

Toyota Land Cruiser 200 Series

Direction-Plus PreLine-Plus Pre-Filter Installation Guide

This document is to be used as a guide for the installation of the **Direction-Plus PreLine-Plus pre-filter kit to a 2008+ Toyota Land Cruiser 200 Series V8 Diesel**. It is recommended that the installation of the product be carried out by a competent qualified mechanic.

Important Before Starting

- Ensure you have the correct tools to complete the fitment
- Read the instructions in full and familiarize yourself with the installation, before commencing any work

Maintenance / servicing

- PreLine-Plus filter element is to be replaced every 40,000km or as per your vehicles service interval

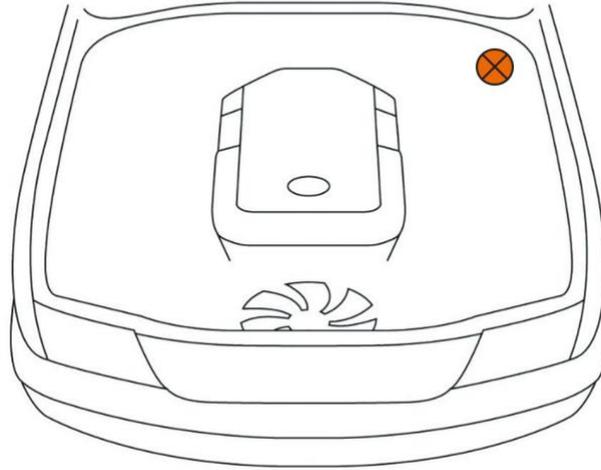
Included in the kit



<i>Pre-assembled</i>	<i>Hardware Bag</i>	<i>Wiring Bag</i>
1 x MANN+HUMMEL PreLine-Plus pre-filter	1 x Bracket (LC200PL150)	Wiring Harness
2 x M16x1.5 to -8 Adaptors	1 x Bracket (LC200PL150.1)	Warning Light
2 x -8 to ½" Hose 90° Fittings	1 x Alloy Support Shaft	Short Earth Lead
	2 x M8x16 Bolts	10 x 100mm Cable Ties
	2 x M8 Spring Washers	
	2 x M8 Flat Washers	<i>PreLine Mounting Kit Bag</i>
	4 x 18-20mm Fuel Clamps	2 x M10x30 Bolts
	1 x 500mm ½" Fuel Hose	2 x M10 Nyloc Nuts
		4 x M10 Flat Washers

