

Direction Plus PreLine-Plus Pre-filter + ProVent Ultimate Catch Can Kit Installation Guide for Toyota Land Cruiser 79 Series 2.8L 4cyl

This document is to be used as a guide for the installation of the Direction Plus PreLine-Plus pre-filter kit to a 2024+ Toyota Land Cruiser 70 Series 2.8L 4 Cylinder Diesel. *It is recommended that the installation of the product be carried out by a competent qualified mechanic.*

1. Preline-Plus Pre-Filter Installation Guide

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.

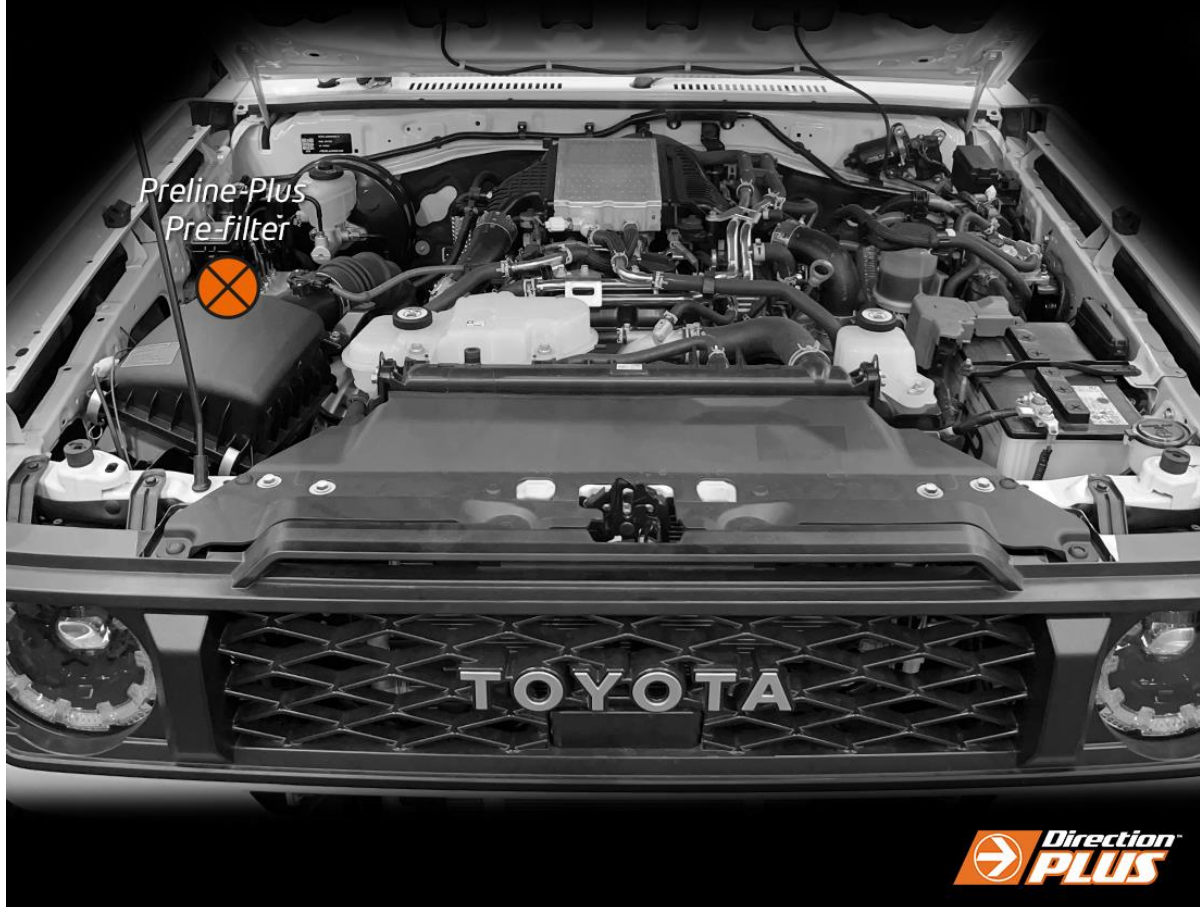
Included in the kit





<i>Loose in Box</i>	<i>Bagged</i>	<i>Wiring Bag</i>
1 x MANN+HUMMEL PreLine 150 (PL150WSDP)	2 x M6x16 Bolt (SSSS304M616)	Wiring Harness (PLWSIND)
1 x M16x1.5 to -8 Adaptor (DP816-8-M1615)	2 x M6 Spring Washer (FMSW6)	Warning Light
1 x -8 to ½" Hose Straight (DPP0001-08)	2 x M6 Flat Washer (FMW6)	Short Earth Lead
2 x M16 Alloy Washers (PLFW16)	2 x M8x16 Bolt (SSSS304M816)	
1 x M16x1.5 to -6 Adaptor (DP816-6-M1615)	2 x M8 Spring Washer (FMSW8)	10 x 100mm Cable Ties (802078)
1 x -6 to 3/8" Hose Straight (DPP0001-06)	2 x M8 Flat Washer (FMW8)	
	1 x 15-17mm Hose Clamp (FMC10)	
1 x Mounting Bracket A (PLPV648-BR)	1 x 18-20mm Hose Clamp (FMC12)	<i>PreLine Mounting Kit Bag</i>
1 x Mounting Bracket B	1 x 1m Hose Heat Wrap (HS35DP)	2 x M10x30 Bolts
	1 x 2.0m 3/8" Fuel Hose (DPFH10)	2 x M10 Nyloc Nuts
1 x 3/8" Inline hand pump (B415-10)	1 x 2.1m ½" Fuel Hose (DPFH12-GAT)	4 x M10 Flat Washers (FMB10KIT)
	10 x 200mm Cable Ties (802078)	
	1 x Loctite 567 Thread Sealant (567-6ML-LOC)	
	2 x ½" Rubberized P-Clips (PCL20)	

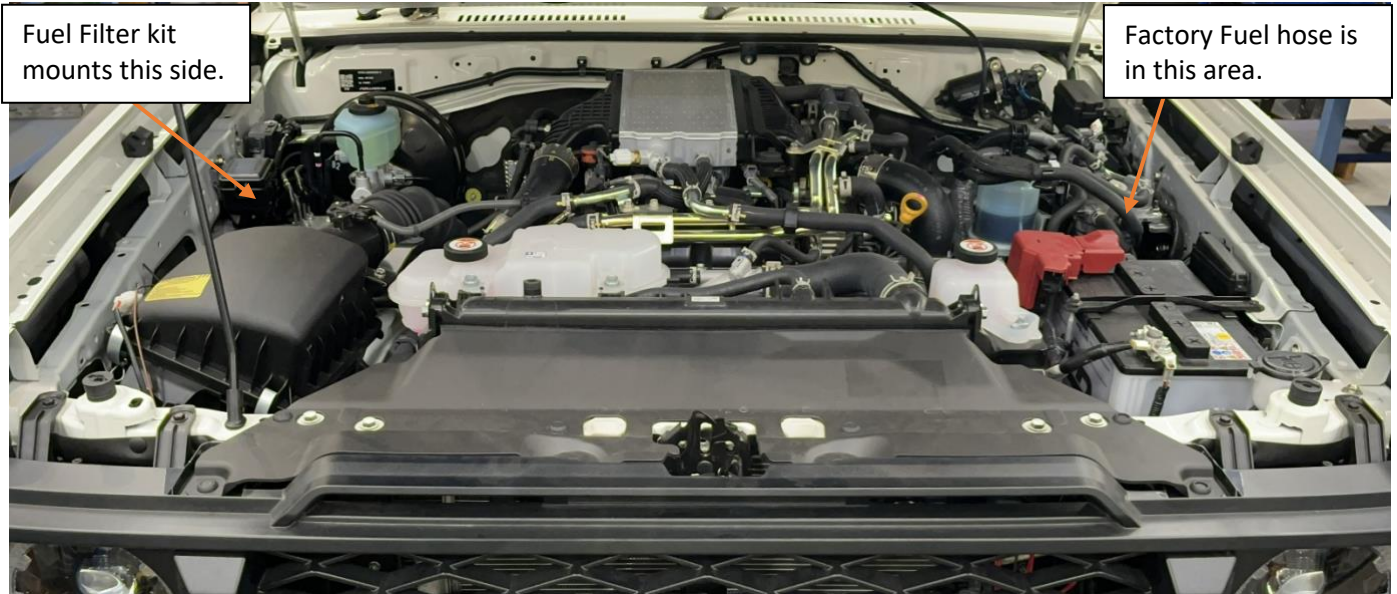
**APPROXIMATE MOUNTING LOCATION
PRELINE-PLUS PRE-FILTER KIT
Land Cruiser 70 series 2.8L 4cyl
PL648DPK**



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



Land Cruiser 70 Series 2.8L Engine Bay – Overall View

1. Begin by removing two of the nuts used to secure the ABS unit to the inner guard. The ones to remove are the closest ones to the centre of the vehicle.

