

# Toyota Land Cruiser 200 series 1VD-FTV

## Direction-Plus™ COMBO KIT

### Fuel Manager Pre-filter & ProVent Installation Guide

#### Fuel Manager Pre-Filter Kit Installation Guide

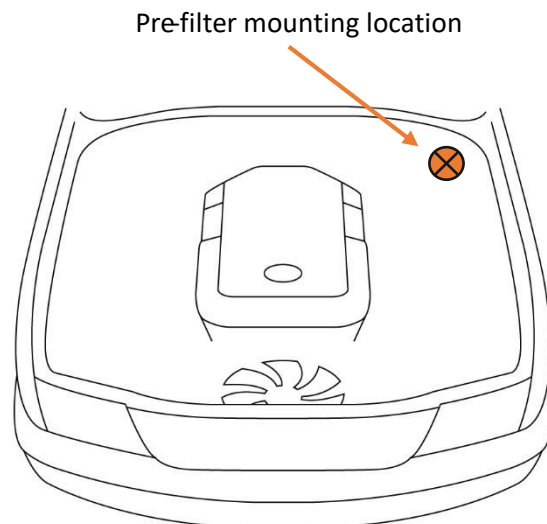
This document is to be used as a guide for the installation of the **Direction-Plus™ Fuel Manager™ pre-filter Kit to Land Cruiser 200 Series 1VD-FTV (2007-2015)**. It is recommended that the installation of the product be carried out by a competent qualified mechanic.

#### Important before starting

- Ensure the engine bay is clean and free from contaminants
- 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

2x STRAIGHT ADAPTOR - 12MM  
2 BOLTS 2 NUTS 4 WASHERS  
1x BRACKET - 200 SER LANDCRUISER  
1x DFL12 - FUEL LINE RUBBER (12MM)  
2x PLUG  
1x FM ENGINE BAY LABEL  
1x FM100 30 MICRON FILTER ASSY  
2x FMC12 - CLAMP 12MM  
2x PUSH ON STRAIGHT – 12MM  
1x WINDSCREEN LABEL



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



## Installation Guide

1. Remove inlet hose from original/ factory fuel filter.
2. Remove the two (2) retaining nuts on top of the factory fuel filter.
3. Install the Direction Plus bracket on top of the original filter housing and refit the retaining nuts. 2007-ON models may require to have the bracket mounted underneath the original housing for bonnet clearance.
4. Install the 12mm straight adaptors into the plugs into the Direction-Plus filter assembly
5. Mount Fuel Manager filter assembly on the bracket.
6. Lubricate the barbed end of one (1) of the push-lock fittings and the inside portion of the hose to be fitted with a push-lock fitting with diesel fuel or WD40.
7. Insert the barbed end of one (1) of the push-lock fittings into the pre-lubricated end of the hose. Ensuring that the hose is firmly stopped against the inside of the bell cover.
8. With the assembled hose, screw the push-lock fitting in to the INLET port of the Direction Plus Pre-Filter.
9. Connect the inlet side of the final original filter to the outlet of the Fuel Manager filter.
10. Fit the original/ factory supply fuel line to the inlet of the Fuel Manager.
11. Reconnect outlet pipe of the factory filter to the inlet of the common rail supply pump.
12. Install the two plugs in to the two (2) remaining ports on the Direction-Plus pre-filter head/ assembly.
13. Ensure all fuel lines are suitably secured.
14. Using the supplied nylon cable ties, secure any loose hose to prevent it from rubbing against any other components.
15. Prime the system using the hand primer on the factory filter. When the primer goes firm, the engine is ready to start.
16. Start and run the engine whilst checking ALL connections for leaks.

**END OF INSTALLATION**

# Toyota Land Cruiser 200 Series 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 Land Cruiser 200 Series 1VD-FTV (2007-2015)**. It is recommended that the installation of the product be carried out by a competent qualified mechanic.

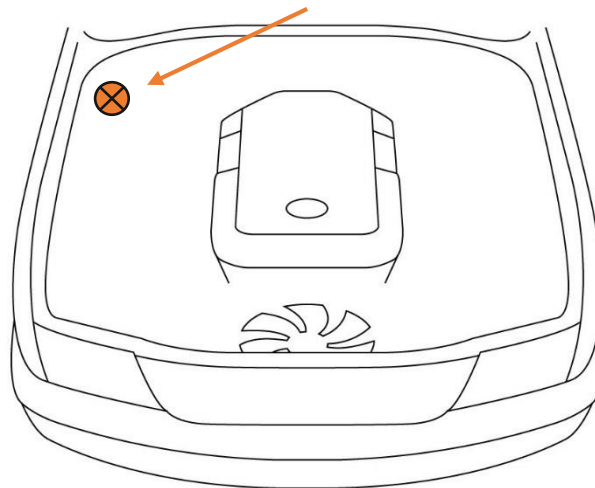
## Important Before Starting

- 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® 200
- 1 x Mounting Bracket
- 2 x 1400mm of 16mm Hose
- 1 x 16mm 90° Joiners
- 2 x 16mm 45° joiners
- 6 x 25mm Clamps
- 2 x 32mm Clamps
- 2 x 16mm to 25mm Hose Coupler
- 8 x Cable Ties
- 1 x M6x12 Bolt
- 1 x M6 Flat Washer
- 1 x 16mm to 19mm 90° Joiner
- 2 x M8x25 Bolts
- 2 x M8 Flat Washers
- 1 x 1000mm of 12mm Hose
- 1 x Drain Tap Assembly
- 2 x 12-20mm Hose Clamps

