Toyota Prado 150 1KD-FTV
Direction-Plus™ COMBO KIT
Fuel Manager Pre-Filter & ProVent Kit Installation Guide

Fuel Manager Pre-Filter Kit Installation Guide

This document is to be used as a guide for the installation of the **Direction-Plus™ Fuel Manager™ pre-filter Kit** to a **Toyota Prado 150 1KD-FTV (2009-2015).** It is recommended that the installation of the product be carried out by a competent qualified mechanic.

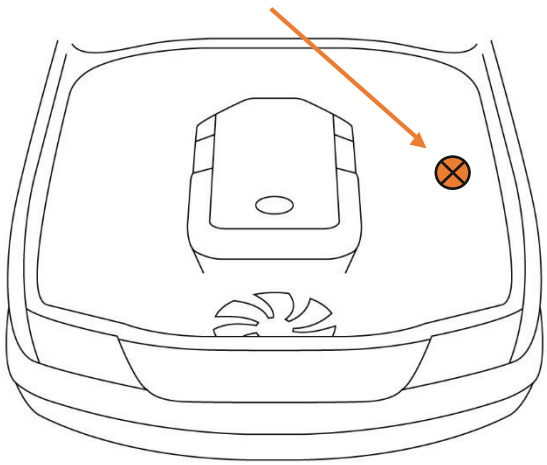
Important before starting

- Ensure the engine bay is clean and free from contaminates
- The fuel manager filter head has direction arrows indicating the direction of flow
- You have the correct tools to complete the fitment
- Read the instructions in full and familiarize yourself with the installation, before commencing any work

Kit contents

1x WASHER 6MM X 25MM
2x 16MM STRAIGHT ADAPTORS
2 BOLTS, 2 NUTS, 4 WASHERS
1x BOLT - 6X25MM ZINC
1x BRACKET - PRADO 150 FACE LIFT
1x DFL10 - FUEL LINE RUBBER (10MM)
2x 16MM PLUG
1x FM ENGINE BAY LABEL
1x FM100 30 MICRON FILTER ASSY
2x HOSE CLAMP - 10MM
1x LOCTITE 567 THREAD SEALANT - 6ML
1x NUT - NYLOC 6MM
2x PUSH ON STRAIGHT - 10MM
1x WASHER - 6MM
1x WINDSCREEN LABEL

Pre-filter mounting location



*Kit contents are subject to change based on component availability and/or refinement

Installation Guide

1. Disconnect factory fuel filter inlet hose from both ends and remove from the vehicle. Retain this hose in a safe place so the vehicle can be returned to factory in the future

2. Remove the two retaining nuts from the top of the factory filter housing

3. Place the pre-filter mounting bracket into its mounting location, sandwiched between the factory fuel filter and the factory fuel filter mounting bracket

4. With the supplied bolt, nut and washers, secure the base of the bracket ensuring that the large washer is installed on the underside of the guard

5. Install the 16mm straight adaptors into the filter head ports that are facing towards the front of the vehicle using the supplied LOCTITE thread sealant.

6. Apply a small amount of LOCTITE thread sealant to the two black 16mm plugs and install them into the two remaining ports in the pre-filter head.

7. Using the supplied 10mm bolts, washers and nuts, mount the FM100 Fuel Manager pre-filter assembly filter to the backside of the bracket

8. Measure from the steel pipe on the firewall (this pipe comes from the tank) to the inlet port of the fuel manager head (the arrows on the head indicate direction of flow) and cut to length a piece of the supplied 10mm hose

9. Lubricate the barbed end of one push-lock fitting and the inside portion of the hose to be fitted with a push-lock fitting with diesel fuel or WD40

10. Insert the barbed end of one push-lock fittings into the pre-lubricated end of the hose. Ensuring that the hose stops firmly against the inside of the bell cover.

11. With the assembled hose, screw the push-lock fitting on to the inlet port of the pre-filter. Connect the other end of the same hose to the steel fuel line coming from the tank and secure using a supplied 10mm hose clamp

12. Lubricate the barbed end of the remaining push-lock fitting and the inside portion of the remaining hose to be fitted with a push-lock fitting with diesel fuel or WD40

13. Insert the barbed end of the remaining push-lock fittings into the pre-lubricated end of the hose. Ensuring that the hose stops firmly against the inside of the bell cover.

