



N O S T R U M
HIGH PERFORMANCE



BMW S58 / B58gen2 High Flow Injectors Installation Guide

PRODUCT PART SKU#: H720-1996

Warning! Please follow all warnings and instructions found in your vehicle service 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.

BMW B58 Gen 2 Injector H720-1996 Install Guide v1.0

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Required tools:

- Torque wrench
- Torque-angle wrench or angle attachment
- Ratchet
- 8mm socket
- 10mm socket
- 17mm wrench
- Adjustable wrench
- E6 Torx socket
- E8 Torx socket
- White or silver paint pen, Sharpie or similar
- BMW B58 injector combustion seal sizing tool: BMW 2 358 417, Injector Seal Installer and Sizer EN-51955 or equivalent
- BMW B58 injector removal tool kit: DPTOOL N14-55, BMW 83300496668 or equivalent
- ECU programming interface or other calibration delivery method
- Safety glasses
- Fire extinguisher (Class B minimum recommended)

Consumables:

- M5x30 mm E6 Torx head bolts
 - BMW P/N: 13-53-8-661-716
 - Quantity 12
- M6x70 mm E8 Torx head bolts
 - BMW P/N: 13-53-8-661-715
 - Quantity: 8
- Clean engine oil
- Lint free absorbent towels
- Disposable rubber gloves

Additional recommended OEM parts (not included):

Description	Quantity	Part #
Fuel Injector M5x30 mm E6 Torx Head Bolts	12	13-53-8-661-716
Fuel Rail M6x70 mm E8 Torx Head Bolts	8	13-53-8-661-715

CLEANLINESS IS PARAMOUNT!

Every serialized injector is production tested for gross leak, fine leak, and leak decay for quality control. These injectors left the factory with no leaks! Contamination is the #1 cause of injector leaks. Injector contamination can come from poor fuel quality, dirt or debris introduced during installation, or dirt and debris from handling before installation. It is imperative that the engine, workspace, tools, and handling is as clean as possible during the installation process. Use fuels and ethanol from trusted sources!

1. Open the trunk of the vehicle, then remove the trunk liner and panel to reveal the battery.



Figure 1

2. Using a 10 mm socket disconnect the negative battery terminal. Cover the terminal with a rag or electrical tape to prevent it from contacting the negative battery post and restoring power to the vehicle.

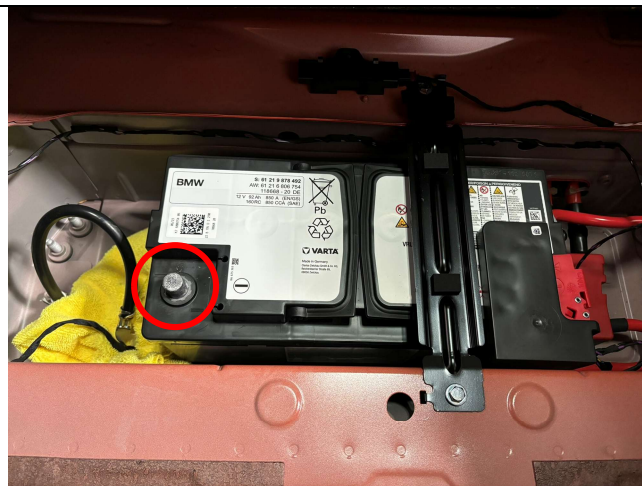


Figure 2

3. Remove the engine appearance cover by lifting the corners upward to release it from its grommets.

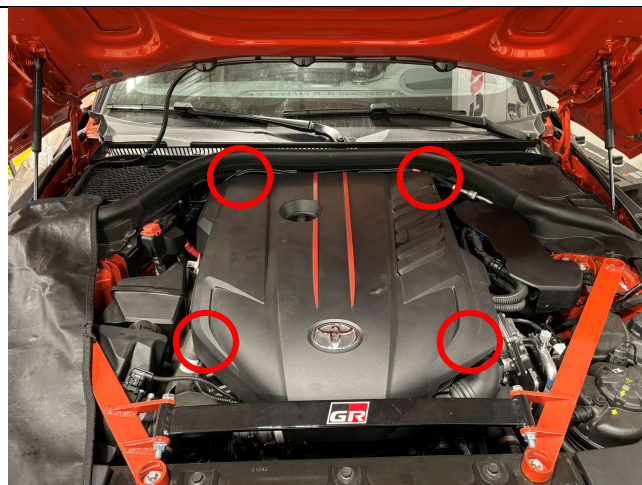


Figure 3

4. On the passenger side of the engine bay pull down and back one the heat insulator to detach it from its center section. Then rotate it towards the firewall.