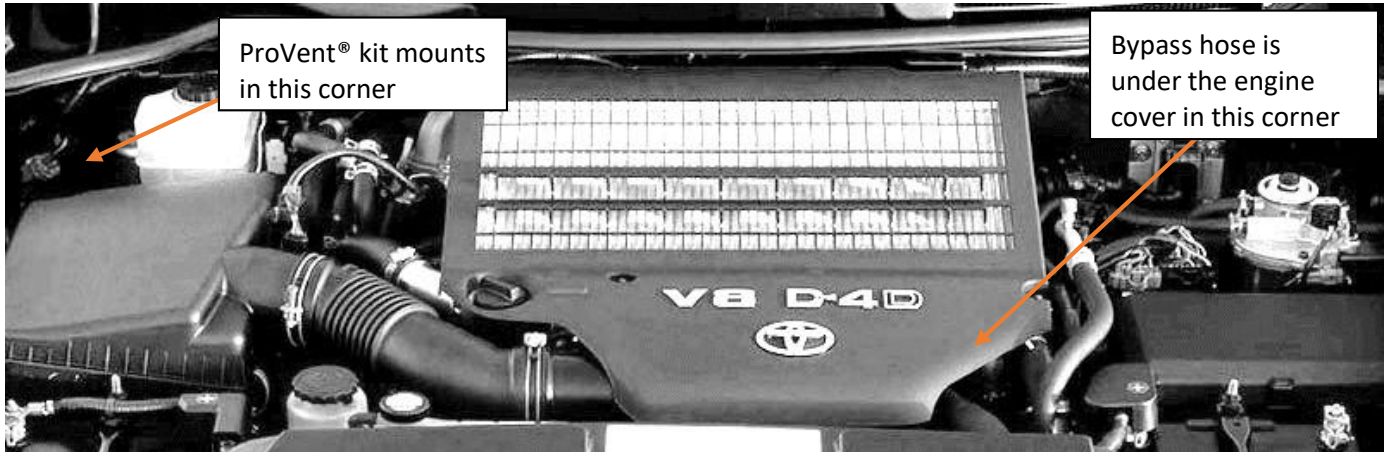
Approximate mounting location



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

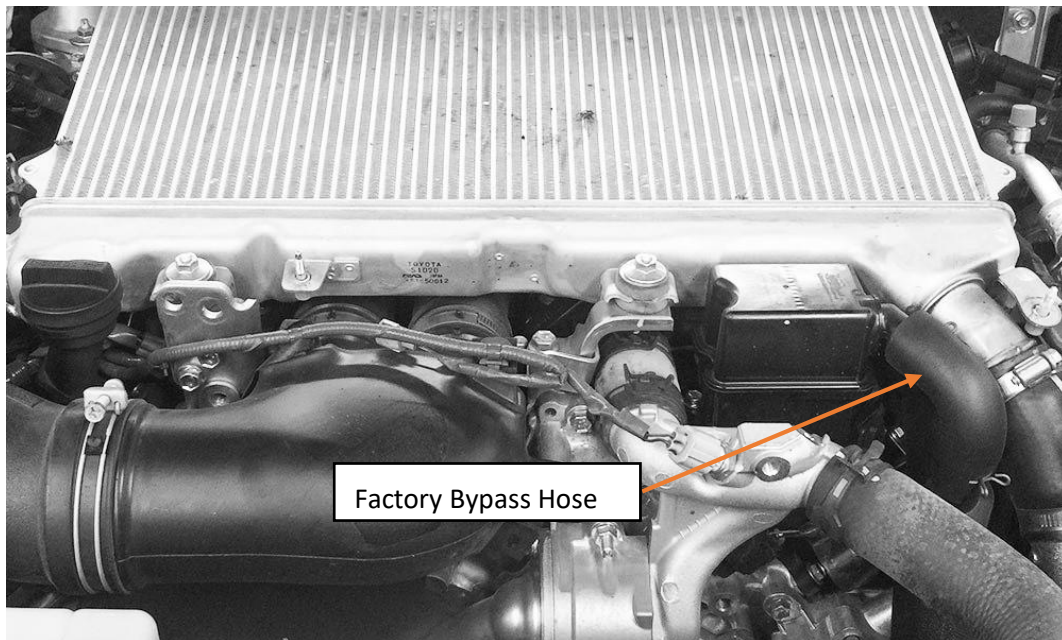
## Installation Guide

1. Begin by removing the engine cover to give access to the crankcase bypass hose in the front passenger corner.



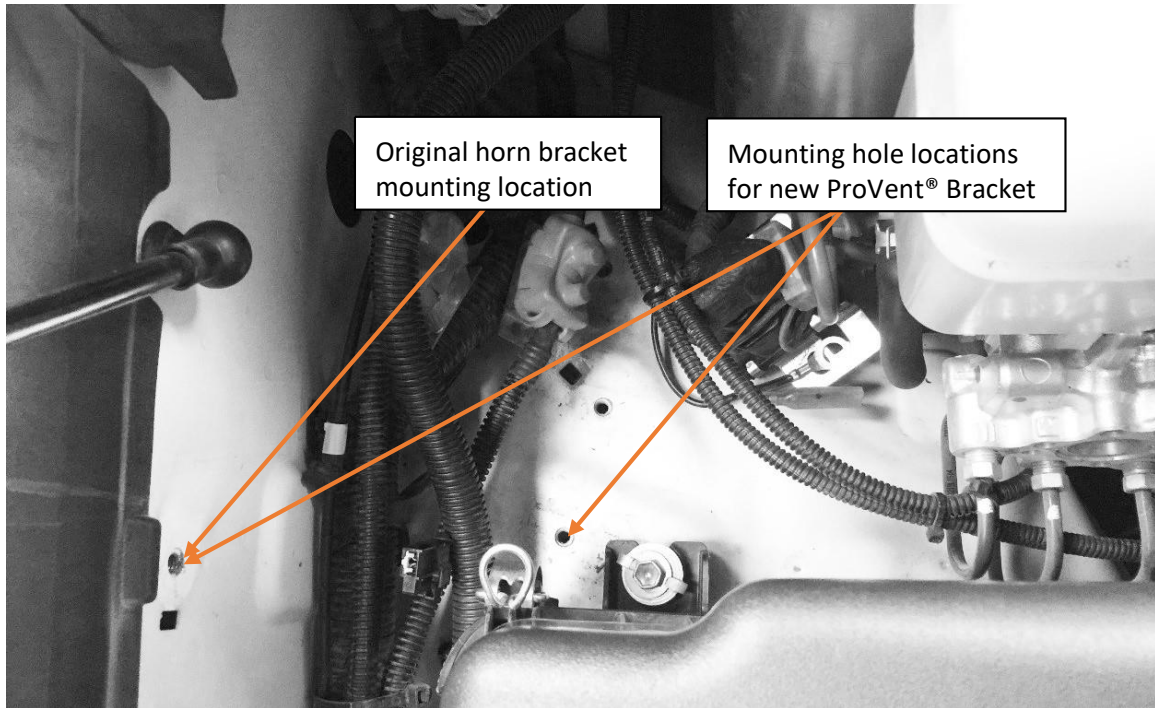
*Land Cruiser 200 Series Engine Bay – Overall View*

2. Begin by locating the factory bypass hose which runs from the black box in the front of the intercooler on the passenger side of the vehicle to the intake pipe in front of it. The hose is only about 100mm in length and shaped like an “L”. Once located, this hose needs to be disconnected from the black box and rotated 180°. A 16mm 90° Joiner needs to be inserted into the end facing down, secure in place with a spring clamp. (Please note there is an additional 19-16mm reducing elbow in the kit. If your vehicle is older your factory hose may not clamp down to the original size, the reducing elbow can be used here instead).