14. With the now assembled hose, screw the push-lock fitting on to the outlet port of the pre-filter.

15. Measuring the hose in place between the outlet port of pre-filter the inlet of the factory fuel filter, cut the hose to length

16. Connect the 10mm fuel hose to the inlet of the factory fuel filter and secure with a supplied 10mm hose clamp

17. Using the supplied nylon cable ties, secure any lose hose from rubbing on any other components

18. Bleed the fuel system by pumping the hand primer on the factory filter until firm

19. Start vehicle and run the vehicle, whilst checking all connections for leaks

END OF GUIDE

Toyota Land Cruiser Prado 150 Series 1KD-FTV Direction-Plus™ ProVent® Ultimate Catch Can Installation Guide

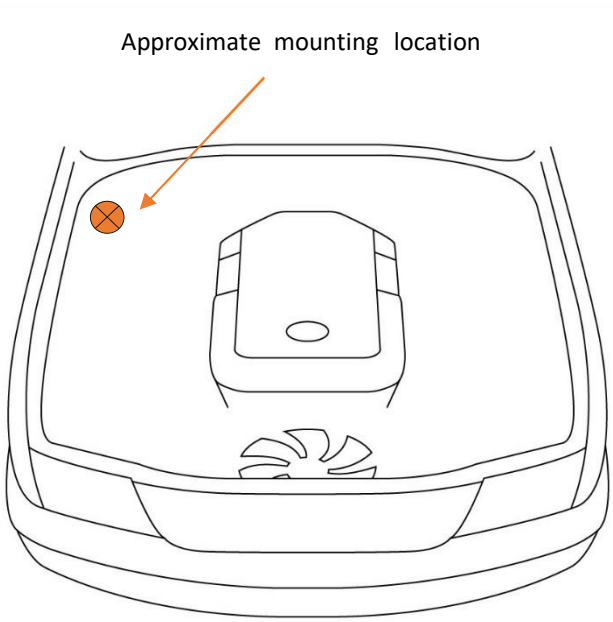
This document is to be used as a guide for the installation of the **Direction-Plus™ ProVent® Ultimate Catch Can Kit** to a **Toyota Prado 150 1KD-FTV (2009-2015).** It is recommended that the installation of the product be carried out by a competent qualified mechanic.