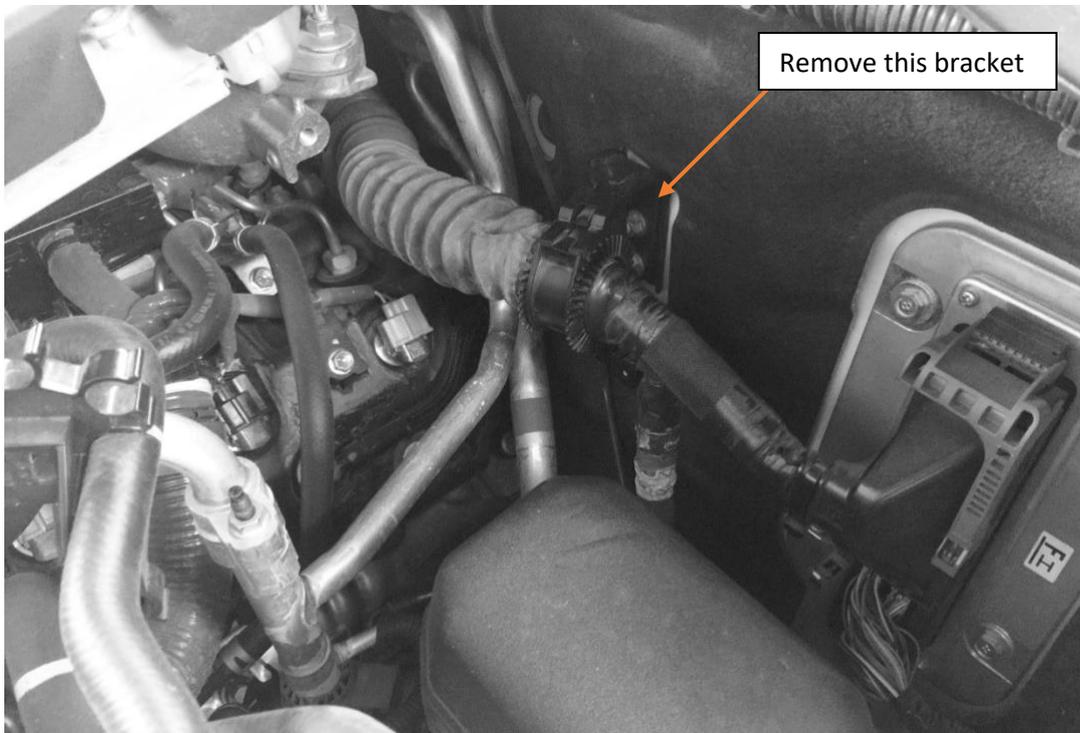
Mounting Location

APPROXIMATE MOUNTING LOCATION
PL615DPK



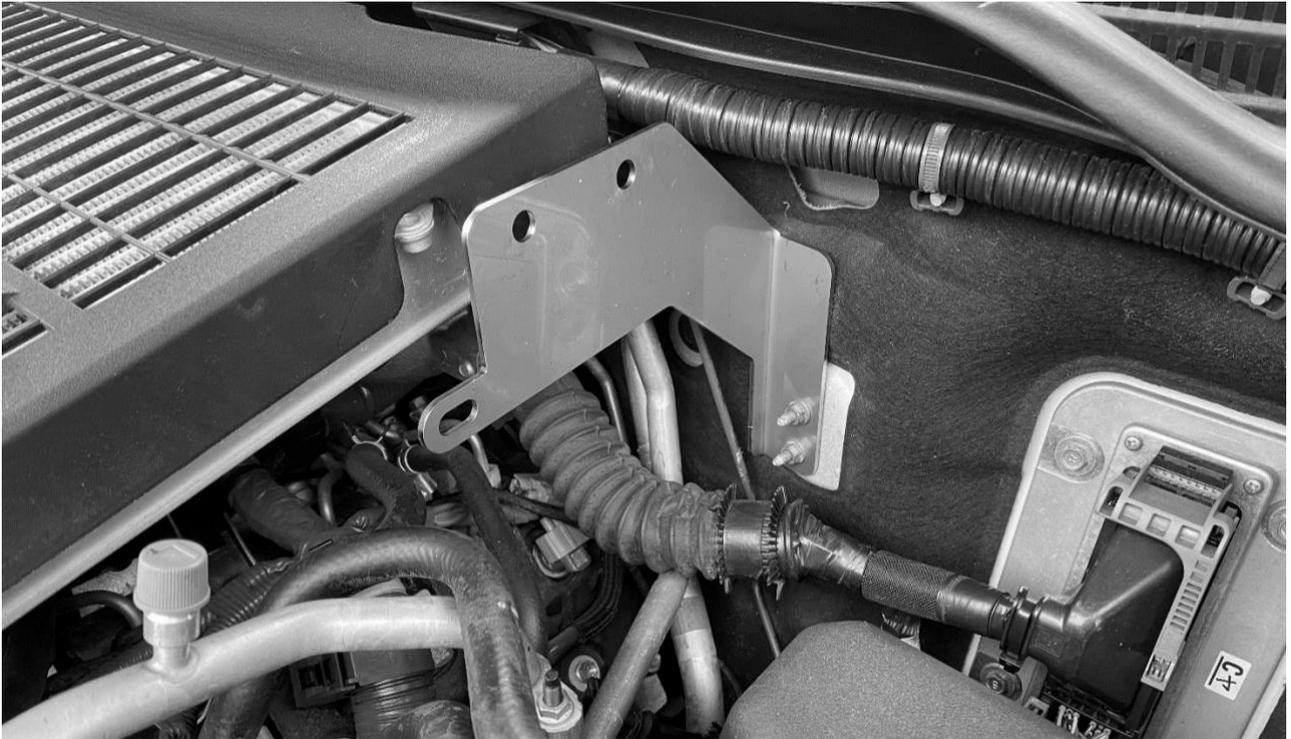
Installation Guide

1. Begin by locating the bracket located on the passenger side firewall which supports the wiring harness. Unclip the wiring harness and remove the bracket from the vehicle. It is secured in place by two M6 nuts.



Rear passenger side of engine bay, looking from passenger side

2. Using the original M6 nuts, mount the new bracket to the firewall and reinstall wiring harness bracket Do not fully tighten yet!