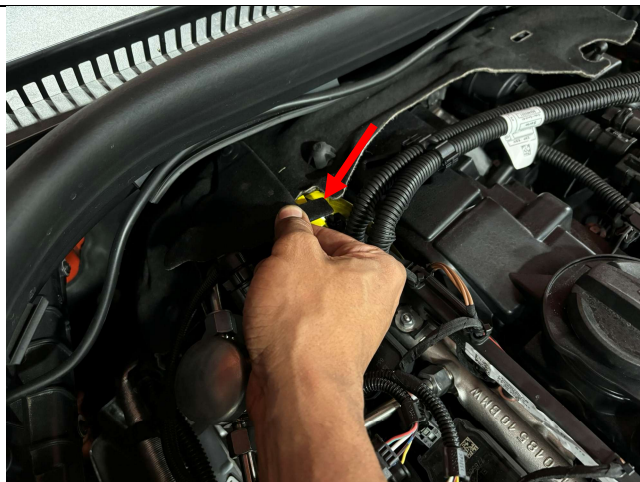


Figure 4

5. Lift up on the engine appearance cover grommet to remove it from its mounting stud.

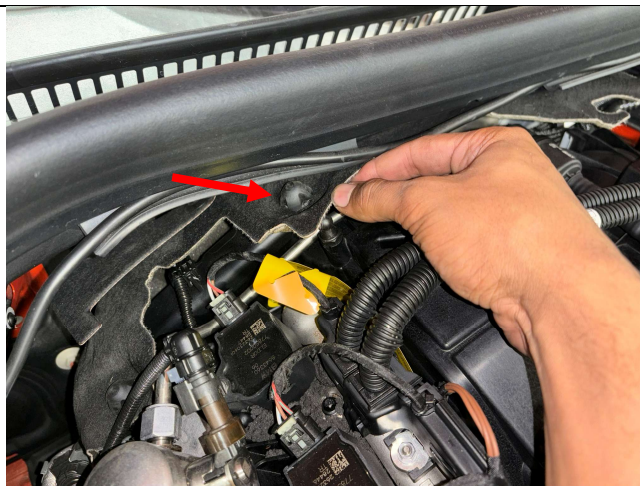


Figure 5

6. Release wire harness housing by pushing the two retaining tabs outwards, then pulling the housing up. After doing so, set the housing aside.



Figure 6

7. Disconnect the high-pressure pump connector by pulling up on the grey locking tab, then push down on the locking tab and pull the connector off.

A flat blade screwdriver or pick tool may be needed to release the locking tab.

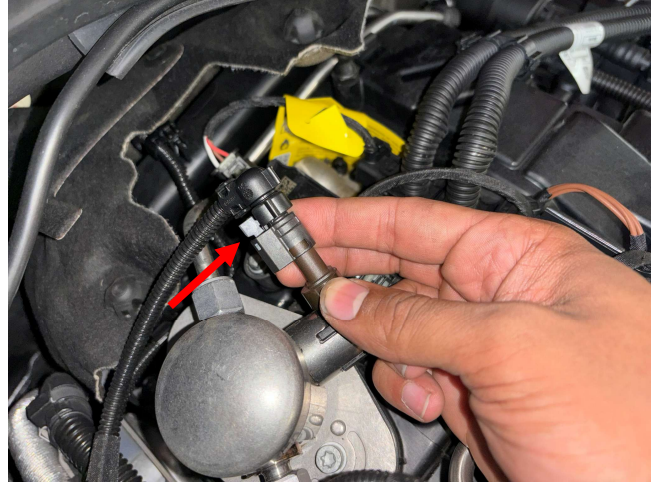


Figure 7

8. Disconnect the 6 coil pack connectors by pulling up on the white locking tabs, then push down on the locking tabs and pull the connectors off.

A flat blade screwdriver or pick tool may be needed to release the locking tabs.

