

Installation Guide of Direction-Plus PreLine-Plus pre-Filter + Provent Ultimate Catch Can Kit for Ford Ranger / Everest 2022+ 2.0L

This document is to be used as a guide for the installation of the Direction Plus ProVent Ultimate Catch Can Kit to a 2022+ Ford Ranger/Everest and Volkswagen Amarok 2.0L 4cyl Diesel. **It is recommended that the installation of the product be carried out by a competent qualified mechanic.**

Important Before Starting

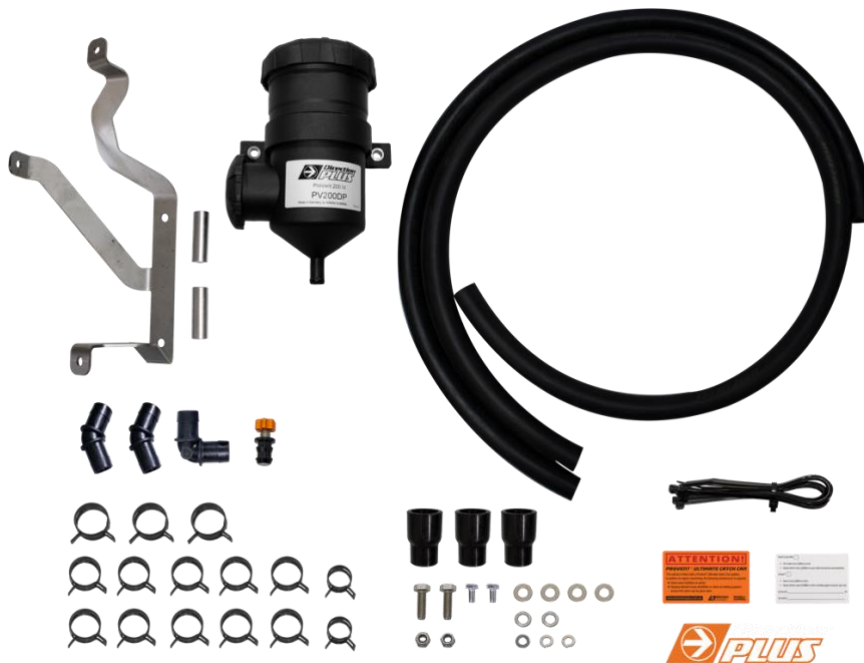
- Ensure you have the correct tools to complete the fitment.
- Read the instructions in full and familiarize yourself with the installation, before commencing any work.

1. Provent Ultimate Catch Can Installation

Maintenance / Servicing

- Provent Catch Can **MUST** be drained every 3,000 – 5,000kms. Failure to do this can result in engine damage.
- Provent Catch Can filter element is to be replaced every 30,000 - 40,000km or as per your vehicles service interval.

Included in the kit



<i>Loose in Box</i>	<i>Hardware Bag</i>	<i>ProVent Fitting Kit Bag</i>
1 x Mann + Hummel ProVent 200 (PV200DP)	2 x 19mm 45° Joiners (DPC4519)	2 x M8x25 Bolts (SSSS304M825)
1 x Mounting Bracket (PV672-BR)	8 x 200 Cable Ties (802078)	4 x M8 Flat Washers (FMW8)
2 x Alloy Spacer	3 x 25mm Clamps (DPSC25)	2 x M8 Spring Washers (FMSW8)
1 x 1.4m of 19mm Hose (DPPH19)	10 x 19mm Clamps (DPSC19)	2 x M8 Stainless Steel Nuts (FMN8)

	2 x M6x12 Bolt (SSSS304M612)	
	2 x M6 Spring Washer (FMSW6)	<i>ProVent Drain Kit Bag</i>
	2 x M6 Flat Washer (FMW6)	1 x 1000mm of 12mm Hose (DPFH12-PEX)
	1 x 19mm 90° Joiner (DPC9019)	1x Drain Tap Assembly (DPDRAIN)
	3 x 25-19mm Reducers (PV2519DP)	2 x 12mm Spring Clamps (DPSC16)

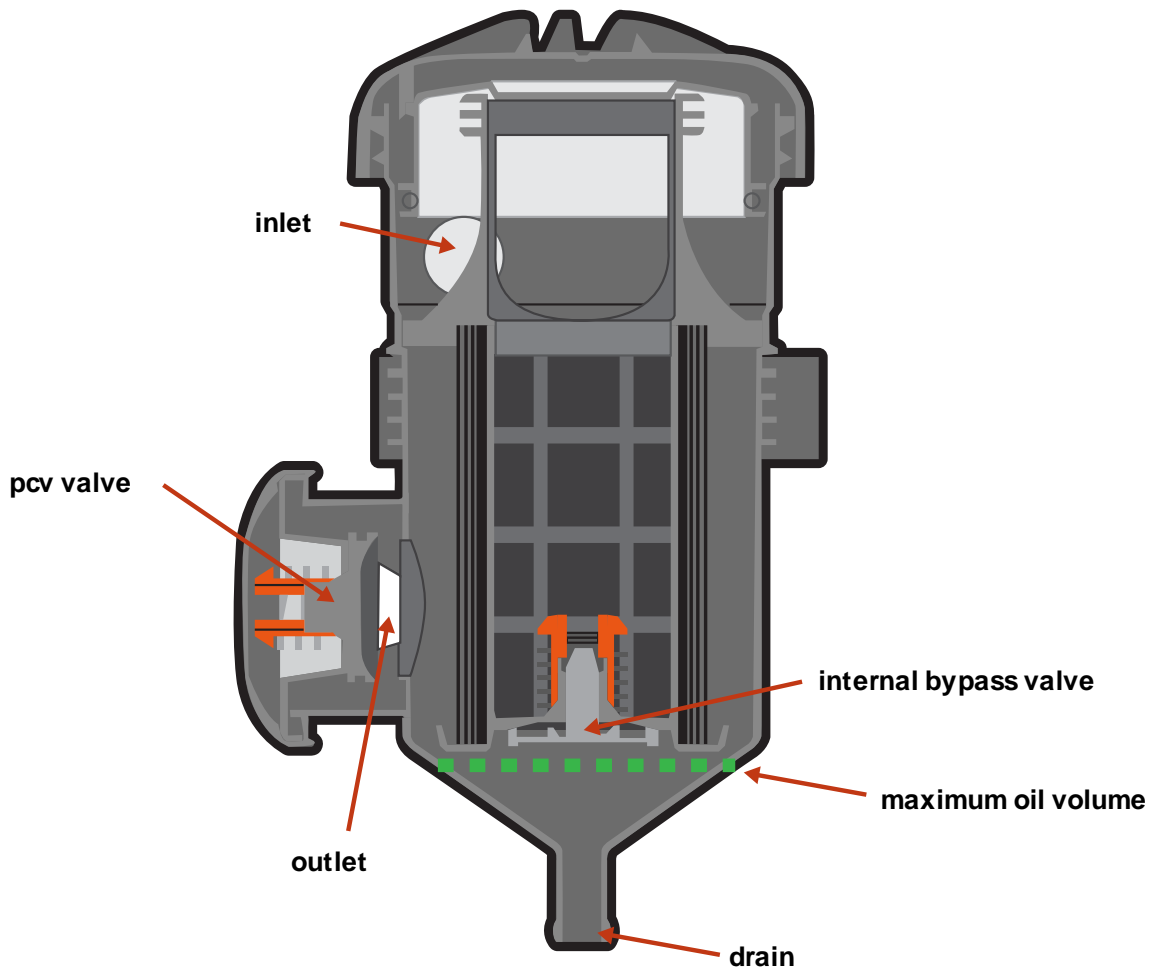


Tools Needed:

- Spanners
- Sockets
- Screw Drivers
- Pliers
- Snips/Cutter
- Rags
- Small container for priming

We suggest using a thread sealant like Loctite 567 or equivalent.

PV200 INTERNAL BYPASS VALVE SECTIONAL DIAGRAM



Due to the way the internally vented PV200 works, the PV200 must be drained regularly to ensure correct operation of the internal bypass valve. Failure to regularly draining/ servicing the Catch Can may cause engine damage due to over pressurisation of the crankcase ventilation system.

