Dorch Engineering HPFP Kit Installation Gen1 B58

DE-581-XXE

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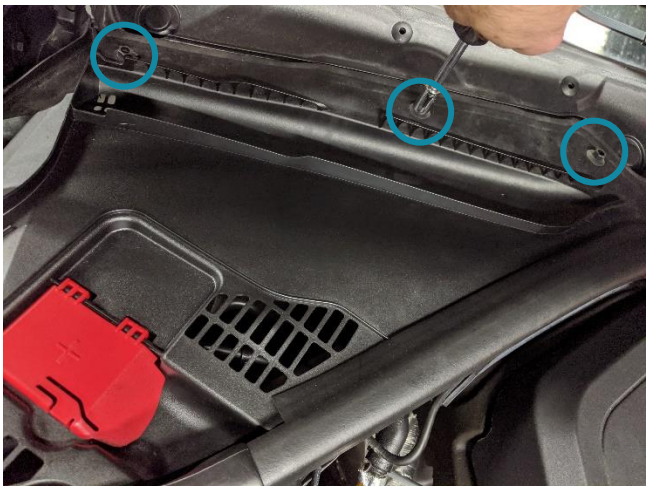
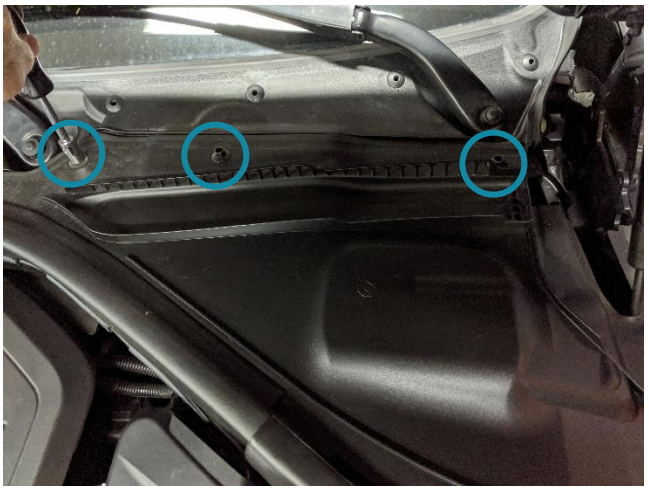
NOTE: These instructions are based on an F30. The cowl and strut bar may differ slightly on other models.

1. Start by disconnecting the battery's ground terminal and removing the engine cover and the cowl covers:

The cowl covers are held on with three 10mm ¼-turn fasteners on each side. Once these are rotated ¼ turn to the left, the cowl pieces can be lifted up by the outer edge (towards the fender) and then out to the side for removal.





