

Dorch Engineering B58 HPFP Kit Installation

DE-58-2001

DE-58-1001

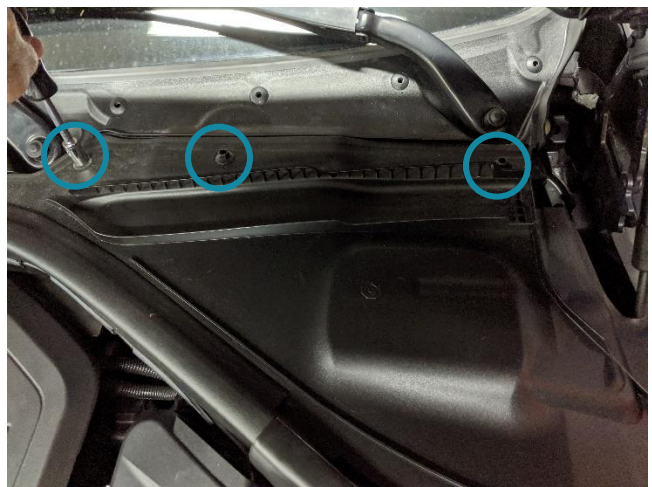


NOTE: These instructions are based on an F30. The cowl and strut bar may differ slightly on other models.

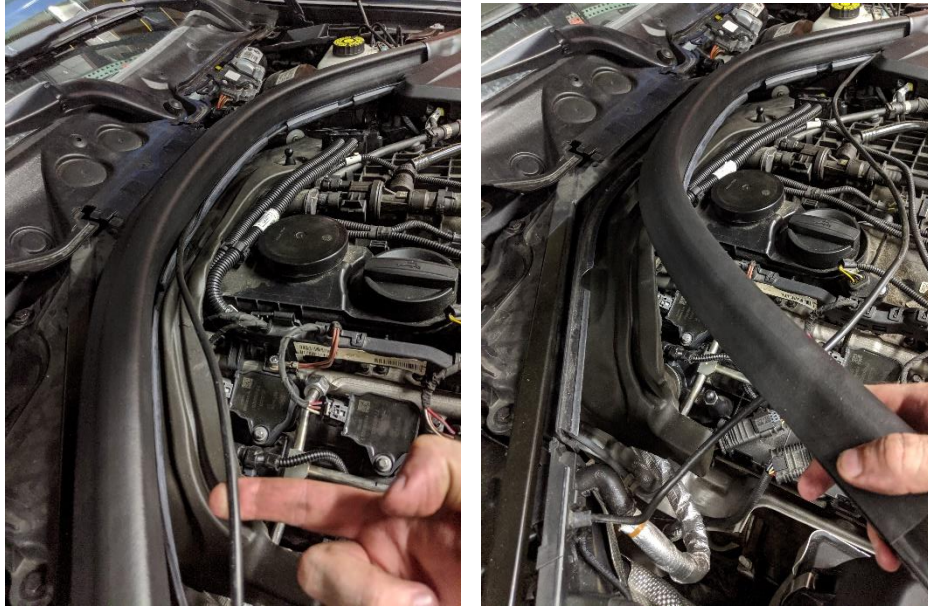
1. Start by disconnecting the battery's ground terminal and removing the engine cover and the cowl covers:



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.



2. Next, remove the cowl weather stripping. First pull the wire out of it's groove 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:



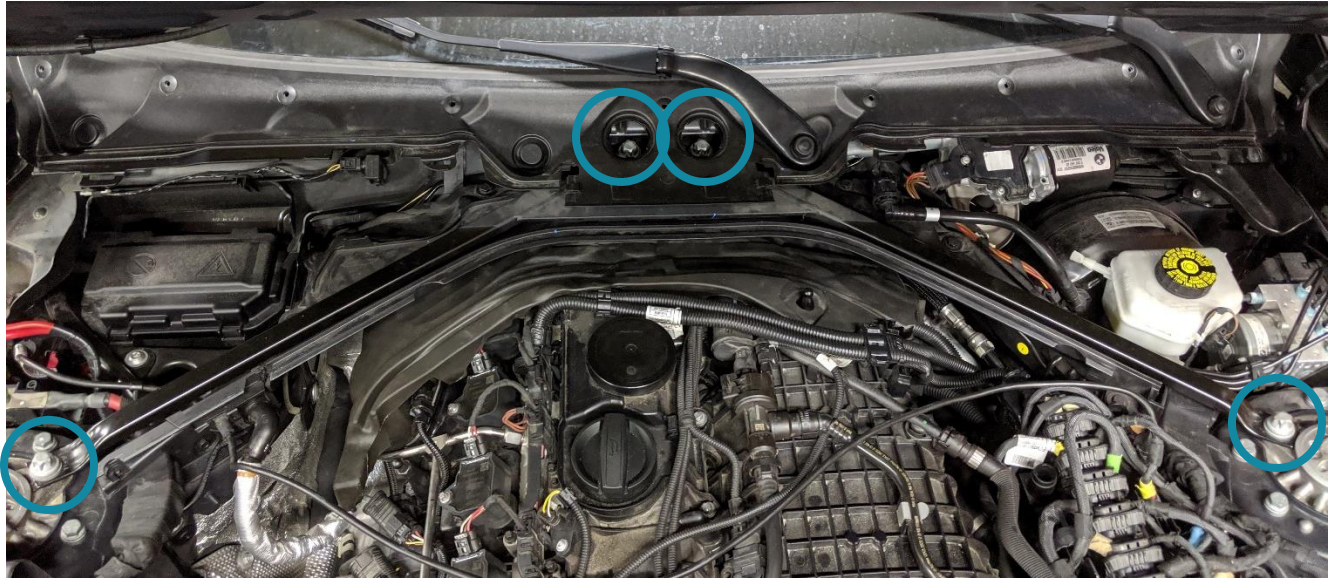
4. Remove the left side strut tower cover clip pictured below (removed) by first pulling up the center and then removing the whole clip. This will give you access to the strut bar bolt.



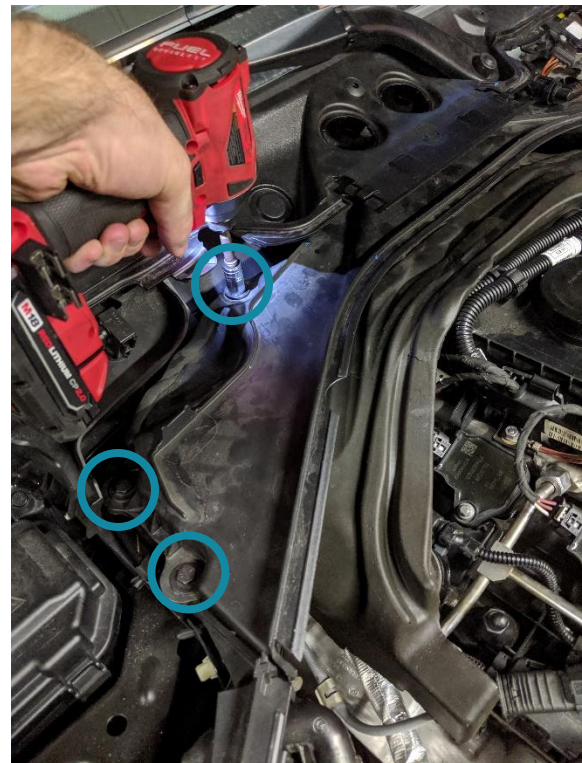
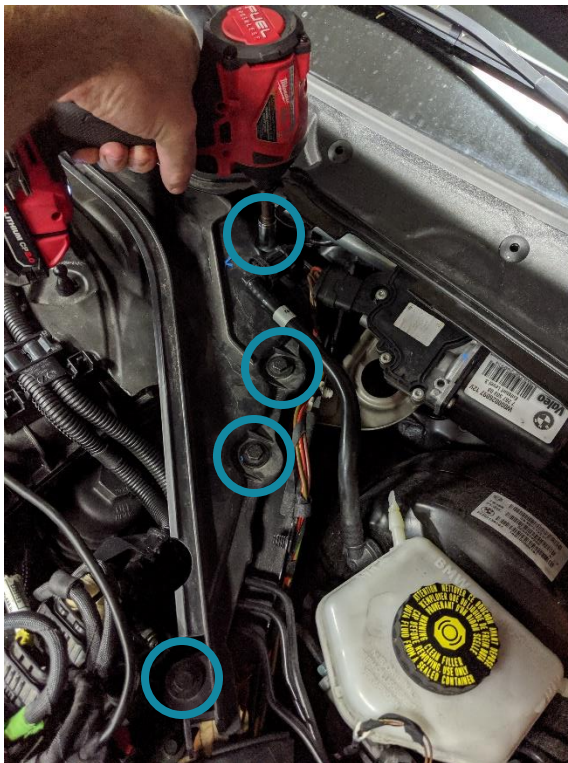
5. To gain access to the strut bar bolts under the cowl, remove the two black circular covers pictured below. These can be removed by reaching underneath and pushing out from the center. Place a hand over top of them as they are pushed out so they don't fly out and get lost.



