

Land Rover Defender 2012+ Direction-Plus ProVent® Ultimate Catch Can Installation Guide

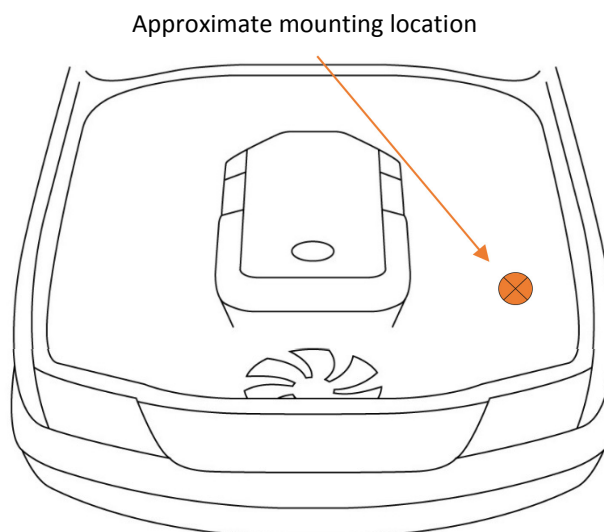
This document is to be used as a guide for the installation of the **Direction Plus ProVent® Ultimate Catch Can Kit to a 2012-2016 Land Rover Defender 2.2 Diesel**. It is recommended that the installation of the product be carried out by a competent qualified mechanic.

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

Included in the kit

1 x Mann + Hummel ProVent® 200
1 x Mounting Bracket
1 x 600mm of 19mm Hose
1 x 125mm of 19mm Hose
1 x 55mm of 19mm Hose
1 x 630mm of 19mm Hose
1 x 110mm of 19mm Hose
1 x 110mm of 19mm Hose
6 x 19mm 90°Joiners
14 x 19mm Clamps
8 x Cable Ties
2 x 25mm Clamps
2 x 16-19mm 90°Joiners
2 x 16mm Clamps
2 x 25-16mm Reducers
2 x M8x25 Bolts
4 x M8 Flat Washers
2 x M8 Spring Washers
2 x M8 Stainless Steel Nuts
1 x 1000mm of 12mm Hose
1x Drain Tap Assembly
2 x 12-20mm Hose Clamps



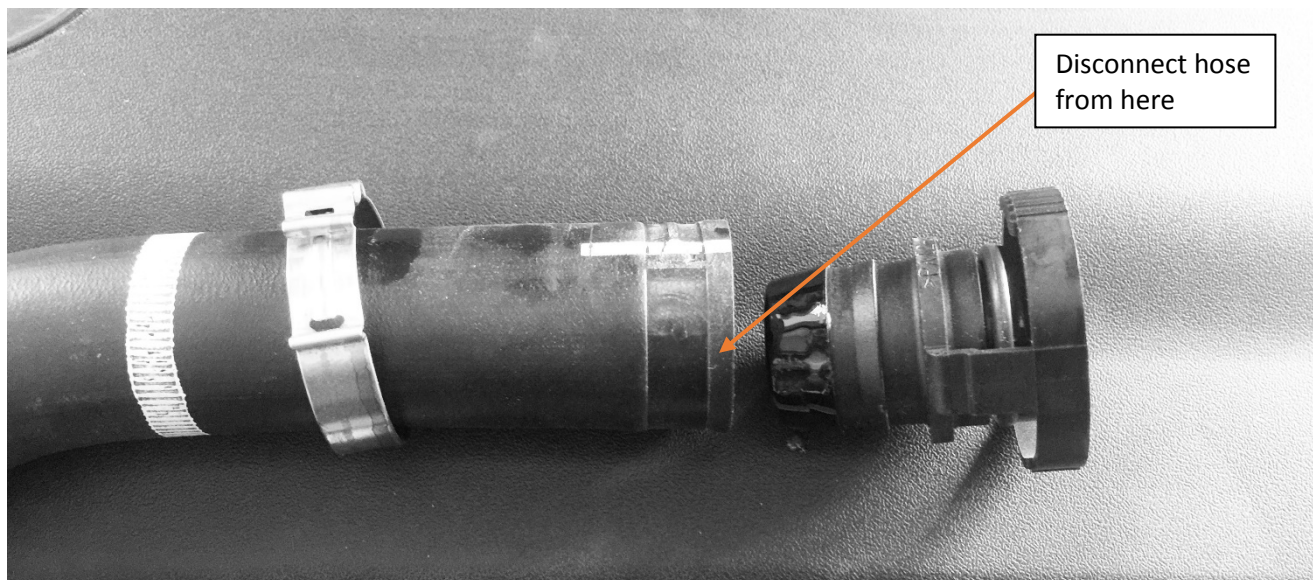
Installation Guide

1. Begin by removing the engine cover to give access to the crankcase bypass hose in the front passenger corner. It is held on by two bolts at the front and a clip at the back (just pull up way from engine).