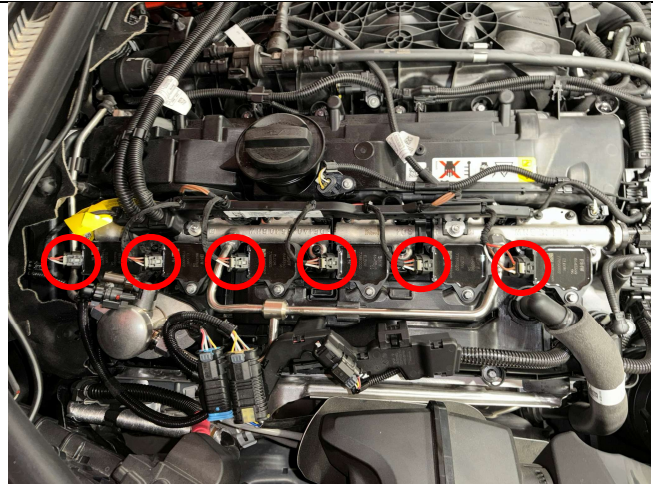


Figure 8

9. Loosen the 6 E8 torx bolts mounting the coil packs to the valve cover, then remove the coil packs.

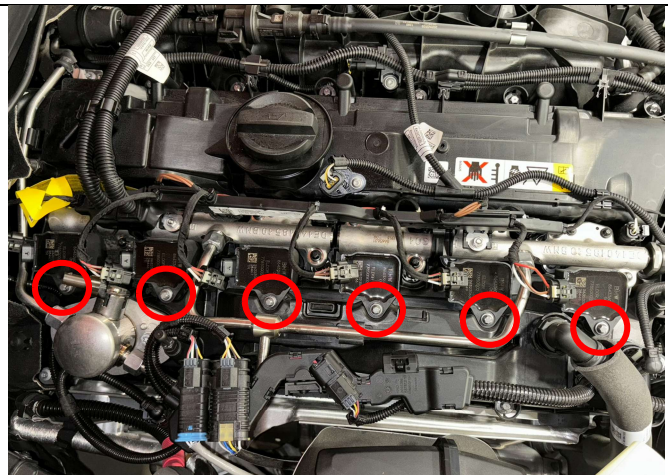


Figure 9

10. Disconnect the fuel rail pressure sensor connector by pulling up on the grey locking tab, then push down on the locking tab and pull the connector off.

A flat blade screwdriver or pick tool may be needed to release the locking tab.

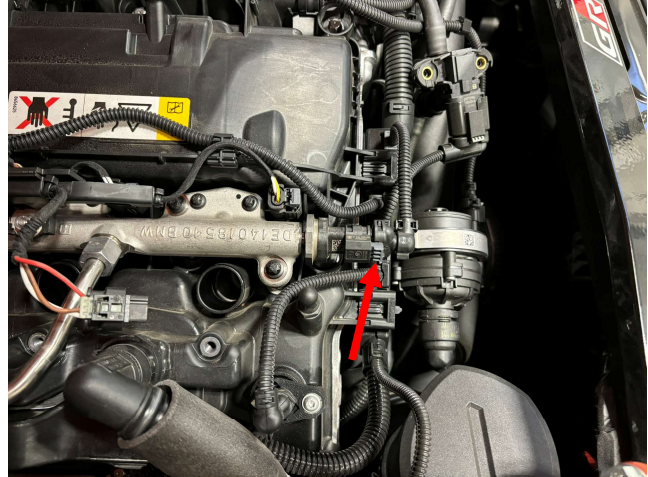


Figure 10

11. Using an 8 mm socket remove the two nuts mounting the wire harness to the fuel rail.

Torque Spec: 5 Nm (44 in-lb)

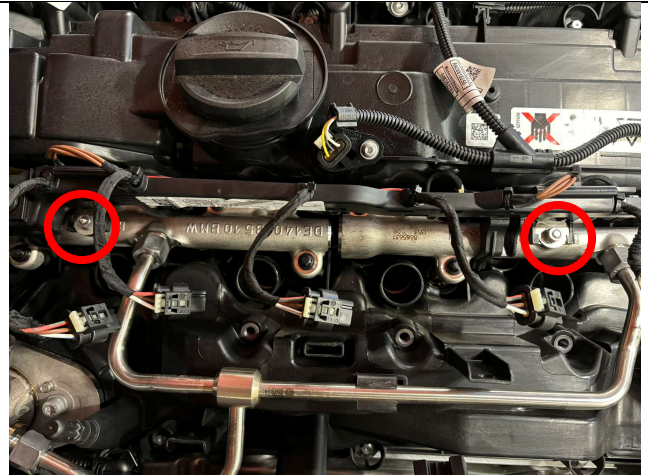


Figure 11

12. Using a flat blade screwdriver or trim tool, pry up on the retaining clip mounting the wire harness to the valve cover then slightly lift the harness.

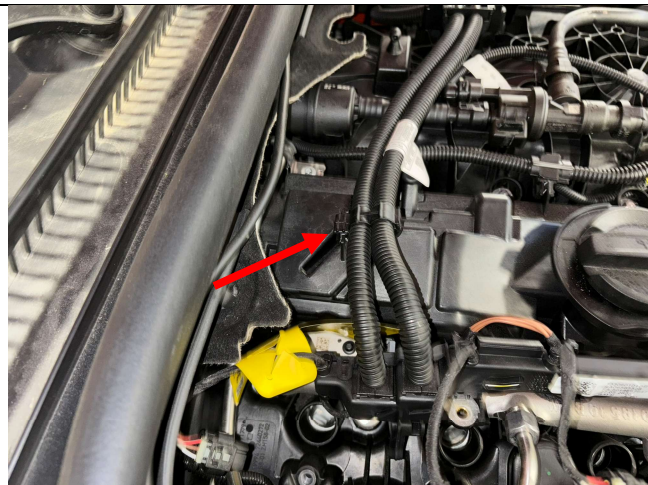


Figure 12

13. While lifting the harness, disconnect the 6 fuel injector connectors by pulling up on the grey locking tabs, then push down on the locking tabs and pull the connectors off.
A flat blade screwdriver or pick tool may be needed to release the locking tabs.