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

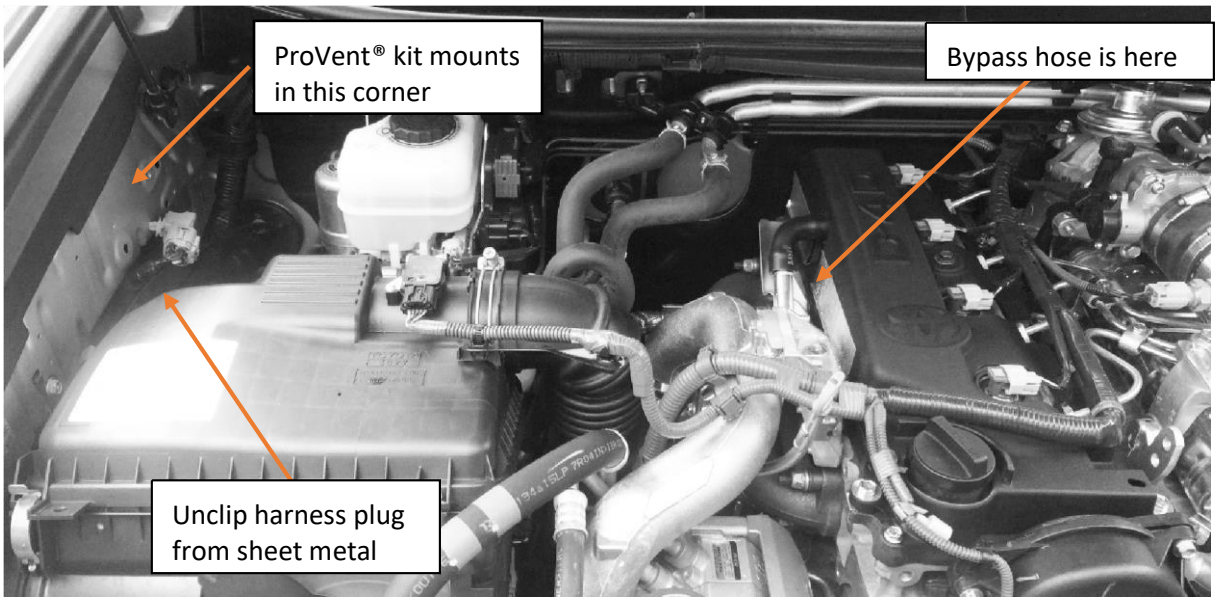
Included in the kit

1 x Mann + Hummel ProVent®
1 x Mounting Bracket
1 x 550mm of 16mm Hose
1 x 600mm of 16mm Hose
1 x 16mm Straight Joiner
3 x 16mm 90˚Joiners
8 x 25mm Spring Clamps
2 x 32mm Spring Clamps
2 x 16mm to 25mm Hose Coupler
8 x Cable Ties
1 x M6x12 Bolt
1x M6 Spring Washer
1 x M8 Nut
1 x M8 Spring Washer
2 x M8x25 Bolts
2 x M8 Flat Washers
2 x M8 Spring Washers
1 x 1000mm of 12mm Hose
1x Drain Tap Assembly
2 x 12-20mm Hose Clamps



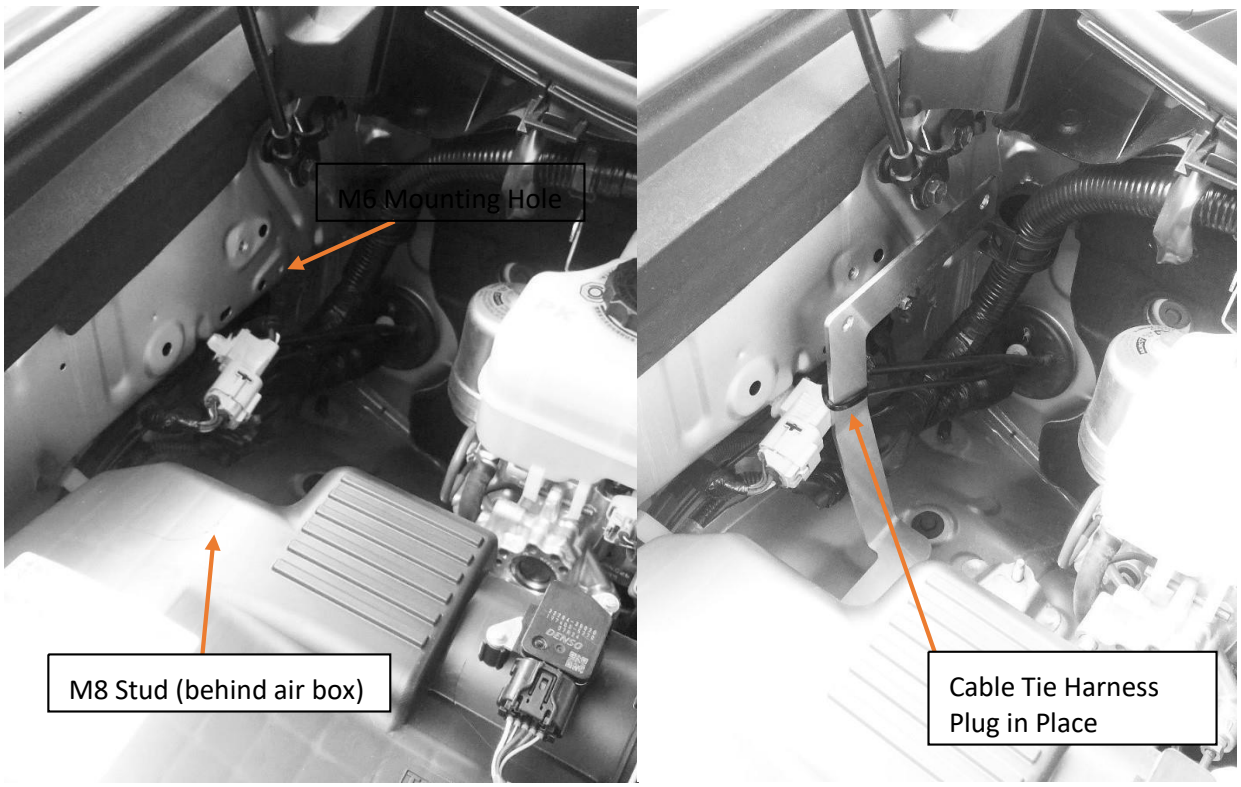
*Kit contents are subject to change based on component availability and/or refinement