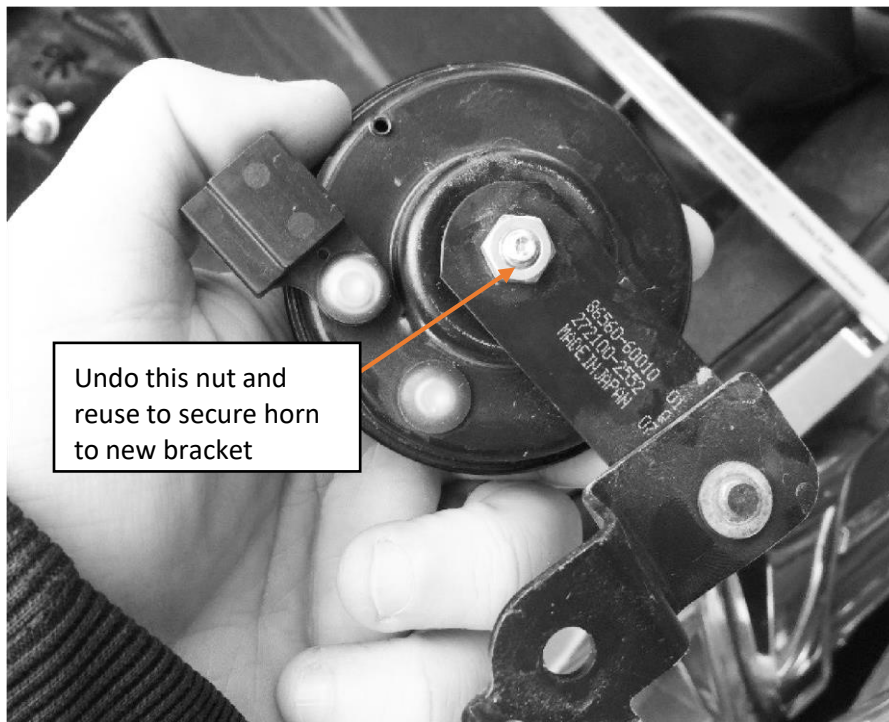


3. Locate the horn behind the airbox bolted to the side of the engine bay. Unbolt it and unplug from the wiring harness. Once removed, disassemble the bracket and horn, the bracket is not reused. Bolt the horn to the new bracket supplied in the kit. It uses the 6mm hole halfway up. Please note the horn is flipped 180°, make

sure it's aligned to be able to plug back in to the wiring. Once aligned correctly, tighten horn mounting bolt in place.

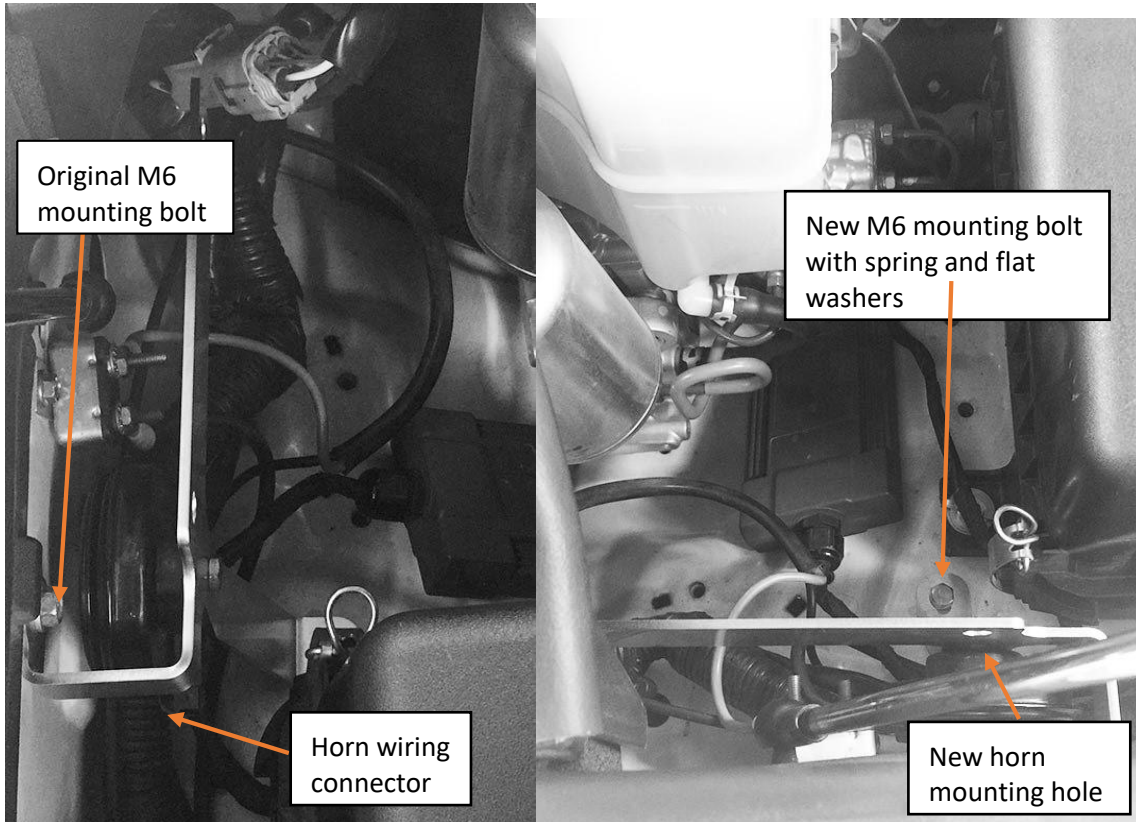


*Top down view: image shows original horn location and new ProVent® bracket location*



*Horn and bracket removed from vehicle horn is remounted to new bracket, original bracket is not reused*

- Using the original M6 bolt from the horn bracket and the new M6 Bolt spring washer and flat washer supplied in the kit, secure the mounting bracket in place behind the airbox. It uses two unused factory threaded holes to locate and mount from. Once in place, plug the horn back in.



