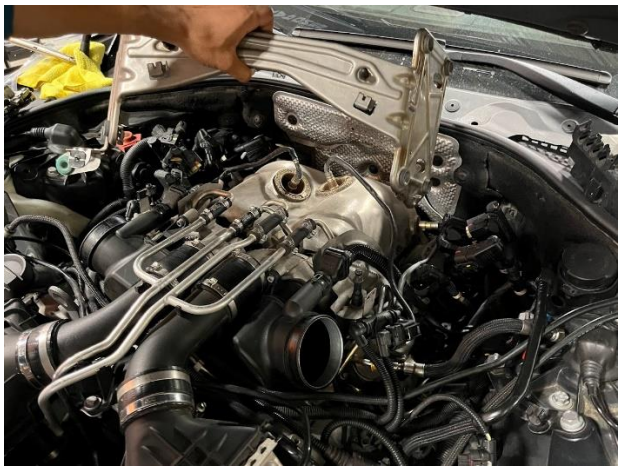

Figure 32

31. Pull up on the latch on top of the coil pack. The coil packs are located just above the fuel rails on either side of the engine. One is located next to the passenger side fuel pump.

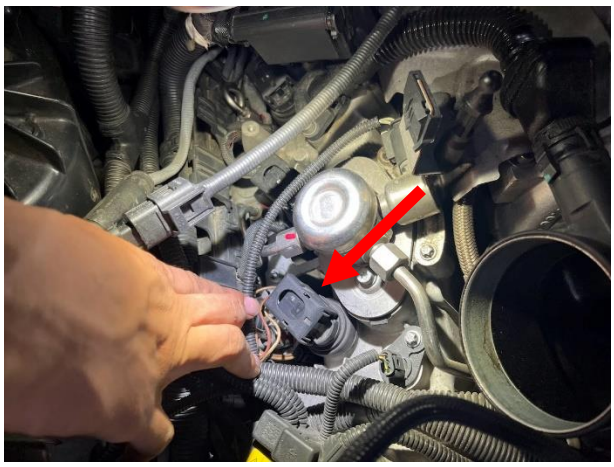

Figure 33

32. Once the latch has been released push on the tabs holding the connector in place and disconnect the connector.

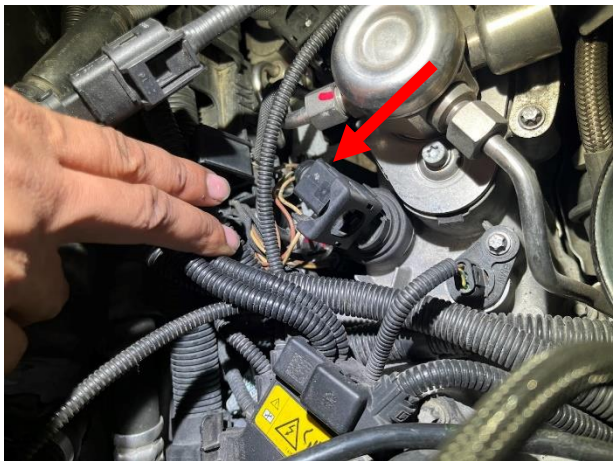

Figure 34

33. Once the connector has been disconnected pull up on the released latch to pull the coil pack out of its seated position. Repeat steps 31-33 for all 8 coil packs on either side of the engine bay.