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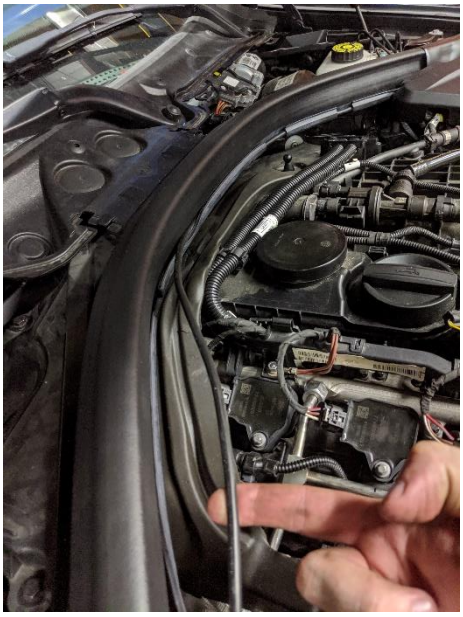
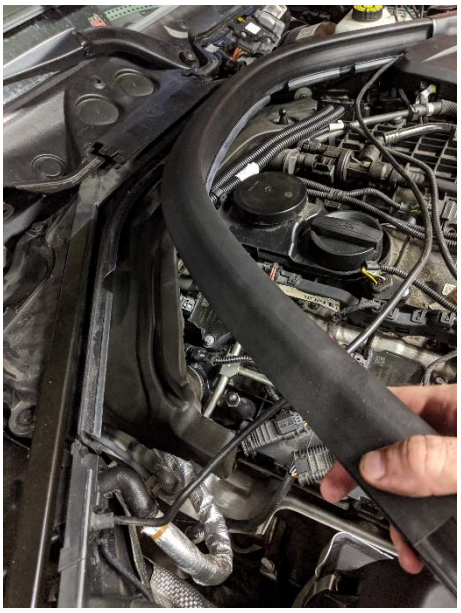
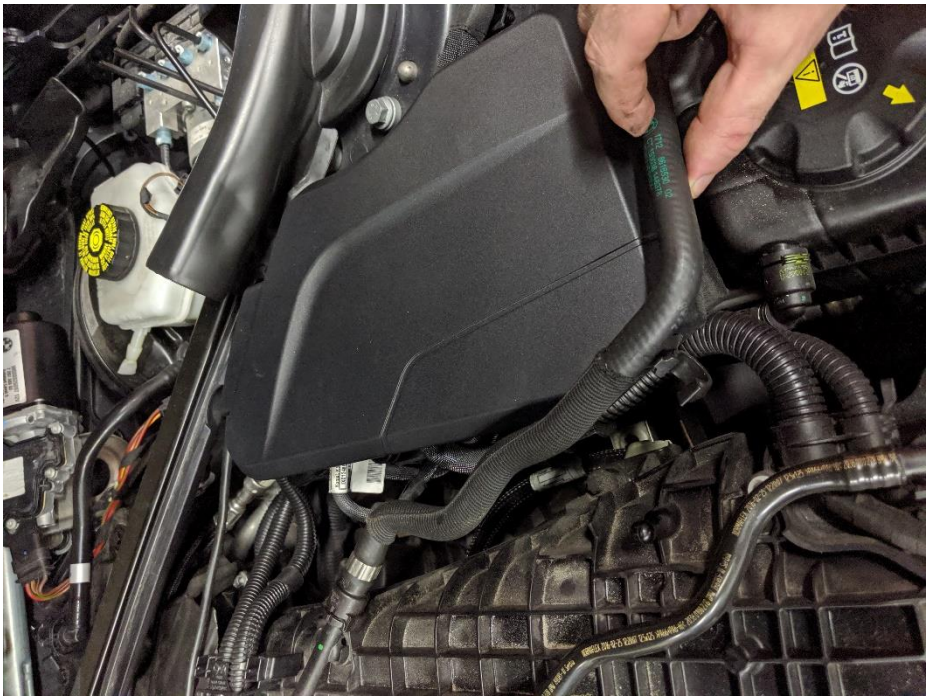
2. Next, remove the cowl weather stripping. First pull the wire out of it's grove and then pull towards the front of the car to remove the weather stripping:

3. Remove the ECU cover by first unclipping the coolant line and then pulling directly up on the cover:



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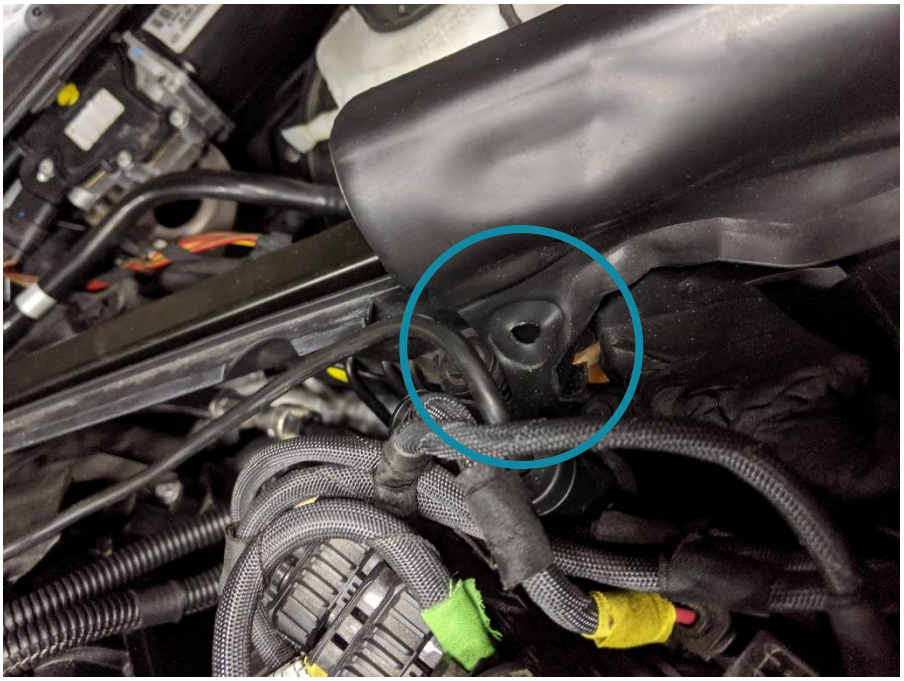
4. Remove the left side strut tower cover clip pictured below (removed) by first pulling up the center and then removing the whole clip. This will give you access to the strut bar bolt.