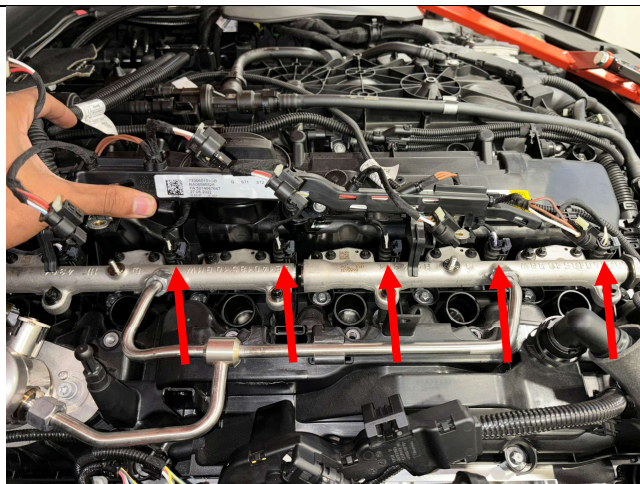


Figure 13

14. Using a 17 mm open ended wrench, disconnect the 3 high-pressure line compression nuts, then remove the high-pressure line.
Place rags or absorbent shop towels beneath the compression nuts to capture any spilled fuel before removal.

Safety glasses are recommended during this step.

Torque Spec: 33 Nm (24 ft-lb)

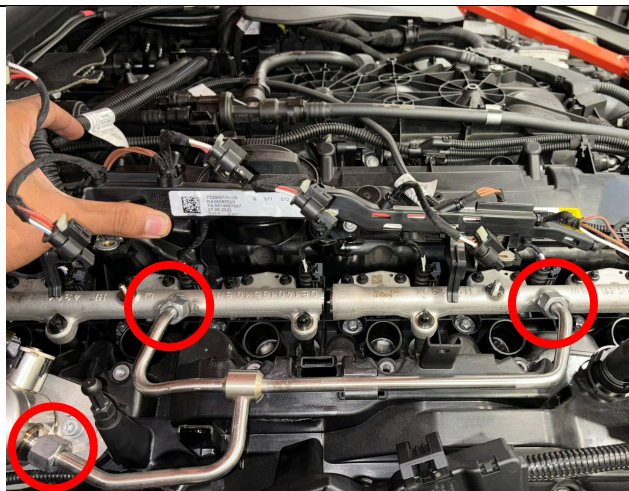


Figure 14

15. Using an E6 torx socket loosen the 12 bolts mounting the fuel injectors to the fuel rail.
There are 2 bolts per injector, be sure to loosen them evenly to prevent damage to the spherical fitting on the stock injectors.

NOTE: These bolts are one time use and MUST be replaced. Failure to do so can cause your injectors to leak.

BMW P/N: 13-53-8-661-716

Quantity: 12

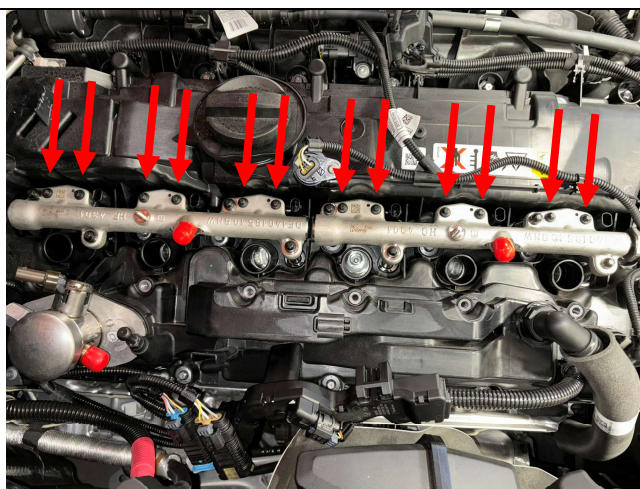


Figure 15

16. Using an E8 torx socket remove the 8 bolts mounting the fuel rail to the cylinder head.

NOTE: These bolts are one time use and MUST be replaced. Failure to do so can cause your injectors to leak.