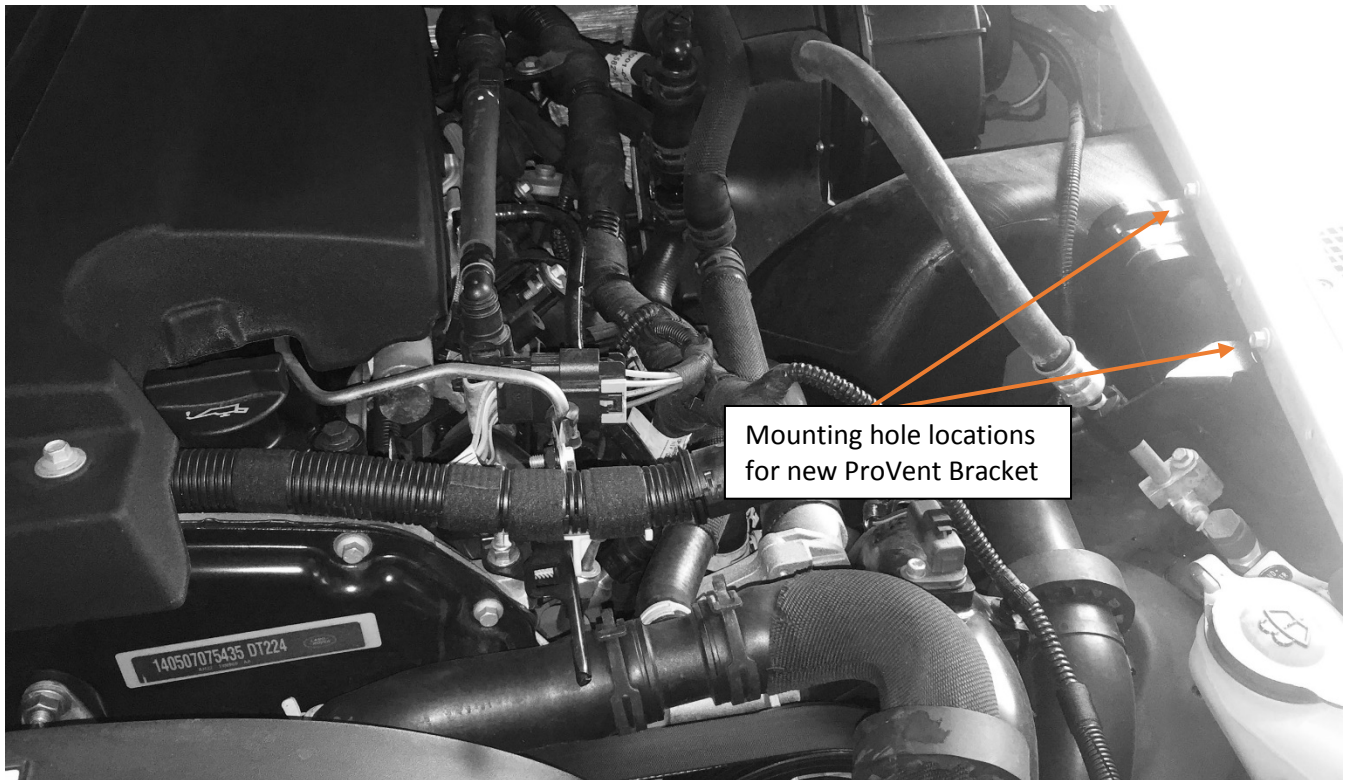
Land Rover Defender Engine Bay – Overall View

2. Locate the factory bypass hose which runs from the valve cover on the driver's side of the engine to the intake pipe just after the concertina section. The hose is about 500mm in length and has a few bends in it. Once located, this hose needs to be disconnected from the valve cover and the plastic fitting in the end needs to be removed (pinch down on the tabs to remove).