5. To gain access to the strut bar bolts under the cowl, remove the two black circular covers pictured below. These can be removed by reaching underneath and pushing out from the center. Place a hand over top of them as they are pushed out so they don't fly out and get lost.

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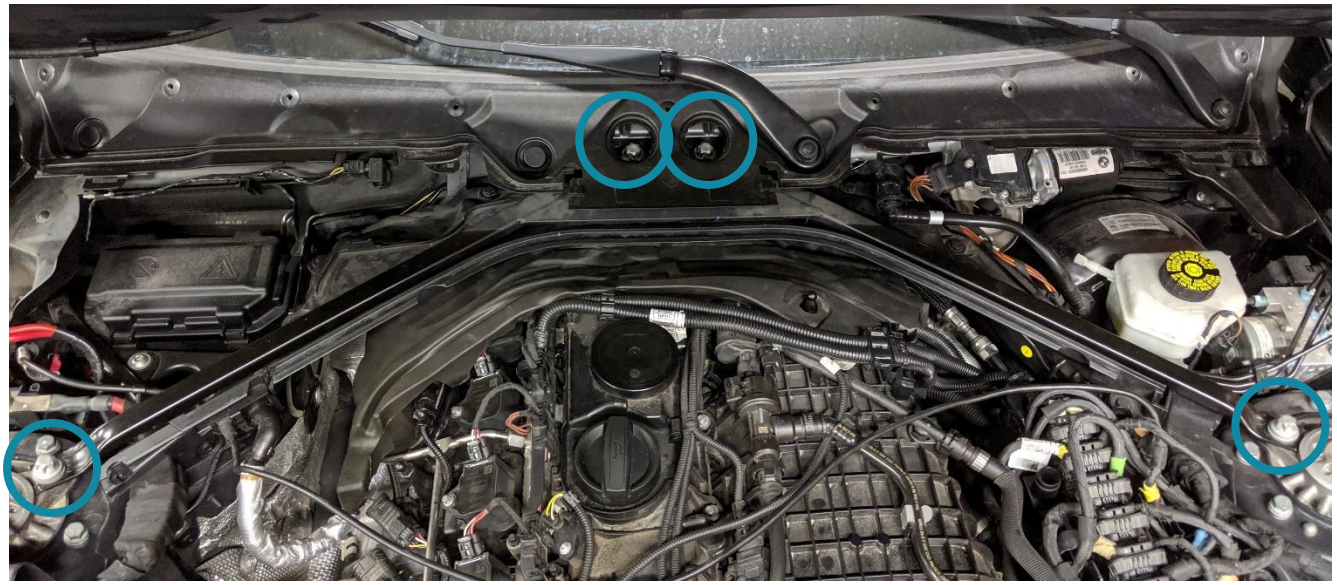
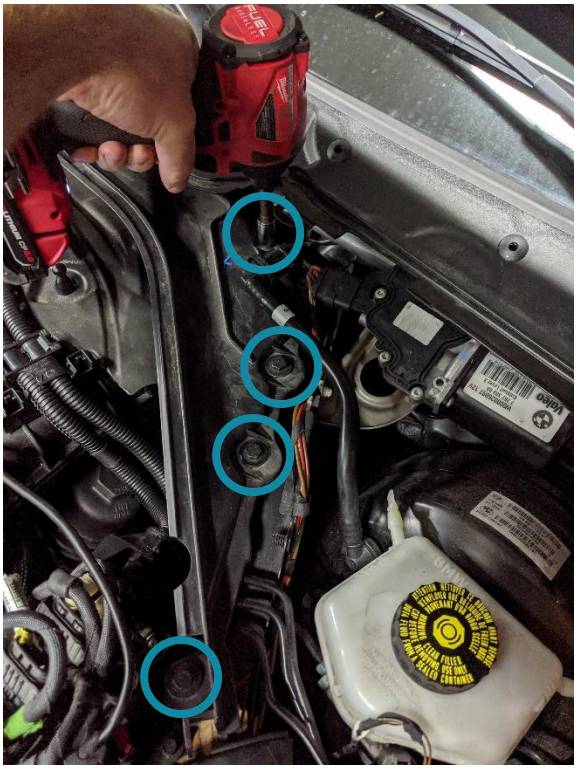
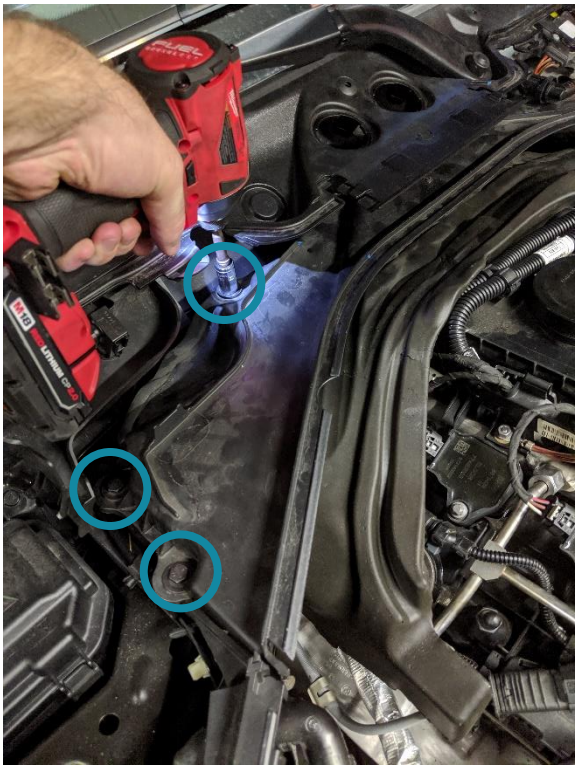
6. All four E18 bolts can now be loosened, and the strut bar can be removed:



7. Next remove the seven 10mm bolts holding on the upper firewall plastic shroud. There are four bolts on the left side and three on the right:





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8. Remove the plastic shroud and the foam sound insulation from the rear of the engine.

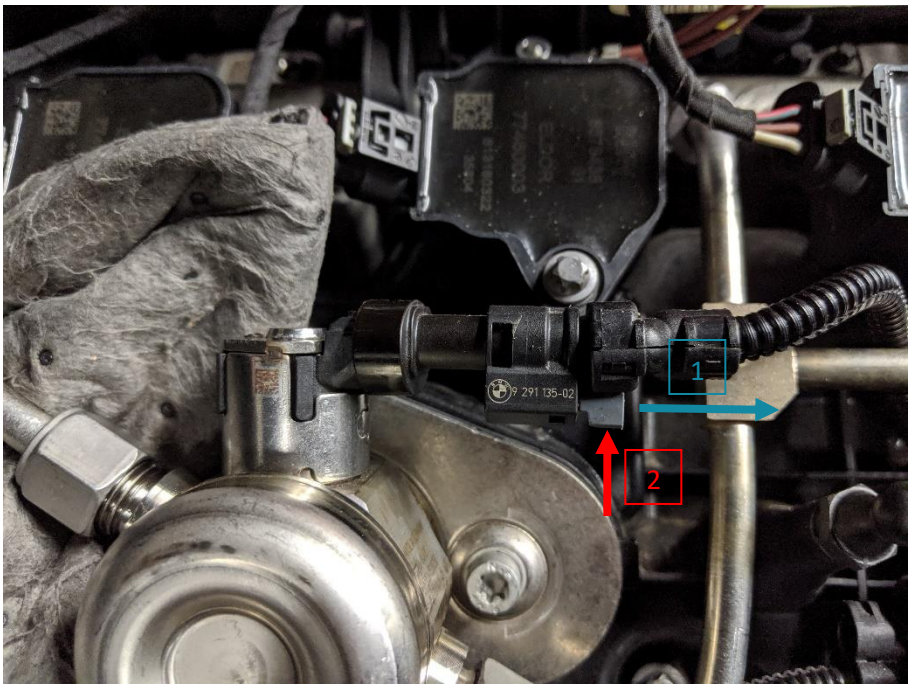
Disclaimer: The fuel pump is now accessible for removal, but take **CAUTION** as it is under **EXTREME PRESSURE**! Safety glasses, a disconnected battery, and plenty of rags are highly recommended.