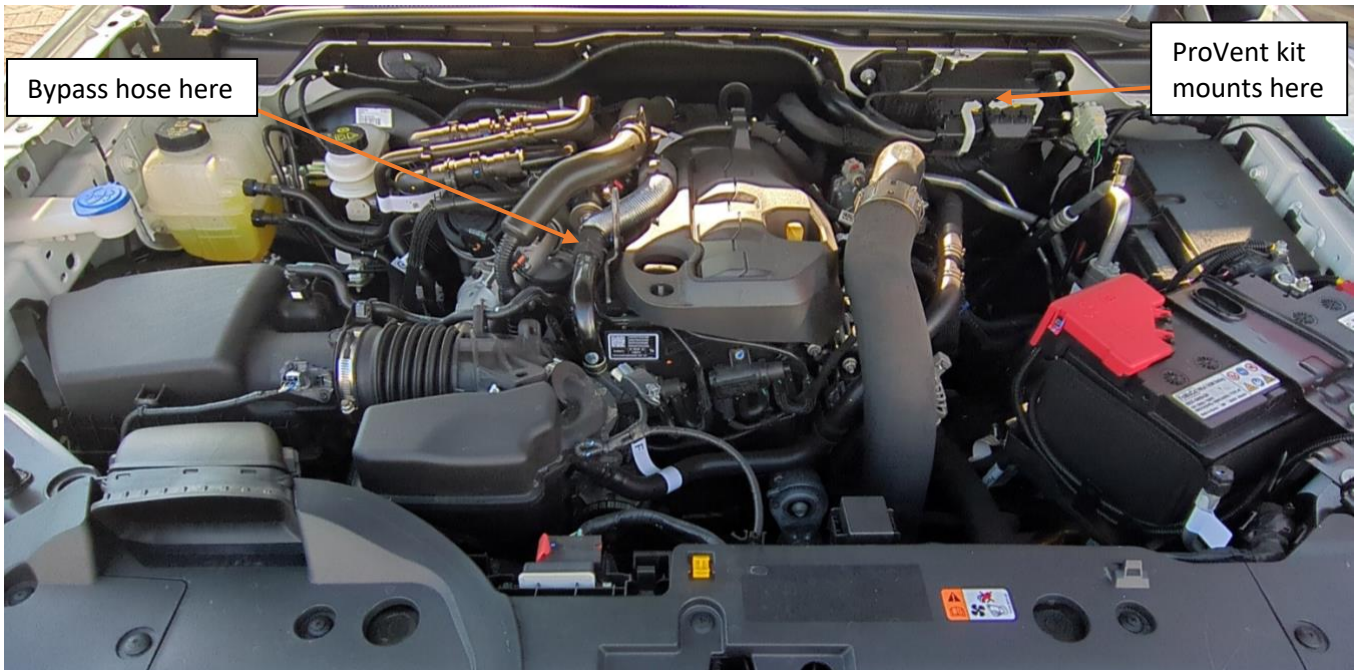
The ■ ■ ■ in the diagram indicates the maximum permissible oil level. For the PV200 internal bypass valve to correctly operate the internal oil volume MUST NOT exceed the level indicated by the ■ ■ ■ shown in the diagram.

If the internal oil volume is to exceed the level indicated by the ■ ■ ■ shown in the diagram, the internal bypass valve cannot operate as designed due to it being submerged. This condition is likely to cause over pressurisation of the crankcase ventilation system and damaging the engine.

WARNING: Colder climates can cause increased condensation inside the Catch Can. This will fill the reservoir quicker than oil and will need to be drained regularly. Failure to do so could & can damaged the Catch Can or vehicle.

Installation Guide

1. Begin by removing the engine cover, one 10mm nut on the front near the engine lift point and it lifts from the front up 45° and then pulls out towards the front of the vehicle.



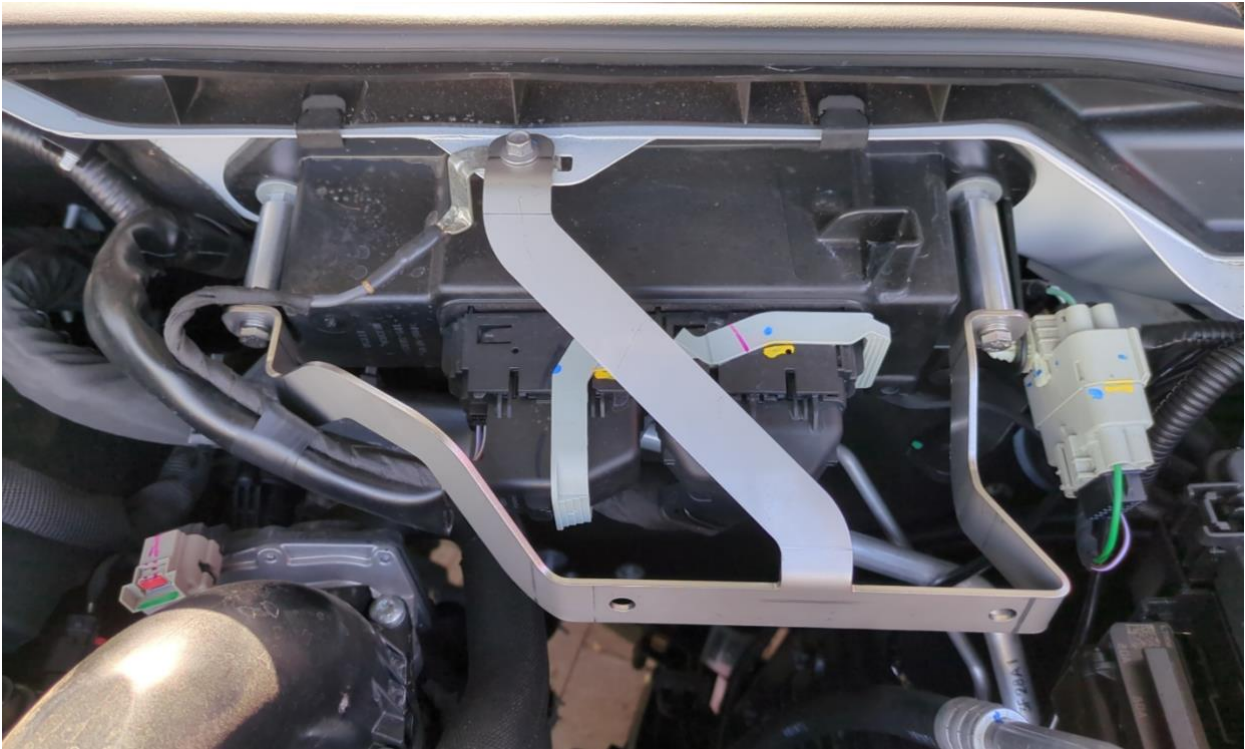
Ranger 2L Bi-Turbo 2022+ Engine Bay – Overall View

2. Thread the M6 alloy spacers onto the male M6 threads at each end of the ECU carrier, make sure it is seated all the way, hand tight is enough.



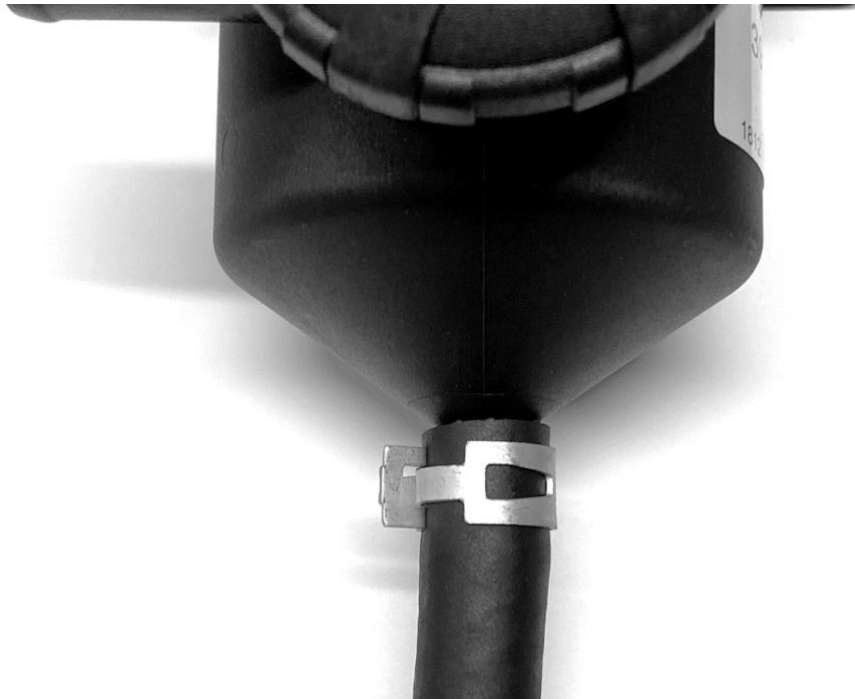
Location of alloy spacer mounting

3. Remove the M6 bolt that secures the earth above the ECU Carrier, install the ProVent mounting bracket on top of this earth fitting and reinstall the original bolt but don't tighten yet. Use the M6x12 bolt, flat washer and spring washer to secure the ProVent mounting bracket to the alloy spacer at each end. Once everything is lined up and secured, go back, and tighten the earth bolt.