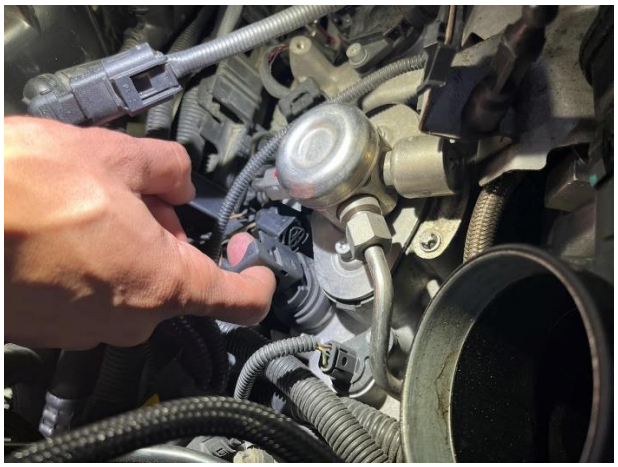

Figure 35

34. Use a T30 torx bit to remove the ground bolt on the injector wire harness on either side of the engine.

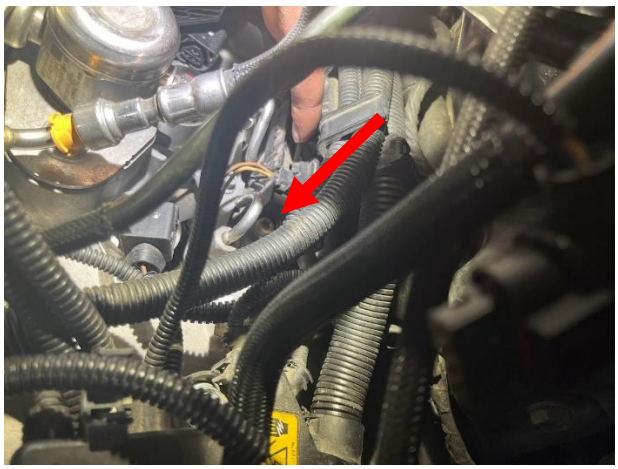

Figure 36

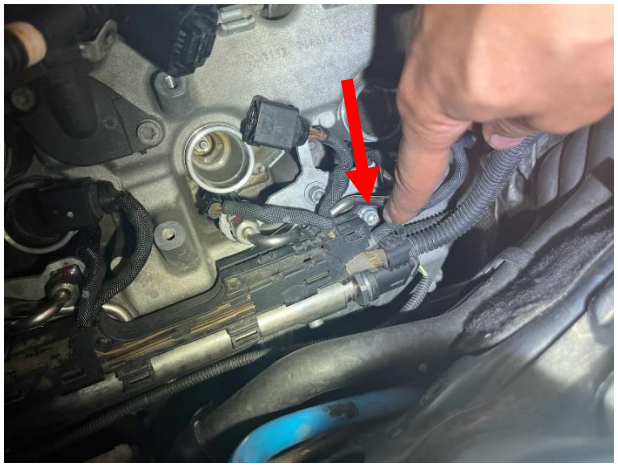

Figure 37

35. Disconnect the injector solenoid electrical connectors for all 8 injectors.

Figure 38

36. Remove both wire harness trays from the engine bay to allow access to the fuel rails.

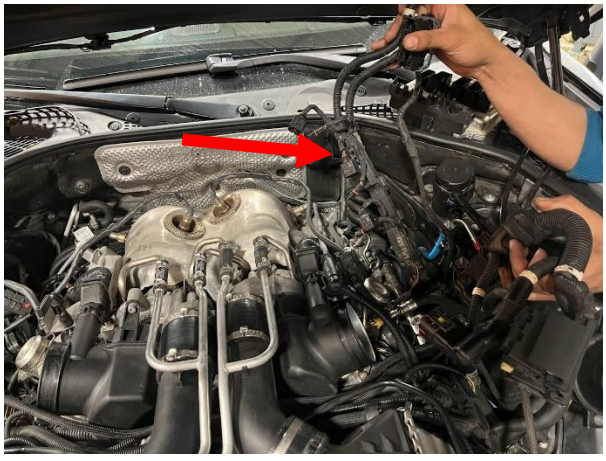

Figure 39

37. Use a 14mm crows' foot and extension to reach the compression nuts on the fuel lines that connect the rail to the injectors.

Figure 40

38. With the 14mm crows foot loosen the compression nuts on the back of all 8 injectors on either fuel rail. (Torque Spec: 23Nm)