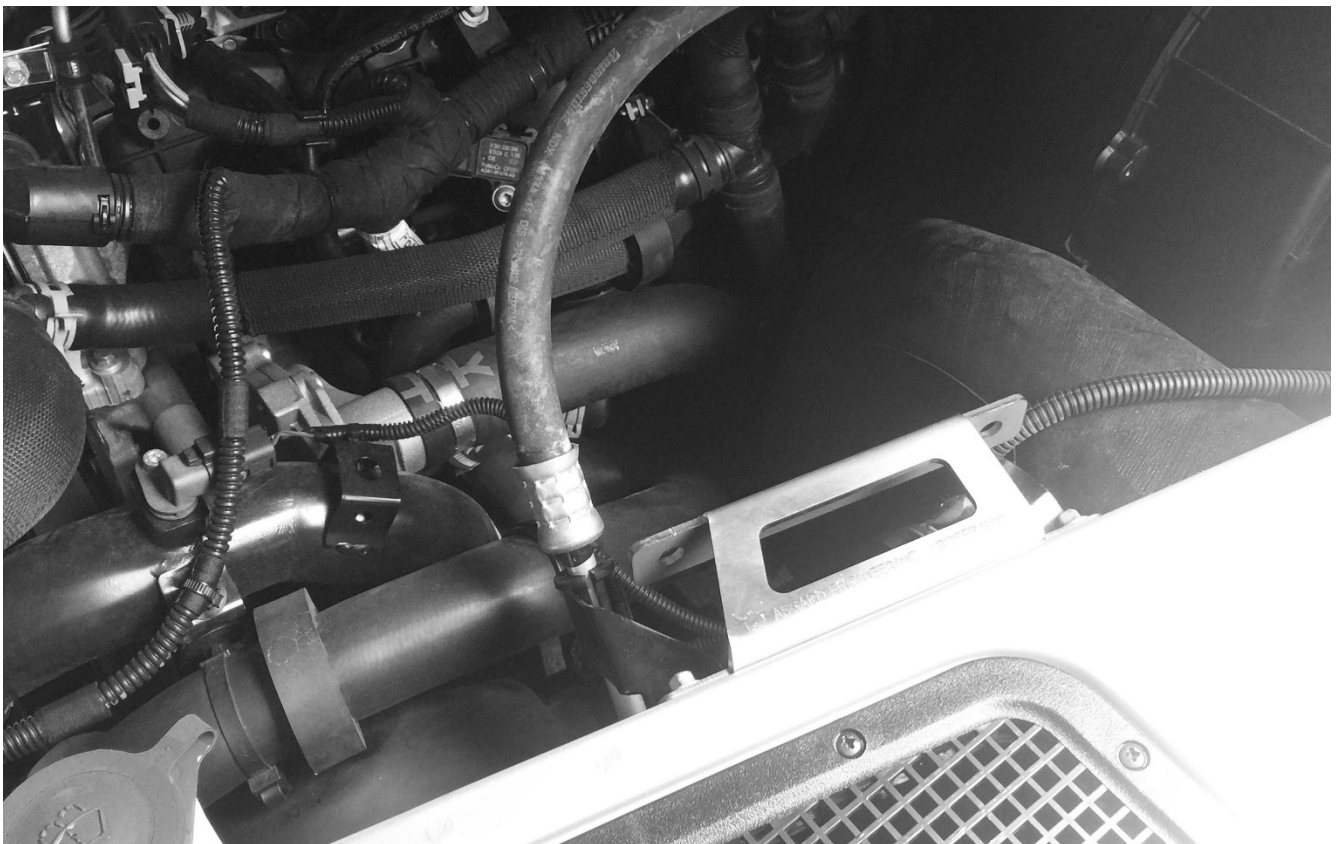


Factory bypass hose location to valve cover connection – Disassembled. The clamp just unclips and slides down allowing the plastic fitting to be removed.

