NOSTRUM
HIGH PERFORMANCE

BMW N55 HIGH PRESSURE FUEL PUMP KIT

PART SKU#: H086-0715
Rev1

WARNING! PLEASE FOLLOW ALL WARNINGS AND INSTRUCTIONS FOUND IN YOUR VEHICLE OWNER'S MANUAL. THE FOLLOWING INSTRUCTIONS MUST BE READ AND FULLY UNDERSTOOD BEFORE BEGIN-NING 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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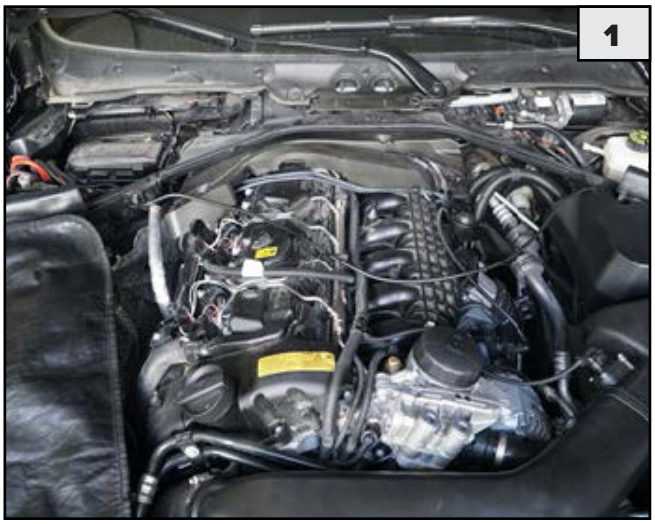
BMW N55:
HIGH PRESSURE FUEL PUMP INSTALLATION GUIDE
PART #: H086-0715

1. Remove Intake manifold. Please reference OEM service instructions.



2. Remove the stock high pressure fuel pump (HPFP) assembly, including the stock low pressure line, high pressure line, and pump. You will need to uninstall the wire loom housing bolts to remove the stock low pressure line.

Remove wire loom housing bolts to remove stock low pressure line

Stock HPFP assembly

NOTE: It is good practice to put a cap on the fuel rail fitting to prevent debris and damage while waiting installation of the new supplied HP tube. Same for the low pressure fuel line.

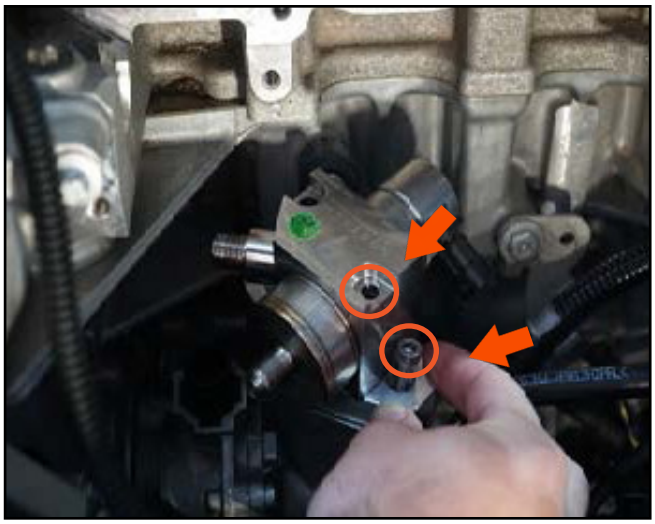
NOTE: Be sure the pump flange mounting face is clean and free of debris.

Factory HPFP assembly removed

3. Your new HPFP is shipped with the flange already pre-seated to the pump, but without the bolts installed. Seat the pump and flange assembly, ensuring that pump is properly aligned and firmly seated on the fuel pump & vacuum pump module. The pump solenoid should be pointed toward the engine block. ***(See fig. 1)***

Figure 1

4. Install the two M6x25mm stainless steel flange bolts to the flange. You may need to rotate the pump slightly to install these to gain clearance to the pump bolt heads. Hand tighten the bolts snug.
(do not completely torque down yet)