Bracket bolted in place

4. Connect the 12mm (1/2") Hose to the underside of the catch can body, using a 12mm spring clamp to secure it in place.



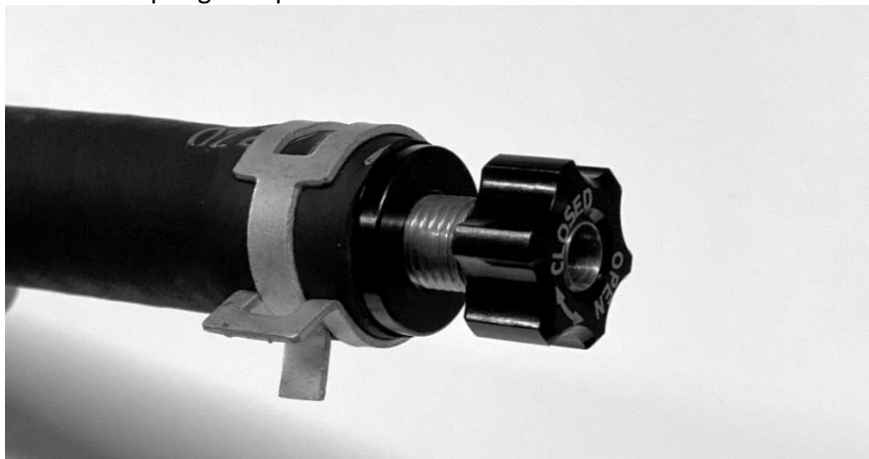
ProVent 200 with 12mm hose connected and secured with a clamp

5. With a flat washer on each of the M8x25mm bolts, mount the ProVent 200 to the mounting bracket. Use a flat washer, spring washer and nut to secure the bolts on the other side.



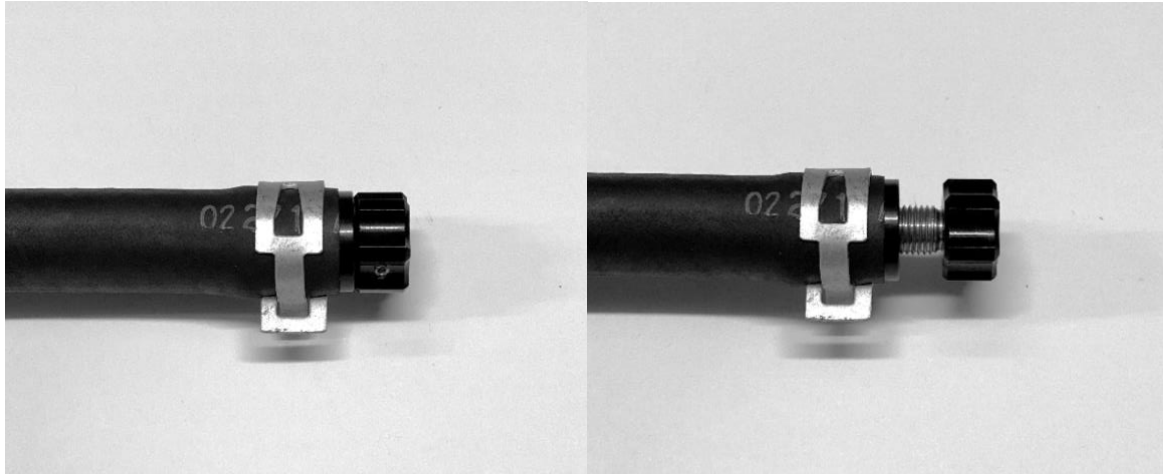
ProVent 200 bolted to bracket– Please note ProVent rotation in this image is correct, refer to the image on the last page of this installation guide for how to rotate the unit.

6. Feed the 12mm Hose down the side of the engine bay, under the vehicle to an out of the way location, making sure it is clear of any suspension, driveline, and exhaust components, fit the Drain Tap into the hose and secure with a 12mm spring clamp.



Drain Tap inserted into 12mm hose, secured with a clamp

7. Use the supplied cable ties to secure the 12mm hose into the location required under the vehicle to prevent movement. Note: Leave a slight amount of slack in the line where the body and chassis join to prevent stretching the hose.
8. Make sure the tap position is closed and avoid placing the tap in a location in which it will fill with dirt and mud.



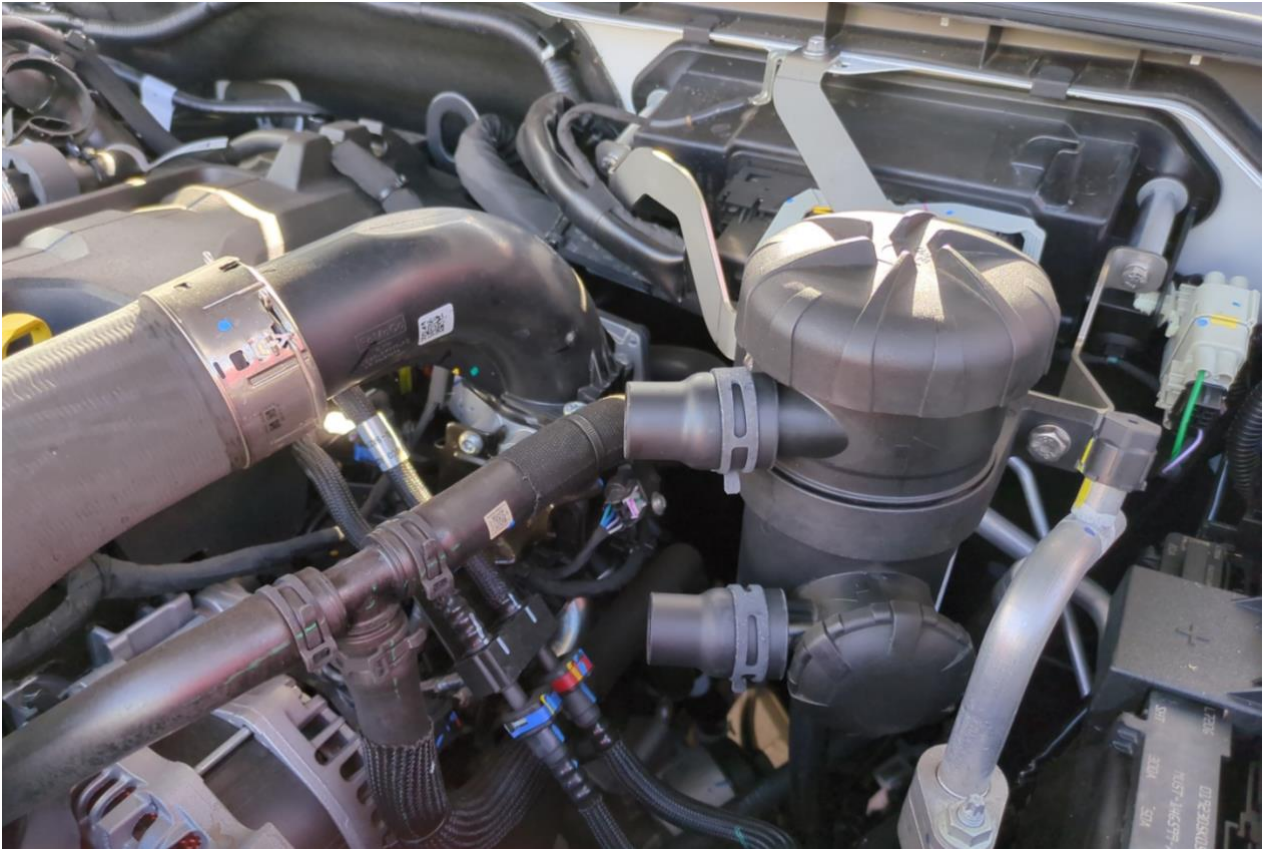
Left image – Tap Open. Right image – Tap Closed.