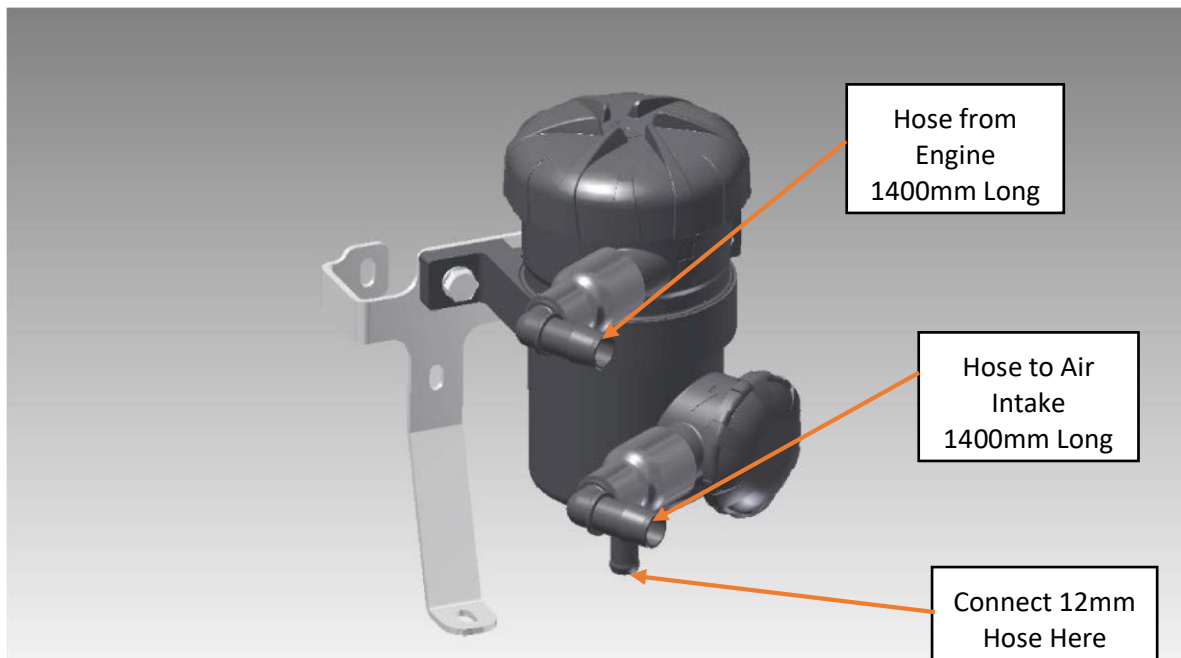
*Front view left, top down view right: Land Cruiser 200 Series Engine Bay- Drivers Side*

- 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 spring clamp*

6. 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.*

7. 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.



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

8. 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.
9. Make sure the tap position is closed and avoid placing the tap in a location in which it will fill with dirt and mud.