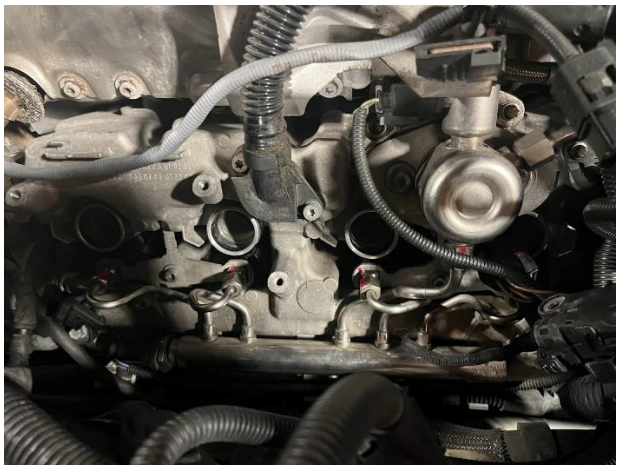

Figure 41

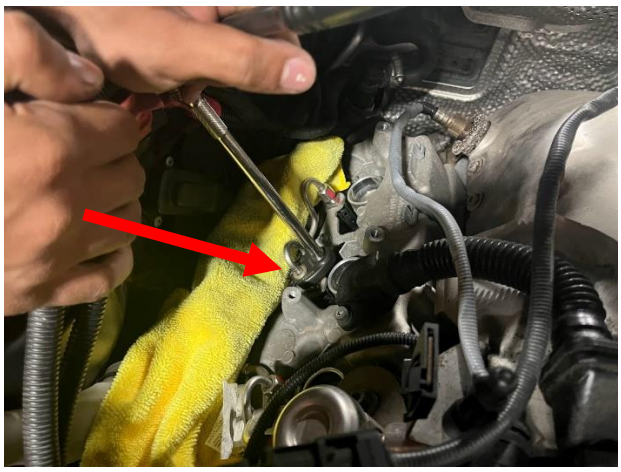

Figure 42

39. Use a 17mm wrench to remove the compression nut on the high-pressure outlet on the fuel pump. The fuel line connects the pump to the fuel rail. Repeat this for both fuel pumps. (Torque Spec: 30Nm)

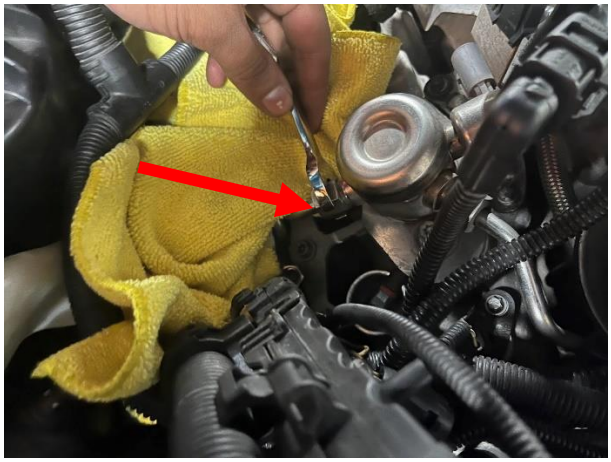

Figure 43

40. Use a T30 Torx bit to remove the 6 bolts holding both fuel rails in place. The fuel rail bolts are difficult to access with a traditional socket wrench. It is recommended that you use Klien electrician's mini ratchet (Seen in figures 46-47). This low-profile ratchet makes it easier to access the bolts and remove them. If needed a low-profile ¼" wrench (Seen in Figure 48) with a ¼" T30 Torx bit can be an effective substitute. (Torque Spec: 10Nm)

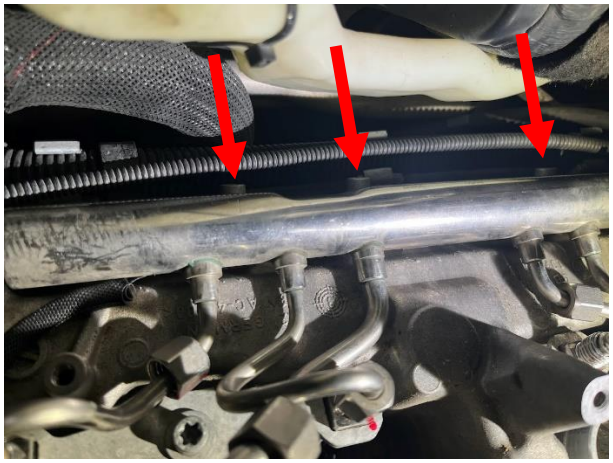

Figure 44

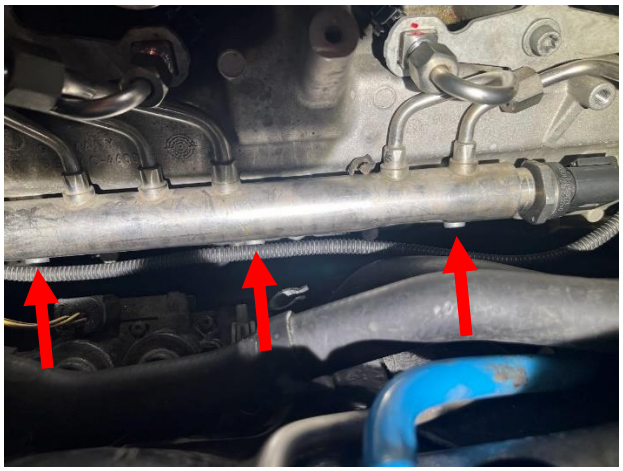

Figure 45

Figure 46

Figure 47

Figure 48

41. Once the bolts have been removed pull the fuel rails out of their seated position with the pressure sensor connector still attached. Put the rail off to the side and out of the way to give access to the injectors.