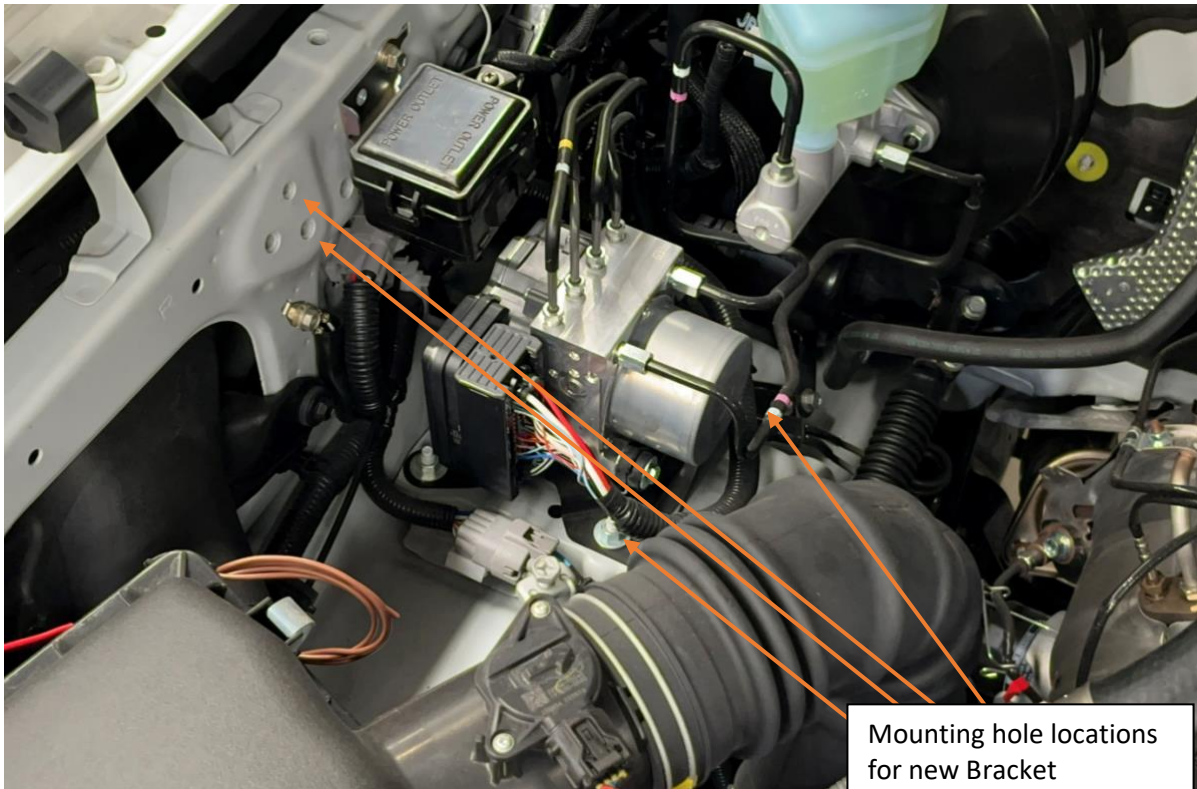
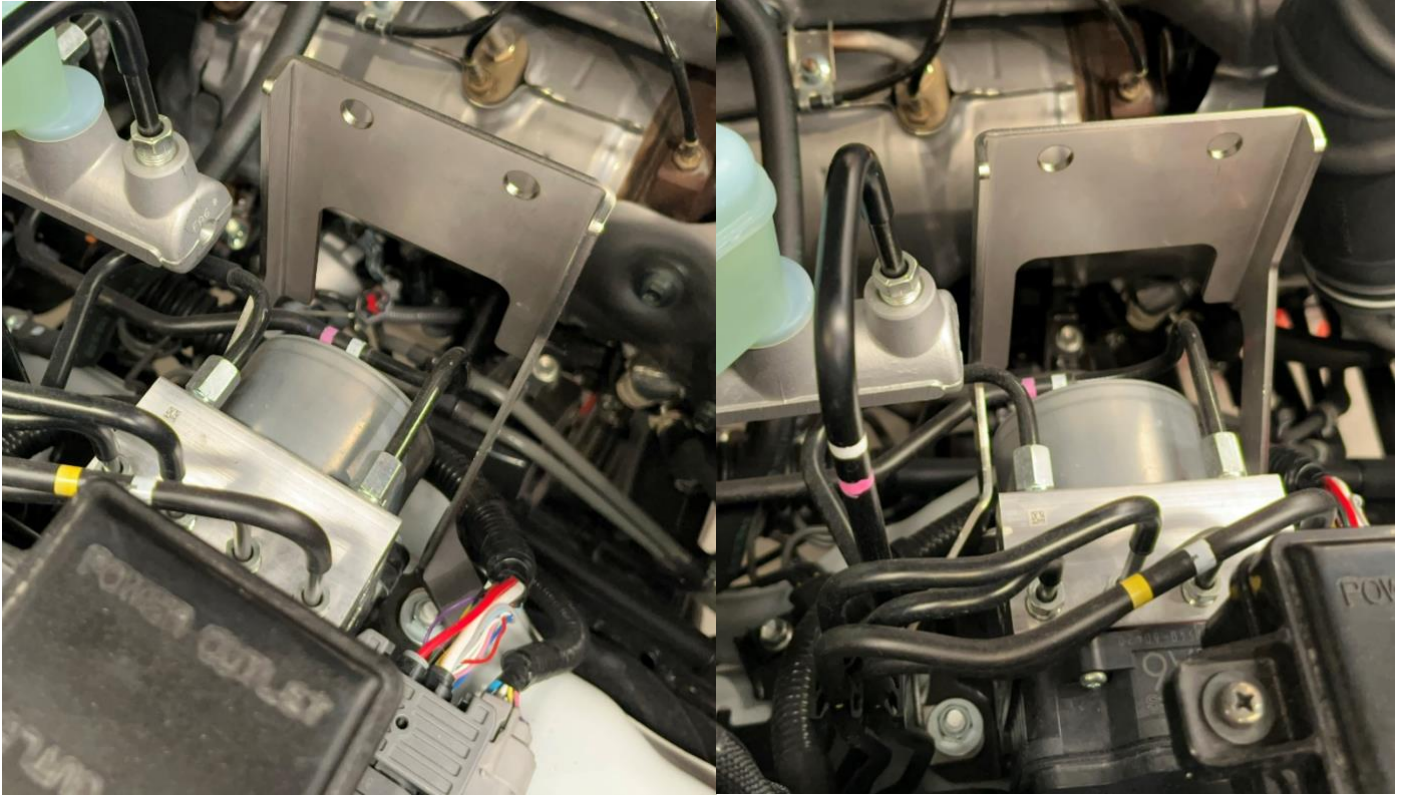


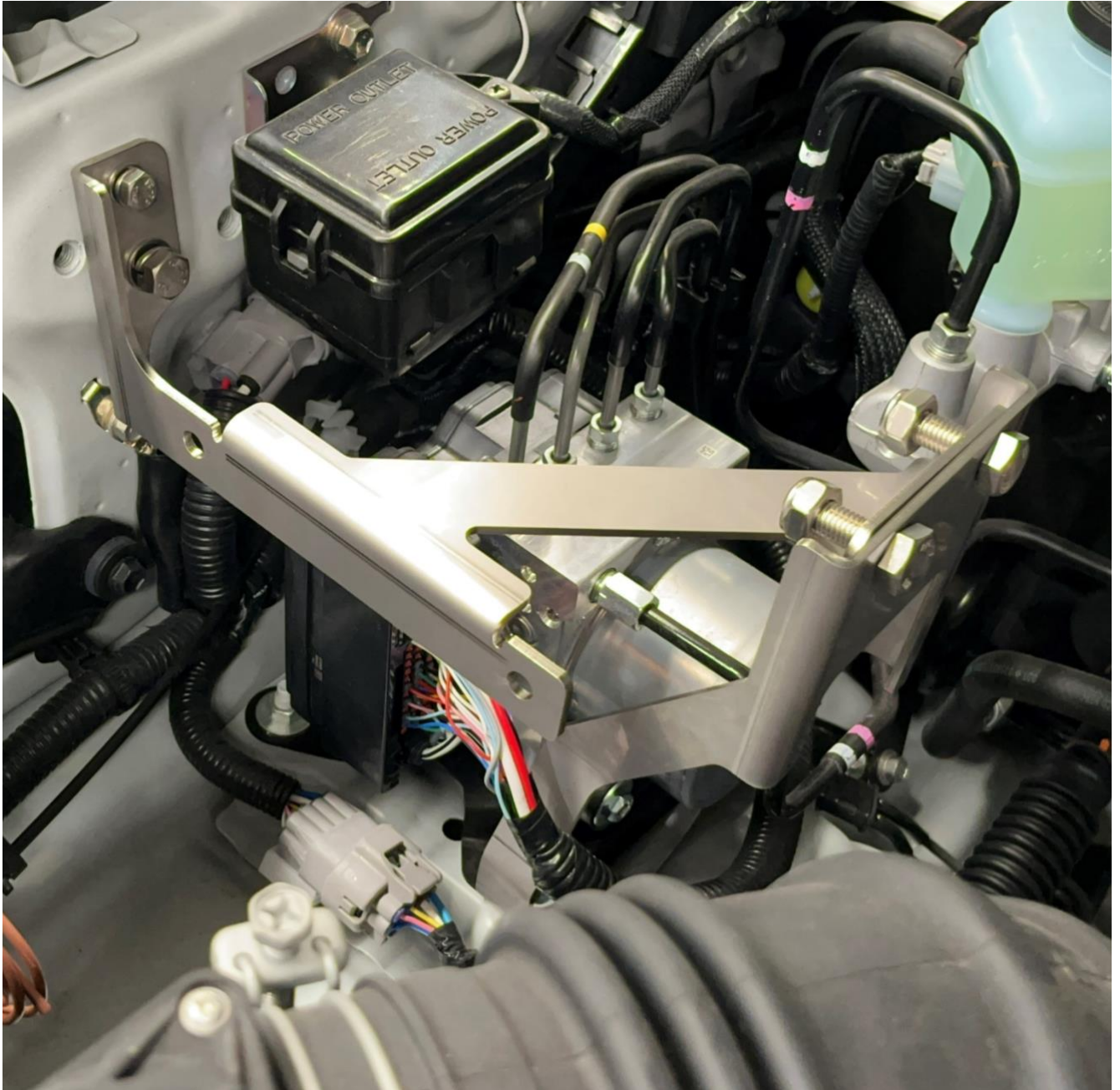
Image shows new bracket mounting location.

2. Mount the new bracket in place, it goes under the top line on the rear of the ABS unit and under the wiring harness on the front side, take care and it does manipulate in there without too much trouble. Reuse the original nuts to loosely secure in place – Do not tighten them yet!

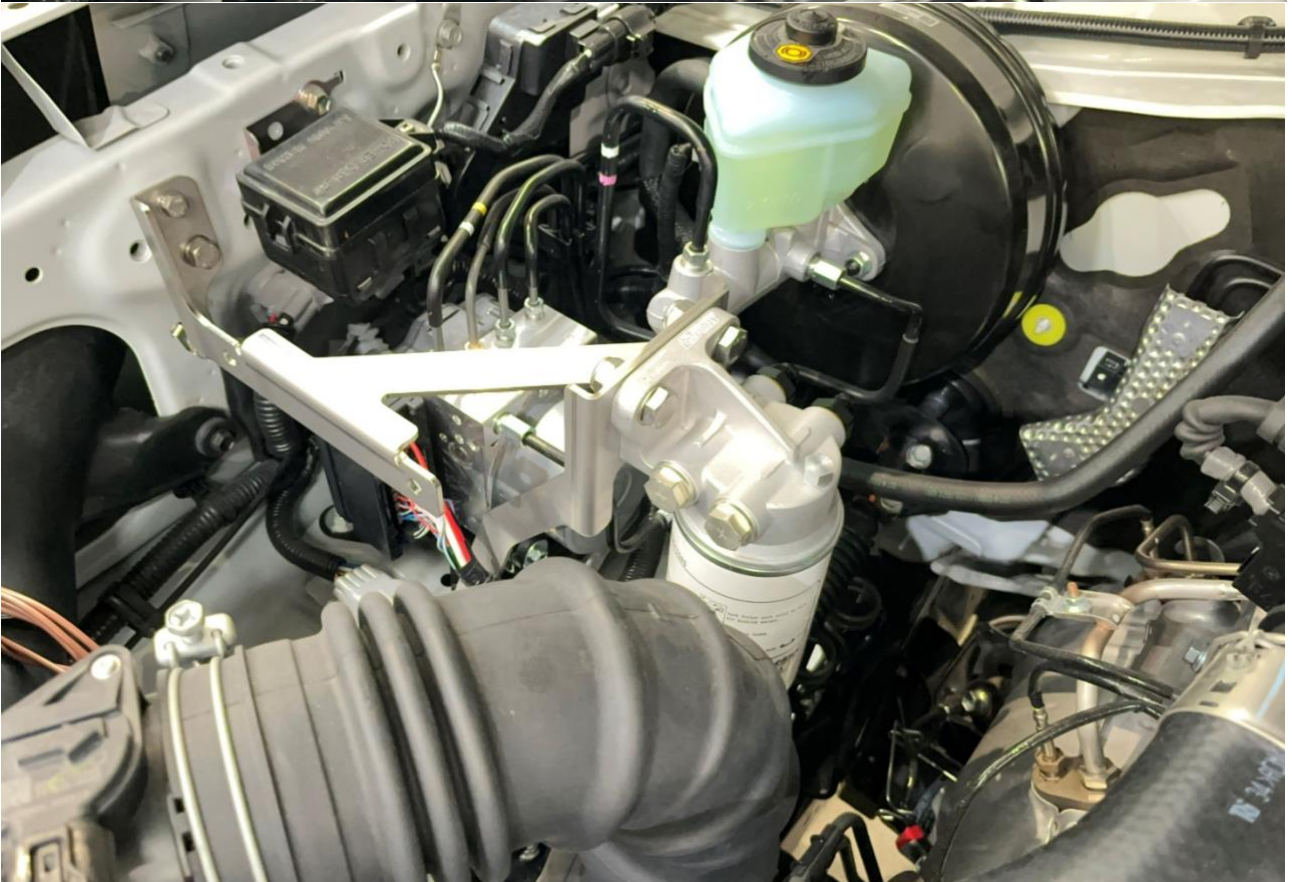
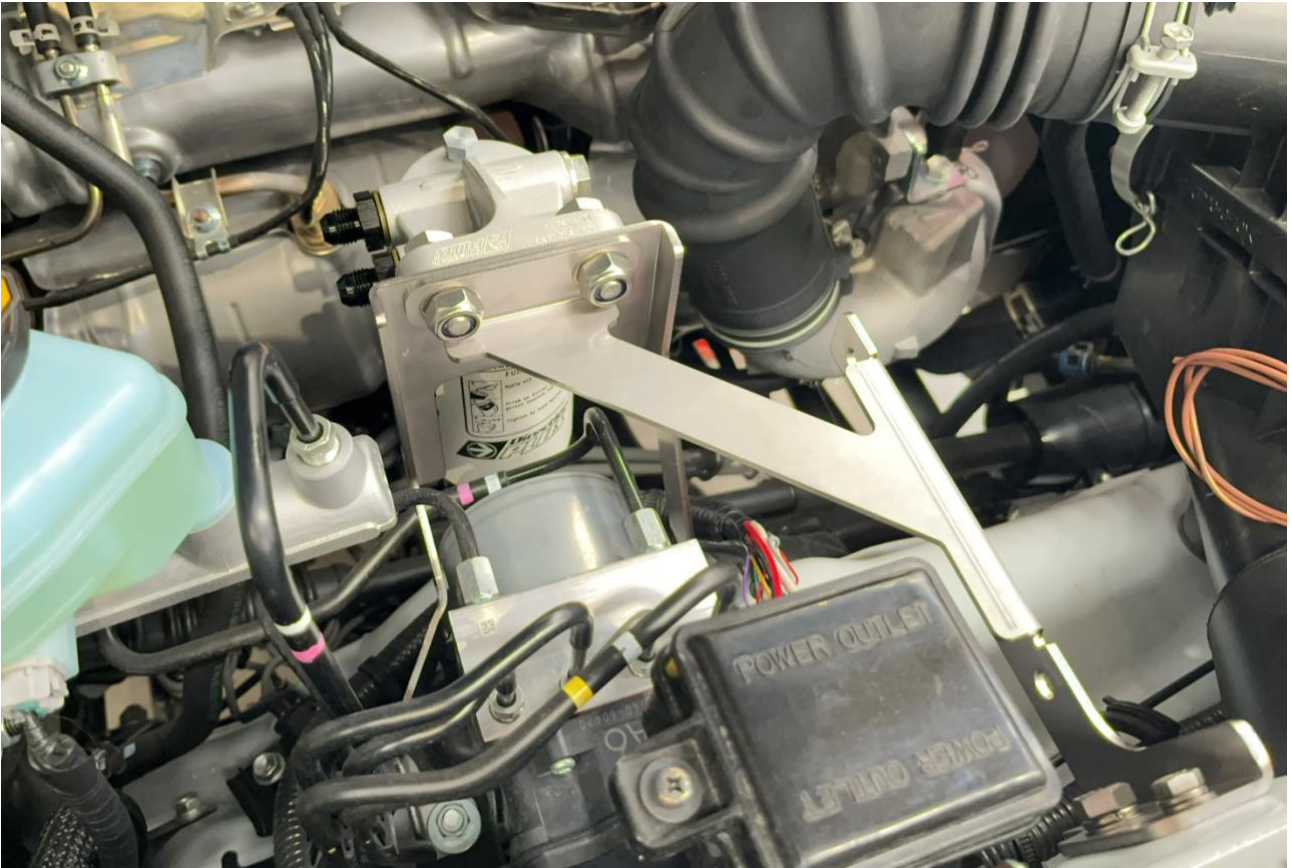