3. Locate the two bolts on the passenger inner guard. They need to be removed to allow fitment of the bracket.

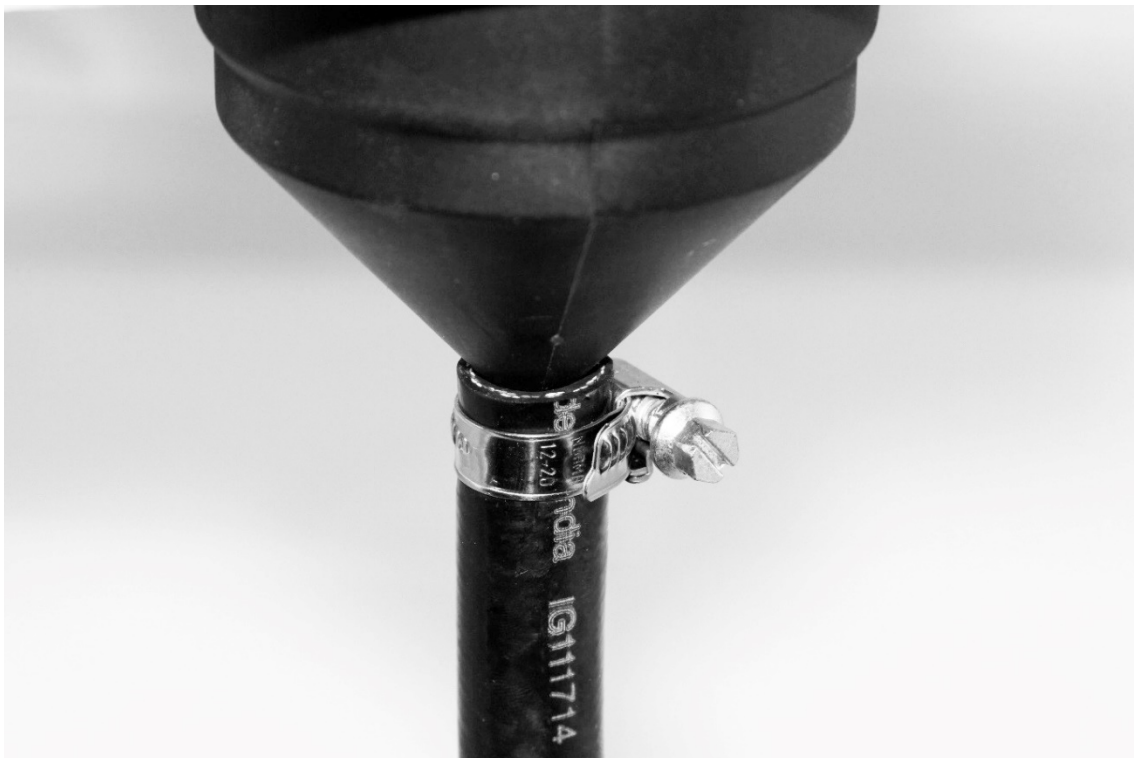


Top down view: image shows new ProVent bracket location, the installation reuses existing bolts



View from passenger side towards engine, showing new bracket in place.

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



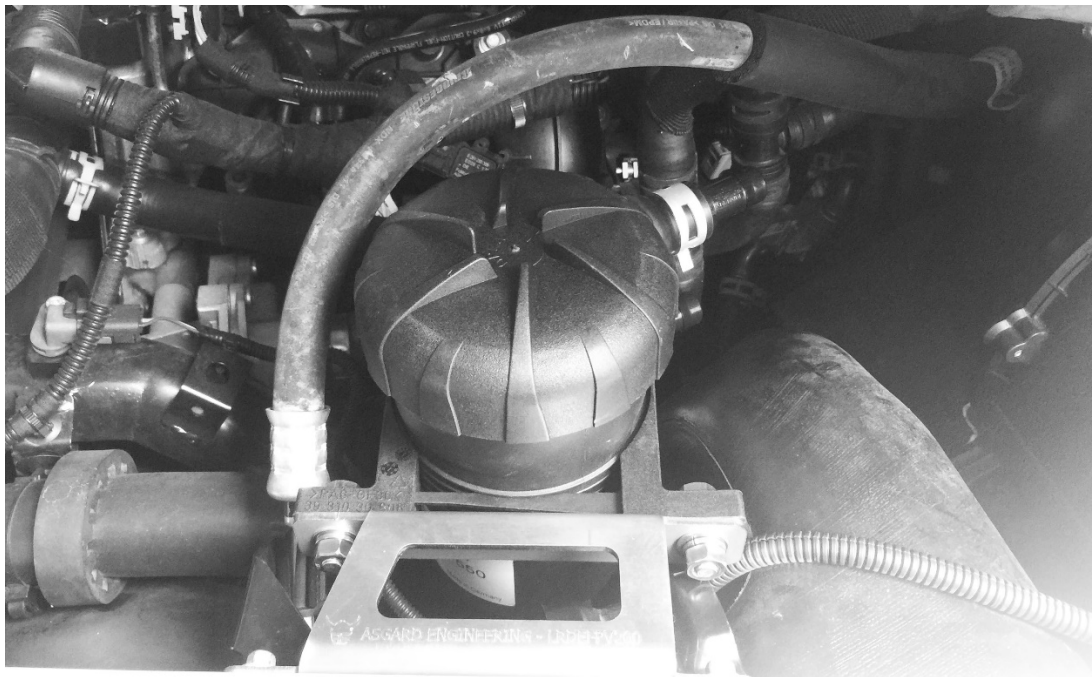
ProVent® 200 with 12mm hose connected and secured with 12-20mm worm drive clamp

5. 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 is not required.