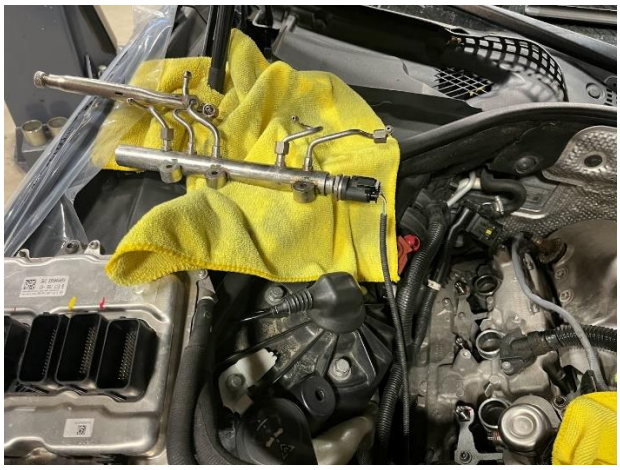

Figure 49

42. Use a T30 Torx to remove the injector brackets on all 8 injectors. (Torque Spec: 13Nm)

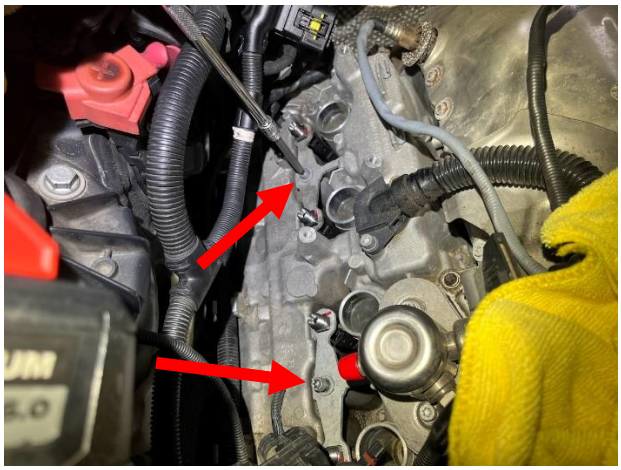

Figure 50

43. To remove the fuel injectors a custom fuel injector removal tool specifically for the BMW S63 platform is required.

Figure 51

44. Place the removal tool over the set of 2 injectors that one bracket covers. The tool will thread into the hole that is intended for the injector bracket. Use a 10mm socket to do so (1). Once the tool is secured to the cylinder head use the knurled top of tool to thread the sleeve onto each injector by hand (2).

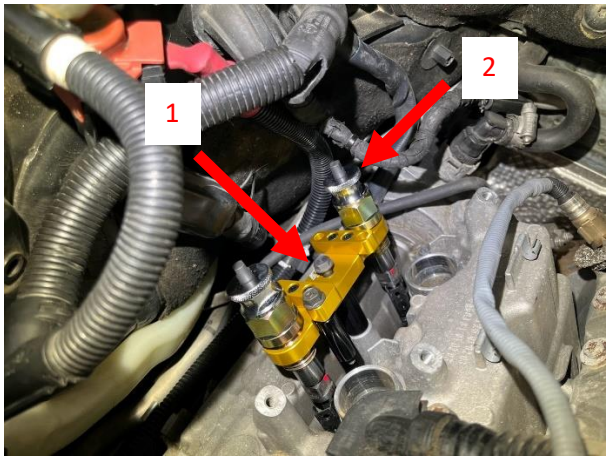

Figure 52

45. Use a 15/16” wrench and turn clockwise on the hexagon head treaded onto each injector to pull the injectors out.

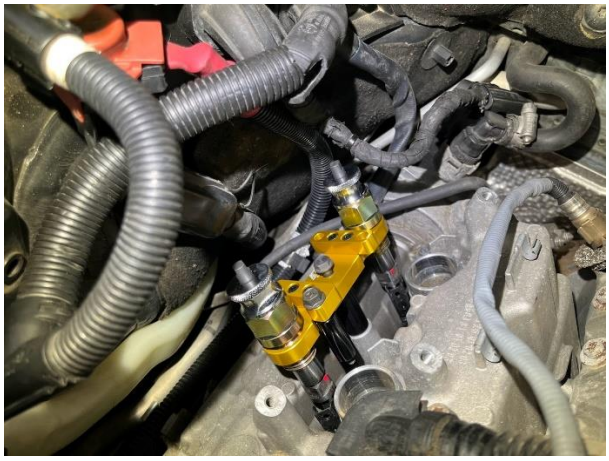

Figure 53

46. Once you have pulled the injectors out of the engine place them on a clean mat.

Figure 54

47. Begin installation of the 8 new Nostrum injectors by lubricating the seal on the stem of each injector with clean engine oil.