Mounting Bracket A fitted to the vehicle.

3. Using mounting bracket B, the M10 bolts, nuts and washers, along with the single M6x16 bolt +washers and the single M8x16 bolt + washers. Fit the bracket to the vehicle as shown in the image below. Bolt the PreLine to the bracket now. Once both brackets are in place, tighten the bolts and ABS nuts.

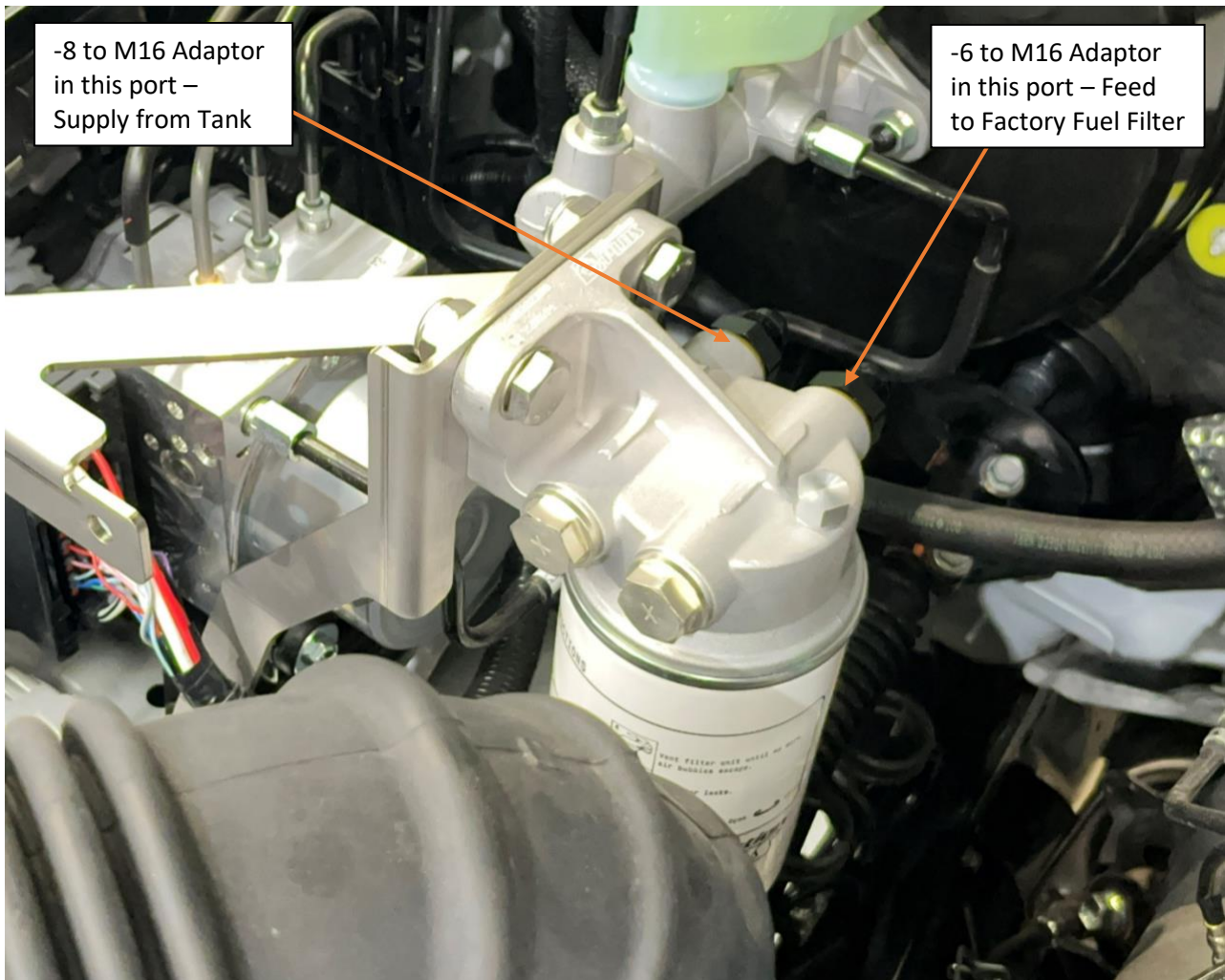


Mounting Bracket A and B fitted to the vehicle.



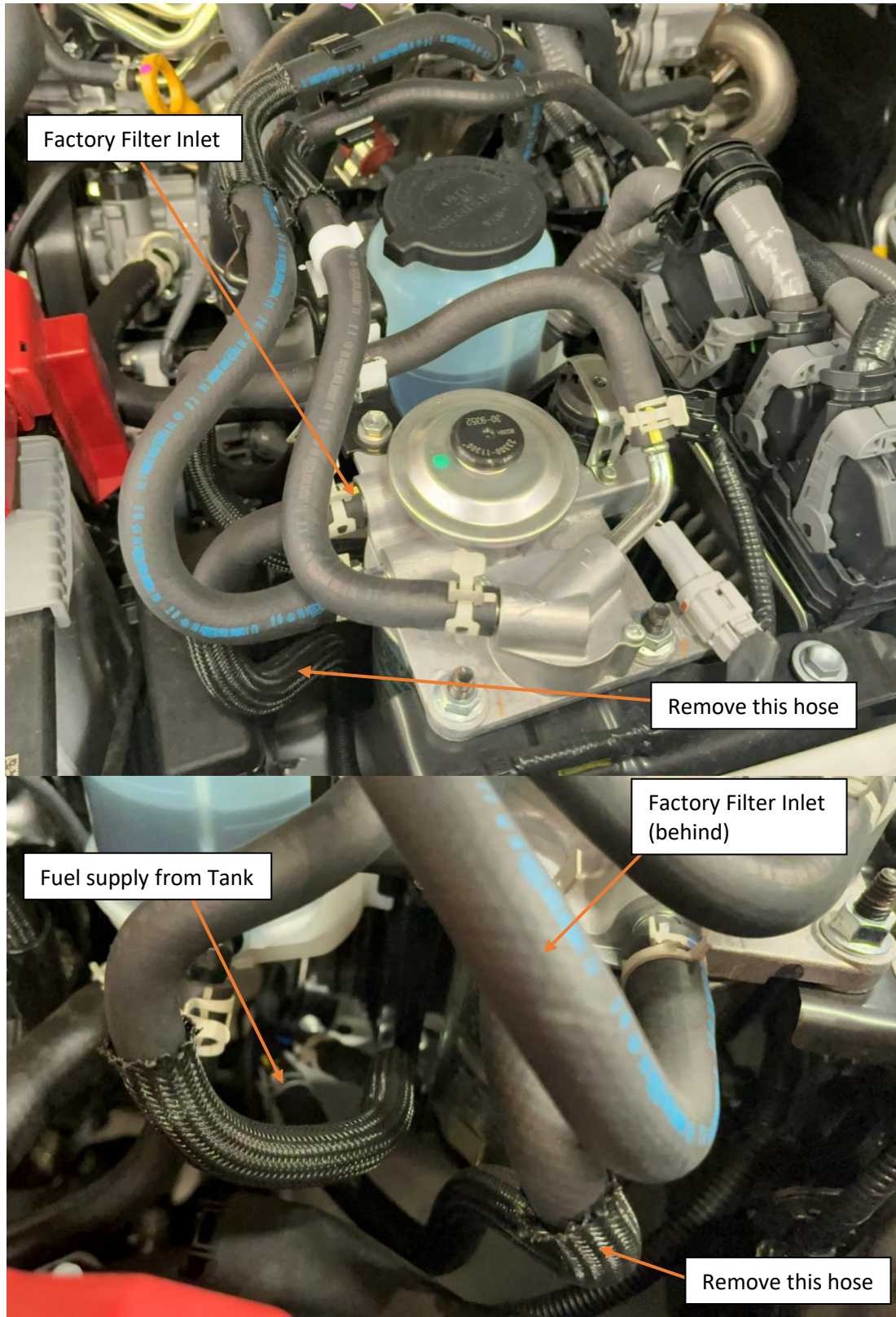
PreLine 150 mounted to Fuel filter bracket.

4. Install the threaded -8 to M16 adaptor into the rear port on the PreLine 150, using the M16 washers between the filter head and the adaptor. Make sure to use a sealant like Loctite 567 or equivalent. Keep the exposed thread clean when installing.
5. Install the threaded -6 to M16 adaptor into the front port on the PreLine 150, using the M16 washers between the filter head and the adaptor. Make sure to use a sealant like Loctite 567 or equivalent. Keep the exposed thread clean when installing.



PreLine 150 in place on bracket with Adaptors installed.