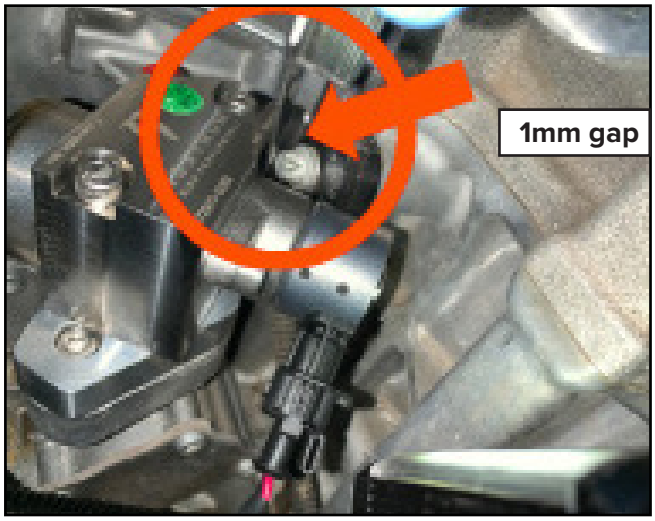


5. Install the two M6x50mm stainless steel pump bolts, hand tighten. **(Do not completely torque down yet)**

6. Position a 0.85mm feeler gauge between the knock sensor plastic body and HPFP solenoid ***(See fig. 6A).*** With the feeler gauge in place, tighten the 25mm flange bolts to **10 lb-ft** with an 5mm Allen bit. You may need to use an extended-length bit to clear the height of the pump.

7. With the feeler gauge still in place, alternate tightening each 50mm pump bolt by applying 2-3 rotations at a time. This will ensure the pump is installed evenly as you apply load to the pump spring.
Torque both bolts to **10 lb-ft** with an 5mm Allen bit.

8. Ensure there is at least a 1mm gap between the knock sensor bolt head and pump body using a feeler gauge.



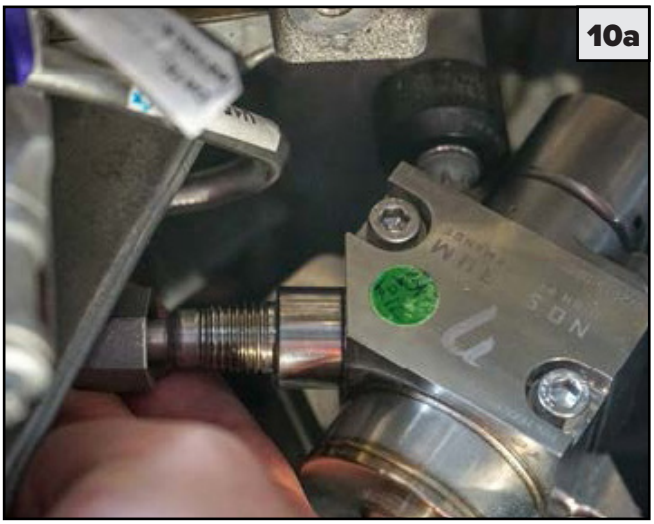
NOTE: It is important to prevent the pump from touching the knock sensor so that vibration from the pump is not transferred to the knock senor.

9. Connect the pump electrical connector adapter. Be sure that both connectors lock into the mating connector **(you should hear a click)**. Check by lightly pulling on the connectors. **Do not pull on the wires!**

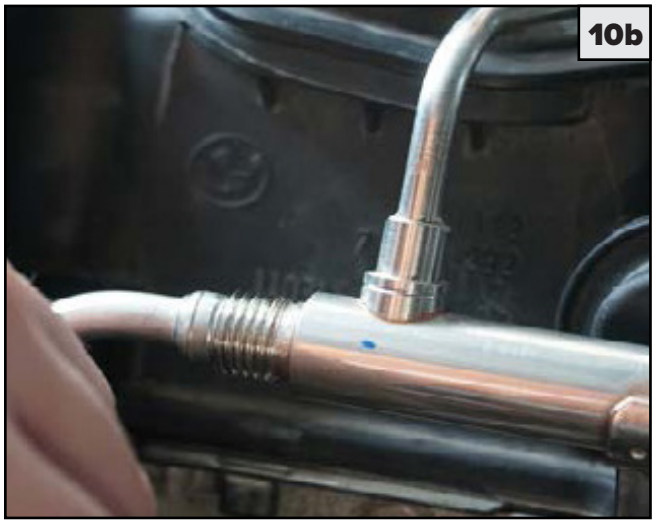
10. Install high pressure fuel line. Check that the female cones on the fuel rail are clean.

a. Seat the fuel line spherical fitting on the pump side first, followed by the fuel rail. Ensure the spherical fittings are centered and straight. If the spherical fitting does not align with the fuel rail female cone, apply a small force to **"snap"** it in place. ***(See fig. 10A and 10B)***