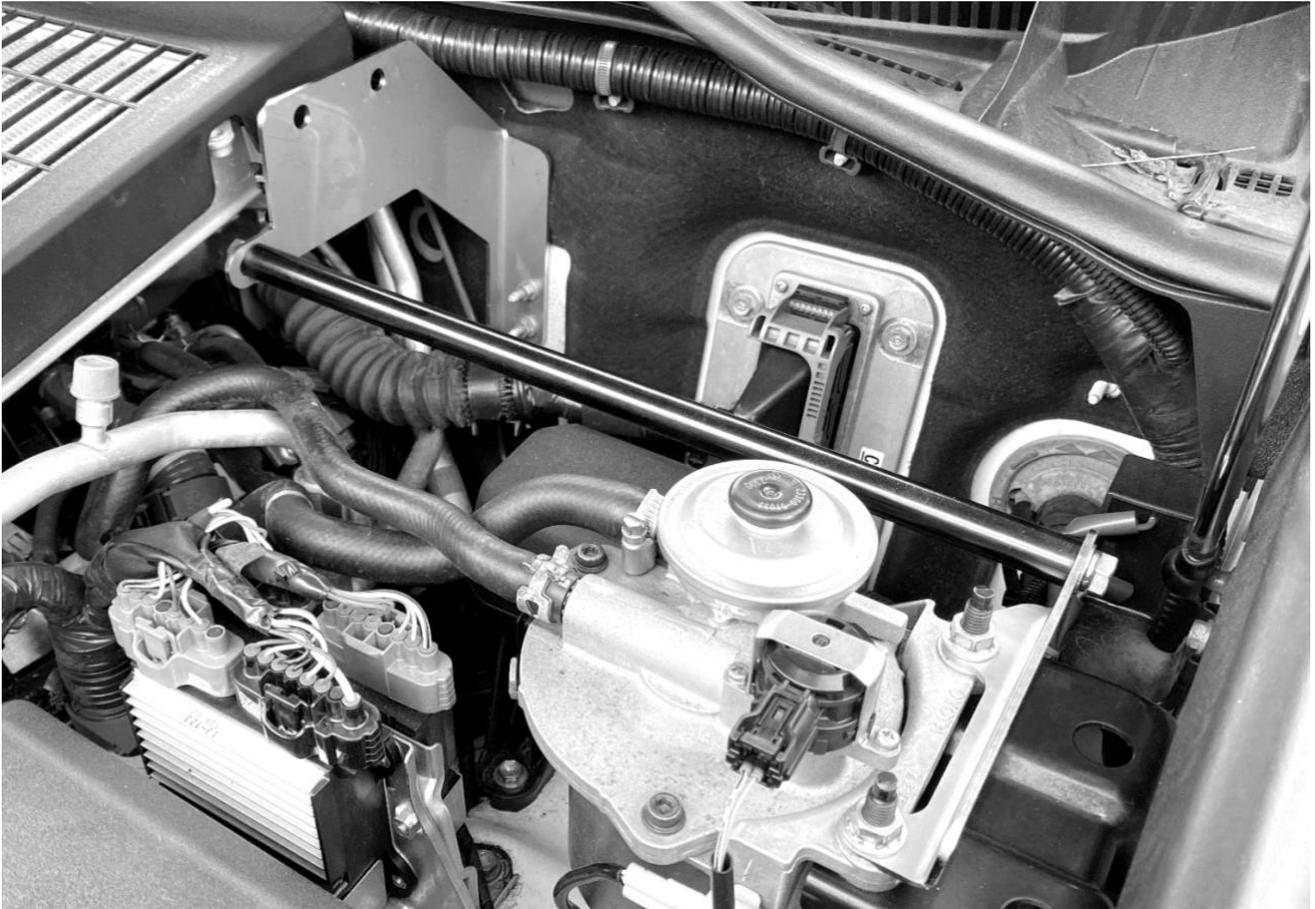


New bracket secured in place, note factory wiring harness bracket has not been reinstalled in this image.