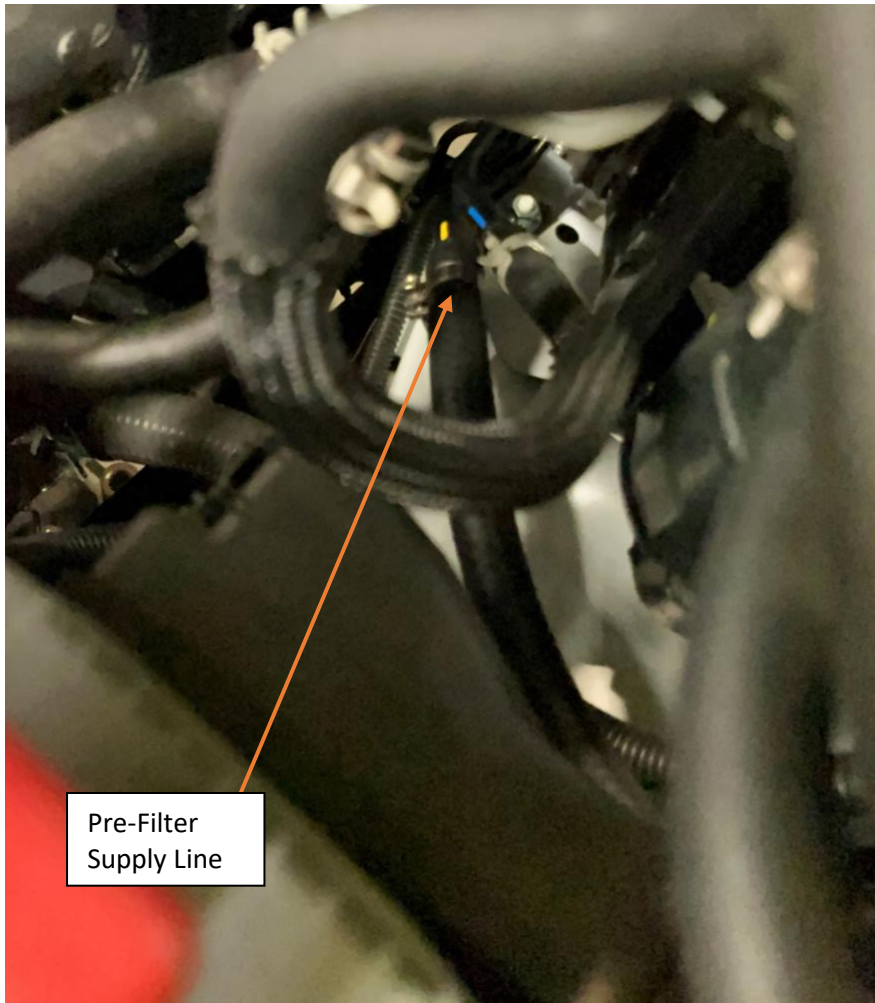
6. Connect the supplied wiring harness to the water sensor in the bottom of the fuel filter. Check to make sure the water sensor and the filter are snug on the assembly, do not over tighten as the thread can strip. Run the harness up through the grommet in the vehicle firewall. Use cable ties to retain in place.
7. Install the straight° -8 hose fitting to one end ½" hose. Make sure the hose is seated all the way on the push lock fitting. Finally, apply Loctite 567 to the -8 thread on the adaptor in the fuel filter ports before securing the straight -8 hose fitting in place. Install the heat sleeve over the hose.
8. Find the factory fuel hose that supplies the factory fuel filter. Remove the hose completely. To the hardline side, measure, cut and install other end of the new fuel filter supply hose and secure with one of the new stainless hose clamps.

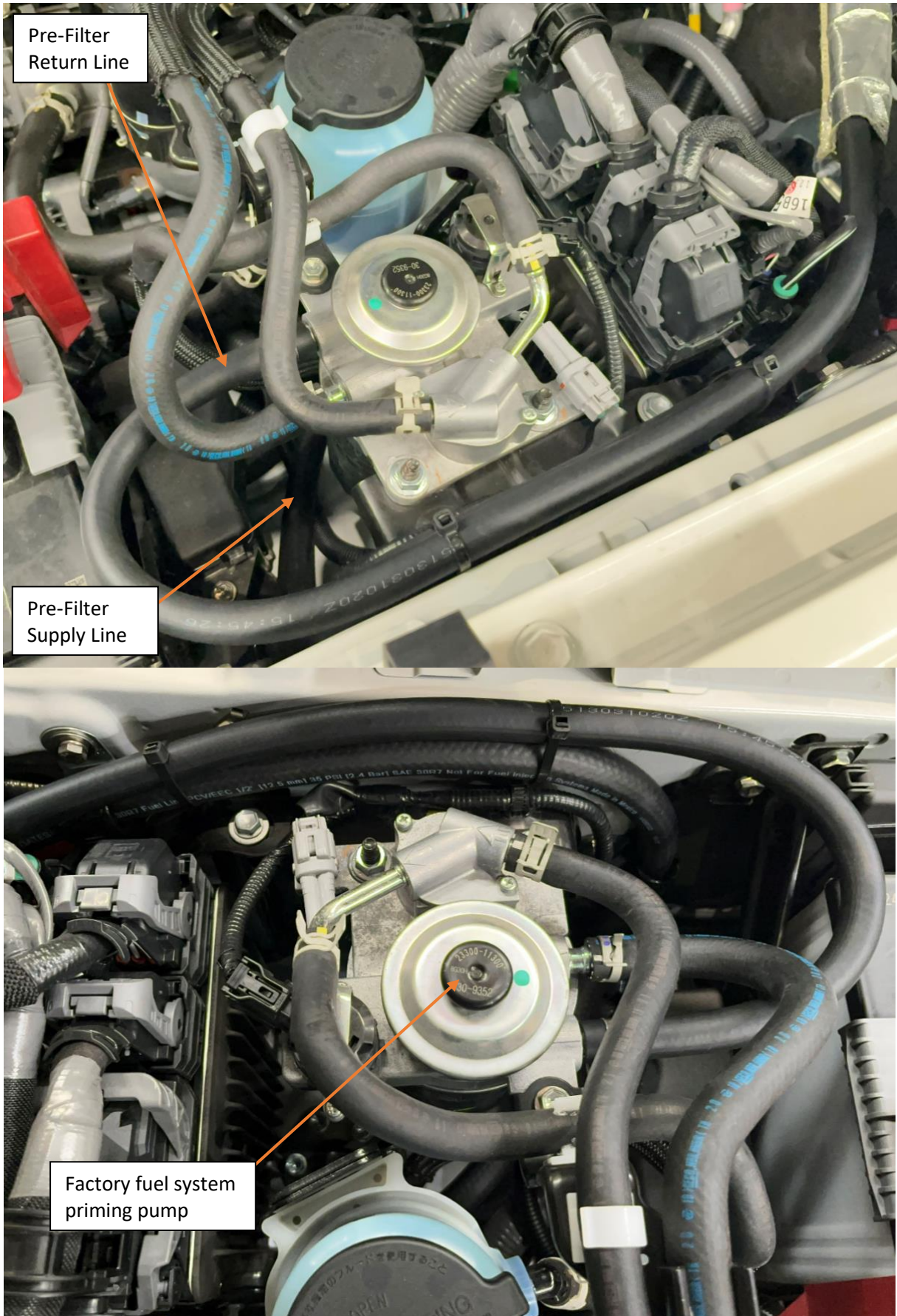


Factory Fuel Filter hose locations

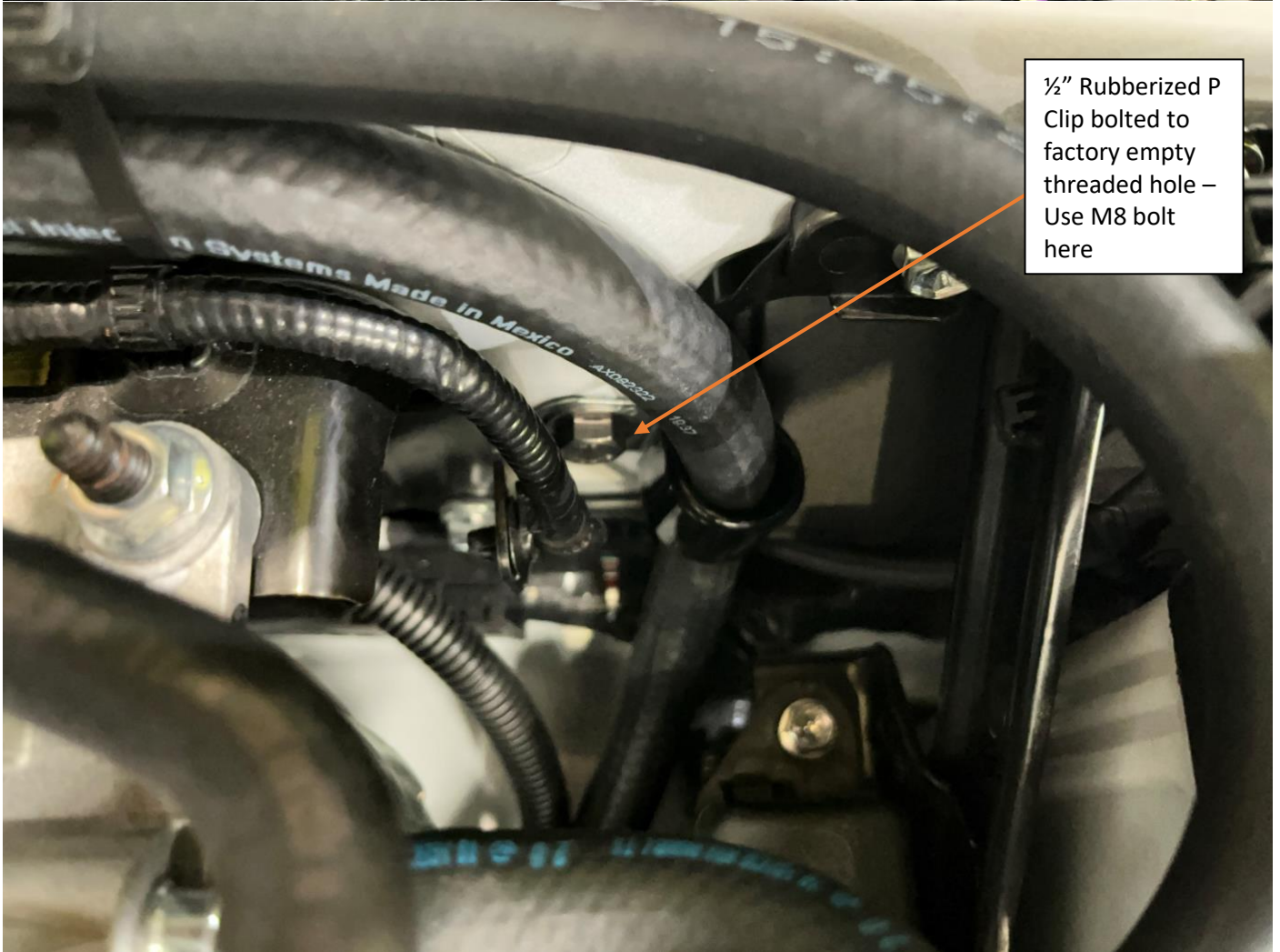
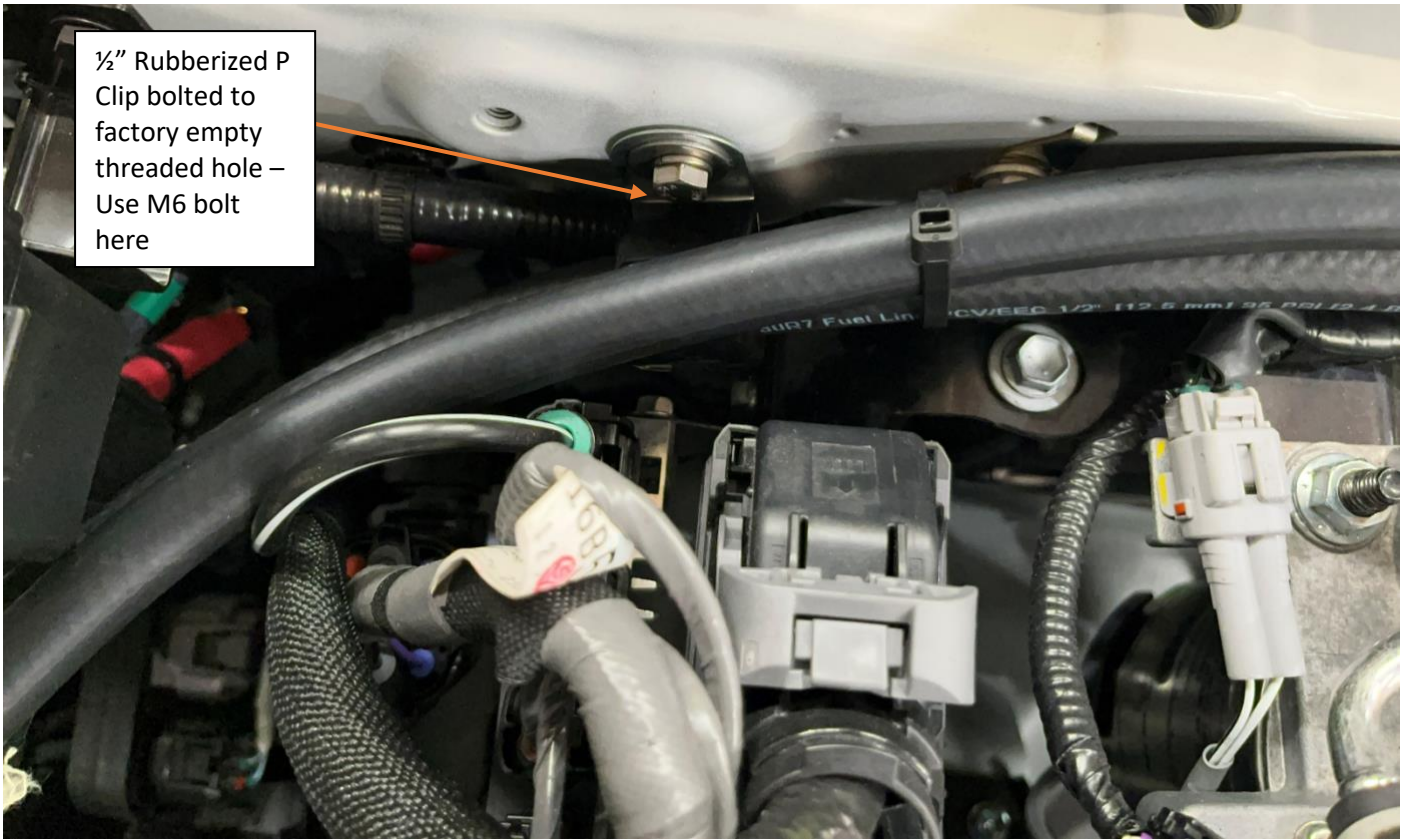
9. Install the straight^o -6 hose fitting to one end 3/8" hose. Make sure the hose is seated all the way on the push lock fitting. Finally, apply Loctite 567 to the -6 thread on the adaptor in the fuel filter ports before securing the straight -6 hose fitting in place. Run the hose through the same heat sleeve the 1/2" hose is running through.