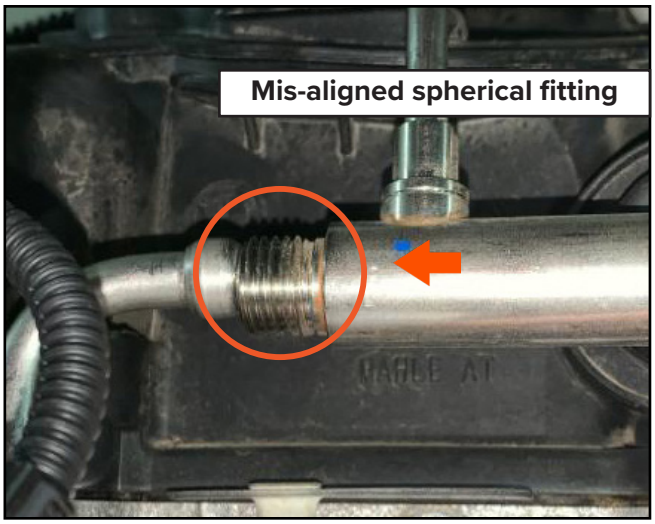
b. While holding the line & spherical fitting in proper position, seated firmly in the cone, hand tighten both compression nuts. The nuts should spin freely and without resistance. If there is resistance, ensure the globe fittings are straight and centered to the cones, and try again. It is critical that the spherical fittings are aligned with the female cone, **DO NOT USE THE NUT TO "CENTER" THE FITTING**. Improper installation can damage the thread, misalign the fitting and result in a leak.



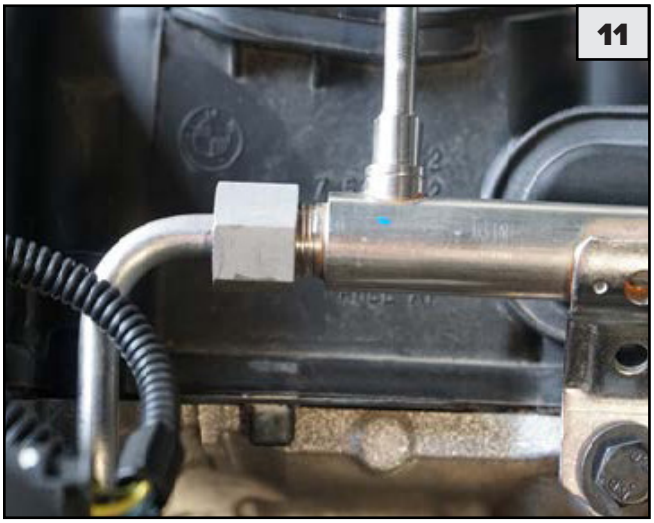
Fuel pump side high pressure spherical fitting and female line

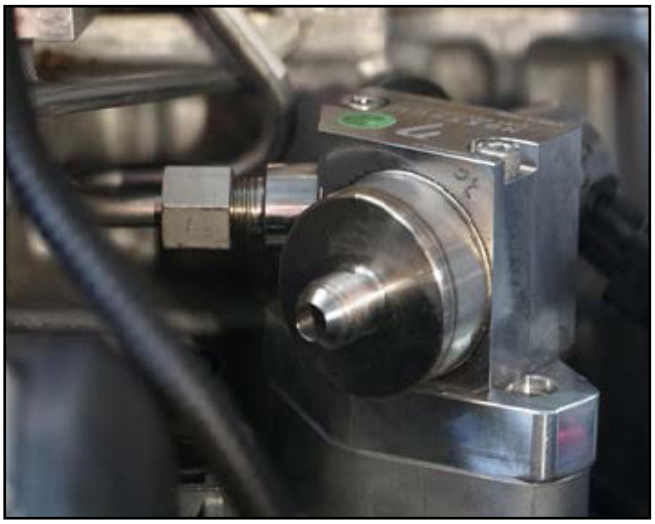


Fuel rail side high pressure spherical fitting and female cone



11. Torque both compression nuts to **20 lb-ft**. Attempt to move or shake the high pressure hard line at both ends near the fittings. They should not move inside the compression nut. If they do move, remove the line and return to Step 10.





12. Install the Nostrum low-pressure fuel line.
a. Install the Nostrum low-pressure line male quick connect to the stock fuel supply feed.
b. Hand tighten the low-pressure line AN female fitting to the high-pressure fuel pump male AN fitting.
c. Torque the AN female fitting to the high-pressure fuel pump to **14 lb-ft**
d. Important: To prevent fuel leaks, Torque the AN QC fitting and the AN6 swivel fitting that connect to the stock fuel supply feed to **14 lb-ft** relative to one another.
e. **Note: Double check all AN connections (including the AN connection on the low-pressure tube assembly and the AN6 quick connect which is connected to the stock fuel supply feed) and ensure that they are all torqued to 14 lb-ft.**
f. Reconnect the battery and check using key cycle one that as the fuel system primes, it does not leak from the Nostrum low-pressure line.

In-Process check without manifold installed:

13. Key cycle the vehicle in to 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 pump connections, and lower pressure side for leaks. If ok, proceed to 14. If ok, go back to the appropriate step.

14. Route the low pressure fuel line below the wire loom housing so it is out of the way.

15. Reinstall intake manifold and all other components. **Check reinstallion of all hardware.**

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 doesn't, 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)**