3. Install the second bracket to the two bolts retaining the stock fuel filter. Do not fully tighten yet!

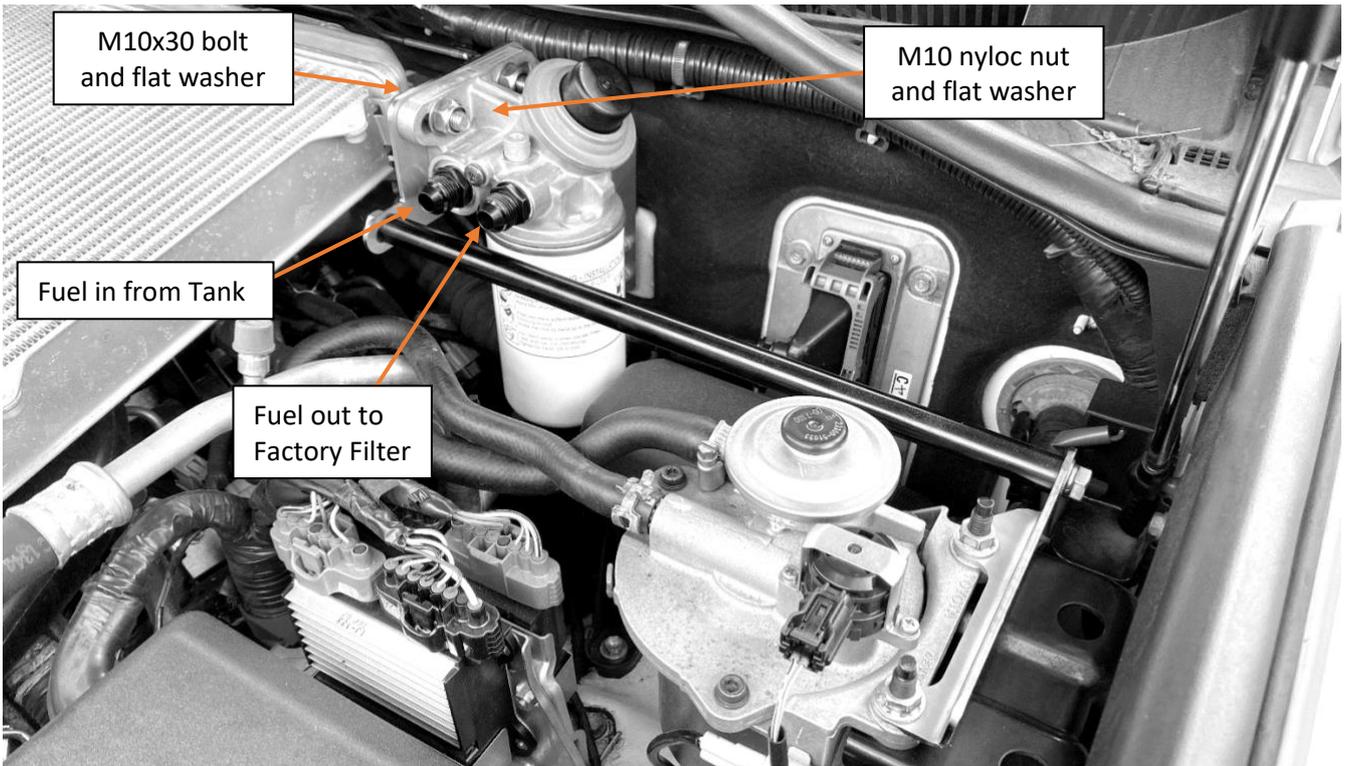


4. Install the alloy support shaft between the primary bracket and the bracket you just installed to the factory fuel filter. Use an M8x16 bolt, spring washer and flat washer at each end to secure it firmly in place.



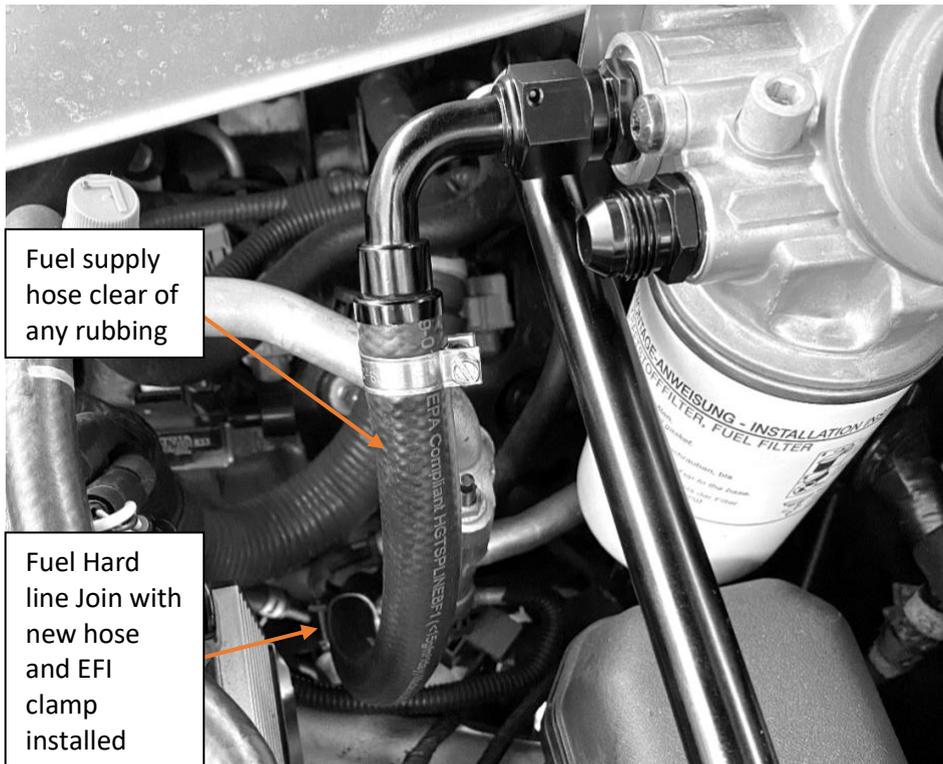
5. Now you can tighten all the mounting bolts to secure the whole assembly in place. Clip the wiring harness back onto the original mount.
6. Using Loctite 567 or similar thread the M16x1.5 fittings into the PreLine filter head, making sure to use an alloy washer under each fitting. Keep the exposed -8 thread clean when installing.
7. Connect the supplied wiring harness to the water sensor in the bottom of the fuel filter. Check to make sure the water sensor and the filter are snug on the assembly, do not over tighten as the thread can strip.
8. Bolt the fuel filter assembly into place, using the M10x30mm bolts and nyloc nuts, making sure to use a flat washer under each bolt head and nut. Adjust the position of the fuel filter assembly to make sure there is clearance from the A/C line and the wiring harness. Once you are happy with the location, tighten the bolts and nuts to retain in place. You may need to remove the intercooler cover to give clearance to do up the bolts.
9. There are three wires on the harness, a long wire (signal), a short black wire with an eyelet(earth) and a short wire with an add-a-fuse holder (power). The fuse is a mini blade type and rated at 2A.
10. Route the signal wire for the in-cabin warning light into the cabin via the grommet in the firewall on the passenger's side. Use cable ties to retain in place.
11. Mount the in-cabin warning light in the desired location, you will need a 20mm hole-saw to do this cleanly and quickly. We recommend installing it in one of the empty switch covers.