9. Remove the factory bypass hose shown in the following image.



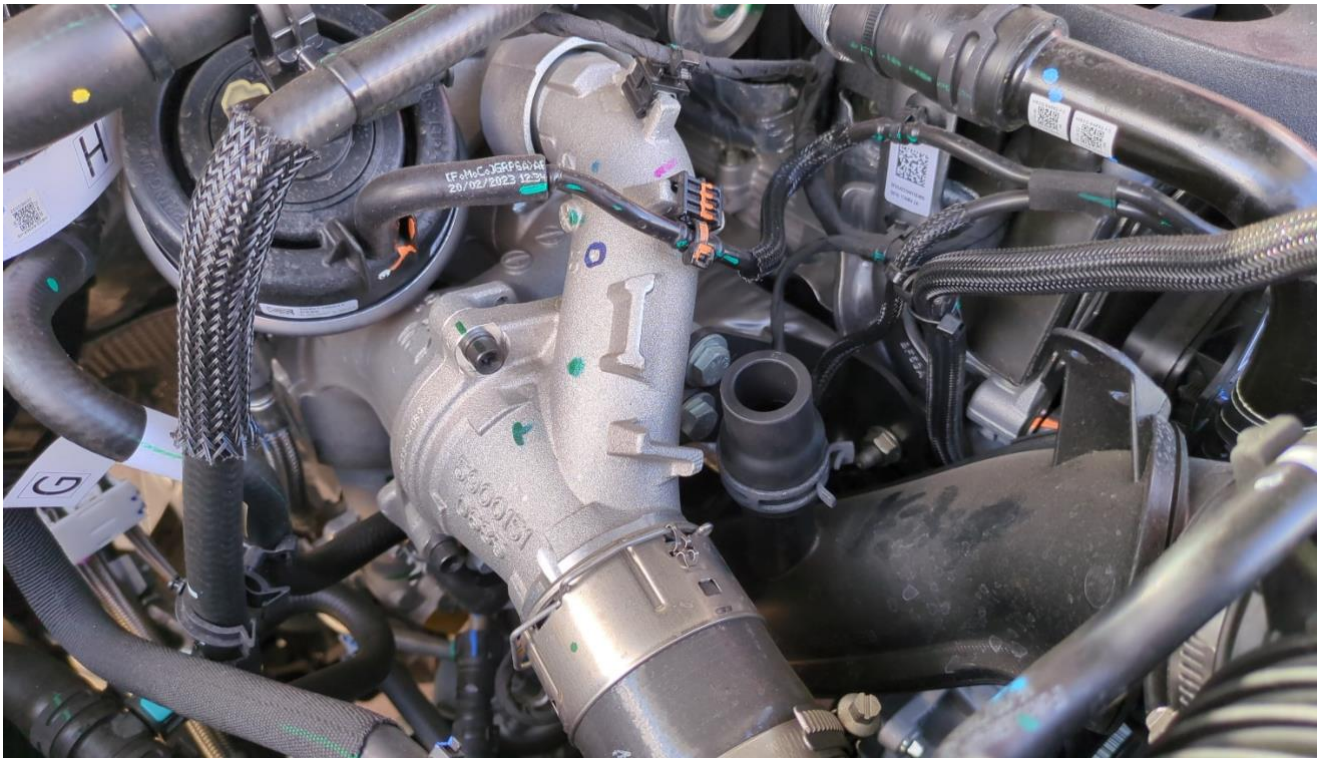
Factory bypass hose location

10. Connect the 25-19mm reducers to the ports on the side of the ProVent 200 unit. Use the 25mm spring clamps to secure in place.



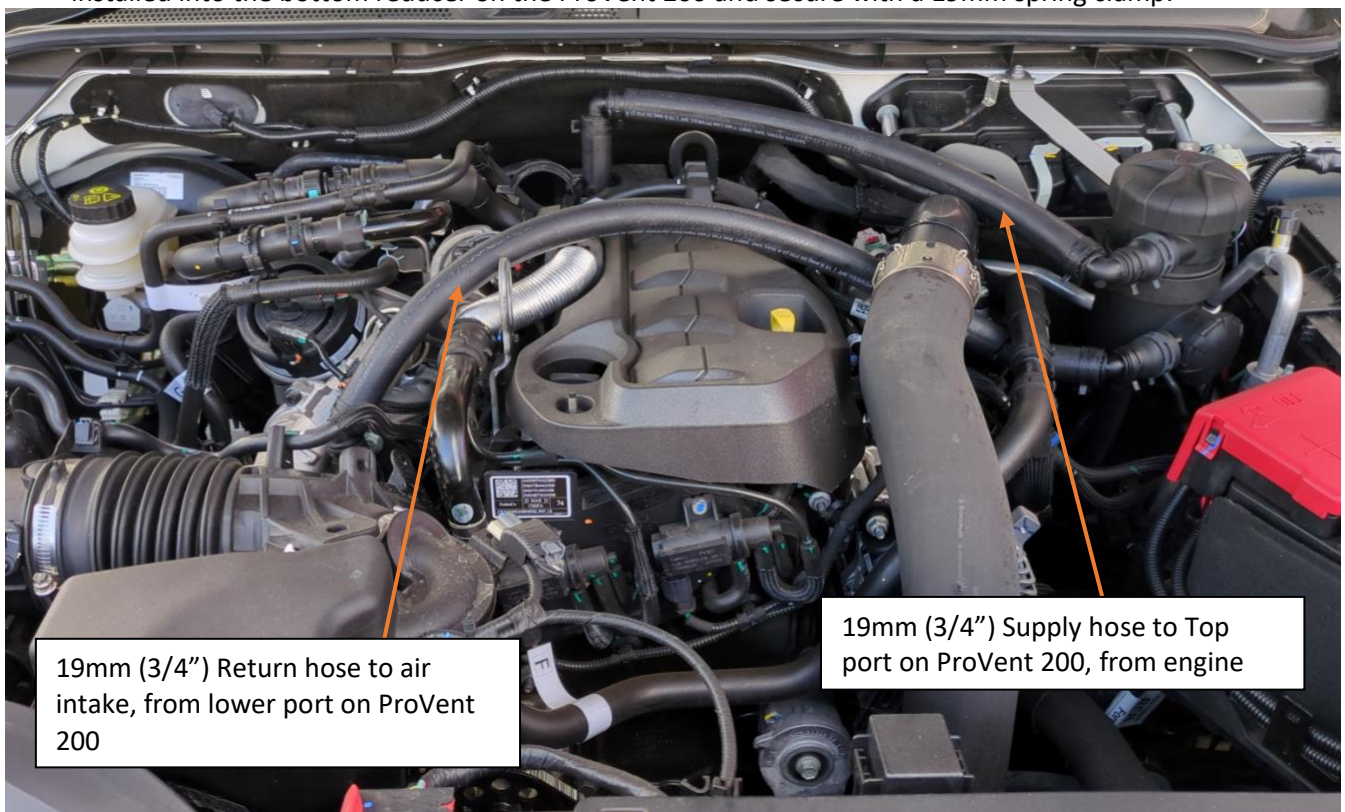
ProVent 200 mounted in place with 25-19mm reducing couplers and clamps

11. To the 19mm end of these reducers, fit the 19mm 45° elbows and use 19mm clamps to secure in place.
12. Cut a length of 19mm hose to 70mm long, to this hose fit the 90° elbow to one end and secure in place with a 19mm spring clamp. Secure the other end of this hose the top fitting from the factory bypass hose at the rear of the engine and secure with a 19mm spring clamp. To the other side of the 90° elbow connect a length of 19mm hose and secure with a 19mm spring clamp. Measure and cut this hose to connect to the 45° elbow on the upper port on the ProVent 200 and secure with a 19mm spring clamp.
13. Fit the remaining 25-19mm reducer to the return port near the air intake the PCV hose was removed from earlier. Secure in place with a 25mm spring clamp.