Installation Guide



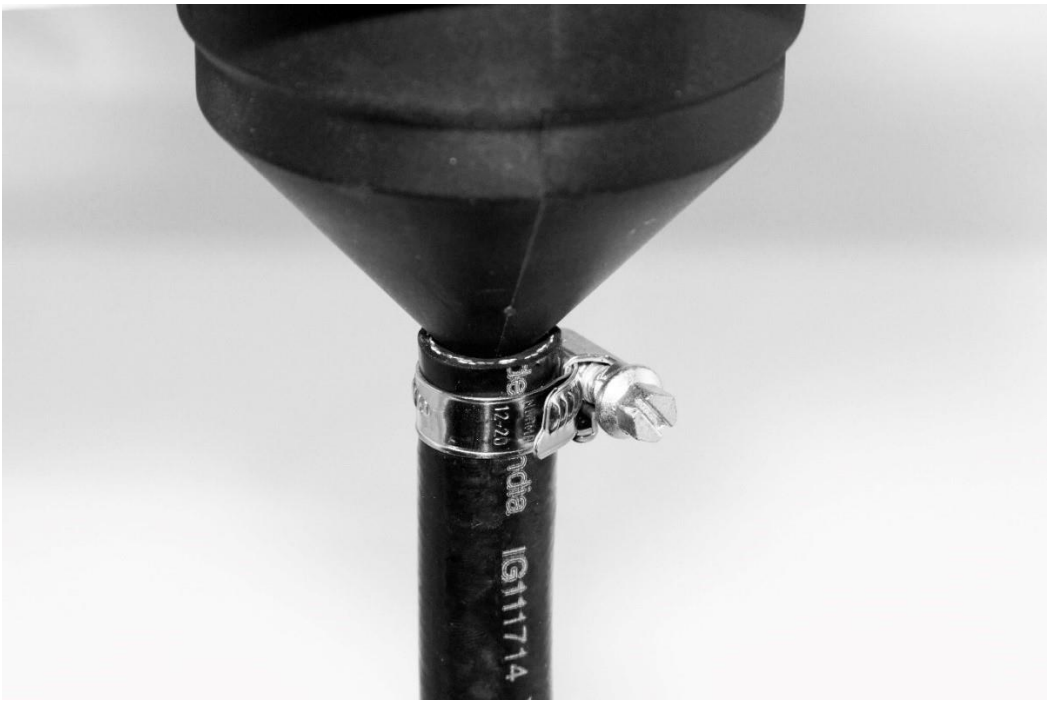
Land Cruiser Prado 150 Series Engine Bay – Overall View

1. Begin by unclipping the harness plug from the side of the engine bay (shown above) and bolting the new ProVent® Bracket to the rear corner of the engine bay. It uses an M8 nut and washer at the base and an M6 bolt and washer on the side to secure it to factory mounting locations.