6. Fit the ProVent® to the bracket using the two M8 bolts and nuts, make sure to use a flat washer under each side and the spring washer on the side with the nut.



*ProVent® bolted in place, please make note of the direction of the ports, they face towards the back centre of the engine bay.
Refer to last page of instructions for information on how to rotate the ProVent® 200*

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.

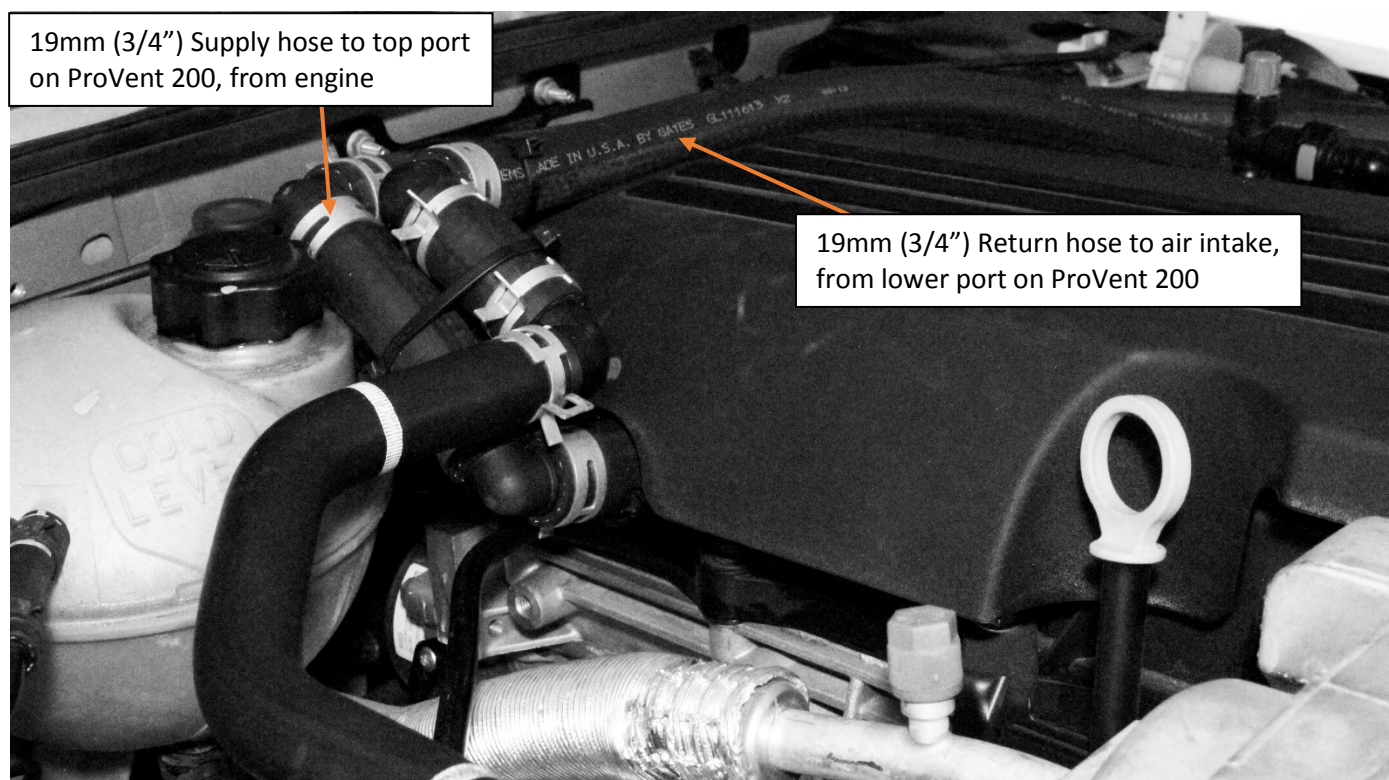


Right image – Tap Closed.