25-19mm Reducer and spring clamp installed on PCV hose return fitting

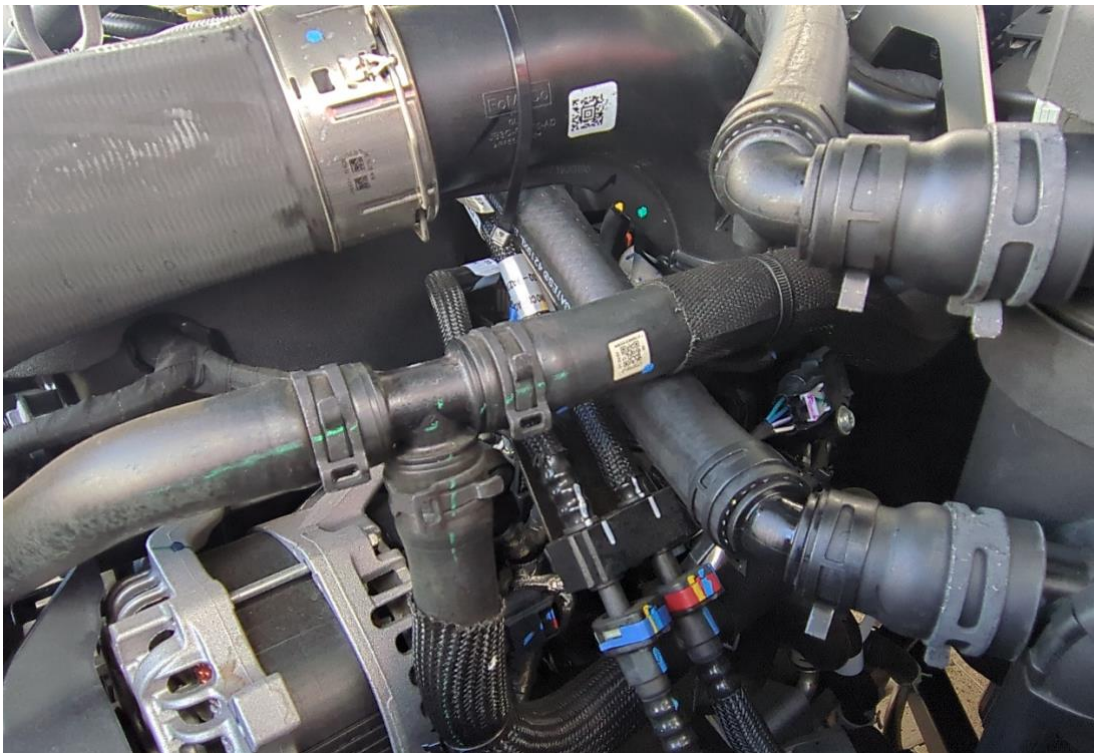
14. Fit a 19mm 45° elbow to the empty side of the 25-19mm reducer you just installed and secure in place with a 19mm spring clamp.
15. Fit one end on the remaining 19mm hose to the 19mm 45° elbow you installed in the previous step and secure in place with a 19mm spring clamp. Measure and cut this hose to connect to the 45° elbow you installed into the bottom reducer on the ProVent 200 and secure with a 19mm spring clamp.



Hose configuration in 2L Bi-Turbo Ranger with ProVent 200 installed



Finished Install – Check to make sure everything is secure



ProVent 200

The housing can (prior to installation) be turned in the holder in 30° steps around the longitudinal axis.

This enables the position "Inlet and outlet fitting to flange" to be flexibly adjusted to the installation situation.

- Remove the retaining clip (1) upward from the groove and turn the holder into the desired position.
- Press the holder together somewhat in the desired position and engage the retaining clip in the groove again
- Mount the holder in the vertical position. Recommended tightening torque for M8 screws: 10 Nm.
- Ensure sufficient strength of the screw and nut material.
- Connect the hoses to the inlet, outlet and oil return fittings (make sure a sufficient length of hose is pushed on) and secure with hose clamps (see Chap.4.2 and 4.3).
- Connect the oil return hose (and non-return valve if necessary) to the oil sump.
- To ensure proper functioning, the ProVent should be protected against dirt (mount splash guards if necessary).

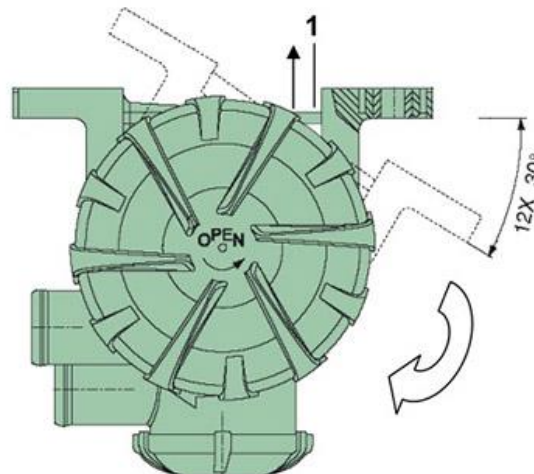


Fig. 5 Positions of outlet for ProVent 200

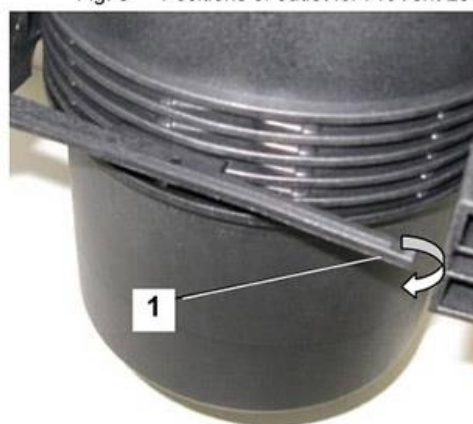


Fig. 6 Holder for ProVent 200

End of ProVent Ultimate Catch Can Installation Guide

Go to next Page for Preline-Plus Pre-Filter Installation

2. PreLine-Plus Pre-Filter installation

This document is to be used as a guide for the installation of the **Direction-Plus PreLine-Plus pre-filter kit to a 2022+ Ford Ranger /Everest 4cyl and 6cyl 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 150 (PL150WSDP)	2 x M6x16 Bolts (SSSS304M616)	Wiring Harness, Warning Light, Short Earth Lead (PLWSIND)
2 x M16x1.5 to -6 Adaptors (DP816-6-M1615)	4 x M6 Flat Washers (FMW6)	10 x 100mm Cable Ties (802078)
2 x -6 to 3/8" 90° Fittings (DPP0090-06)	2 x M6 Spring Washers (FMSW6)	
2 x M16 Alloy Washers (PLFW16)	2 x M6 Nyloc Nut (FMN6)	
	4 x 15-17mm Fuel Clamps (FMC10)	
	1 x 3500mm 3/8" Fuel Hose (DPFH9)	
1 x Bracket - 3 PCE (PL671V2-BR)	1 x Male 3/8 QR to 3/8 Adaptor (DPRP703QRM-06)	<i>PreLine Mounting Kit Bag</i>
	1 x Female 3/8 QR to -6 Adaptor (DPRP703QRF-06)	1x 2x BOLTS, 2x NUTS, 4x WASHERS (FMB10KIT)
	1 x -6 to 3/8" 180° Fitting (DPP00180-06)	
	10 x 200mm Cable Ties (802078)	