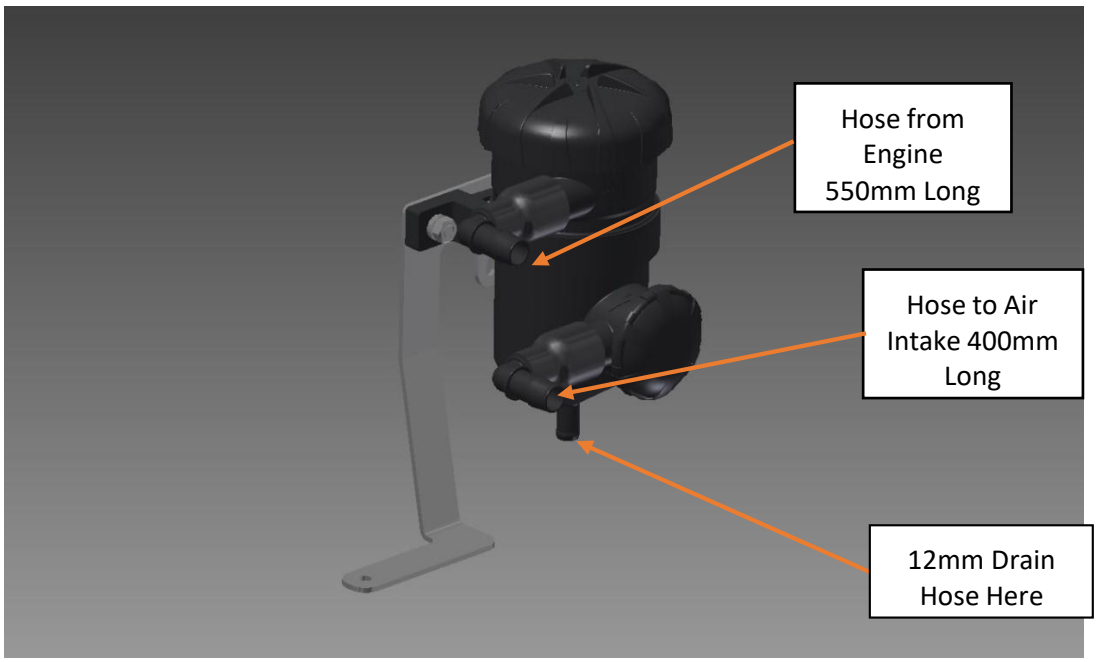
Land Cruiser Prado 150 Series ProVent® Bracket Mounting

2. Connect the 12mm (1/2”) Hose to the underside of the catch can body, using a 12-20mm Clamp to secure it in place.



Provent® 200 with 12mm hose connected and secured with 12-20mm worm drive clamp

3. 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.



Pre-assembled Provent® 200 with bracket – Please note ProVent rotation in this image is correct, your ProVent should come at the correct rotation in the box – if it is not, refer to the image on the last page of this installation guide.

4. 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 Tap hose tail into the hose and secure with a 12-20mm clamp.

Hose tail and tap assembly inserted into 12mm hose, hose clamp not required.

5. 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.

6. 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.*

7. There are two hose routing options for this kit. One to retain the factory steel ventilation hose and one to remove it. It is up to you which you do, there are enough parts in the kit to cover both options. This guide will cover the installation to retain the factory steel ventilation hose.

8. Remove the factory bypass elbow from the valve cover on the engine and rotate 180 ˚. You will also need to push it further down the steel hard pipe for clearance.