BMW P/N: 13-53-8-661-715

Quantity: 8

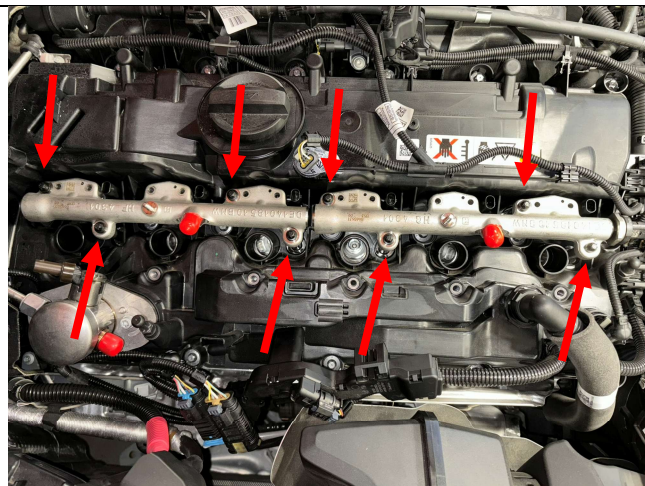


Figure 16

17. Remove the fuel rails from the engine bay.

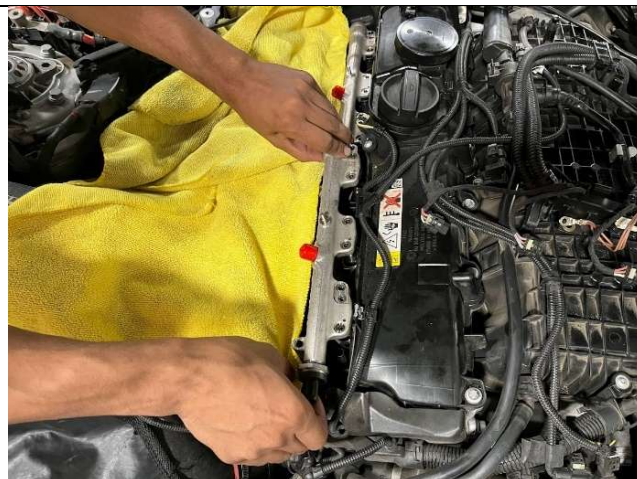


Figure 17

18. Use a BMW B58 Injector removal tool to remove all 6 injectors from their seated positions in the cylinder head.



Figure 18

19. Example tools kits include the OEM BMW service tool kit 2 358 417 and the DPTOOL N14-55 kit. Image to the right is of the DPTOOL N14-55 kit found on Amazon.



Figure 19

20.

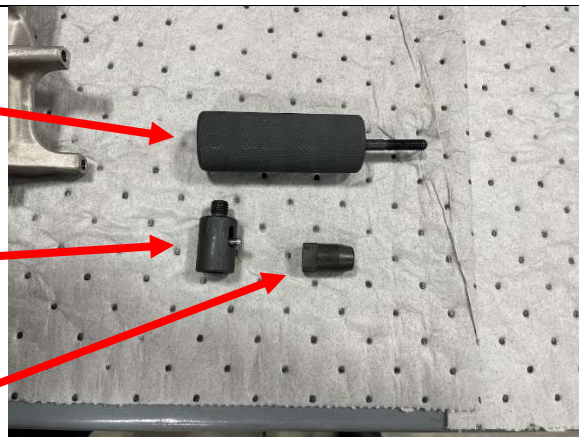
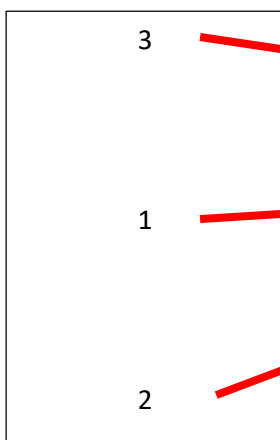


Figure 20

21. Thread section 2 into section 1.



Figure 21

22. Place the assembled sections in Step 21 over the top of the injector with the pin push completely down.



Figure 22

23. Once the assembled section is placed on the injector turn it 90 degrees clockwise then pull up on the pin to secure it to the injector.



Figure 23

24. Take section 3 and thread the stem into the assembled section.

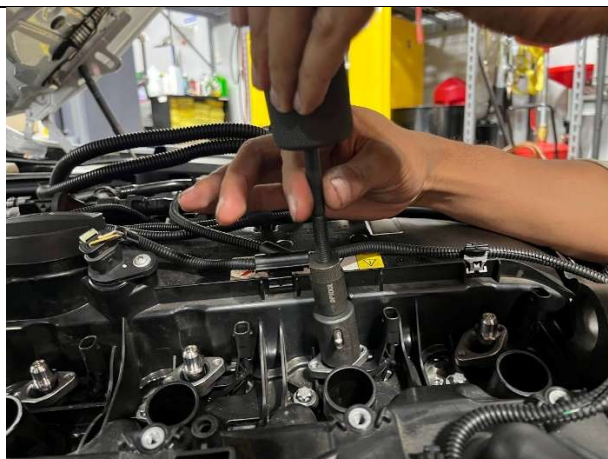


Figure 24

25. Pull out the injectors by holding section 3 and hammering upward repeatedly until the injector is removed from its seated position in the cylinder head. Mild force may be required to do so. Use caution to ensure you do not damage the injectors.