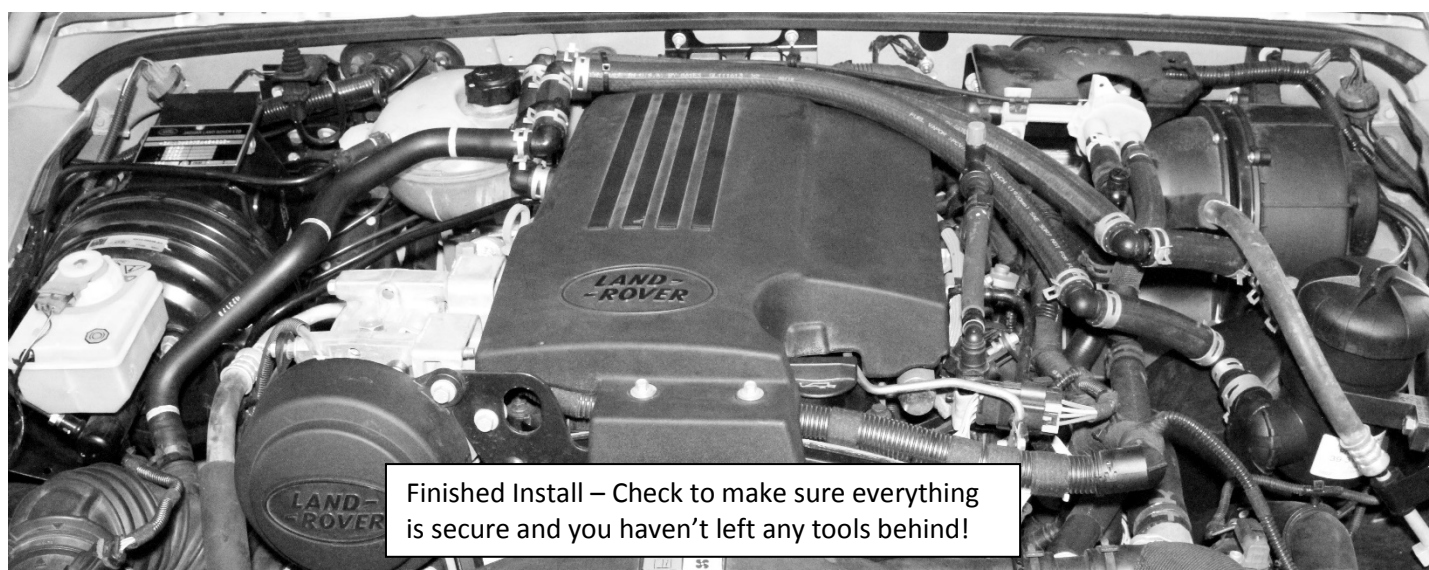