12. Secure the signal wire to one of the terminals on the warning light (it does not matter which). To the other terminal, connect the short earth lead. Use one of the M6 earth locations just above the kick panel on the driver's side to secure the eyelet on the short earth lead.
13. Connect the Power wire to an ignition source in the fuse box, piggy backing the original fuse. (the original fuse for the circuit goes into the empty fuse location in the add-a-fuse holder.
14. Connect the Negative eyelet on the harness to the negative terminal on the battery or nearby chassis earth.
15. Secure any excess wiring out of the way with the supplied cable ties.



PreLine-Plus pre-filter in place on bracket with M16x1.5 to -8 Adaptors installed

16. Connect the Power wire to an ignition source in the fuse box, piggy backing the original fuse. (the original fuse for the circuit goes into the empty fuse location in the add-a-fuse holder.
17. Connect the Negative eyelet on the harness to the negative terminal on the battery or nearby chassis earth.
18. Secure any excess wiring out of the way with the supplied cable ties.
19. Remove the factory fuel that supplies the factory fuel filter. Trace the line down and you will see it connects to steel line near the rear of the front left upper control arm. Remove the line completely. To this hard line install one end of the supplied fuel line and secure with one of the new stainless EFI hose clamps.
20. Temporarily install one of the 90° -8 hose fittings to the inlet port of the PreLine. Measure and cut the hose to the desired length. It should be around 300-320mm long. Once cut, slide a stainless EFI hose clamp onto the hose and remove the 90° -8 hose fitting and install onto the hose. Make sure the hose is seated all the way on the pushlock fitting before securing with a clamp. Finally, apply loctite 567 to the -8 thread before securing the 90° -8 hose fitting in place. The supply line should look like the following image installed.