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:



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.

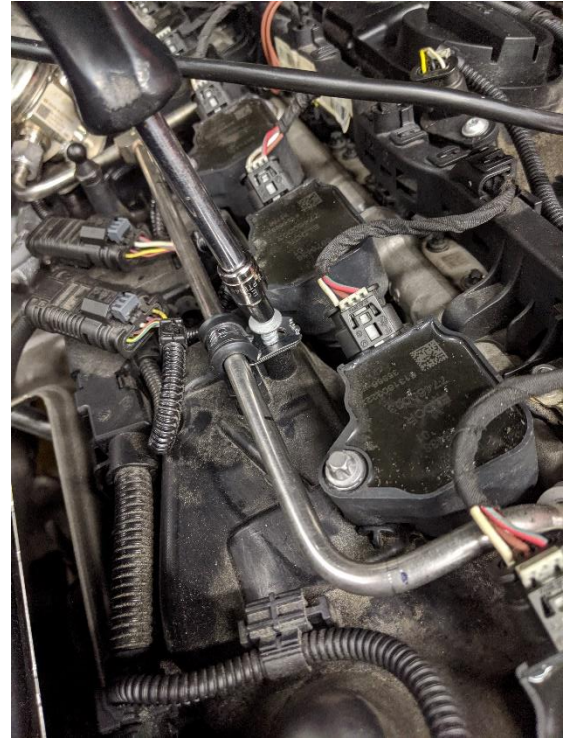
9. **READ THIS STEP THOROUGHLY** - For discharging a pressurized fuel system, we recommend placing Pigmat or an equally absorbent rag under both the inlet and outlet ports of the high pressure pump. Using a 17mm wrench, slowly crack the nut loose first on the outlet and then on the inlet. Leave both 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).

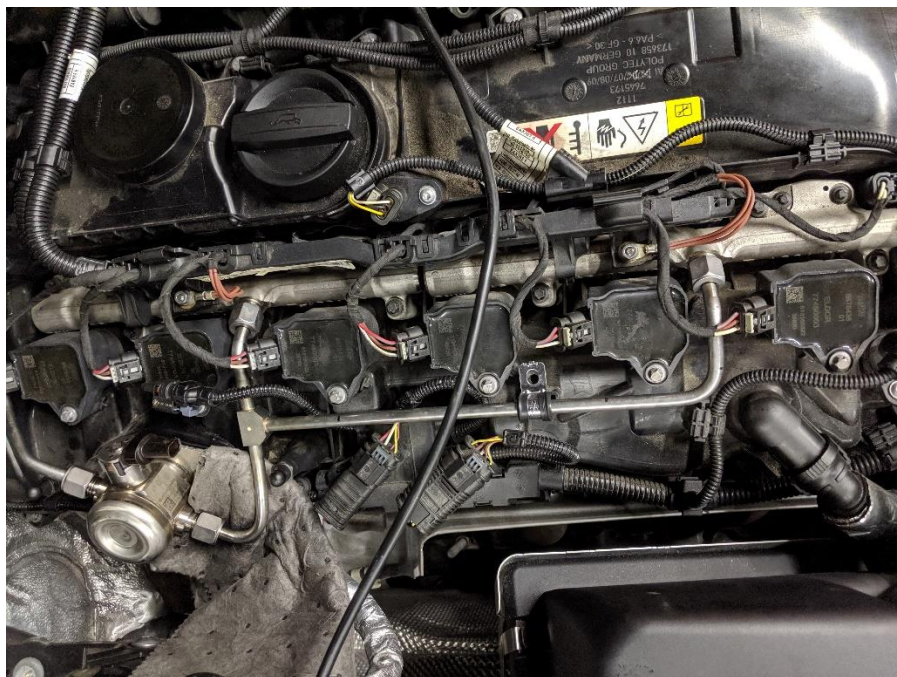
10. While the fuel lines drain, remove the fuel pump's electrical connector. First pull the gray tab out until it stops (pull towards the front of the car). Then push the gray tab in towards the connector body while simultaneously pulling the entire connector away from the pump.