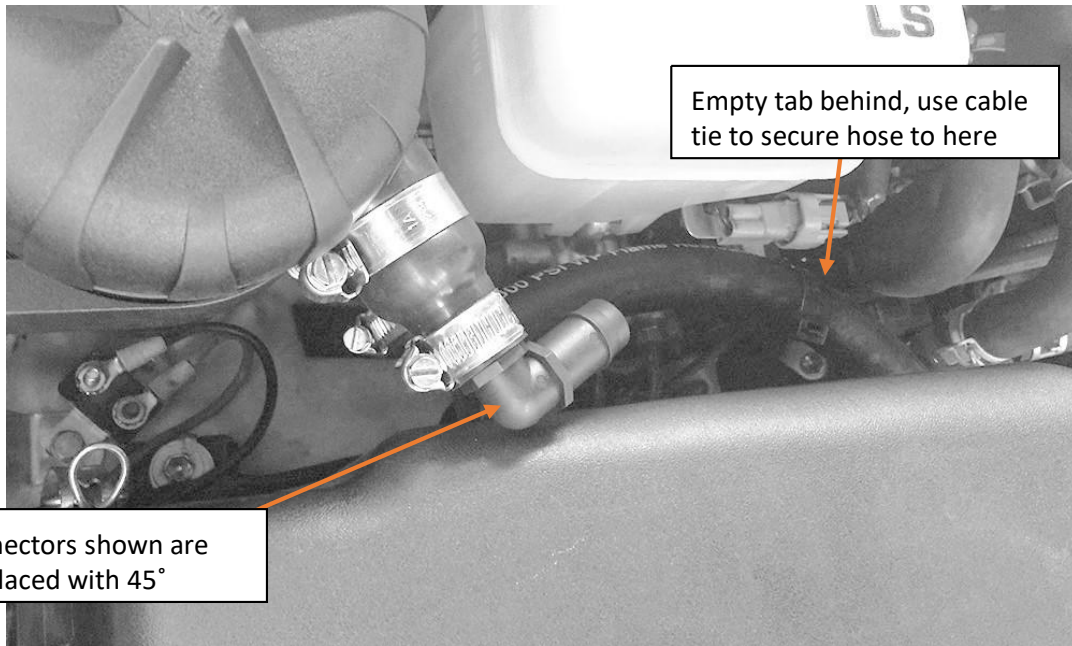


*Left image – Tap Open.*

*Right image – Tap Closed.*

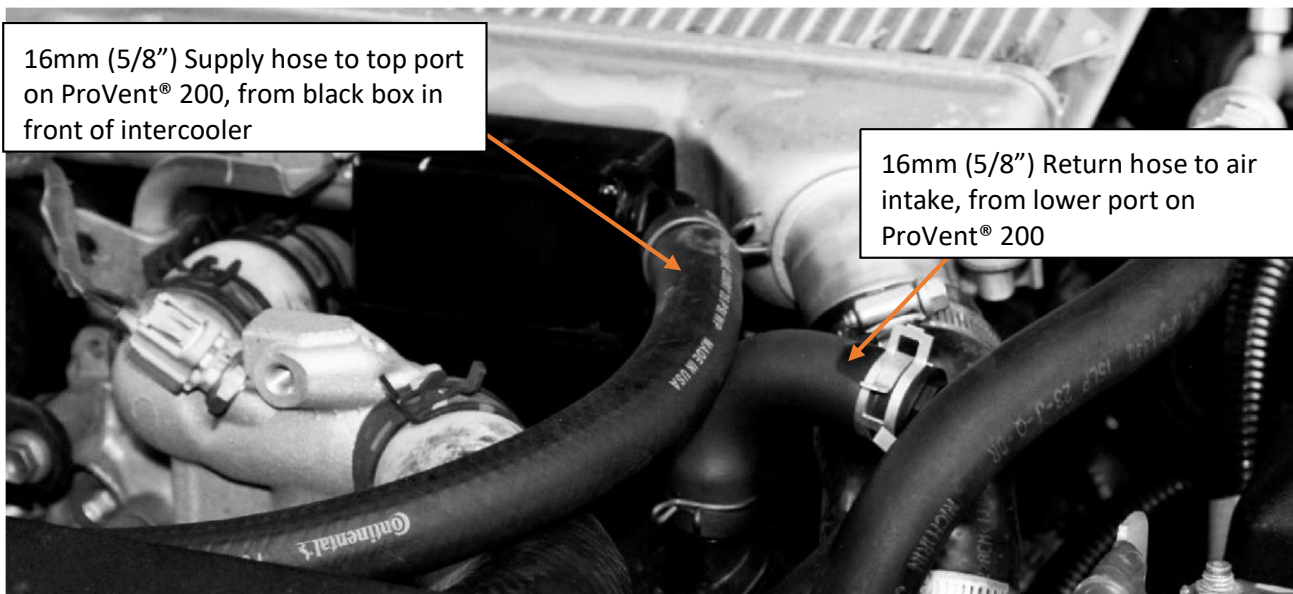
10. Mount one end of the first 1400mm long 16mm (5/8") hose to the lower 16mm (5/8") 45° joiner fitting on the ProVent® 200. Secure in place with a hose clamp.
11. Mount the other end of the same 1400mm long 16mm (5/8") hose to the 16mm (5/8") 45° joiner fitting you put on the factory bypass hose earlier. Secure in place with a hose clamp.