10. Measure and cut the new fuel filter return hose to the inlet to the factory fuel filter do not secure yet.
11. Temporarily install the inline priming pump to the end of the pre-filter return hose, 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.
12. Remove the inline priming pump and connect the hose from the pre-filter assembly outlet to the factory fuel filter. Secure in place with a 15-17mm clamp. Use the factory priming pump in the engine bay to draw the fuel the rest of the way.

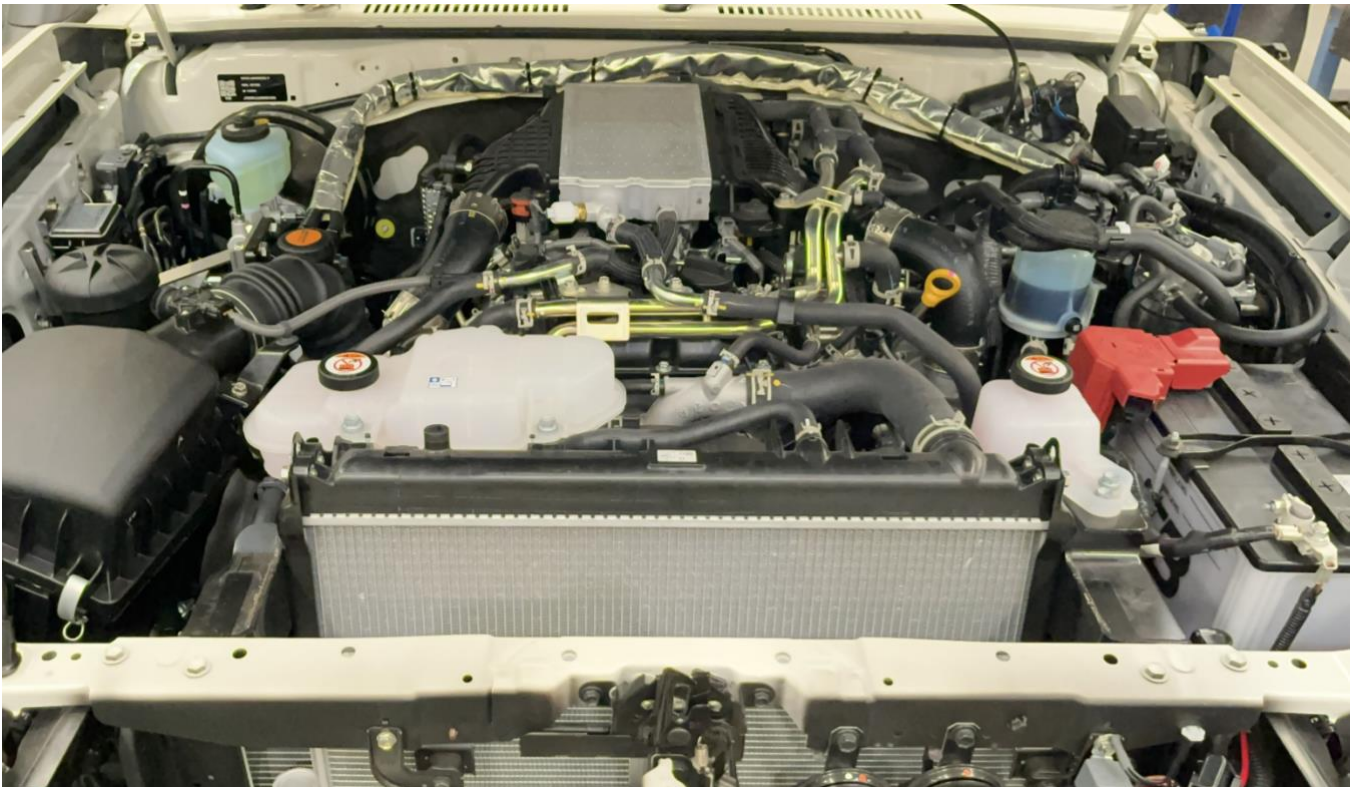




LC70 2.8L factory fuel system priming pump



13. 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.
14. 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.
15. 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.
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.



Fuel hose routing for pre-filter on LC70 2.8L

19. Once complete start the vehicle, carefully and toughly check for leaks.
20. Run the vehicle for at least 20 minutes to ensure there are no air pockets in the fuel system.

End of Installation Guide

GO TO THE NEXT PAGE TO INSTALL PROVENT ULTIMATE CATCH CAN

2. ProVent Ultimate Catch Can Kit Installation Guide

This document is to be used as a guide for the installation of the Direction Plus ProVent Ultimate Catch Can Kit to a 2024+ Toyota Land Cruiser 70 Series 2.8L 4 Cylinder 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

- 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>Bagged</i>	<i>ProVent Fitting Kit Bag</i>
1 x Mann + Hummel ProVent 200 (PV200DP)	2 x 16mm 45° Joiners (DPC4516)	2 x M8x25 Bolts (SSSS304M825)
1 x 270mm of 16mm Hose (DPPH16)	2 x 16mm 90° Joiners (DPC9016)	4 x M8 Flat Washers (FMW8)
1 x Mounting Bracket A (PLPV648-BR) <i>same bracket as PreLine-Plus pre-filter kit.</i>	8 x 16mm Spring Clamps (DPSC16)	2 x M8 Nyloc Nuts (FMN8)
1 x Mounting Bracket B <i>same bracket as PreLine-Plus pre-filter kit.</i>	2 x 25mm Spring Clamps (DPSC25)	
1 x 55mm of 16mm Hose (DPPH16)	2 x 16mm to 25mm Hose Coupler (PV2516DP)	<i>ProVent Drain Kit Bag</i>

1 x 60mm of 16mm Hose (DPPH16)	8 x 200mm Cable Ties (802078)	1 x 1000mm of 12mm Hose (DPFH12-PEX)
1 x 230mm of 16mm Hose (DPPH16)	2 x M10x30 Bolts (FMB10)	1x Drain Tap Assembly (DPDRAIN)
	2 x M10 Nyloc Nuts (FMN10)	2 x 12mm Spring Clamps (DPSC16)
	4 x M10 Flat Washers (FMW10)	
	1 x M6x16 Bolt (SSSS304M616)	
	1 x M6 Spring Washer (FMSW6)	
	1 x M6 Flat Washer (FMW6)	
	1 x M8x16 Bolt (SSSS304M816)	
	1 x M8 Spring Washer (FMSW8)	
	1 x M8 Flat Washer (FMW8)	



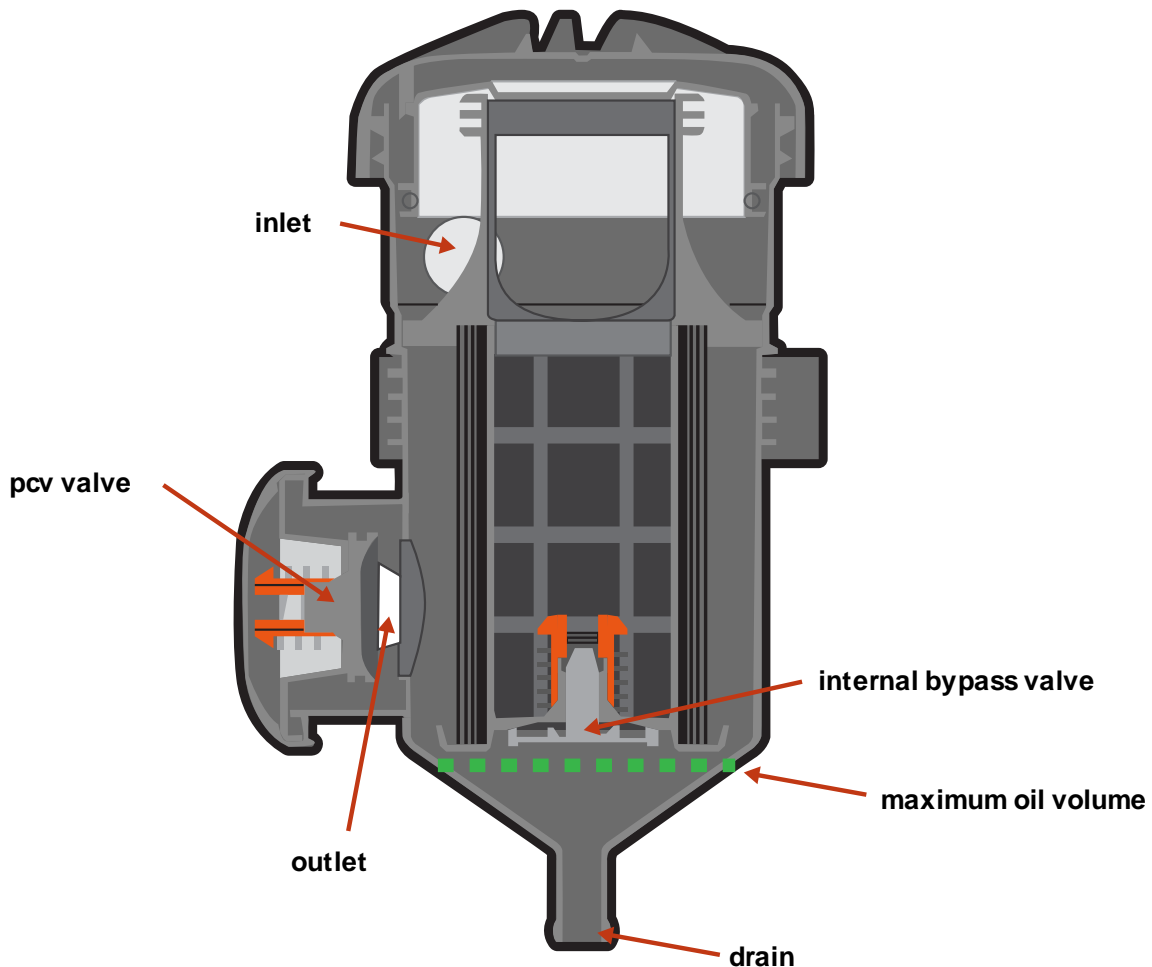
Basic Tools Required:

- Spanners
- Sockets
- Screw drivers
- Pliers
- Snips/Cutters



- Rags

PV200 INTERNAL BYPASS VALVE SECTIONAL DIAGRAM



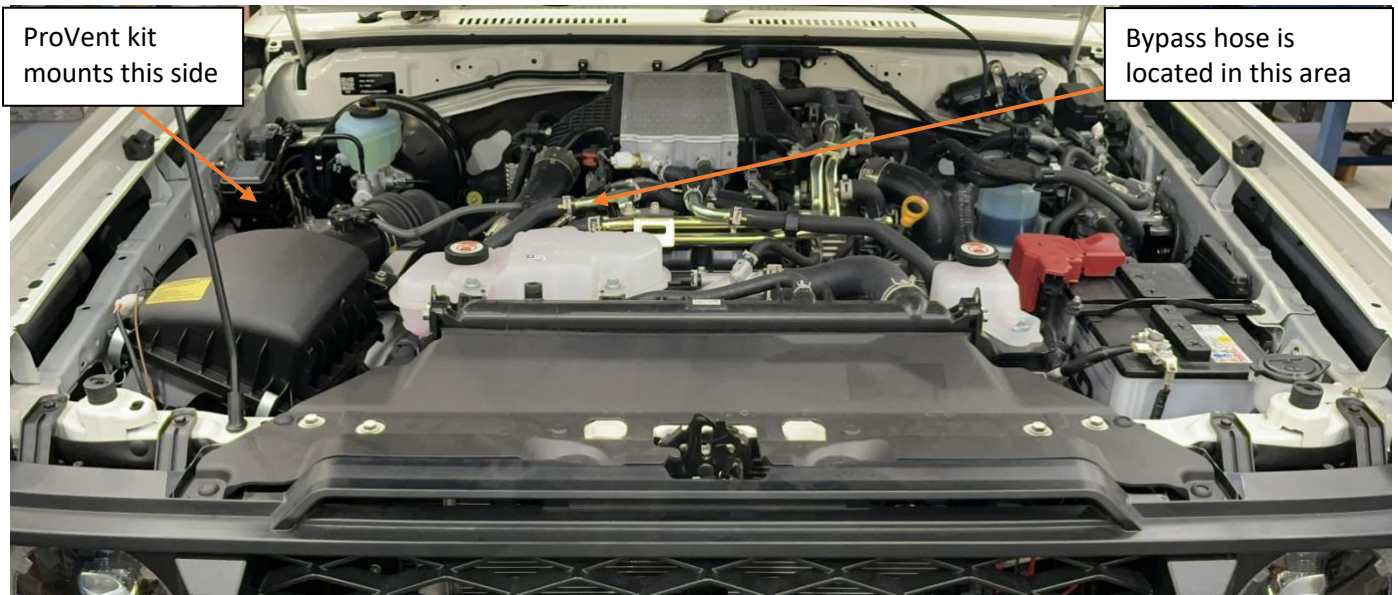
Due to the way the internally vented PV200 works, the PV200 must be drained regularly to ensure correct operation of the internal bypass valve. Failure to regularly draining/ servicing the Catch Can may cause engine damage due to over pressurisation of the crankcase ventilation system.

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



Land Cruiser 70 Series 2.8L Engine Bay – Overall View

21. Begin by removing two of the nuts used to secure the ABS unit to the inner guard. The ones to remove are the closest ones to the centre of the vehicle.

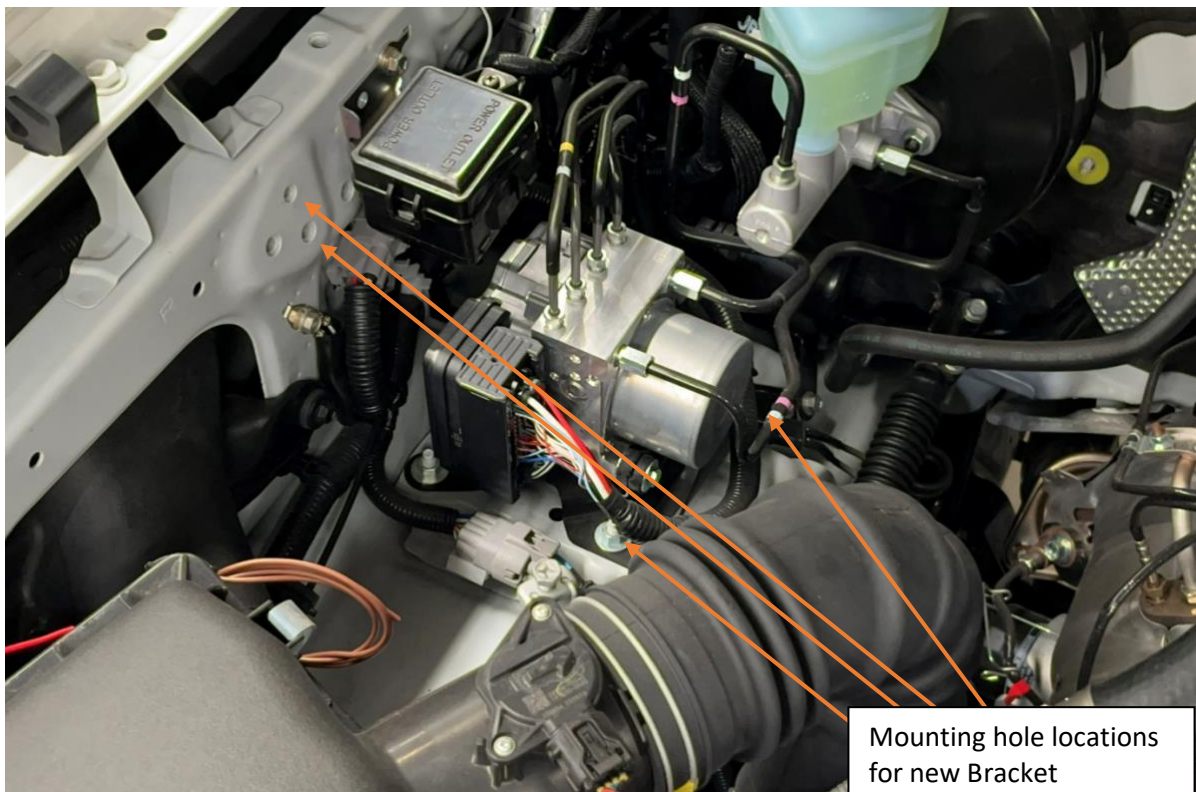
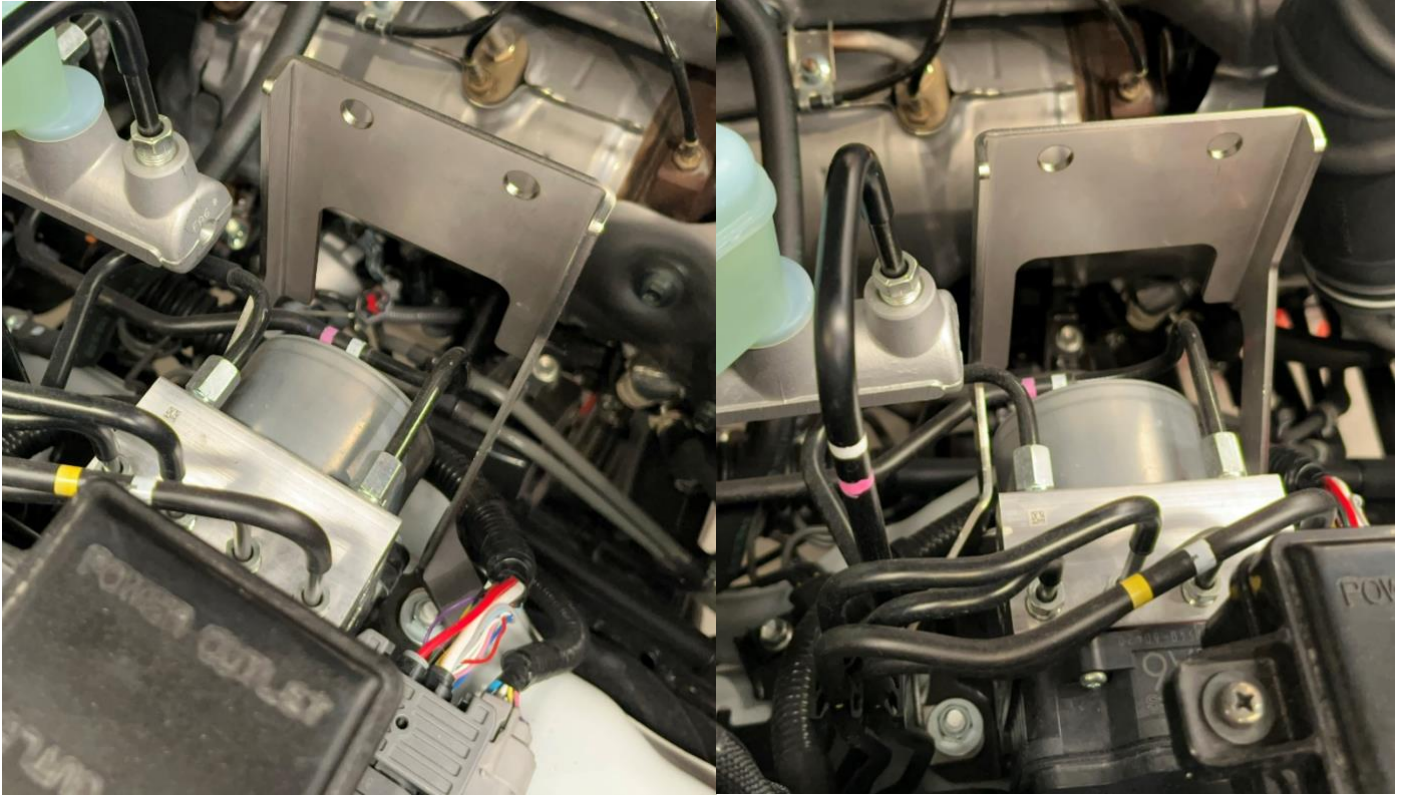