WARNING: Spilling fuel on the silicone boot of the coil pack can lead to coil pack failure. BMW advises to cover the coil packs when opening up the fuel system.

9. **READ THIS STEP THOROUGHLY** - For discharging a pressurized fuel system, we recommend placing Pigmat or an equally absorbent rag under both the inlet and outlet ports of the high pressure pump. Using a 17mm wrench, slowly crack the nut loose first on the outlet and then on the inlet. Leave both of these cracked enough to drain, but not enough to spray fuel.

   Now let these drain for a couple minutes before removing any nuts completely (even if you think it's already drained).

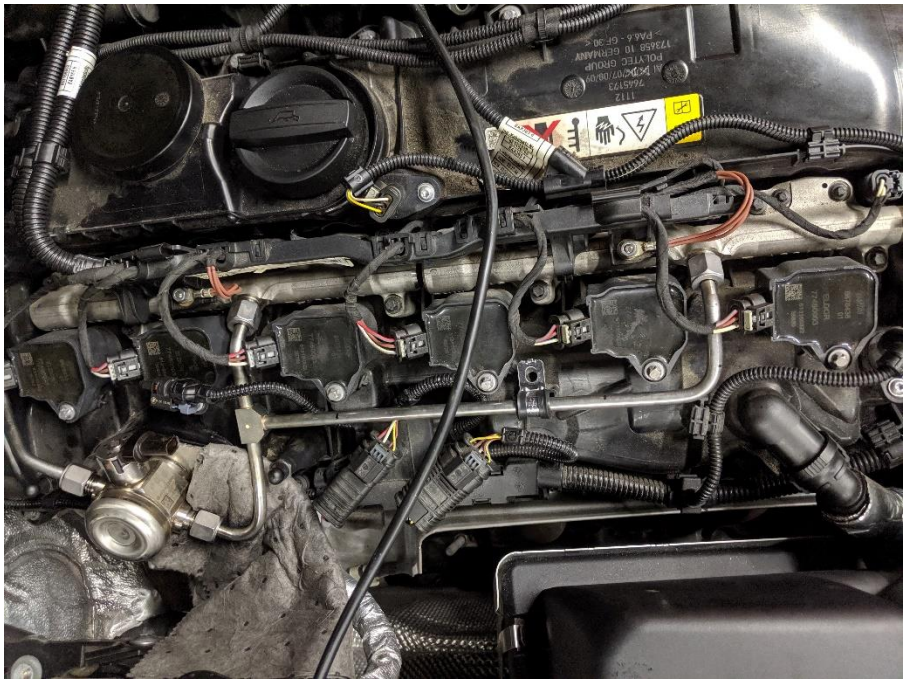
10. While the fuel lines drain, remove the fuel pump's electrical connector. First pull the gray tab out until it stops (pull towards the front of the car). Then push the gray tab in towards the connector body while simultaneously pulling the entire connector away from the pump.



11. Using an E6 socket, remove the hold down bracket bolts on both the low pressure line and the high pressure line:

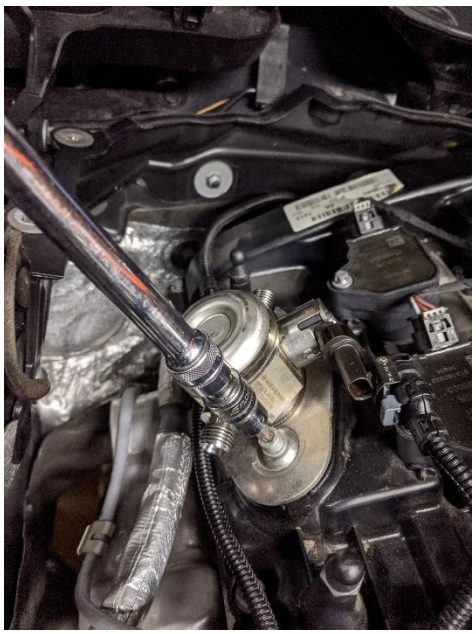
    NOTE: The low pressure line bracket will be adjusted and refitted later in step 17.