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



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



13. The low pressure line can now be removed. Be sure to place a rag under the quick-connect fitting before removal. This fitting requires removal of the gray clip first, and then push the black plastic collar in, while simultaneously pulling the line off.



14. 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).



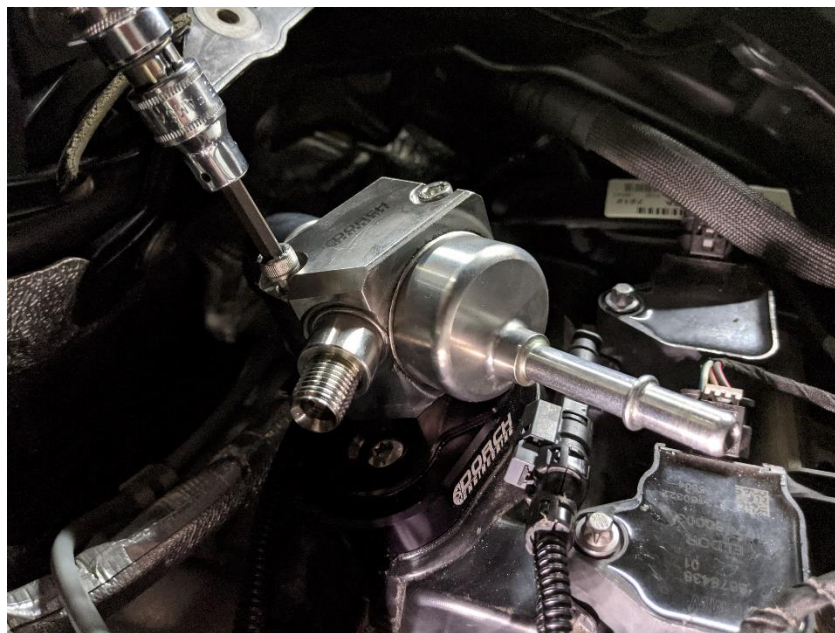
15. Now install the Dorch Engineering pump flange using the supplied Torx T30 bolts and the flange alignment tool. Press the alignment tool into the center of the flange and tighten the bolts.

Flange Tightening Torque: 12nm

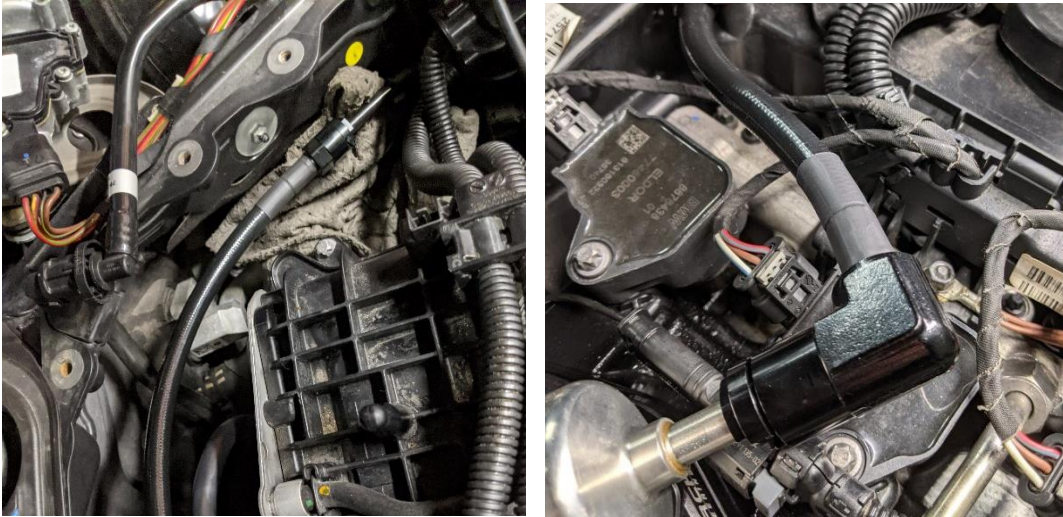


16. Now remove the alignment tool and insert the Dorch Engineering fuel pump. Use extreme **CAUTION** when installing the pump. The bolts **MUST BE TIGHTENED EVENLY**. Uneven loading of the spring can damage the pump. Also, be **EXTREMELY CLEAN** as all HPFPs are very sensitive to contaminants.