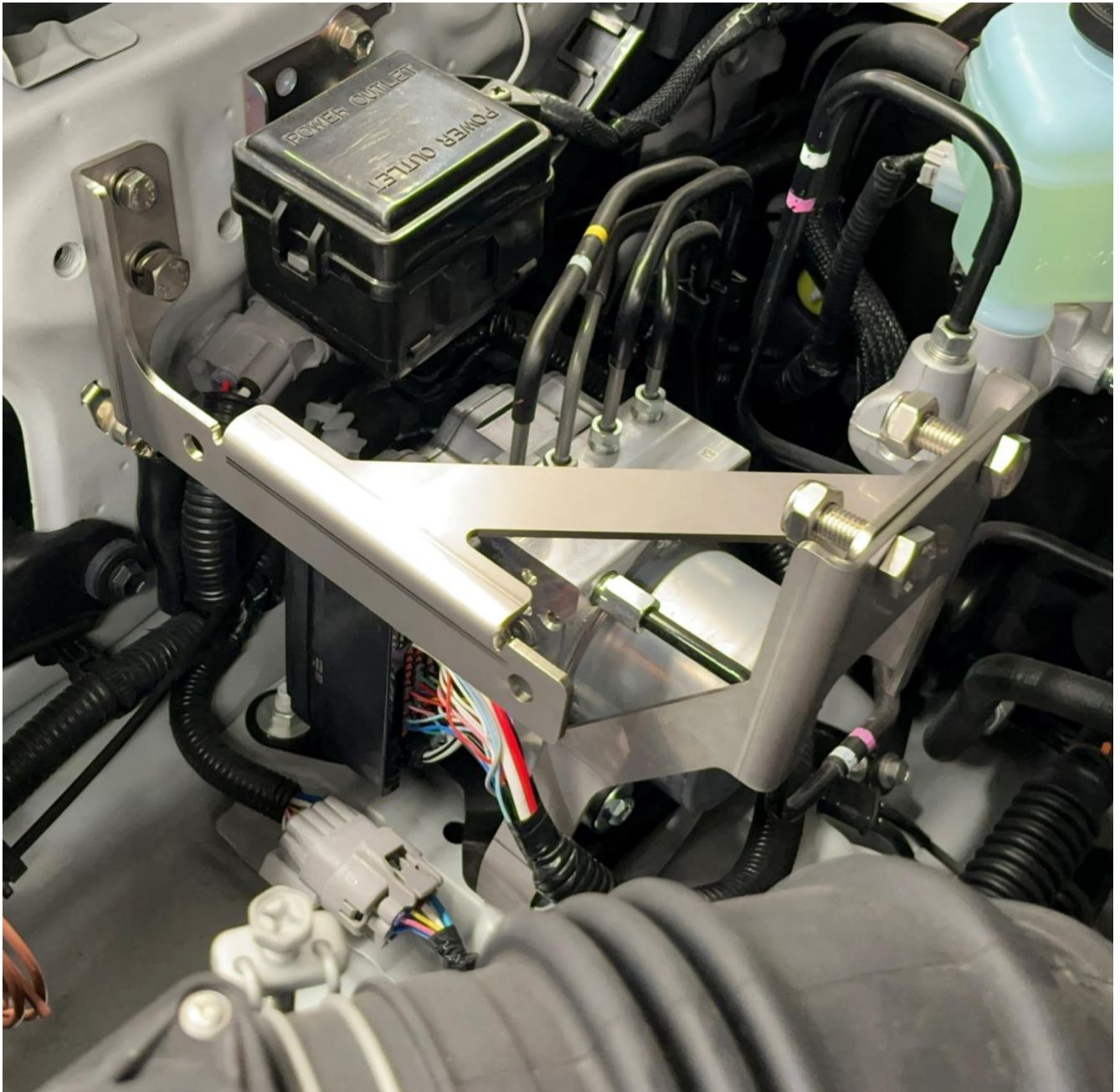
Image shows new bracket mounting location.

22. Mount the new bracket in place, it goes under the top line on the rear of the ABS unit and under the wiring harness on the front side, take care and it does manipulate in there without too much trouble. Reuse the original nuts to loosely secure in place – Do not tighten them yet!



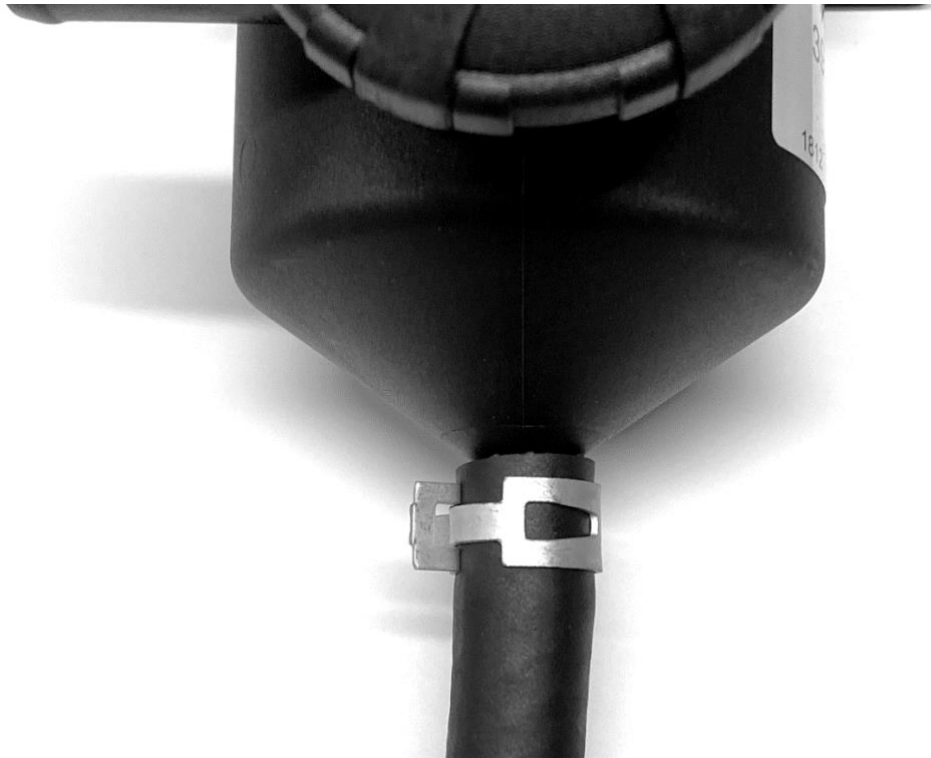
Mounting Bracket A fitted to the vehicle.

23. Using mounting bracket B, the M10 bolts, nuts and washers, along with the single M6x16 bolt +washers and the single M8x16 bolt + washers. Fit the bracket to the vehicle as shown in the image below. If installing a fuel filter, bolt it to the bracket now. Once both brackets are in place, tighten the bolts and ABS nuts.



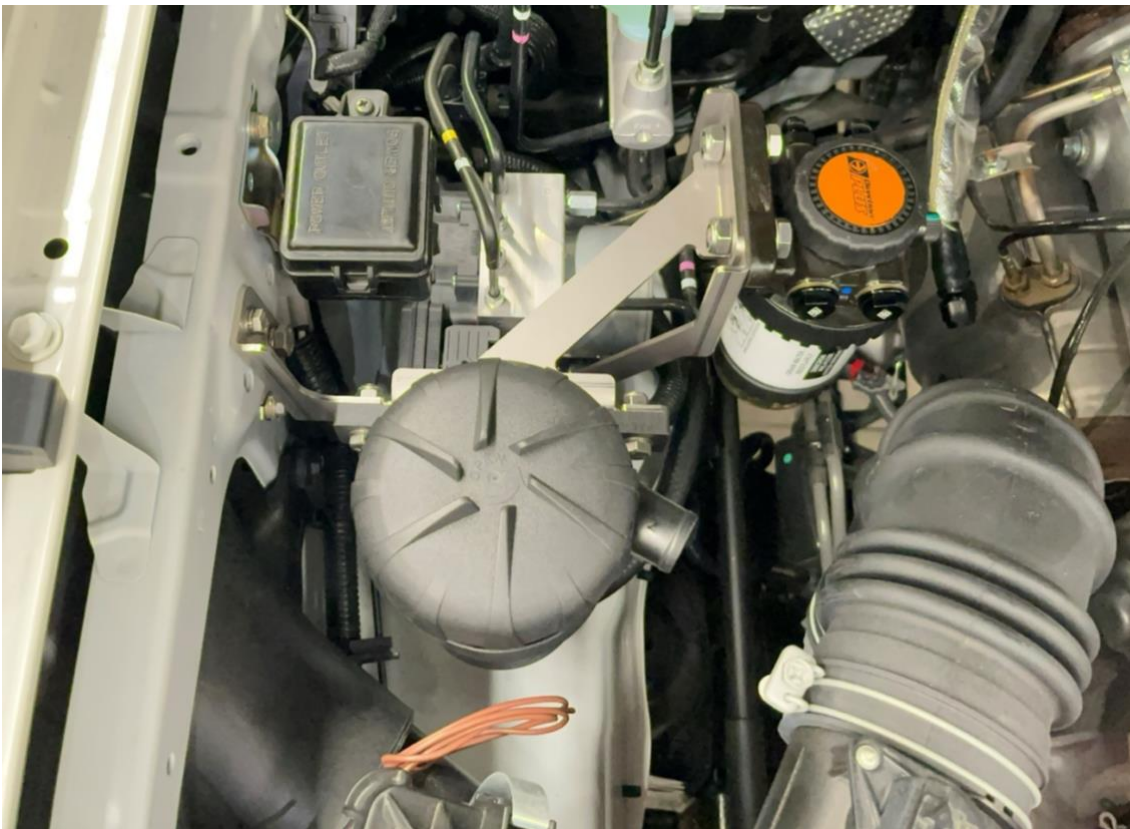
Mounting Bracket A and B fitted to the vehicle.

24. 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.

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



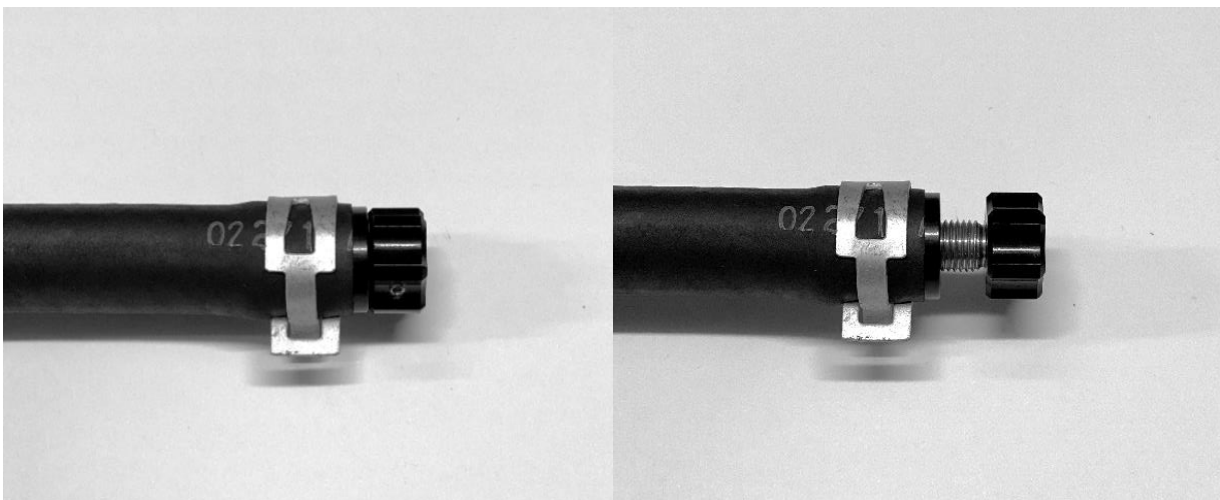
ProVent 200 bolted to bracket— Please note ProVent rotation in this image is correct, refer to the image on the last page of this installation guide for how to rotate the unit.

26. 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.