Figure 25

26. Once all six injectors have been removed, place them along with the fuel rail on absorbent towels in a clean area.

Be very careful not to get dirt or debris on any fuel injector, fuel rail, or fuel line sealing surfaces.

NOTE: Failing to keep your fuel system clean can cause damage to the injectors or other parts of the system.



Figure 26

27. Rotate the flange on the end of the injectors 90 degrees and pull the flange off. Some fuel rail flanges are a cast flange with a boss or lug located on the flange. If your flanges have this boss be sure to note the orientation of the boss before removing the flange (we recommend taking pictures) and be sure to re-install the flange with the boss located in the same orientation (boss should be facing towards the fuel rail not away from the fuel rail).



Figure 27

28. Place the flanges on the new Nostrum injectors.



Figure 28

29. Place the Nostrum injectors in position on the fuel rail. Be sure that the side of the injector with the connector is facing the front of the vehicle towards the pressure sensor on the fuel rail. Place the injector distance guide included with the injector install kit (white object in image to the right) between the flange and the fuel rail.



Figure 29

30. Install the M5x30 mm E6 Torx bolts to secure the injector to the rail. Hand tighten the bolts at this time until the distance guide rests flat on the rail and the holder. Repeat the process for all the injectors.

Note that these bolts are torque to yield. New bolts are required for proper installation of the Nostrum Injectors. The BMW Part number is 13-53-8-661-716. Contact your local BMW dealer for sourcing.

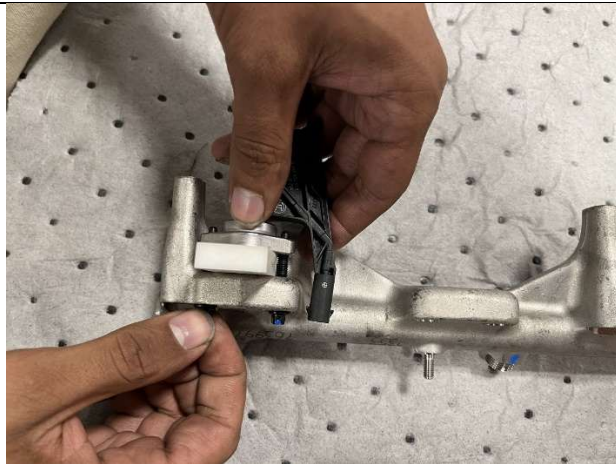


Figure 30

31. The injectors will have a loose fit after completing Step 30 and before being installed back in the vehicle.



Figure 31

32. Lubricate the stem of the injectors with clean engine oil.

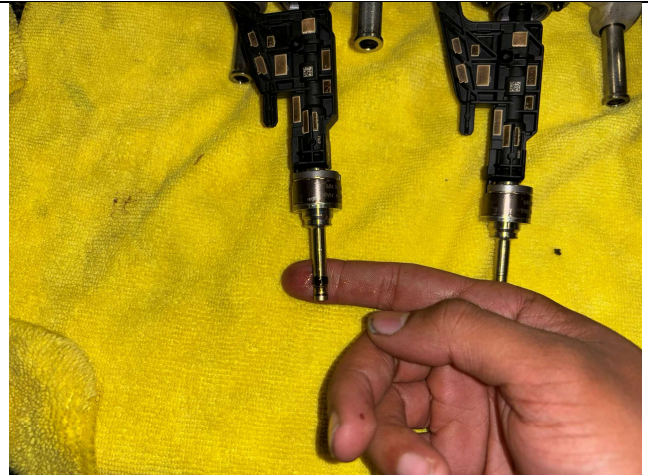


Figure 32

33. **Sizing of the combustion seal** - you must size the injector combustion seals immediately before installing the injectors in the cylinder head. This step must be performed on all new injectors as well as after changing the seals on used injectors. Seals should be changed whenever injectors are removed from the engine. **Use the Injector Seal Installer and Sizer tool set: EN-51955** or equivalent. Place the injector compression tool over the end of each injector. Press the tool on until the tool stops on the stem.

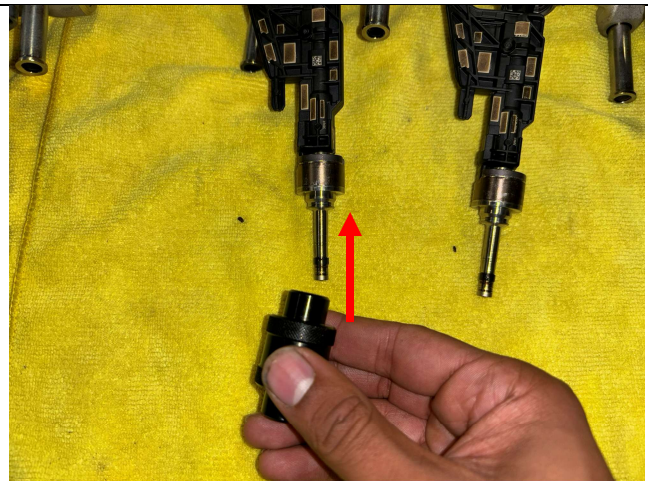


Figure 33

34. Keep the compression tool on the stem of each injector for 30 seconds before moving on to the next one. The fuel injectors must be installed into the cylinder head immediately after performing this step. Do not perform this step until you are ready to continue with the installation of the fuel rail into the engine.