Pump to Flange Tightening Torque: 12nm



17. Next, install the Dorch low pressure hose. To do this, first remove the threaded locking collars on each fitting. Then push the straight fitting onto the car's low pressure feed line and the elbow fitting onto the fuel pump. Once the hose is fully seated on each end, slide the locking collars into the fittings and thread them in by hand. It is highly recommended to **use a drop of blue Loctite on the collar nuts**.



Once the collars are fully threaded on, use a wrench to tighten them. You may need to hold the hose in place by using an additional wrench on the hex portion of the hose fitting.

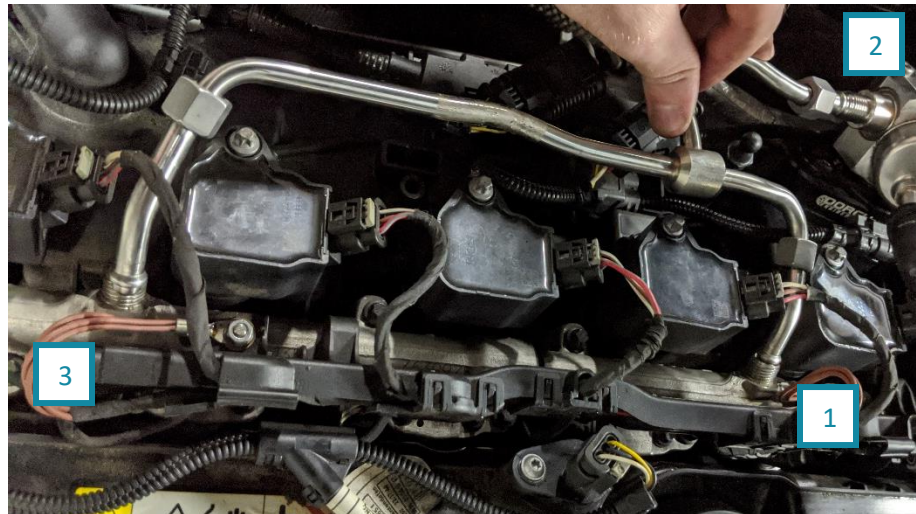
Tip: Aluminum AN wrenches should be used to avoid damage or scratches on the finish of the fittings.

18. Using one of the spare E6 bolts removed in step 11, secure the low pressure line to the valve cover using the supplied bracket as pictured. The bolt can be bottomed out completely, but do not over tighten it.



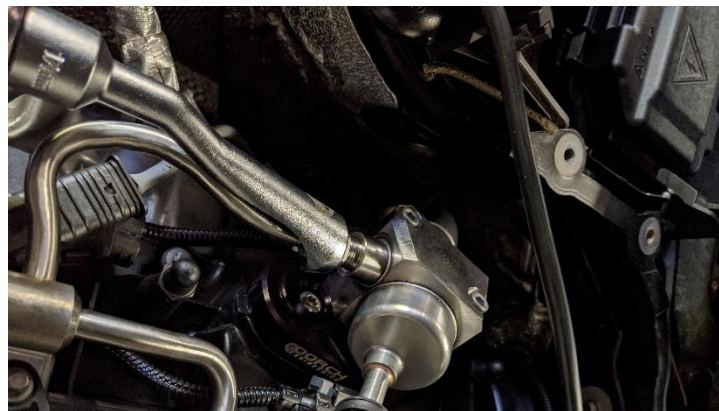
19. **READ THIS STEP THOROUGHLY.** Now install the supplied high pressure line. This line needs to be installed into the rear-most fuel rail port first, then rocked over into the fuel pump port, and lastly pulled down and back into the front-most fuel rail port. It will be a tight fit and the line **MUST BE AS STRAIGHT AS POSSIBLE.**

The nuts need to thread effortlessly by hand on each fitting until they bottom out. If they do not, there is an alignment problem. Alignment can be adjusted by very slightly loosening the pump-to-flange bolts and rotating the pump either way in its bolt holes. Further adjustment can be had by doing the same with the flange-to-valve cover bolts. If you need to take these steps for alignment be sure to **RE-TORQUE** any bolts that were loosened.



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 to be sure to not over tighten and damage the line.

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 drivers 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 begin 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!