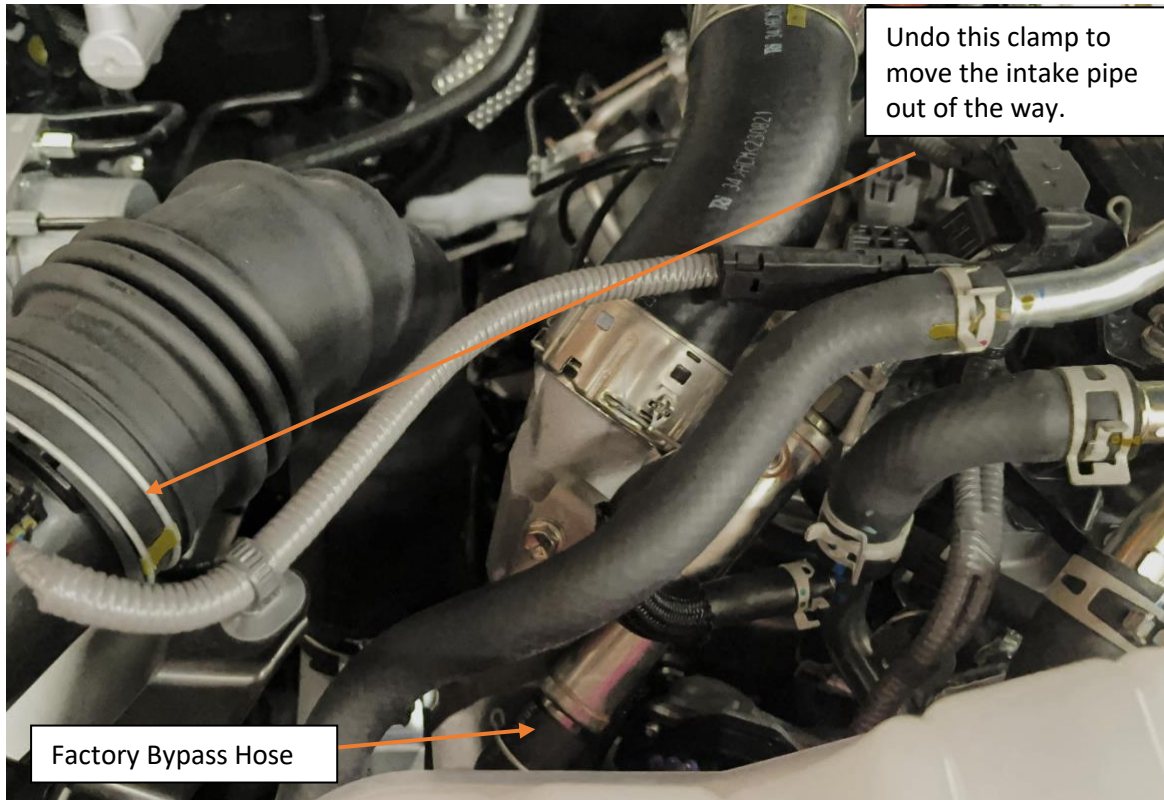
Drain Tap inserted into 12mm hose, secured with a clamp.

27. 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.
28. Make sure the tap position is closed and avoid placing the tap in a location in which it will fill with dirt and mud.

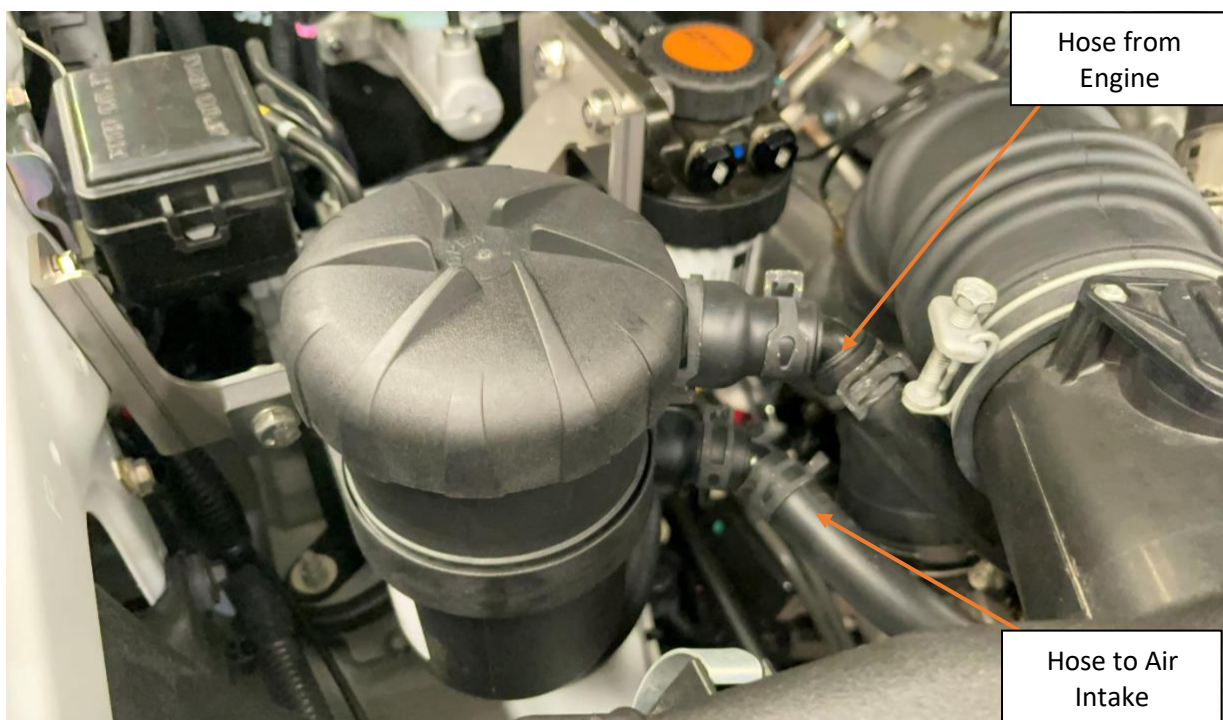


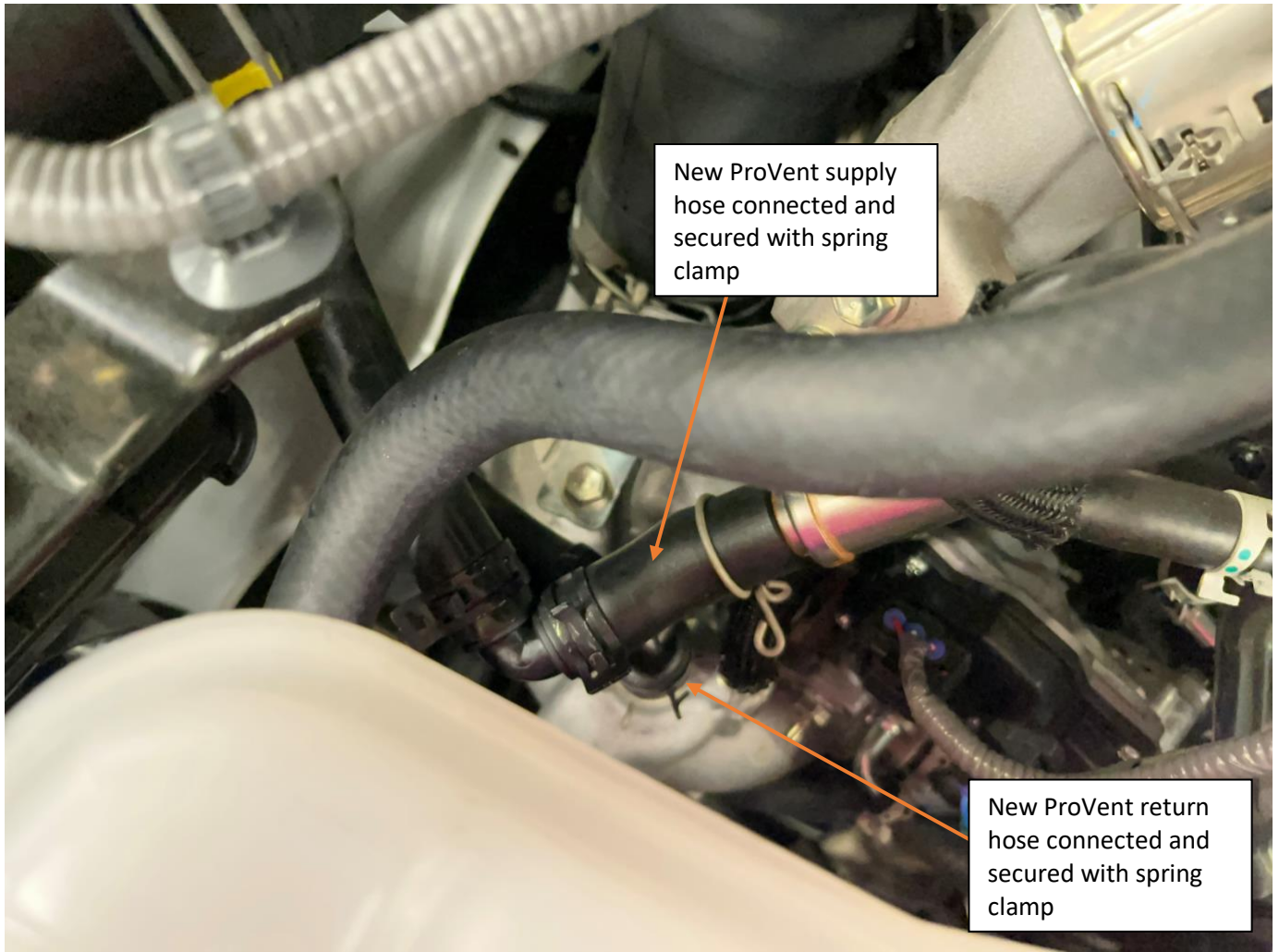
Left image – Tap Open. Right image – Tap Closed.

29. Remove the factory rubber hose at the base of the heat chamber that runs to the alloy intake pipe. The intake pipe may need to be removed to fully access the hose.



30. Secure on end of the 60mm long 16mm hose a 90° Joiner. Secure in place with a 16mm spring clamp.
31. Push the hose onto the end of the heat chamber all the way. Secure the hose with the factory clamp.
32. Install the 25-16mm reducers onto the ProVent 200. Secure in place with the 25mm spring clamps.
33. Install the 45° Joiners into the vacant ends of the 25-16mm reducers. Secure in place with a 16mm spring clamp.





34. Mount one end of the 230mm long 16mm (5/8") hose to the lower 16mm (5/8") 45° joiner fitting on the ProVent 200. Secure in place with a hose clamp.
35. Mount the other end of the same 230mm long 16mm (5/8") hose to the 16mm (5/8") 90° joiner fitting you put on the factory alloy intake pipe earlier. Trim to length if needed. Secure in place with a hose clamp at each end.
36. Mount one end of the 270mm 16mm (5/8") hose to the upper 16mm (5/8") 45° joiner fitting on the ProVent. Secure in place with a hose clamp.
37. Mount the other end of the same 270mm 16mm (5/8") hose to the upper 16mm (5/8") 90° joiner fitting you put of the factory heater tube earlier. Trim to length if needed. Secure in place with a hose clamp.

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).

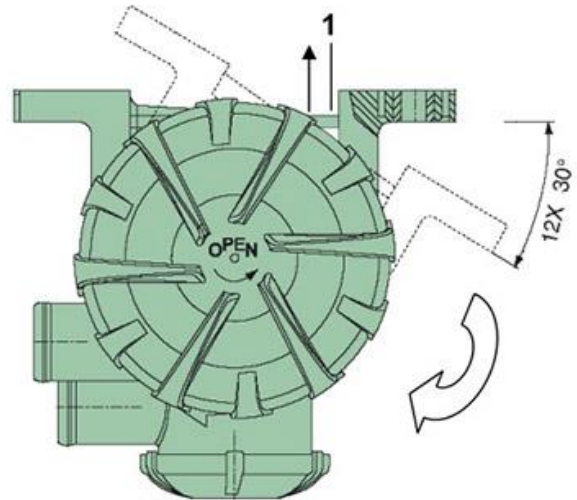


Fig. 5 Positions of outlet for ProVent 200

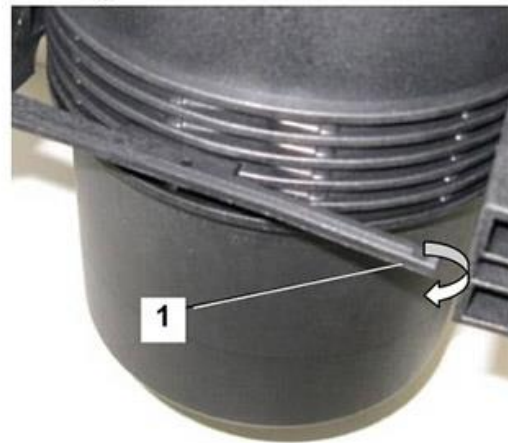


Fig. 6 Holder for ProVent 200

End of Installation Guide