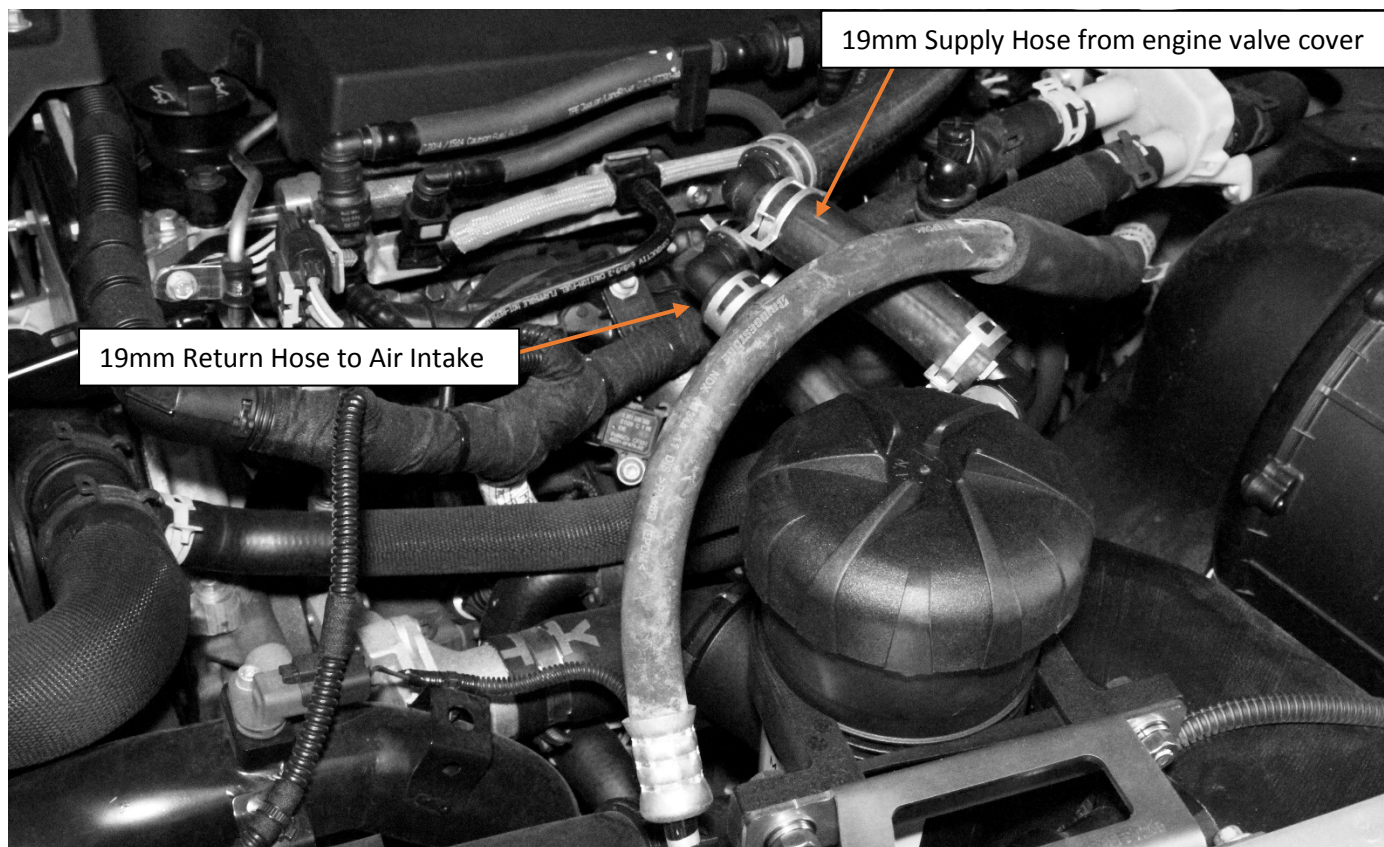