**APPROXIMATE MOUNTING LOCATION
PRELINE-PLUS PRE-FILTER + CATCH CAN KIT
PLPV672DPC**



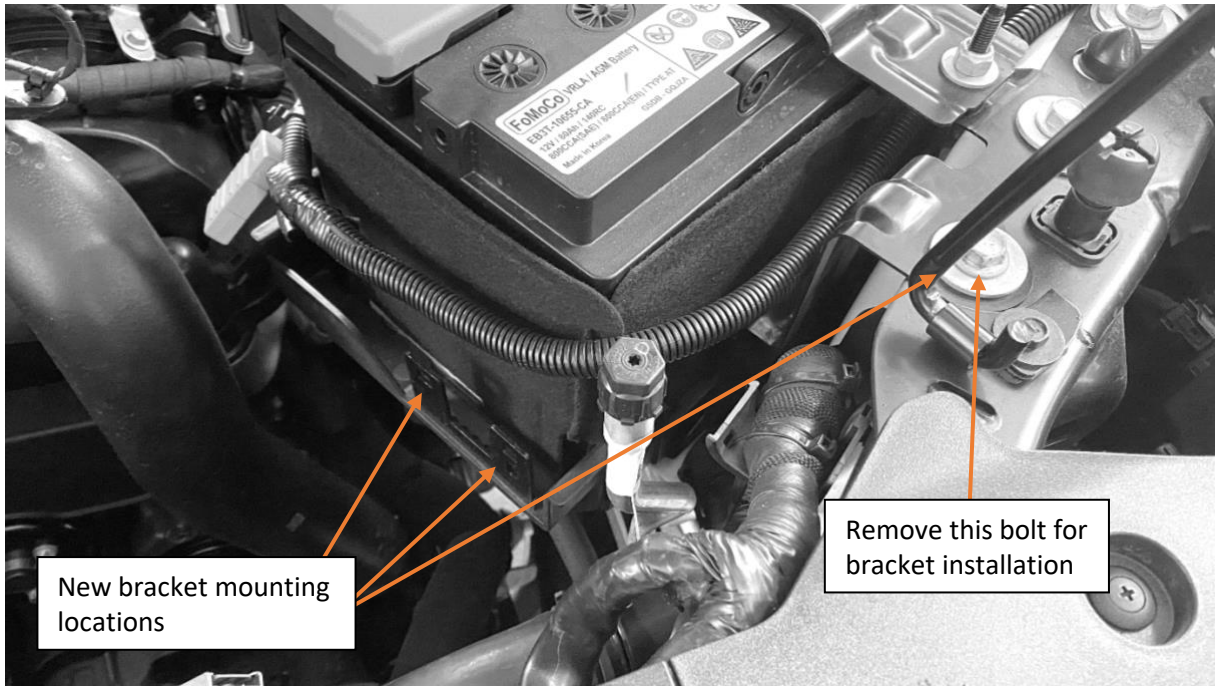
Tools Needed:

- Spanners
- Sockets
- Screw Drivers
- Pliers
- Snips/Cutter
- Rags
- Small container for priming

We suggest using a thread sealant like Loctite 567 or equivalent.

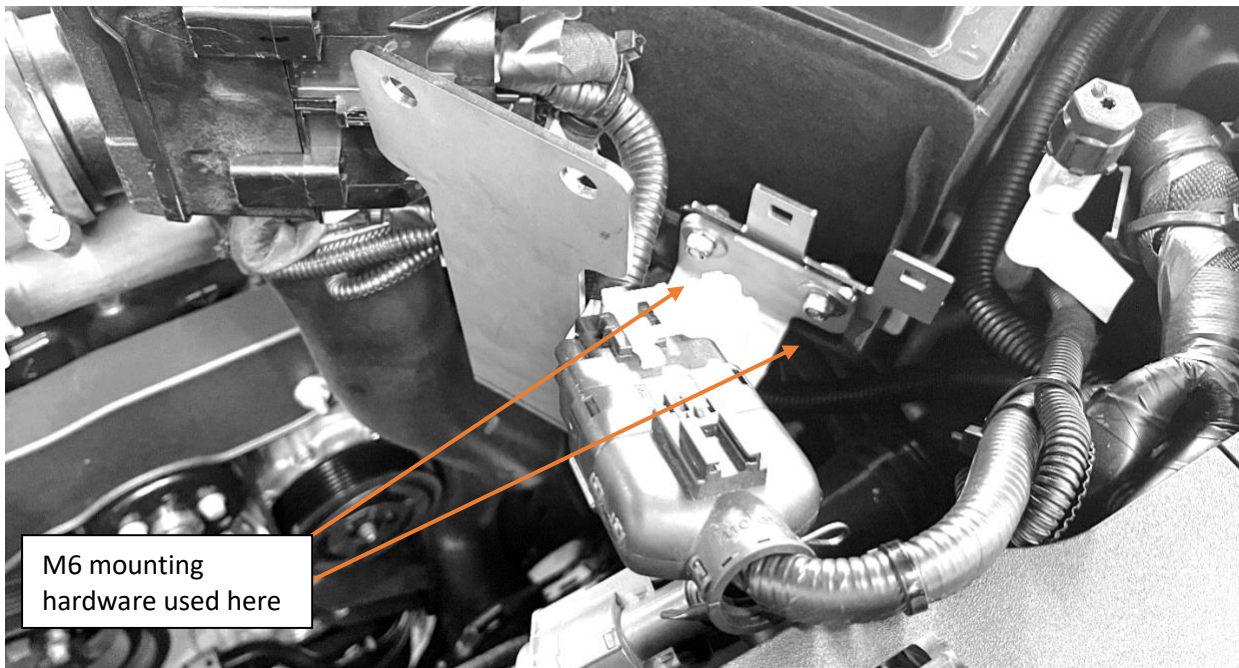
Installation Guide

1. Begin by removing the bolt that secures the battery tray to the radiator support panel.
2. For vehicles with roof mounted switch panel, unclip the accessory fuse box by pushing the tabs in and sliding it up.

