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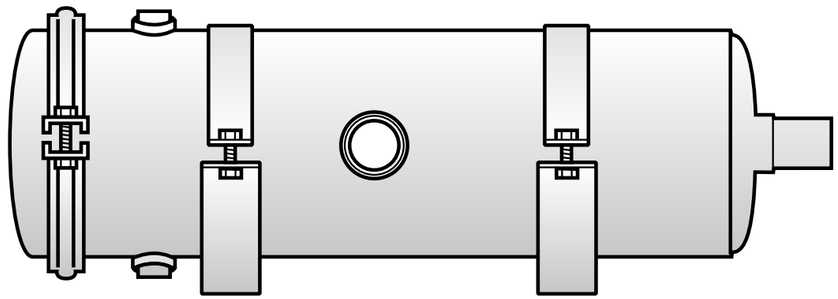
EcoVent™ Recirculator Installation Manual

SM-337



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Maintenance Instructions

Whenever the manometer shows a reading of 1.5" H_2O positive pressure, you must replace the EcoVent filter element.

1. With the engine shut off and cooled, remove the EcoVent's cover clamp, cover and cover gasket.

2. Remove the hex nut, element seal plate and element.

3. Replace the element with the proper new element. Inspect the cover gasket and grommet on the element seal plate and replace if cut, damaged or swollen.

4. Replace the parts in the same order in which you removed them.

5. Start the engine and check the manometer. If it is not showing a 0" to 0.3" H_2O positive pressure reading, follow the adjustment instructions on pages 9 and 10 to adjust the air flow.

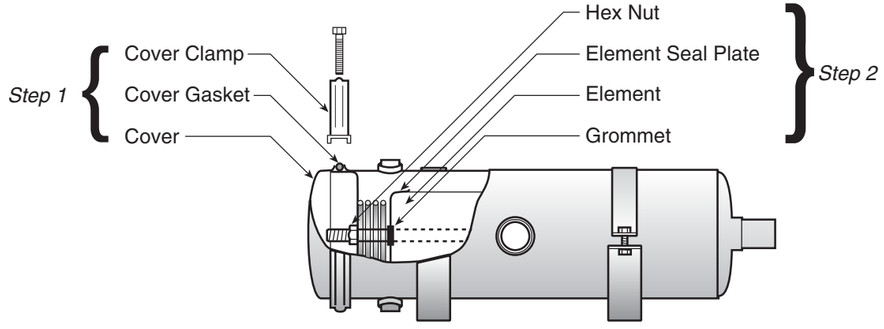

Figure 9 • Parts to be removed during maintenance.

Parts List

Description	Part Number			
EcoVent	93196A	93195A	93194A	93192A
Filter Element	88468A	88467A	88365A	88465A
Cover Gasket	Q58510	Q58510	Q58403	Q58403
Grommet	Q58521	Q58521	Q58521	Q58521
Nut	Q53714	Q53714	Q01428	Q01428

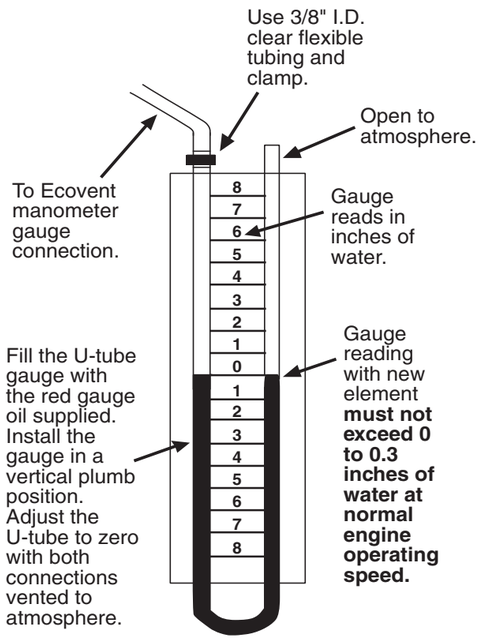

Figure 7 • U-tube Manometer Gauge Reading
With New Filter Element

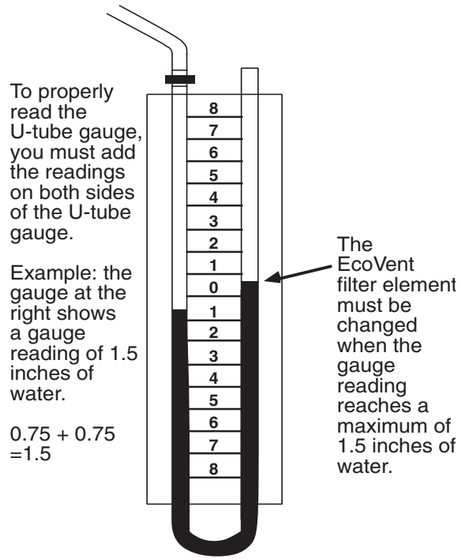

Figure 8 • U-tube Manometer Gauge Reading
At Filter Element Changeout

Operating Instructions

Once you have installed and adjusted the EcoVent, operating instructions are very simple:

- Monitor the reading on the manometer. When it reaches a reading of 1.5" H_2O positive pressure (see figure 8) replace the EcoVent element, as shown in the Maintenance Section.
- If you are not returning the oil to the engine, drain the oil from the EcoVent as needed.