Assembled Return Hose. From left to right the hose lengths are 55mm, 600mm and 125mm

9. Construct the hose shown in the image above and fit to the vehicle. Secure with hose clamps at each end.
10. Construct the supply hose the same way, but this time the hoses are 55, 100mm, 630mm and 110mm. Fit to the vehicle. Secure with hose clamps at each end. Refer to images on following pages for correct hose routing.

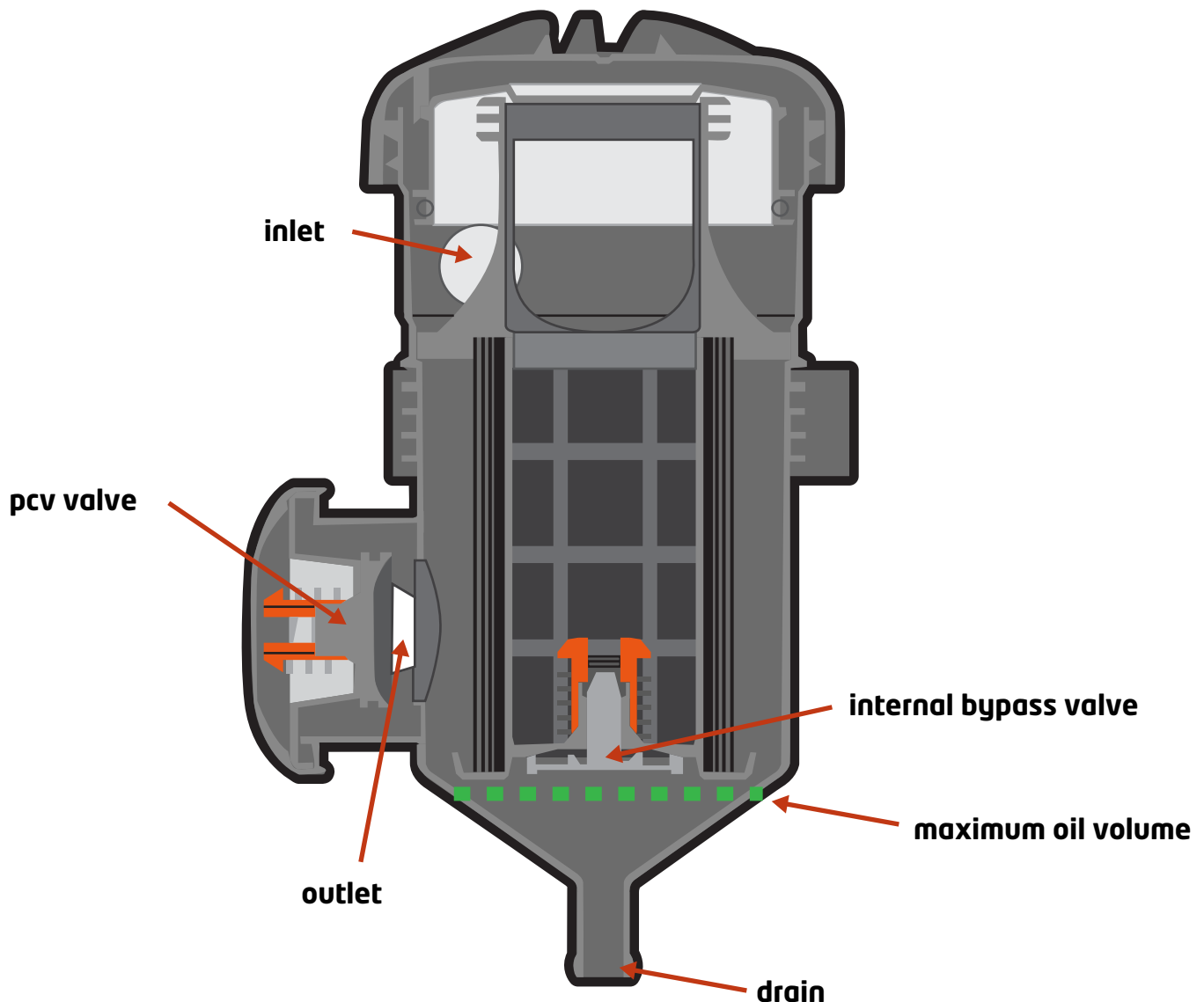


Hose configuration in Land Rover Defender with ProVent 200 installed – Note, the hose to the ProVent need to be run on top back edge of the engine cover.



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).

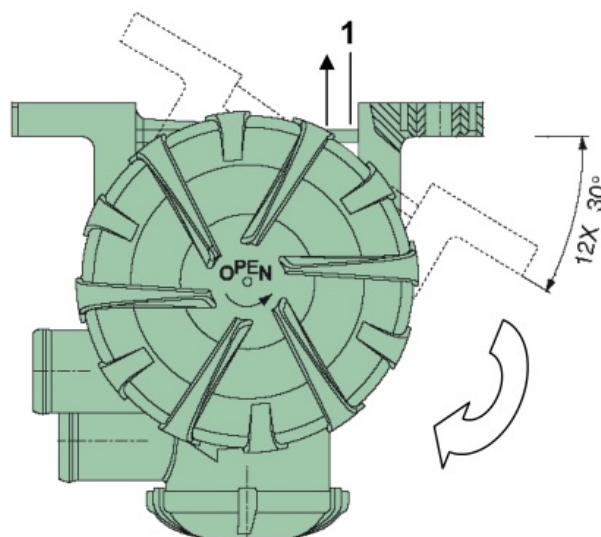


Fig. 5 Positions of outlet for ProVent 200

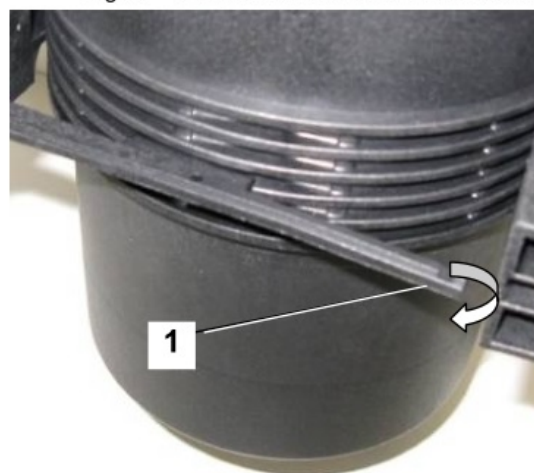


Fig. 6 Holder for ProVent 200