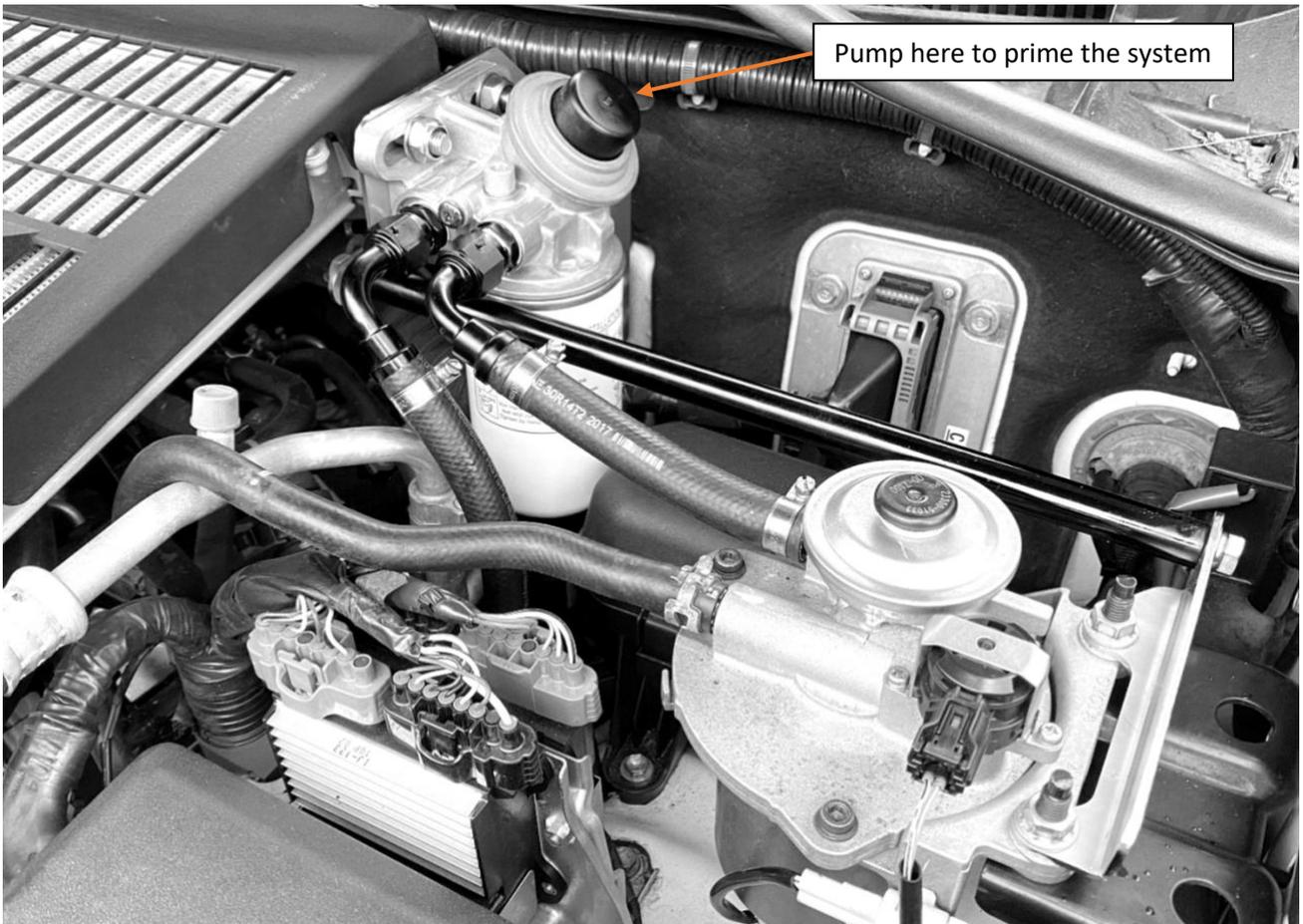
PreLine-Plus pre-filter in place with supply line installed

21. Push the remaining hose supplied in the kit onto the other 90° -8 hose fitting. Make sure the hose is seated all the way on the pushlock fitting before securing with a clamp.
22. Temporarily install the fitting to the outlet port of the PreLine. Measure and cut the line to the correct length to connect to the inlet of the factory fuel filter housing. Once cut, slide a stainless EFI hose clamp onto the hose and remove the 90° -8 hose fitting from the -8 threaded adaptor. Finally, apply loctite 567 to the -8 thread before securing the 90° -8 hose fitting in place. The outlet line should look like the following image installed.



PreLine-Plus pre-filter with both supply and outlet lines installed

23. Using the manual priming pump on the top of the pre-filter assembly, pump until there is fuel just about to come out of the pre-filter outlet hose. This is done to minimize any air locks in the system.
24. Connect the hose from the pre-filter assembly outlet to the factory fuel filter. Secure in place with an 18-20mm clamp. Use the priming pump on the factory fuel filter to draw the fuel the rest of the way.
25. Once complete start the vehicle, carefully and toughly checking for leaks.
26. Run the vehicle for at least 20 minutes to ensure there are no air pockets in the fuel system.



Finished PreLine-Plus pre-filter installed in place

End of Installation Guide