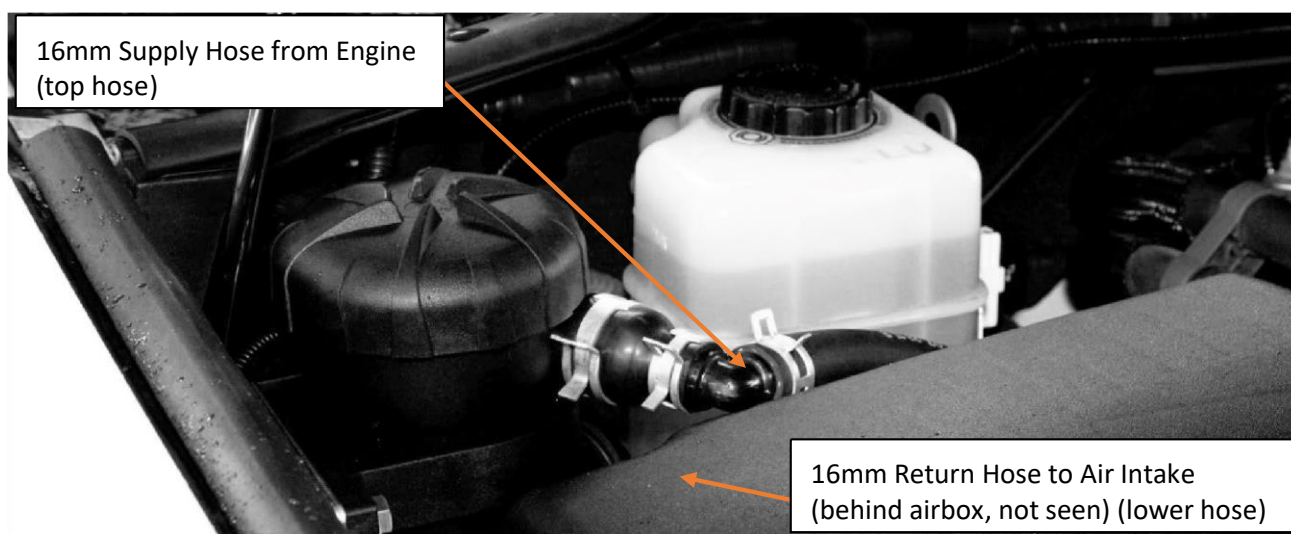


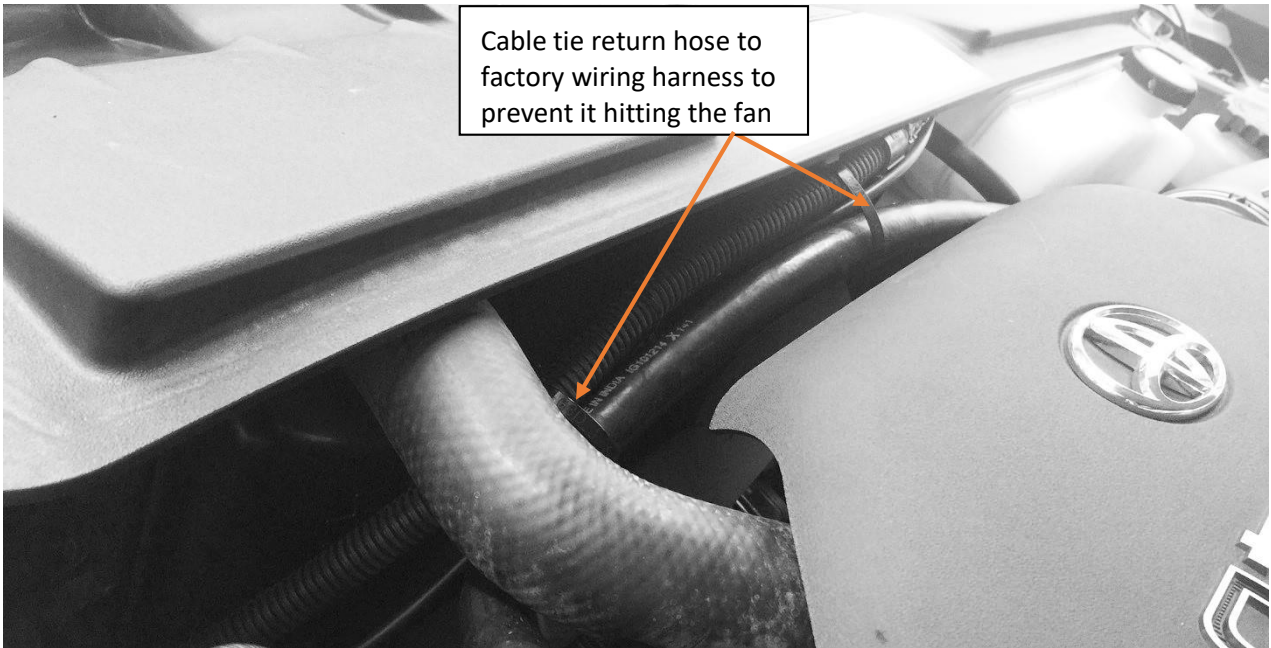
Lower hose connected to outlet port on the ProVent® 200. Note there is an empty tab to cable tie the hose to and keep it secure. Please note earlier version of kit with older style clamps.

12. Mount one end of the second 1400mm 16mm (5/8") hose to the upper 16mm (5/8") 45° joiner fitting on the ProVent® 200. Secure in place with a hose clamp.
13. Mount the other end of the 1400mm 16mm (5/8") hose to the black box in front of the intercooler on the front passenger side. Secure in place with the factory ring clamp.