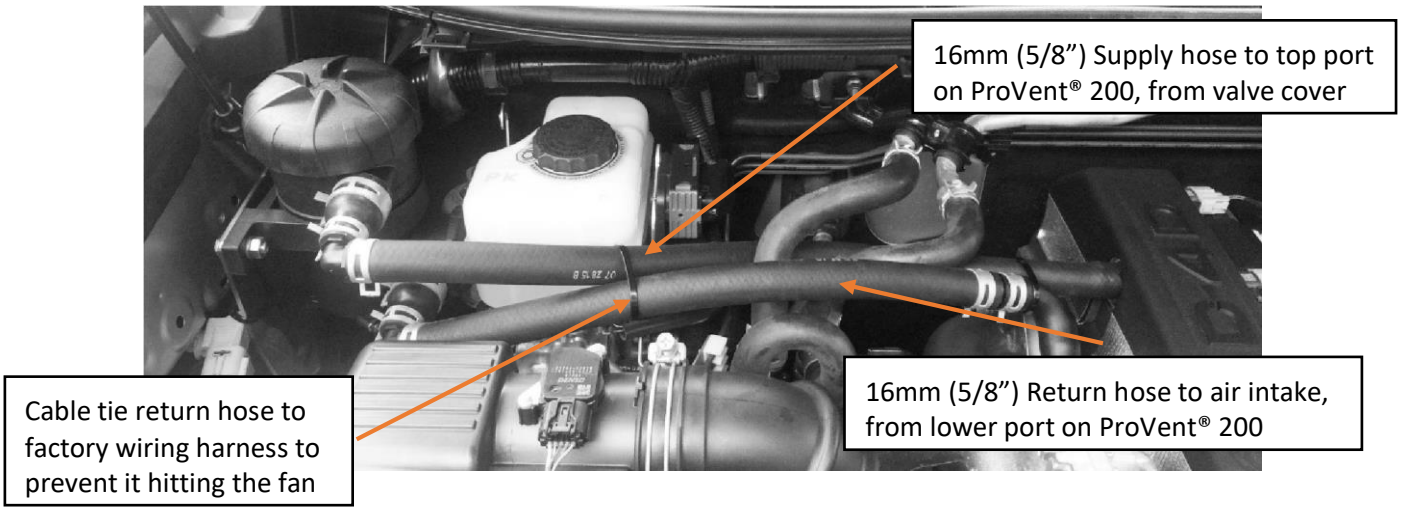
9. Mount one end of the 550mm long 16mm (5/8”) hose to the now vacant outlet on the valve cover of the engine. You can use a hose clamp here if you wish, there are enough in the kit (The factory hose has no clamps).

10. Run the other end of the 550mm long hose to the top 16mm (5/8”) 90˚ joiner fitting on the ProVent®. You may need to trim it to suit your needs. Secure in place with a spring clamp.

11. Mount one end of the 600mm 16mm (5/8”) hose to the lower 16mm (5/8”) 90˚ joiner fitting on the ProVent® 200. Secure in place with a hose clamp.

12. Using the 16mm straight joiner, run the hose to factory elbow hose you rotated earlier. Secure in place with hose clamps. Only approx. 400mm is needed for this, but we supply 600mm to cover the installation to remove the factory steel ventilation hose.