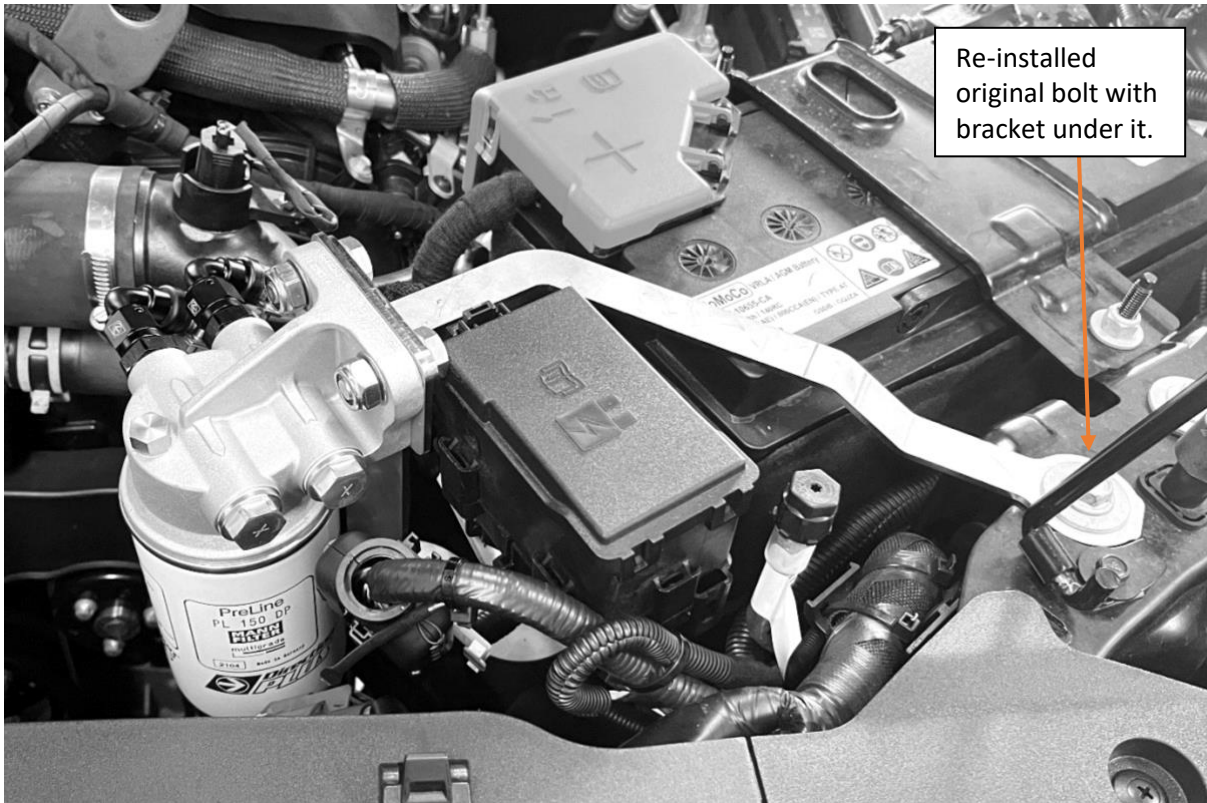


PreLine 150 Bracket Mounting Locations – Accessory Fuse Box not shown

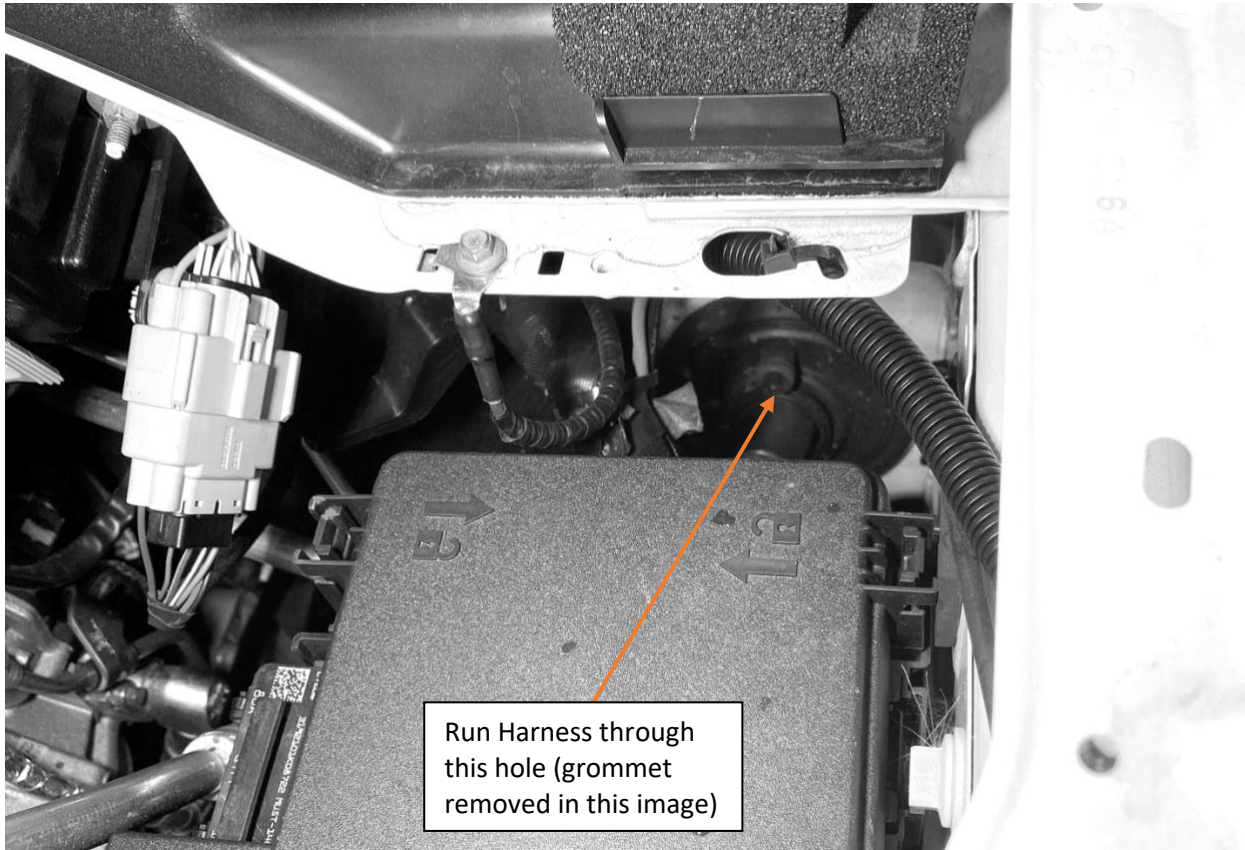
3. Using the M6x12mm bolts, four flat washers and M6 nyloc nuts, secure the bracket in place as per the photo below.



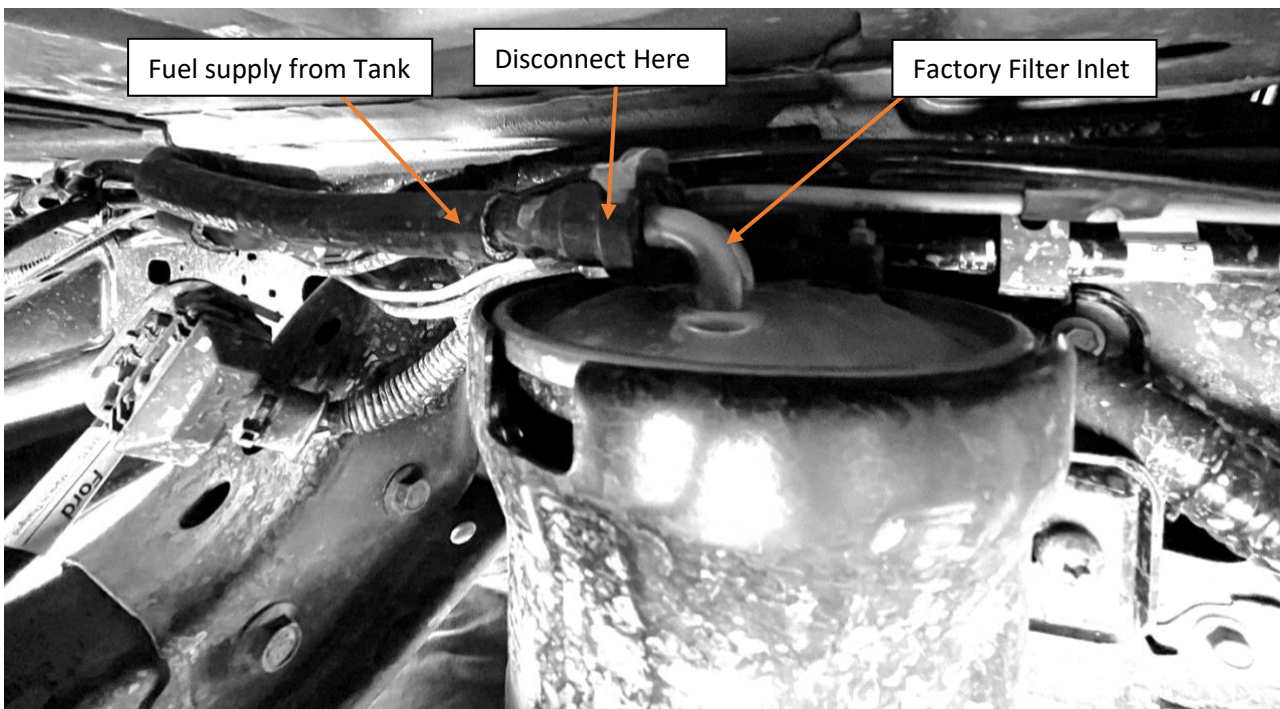
4. Install the threaded adaptors onto the PreLine 150, using the M16 washers between the filter head and the M16 adaptors. make sure to use a sealant like Loctite 567 or equivalent. Keep the exposed -6 thread clean when installing.
5. Install the PreLine 150 to the fuel filter bracket and the support brace using the two M10 bolts, 2 x spring washers and 2 x flat washers. Re-install the original Battery tray bolt removed in step 1.



PreLine 150 in place on bracket with support brace and accessory fuse box back in place