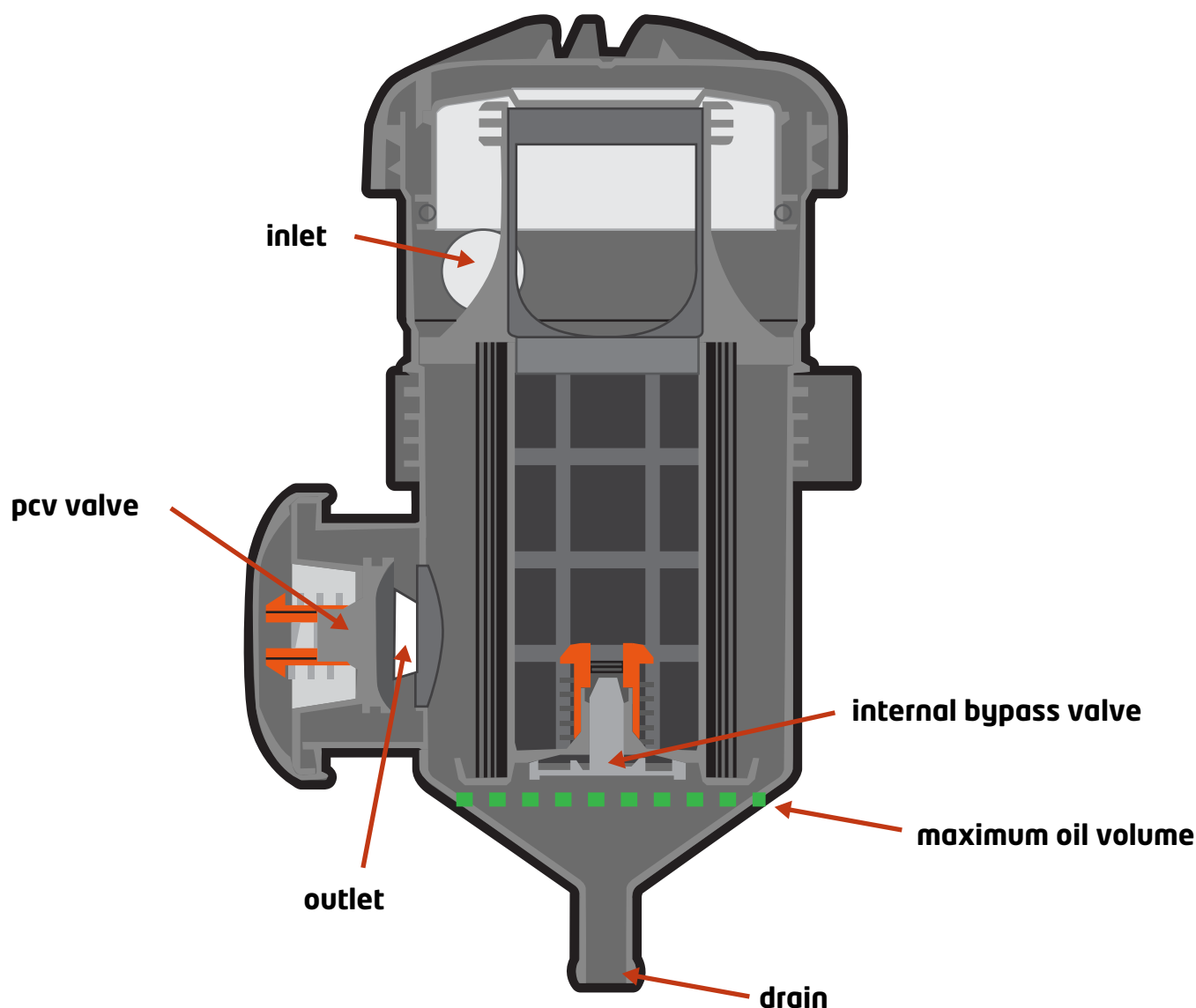
Hose configuration in Land Cruiser 200 Series with ProVent® 200 installed – Note, the hoses need to be run underneath the intake pipe in order to fit the engine cover back on, the hoses are long enough to allow for this, just make sure to keep clear of the radiator fan!!





**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).

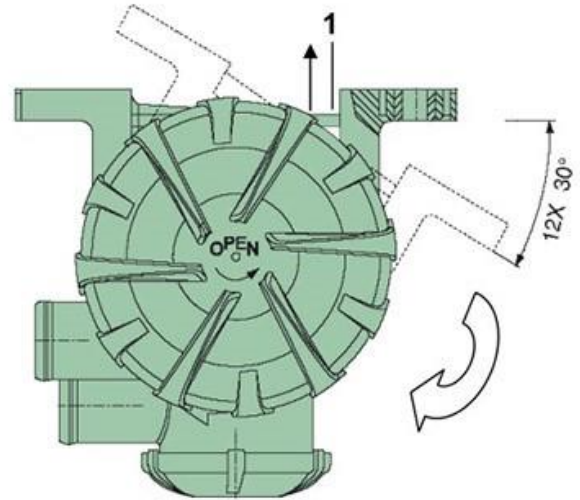


Fig. 5 Positions of outlet for ProVent 200

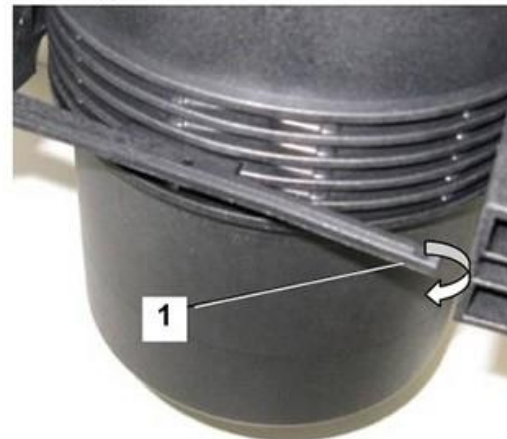


Fig. 6 Holder for ProVent 200