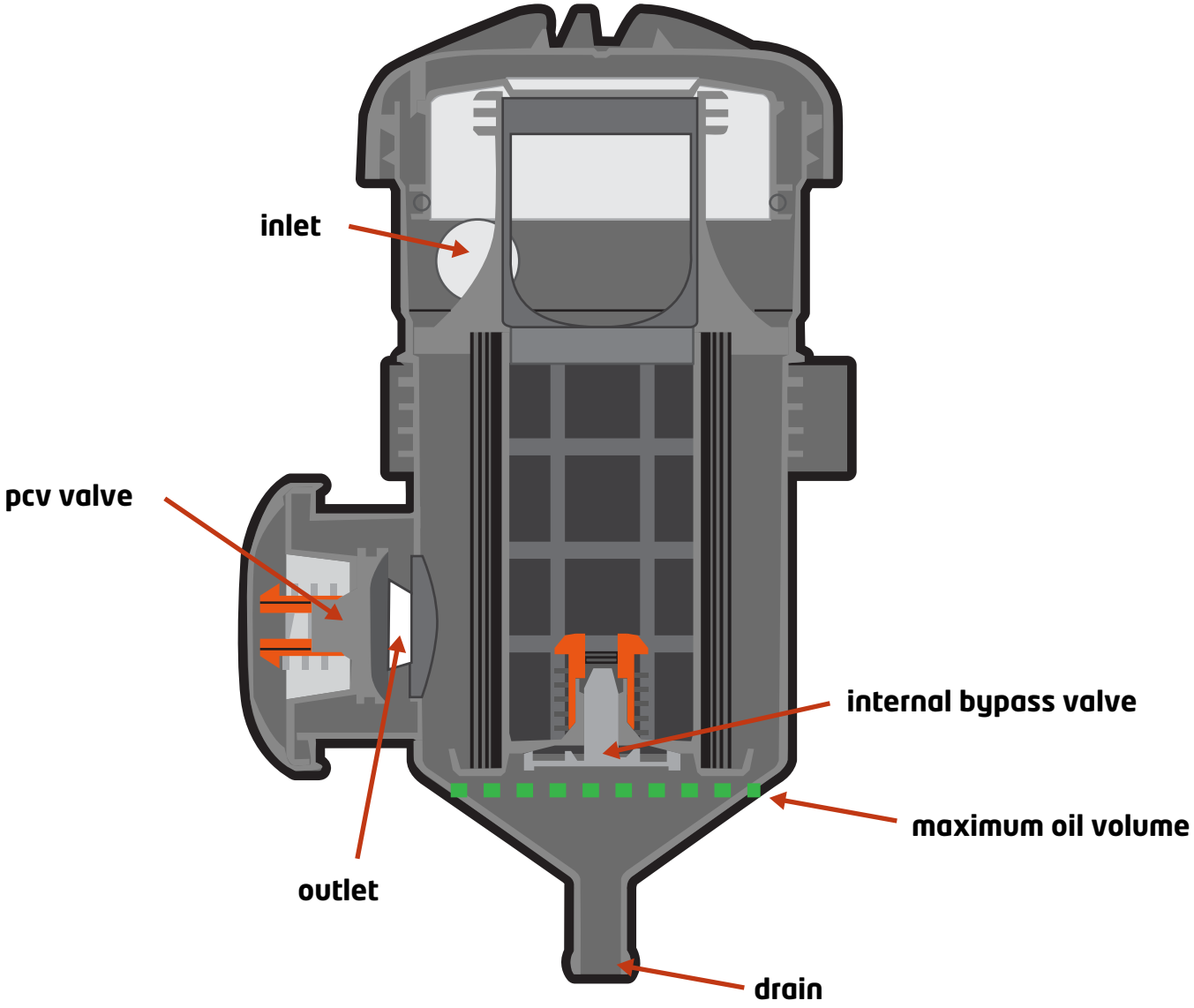
13. Cable ties the hoses together to prevent rubbing on any components.



Hose configuration in Land Cruiser Prado 150 Series with ProVent® 200 installed

End of Installation Guide

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.

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).

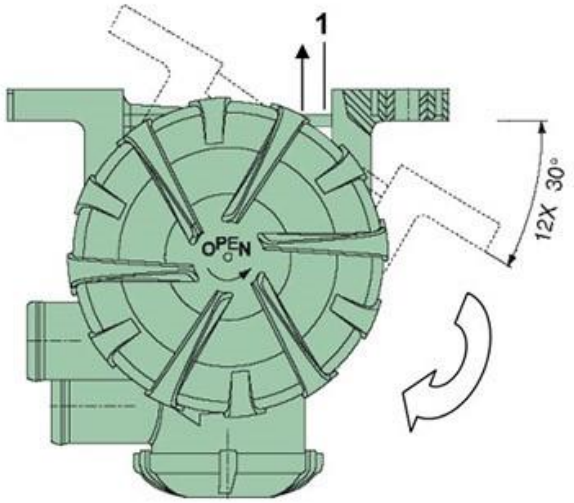


Fig. 5 Positions of outlet for ProVent 200

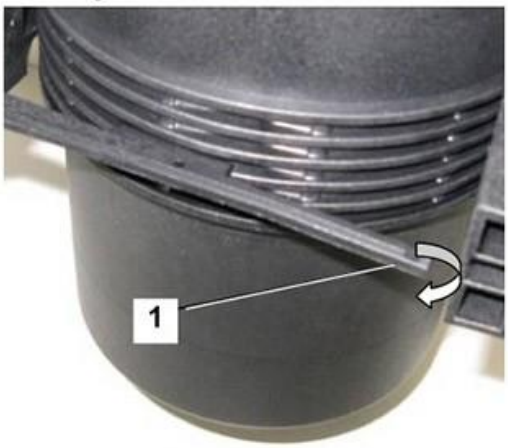


Fig. 6 Holder for ProVent 200