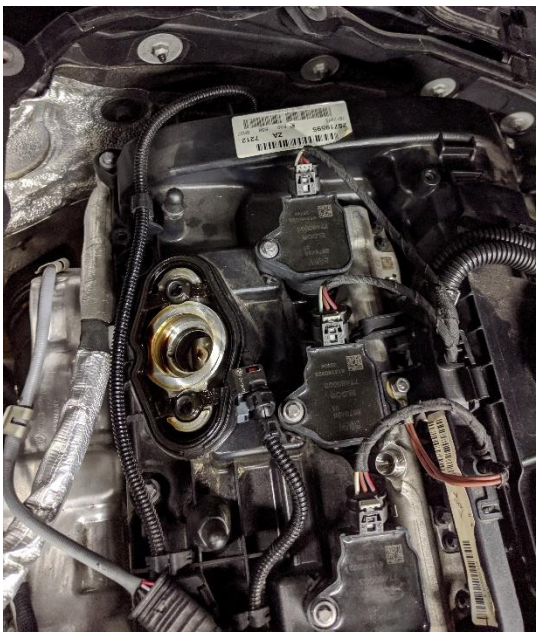
12. The high pressure line can now be completely removed, but **DO NOT SPILL** fuel on the coil pack boots.



13. Lastly, remove the OEM high pressure pump using a T30 socket. Use **CAUTION** when removing the pump. The area must be VERY clean to avoid contaminating the pump and engine. You also must unthread each mounting bolt a little at a time to ensure the pump comes out STRAIGHT.

    Inspect the gasket for any issues (they can almost always be re-used multiple times without leaking).





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14. Now install the Dorch Engineering pump flange using the supplied Torx T30 bolts and the flange alignment tool. Press the alignment tool into the center of the flange and tighten the bolts.

    Flange Tightening Torque: 12nm - Blue Threadlocker REQUIRED

15. Now remove the alignment tool and insert the Dorch Engineering fuel pump, using the threaded holes circled below. Use extreme **CAUTION** when installing the pump. The bolts MUST BE TIGHTENED EVENLY. Uneven loading of the spring can damage the pump. Also, be **EXTREMELY CLEAN** as all HPFPs are very sensitive to contaminants.

    Pump to Flange Tightening Torque: 12nm - Blue Threadlocker REQUIRED

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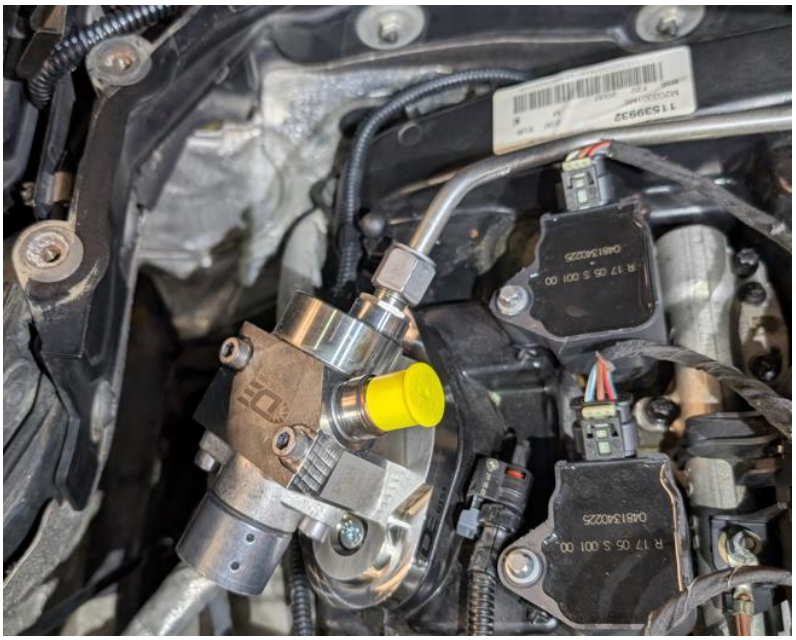
16. Next, install the OEM low pressure hard line onto your Dorch HPFP. Once it is maneuvered into a nicely aligned position without contacting the coil pack connector, tight the nut with a 17mm wrench:

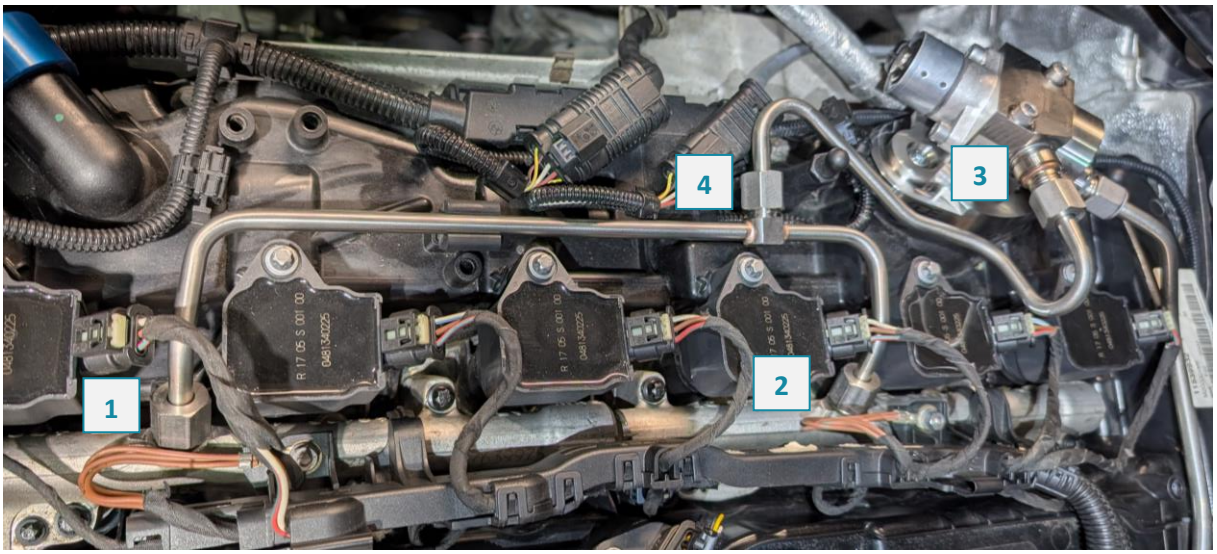


17. Once the OEM low pressure line is installed, you can now adjust the line bracket (removed in step 11) and tighten it back down in the original location with the E6 socket.

18.

19. **READ THIS STEP THOROUGHLY.** Now install the supplied 2-piece high pressure line assembly. First install the larger U-shaped line onto the fuel rails and do NOT torque the nuts yet. The U-shaped line should be installed loose (finger-tight at most), followed by finger-tight installation of the HPFP line connection.

    The nuts need to thread effortlessly by hand on each fitting until they bottom out. Each line connection when properly aligned with end up relatively centered in the nut. Once everything is well aligned and finger-tight, tighten the high pressure line nuts in this order:



20. Lightly apply oil to the threads of the HPFP to prevent galling. If the nuts thread on effortlessly and bottom out with all the fittings well aligned, the three nuts can now be torqued.

    High Pressure Line Nut Tightening Torque: 31nm

NOTE: We don't expect everyone to have specialty sockets for proper torque spec. In this case, simply "snug" the nuts with a 17mm wrench. 31nm is NOT a lot of torque so be sure to not over tighten and damage the line.

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21. Install the supplied plug-n-play harness adapter as pictured.

22. At this point, double-check all of your fuel connections, fastener torques, etc. and then reconnect the battery's ground terminal.

    WARNING: When the battery is connected, the low pressure pump will prime the system as soon as the driver's door handle is touched.

23. Turn the car's ignition on to be sure the low pressure pump has fully primed the system and check for leaks at every connection.

24. It's now time to start the engine. Make sure the proper tune file is loaded (**THE CAR WILL NOT RUN WITHOUT OUR FILE LOADED**) and have someone standing by to check for high pressure leaks during cranking and when the engine fires up.

    NOTE: It is normal for the car to crank at least a few times before firing. The high pressure lines and rails have been drained of fuel and are full of air, so they need to fill with fuel before the pump can even being to build pressure. Slightly rough idling can also be a normal symptom for a few seconds as the rails "bleed" themselves of any air on the first startup.

    At this point you should have a leak free and smooth-running car. It's now safe to re-install all the factory parts. The OEM foam sound insulation will fit over your newly installed pump (may require some trimming) and it is **HIGHLY RECOMMENDED** to re-install it! DI systems make a lot of noise and this OEM sound insulation works great!