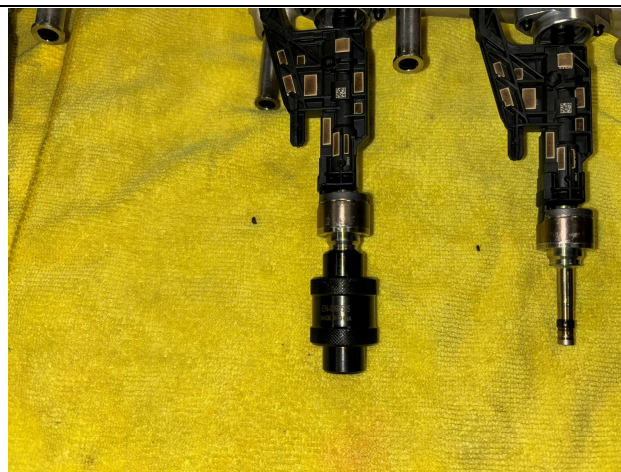


Figure 34

35. Place the fuel rails with the injectors installed back in their seated positions on the cylinder head. Careful to make sure the tips of the injectors go into the corresponding hole in the cylinder head. Press the high-pressure rail assembly down until pressure can be felt.

Note that new fuel rail mounting bolts are required for proper installation. The **BMW part number is 13-53-8-661-715**. Contact your local BMW dealer for sourcing.

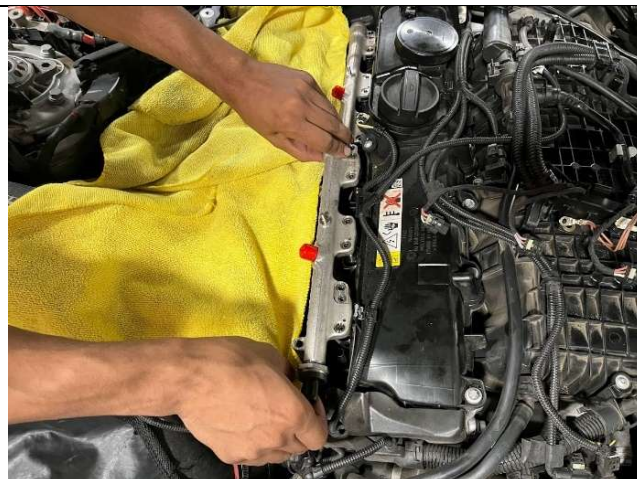


Figure 35

36. Install the M6x70 mm E8 Torx bolts into positions A and B and tighten by hand. Set the torque wrench to 2 Nm and tighten bolts A and B in alternating order in 90-degree increments until the fuel rail is positioned flush on the cylinder head. Insert the bolts into location C & D. Set the torque wrench to 5 Nm and tighten the bolts to 5 Nm in the following order: A then D then B then C.

Make sure the rail is flat against the cylinder head.

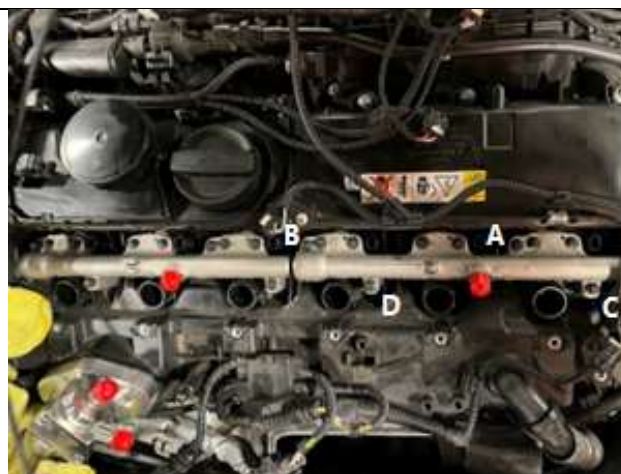


Figure 36

37. Using an E6 Torx socket and a torque wrench set to 5 Nm, hand tighten the M5x30 mm E6 bolts in pairs (1 with 2, 3 with 4, 5 with 6) alternating between the bolts in 90 degree turn increments using the following procedure:

Fuel injector 1:

Tighten screw (1) at an angle of rotation of $90^\circ \pm 15^\circ$ with the torque wrench.

Tighten screw (2) at an angle of rotation of $90^\circ \pm 15^\circ$ with the torque wrench.

Repeat the operations for bolts (1) and (2) until both bolts reach a torque of 5 Nm.