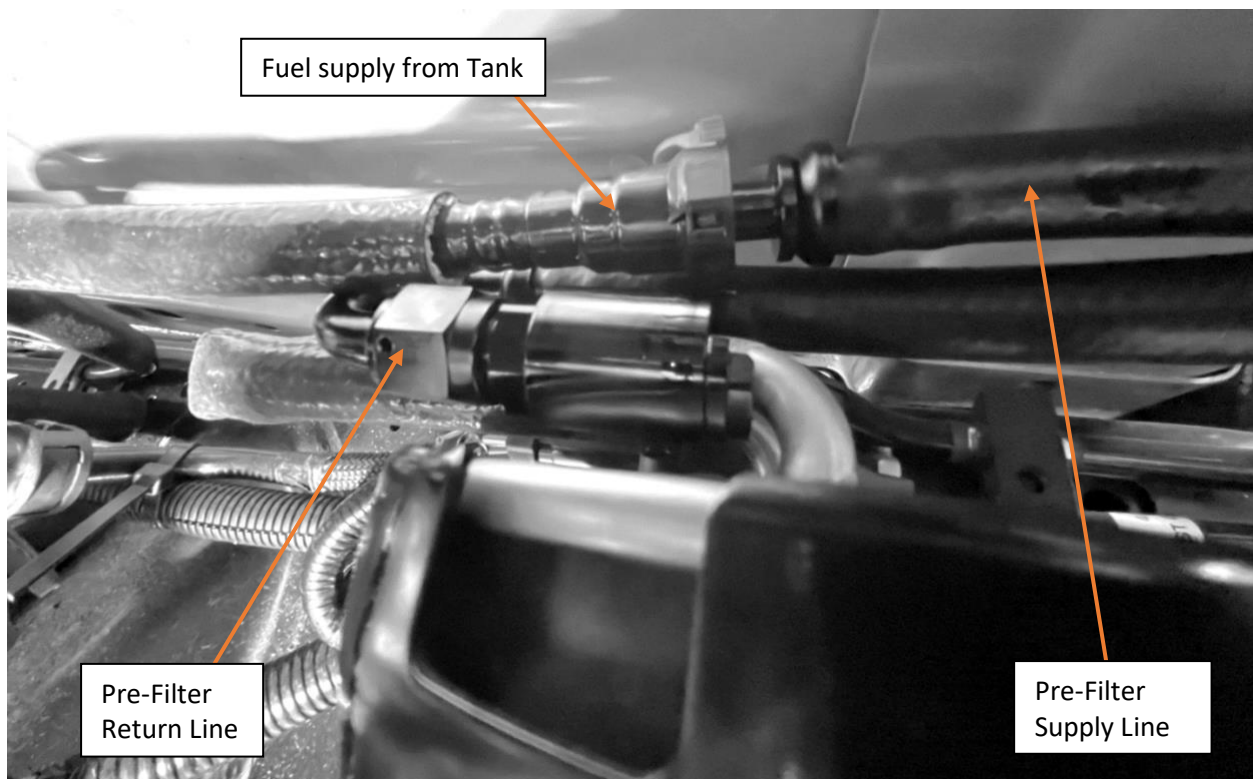
6. Connect the supplied wiring harness to the water sensor in the bottom of the fuel filter. Check to make sure the water sensor and the filter are snug on the assembly, do not over tighten as the thread can strip. Run the harness up through the grommet in the passenger firewall. Use cable ties to keep them in place.



Factory Fuel Filter hose locations

7. Install the first -6 90° hose fitting to one end of the hose. Make sure the hose is seated all the way on the push lock fitting. Finally, apply Loctite 567 to the -6 thread on the supply port adaptor in the fuel filter before securing the 90° -6 hose fitting in place.

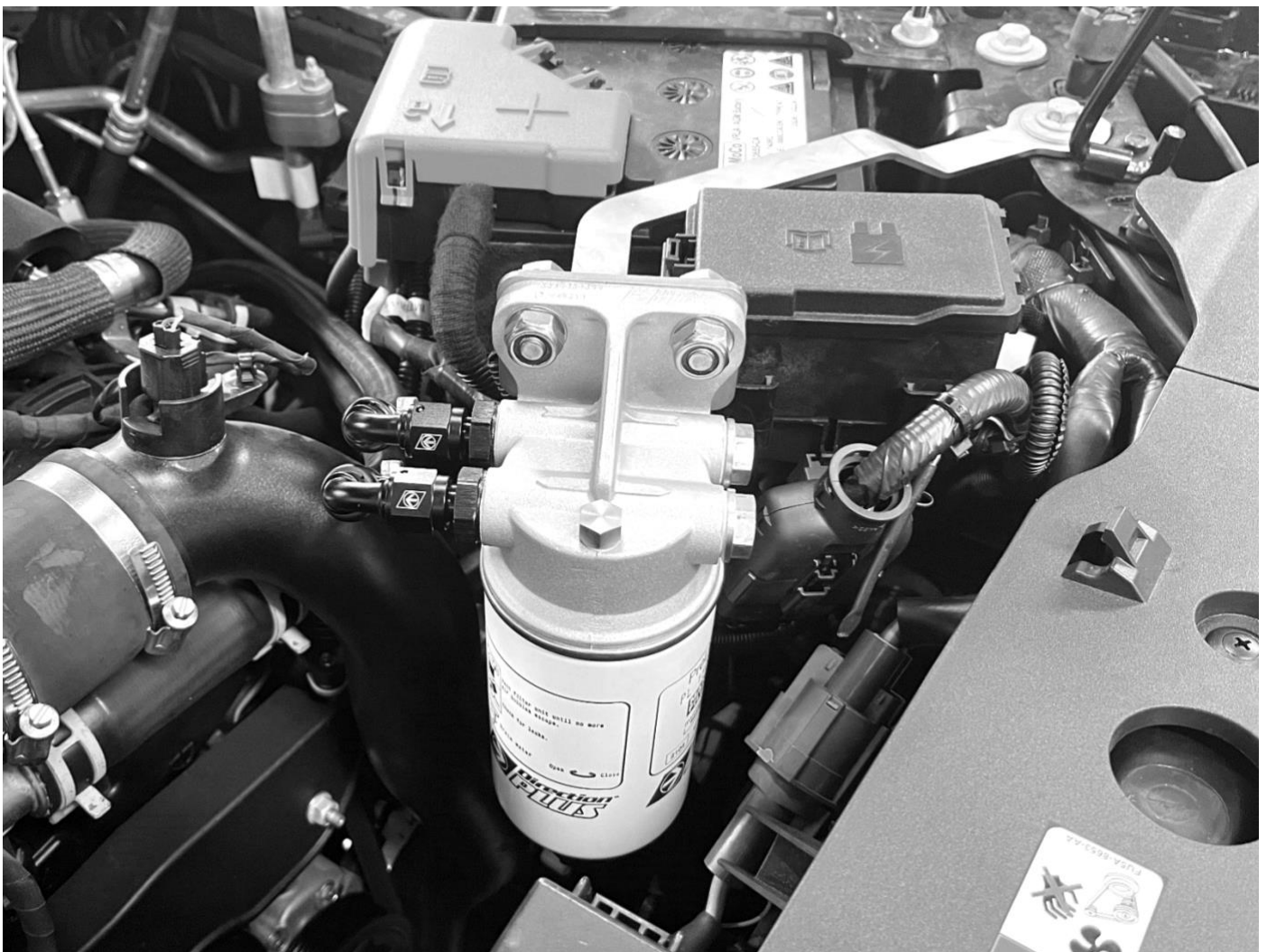
8. Find the factory fuel hose that supplies the factory fuel filter under the passenger side of the vehicle. Run the new hose to this location measure and cut it to length. Install the 3/8 QR male fitting with a hose tail on it into the end of the hose and secure with one of the new stainless EFI hose clamps.
9. Disconnect the factory 3/8 QR female fitting from the inlet to the factory fuel filter. Install the new 3/8 QR male fitting with the hose secured to it into this connector making sure it seats all the way.
10. Install the second -6 90° hose fitting to one end of the remaining hose. Make sure the hose is seated all the way on the push lock fitting. Finally, apply Loctite 567 to the -6 thread on the return port adaptor in the fuel filter before securing the 90° -6 hose fitting in place.
11. Run the remaining new hose to the top of the stock fuel filter you removed the female 3/8 QR fitting from earlier, measure and cut to length. Install the new female 3/8 QR fitting with a hose tail in the kit to the end of the hose and secure with one of the new stainless EFI hose clamps.
12. Connect the new female 3/8 QR fitting to the male port on the top of the factory fuel filter. Take care to make sure it seats all the way.
13. Ensure hose clamps are used with hose fittings
14. Open the bleed port on the new pre filter head and prime the system to remove the excess air in the new filter and lines. Once bled close the bleed port in the filter head.



Ranger 2022+ Pre-filter fuel hose installed – note clamps not installed in this image

15. 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.
16. Mount the in-cabin warning light in the desired location, you will need a 20mm hole-saw to do this cleanly and quickly.

17. 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.
18. Connect the Power wire to an ignition source in the fuse box under the steering column, piggy backing the original fuse. The original fuse for the circuit goes into the empty fuse location in the add-a-fuse holder.
19. Connect the Negative eyelet on the harness to the negative terminal on the battery or nearby chassis earth.
20. Secure any excess wiring out of the way with the supplied cable ties.
21. Once complete start the vehicle, carefully and toughly check for leaks.
22. Run the vehicle for at least 20 minutes to ensure there are no air pockets in the fuel system.



Fuel hose routing for pre-filter on Ranger 2022+ -Note wiring is not yet cable tied in this image.

End of Installation Guide