Figure 55

48. Place the injector seal compression tool over the stem of each injector. Push down until the tool stops at the body of the injector. Keep the compression tool on the injector for 30 seconds before removing. Ensure that you install each injector quickly after removing the compression tool from each.

Figure 56

49. Place each injector back into its seated position in the cylinder head.

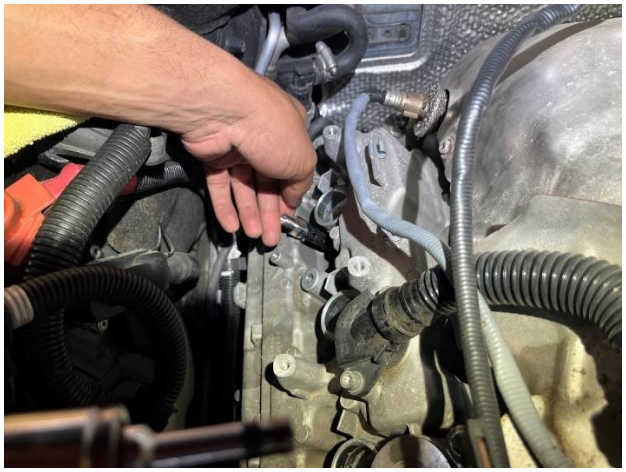

Figure 57

50. Place the injector bracket back over each set of 2 injectors. The brackets have a visible bow in them. Ensure that the bow in the bracket is facing down towards the injectors when reinstalling.

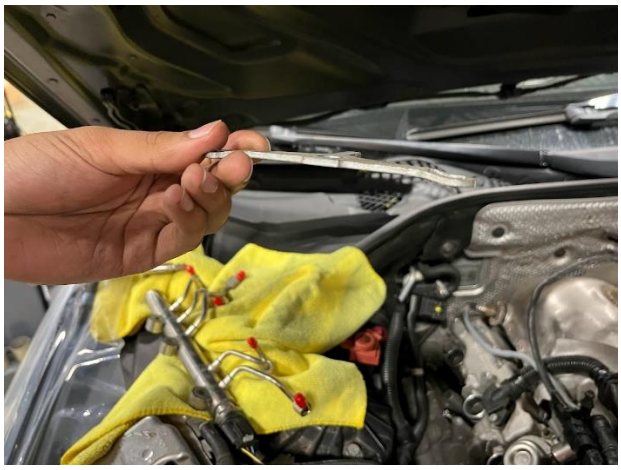

Figure 58

51. Once the bracket has been placed over the injectors secure the center bolt by hand. Before fully torquing down the bolts reinstall the fuel rails by torquing down the fuel rail bolts on both rails to 10Nm with a T30 Torx. Once completed you can then torque the bracket bolts down with a 10mm socket to 10Nm.

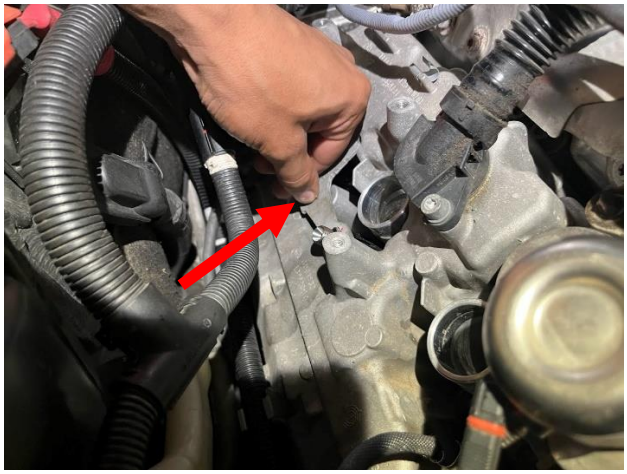

Figure 59

52. Once the fuel rails and injector brackets have been reinstalled reassembly of the vehicle can begin. Repeat steps in reverse starting with step 39. 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.

Hardware installation is complete.

Calibration

Do not start your vehicle, this product requires calibration. Please refer to the Nostrum supplied tuning guide to make the necessary changes prior to starting the vehicle. Once calibration is complete, please proceed to the next step.

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. 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!

NOTE: a fault code may appear at the first key cycle due to the extended cranking 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: Please check for fuel leaks after driving the car and letting it cool for an extended period of time, fittings may loosen after the first heat cycle due to 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	7/19/23