Fuel injector 2:

Tighten screw (3) at an angle of rotation of $90^\circ \pm 15^\circ$ with the torque wrench.

Tighten screw (4) at an angle of rotation of $90^\circ \pm 15^\circ$ with the torque wrench.

Repeat the operations for bolts (3) and (4) until both bolts reach a torque of 5 Nm.

Fuel injector 3:

Tighten screw (5) at an angle of rotation of $90^\circ \pm 15^\circ$ with the torque wrench.

Tighten screw (6) at an angle of rotation of $90^\circ \pm 15^\circ$ with the torque wrench.

Repeat the operations for bolts (5) and (6) until both bolts reach a torque of 5 Nm.



Figure 37

38. Now mark bolts 1 to 6 with a vertical line using a paint pen or silver Sharpie (see image to the right).

Now tighten all of the bolts with an angle of rotation of $90^\circ \pm 15^\circ$. Do so in order 1 to 6.

To confirm that all the bolts have been tightened to the correct angle, the line on all the bolts should now be horizontal.

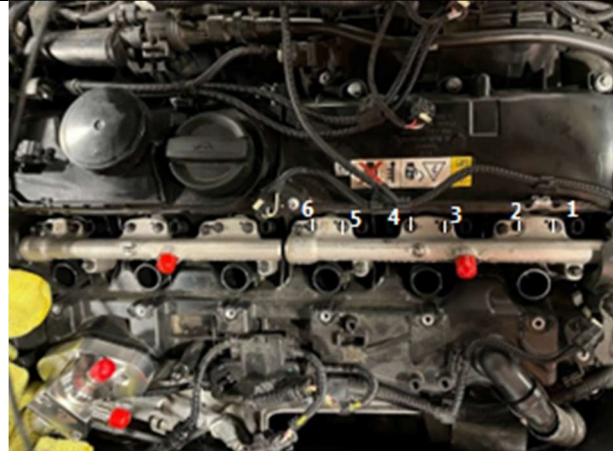
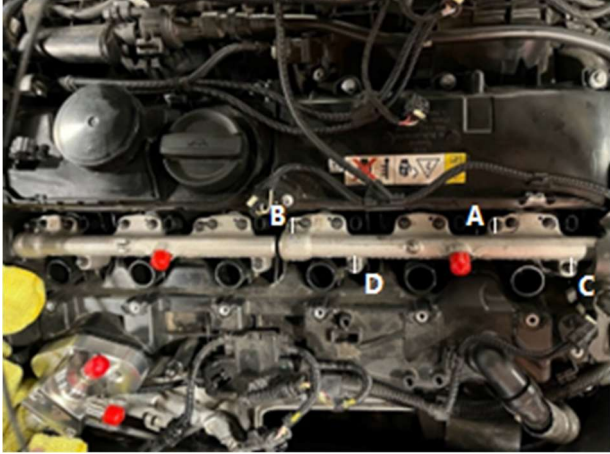


Figure 38

<p>39. Now loosen/release the M6x70 mm E8 Torx bolts A, B, C & D.</p> <p>Set the torque wrench to 5 Nm and tighten the four bolts in the following order: A, D, B and then C. Mark all the bolts with a vertical line similar to the previous step.</p> <p>Tighten all four bolts with an angle of rotation of 90 degrees. Tighten them in order A to D. To verify they have the correct angle the lines on the bolts should all now be horizontal.</p>	
	<p>Figure 39</p>
<p>40. Repeat steps 33 to 39 for the bolts on the other fuel rail.</p>	
<p>Once the Nostrum Injectors are installed, reinstallation of all remaining components can begin. Follow the steps of disassembly listed above in reverse to re-install components starting with step 21. Follow all torque specs that are included in each step where applicable (when applicable the torque specifications for re-assembly are in parentheses in Nm at the end of the particular disassembly step). If a torque spec is not included in a step where it seems applicable assume snug fit with a wrench or socket wrench.</p>	

Hardware installation is complete.

Calibration

Do not start your vehicle, this product requires calibration. Please contact your tuner or refer to the Nostrum 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 service manual.
2. Key cycle the vehicle into the "Accessory On" position (do not go to the Start position). The low-pressure fuel pump will activate and the fuel system will pressurize. Check the high-pressure fuel pump and the low-pressure system for leaks. If no leaks are found, proceed to Step 3.

3. Cycle the key to the Start position and let the vehicle 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, continue with the following steps. 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 no leaks are found, proceed to step 4.

4. Key cycle one more time to Start. Engine should start-up and idle. If so, continue with the following steps. If not, repeat Steps 2-4 again.

5. Let the car idle for a few minutes. Check for leaks in the low and high-pressure systems 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 vehicle 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 EST business hours)

Revision	Notes	Date
1.0	Initial draft review, part number update, cleanliness warning added	10/16/2024