Nelson EcoVent Recirculator

About This Product

Nelson's EcoVent Recirculator removes 99.9% of oil mist and airborne particles coming from the engine crankcase breather vent. Because the separation of crankcase fumes and oil is accomplished by means of a static absorbent filter, there are no moving parts. There is also no need for periodic cleaning—you only have to change the filter element!

The EcoVent Recirculator makes it possible to duct clean blowby fumes into the air cleaner, for a completely closed system, thereby removing 100% of the blowby mists and gases from the atmosphere without danger to the engine. This provides for a cleaner, healthier and safer environment while reducing engine room maintenance costs.

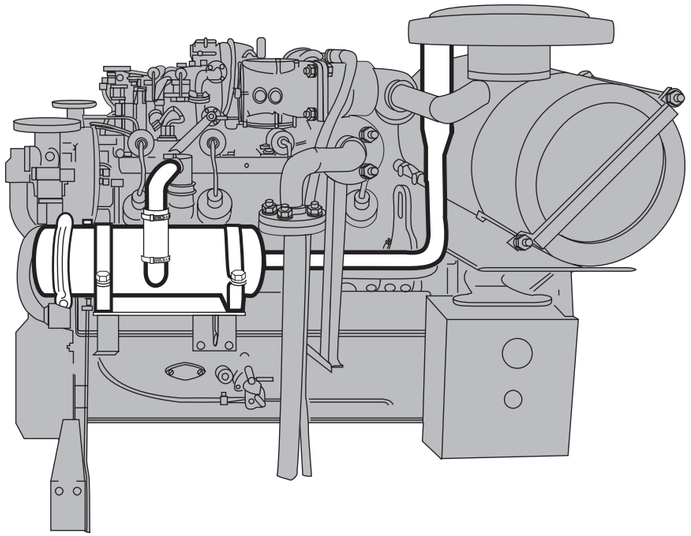

Figure 1 • The EcoVent Recirculator attached to an engine.

⚠ **WARNING**
Read the entire Service Manual before attempting the installation!

Installation

You can install the EcoVent Recircualtor in one of two ways: with the outlet connected to the engine's air inlet flow before the air filter (Option 1) or directly to the engine's air intake ducting (Option 2). Please follow the instructions for your specific situation.

Option 1: Connecting the Outlet to the Air Inlet Flow

See Figures 2 or 3 for an illustration of a correctly installed EcoVent Recirculator.

NOTE

In all cases, you can substitute a rigid pipe where the instructions call for a heat-resistant hose.

1. Use the two mounting brackets we have provided to mount the EcoVent on or adjacent to the engine. You must mount the EcoVent horizontally and above the engine crankcase oil level.

2. Follow the manufacturer's instructions to attach the U-tube manometer gauge (which we have supplied) to the manometer gauge connection on the EcoVent.

3. Attach the proper size of heat-resistant hose to the EcoVent's inlet connection and secure with a hose clamp.

4. Attach the end of the hose used in Step 3 to the engine's crankcase breather vent tube and secure with a hose clamp.

5. Attach another length of heat-resistant hose to the EcoVent's outlet connection and secure with a hose clamp.

6. Attach the end of the hose used in Step 5 to the engine's air intake filter near the air inlet flow and secure with a hose clamp.

CAUTION

If you connect the EcoVent's outlet hose to the air inlet flow **before** the air intake filter, position the end of the hose so that the vacuum created by the air flow produces a 0" to 0.3" H_2O positive pressure reading on the U-tube manometer. See figure 7. At normal engine operating speed a new EcoVent unit must not have more than 0.3" H_2O positive pressure!

Nelson EcoVent Recirculator

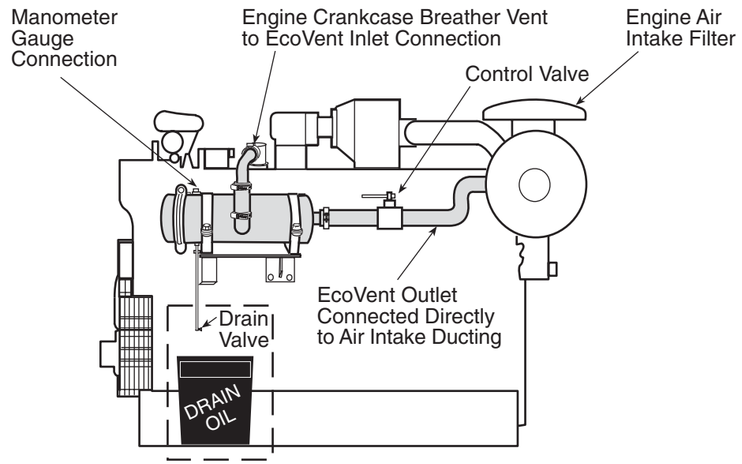

Figure 5 • Completed installation, showing oil being drained.

Adjusting the Air Flow

If, at normal engine operating speed the U-tube manometer gauge does not show a 0" to 0.3" H_2O positive pressure reading, perform the proper adjustment to correct it.

1. If the EcoVent's outlet hose is connected near the air inlet flow, move the open end of the hose into or out of the flow until the manometer shows the proper reading, then secure it with a hose clamp.

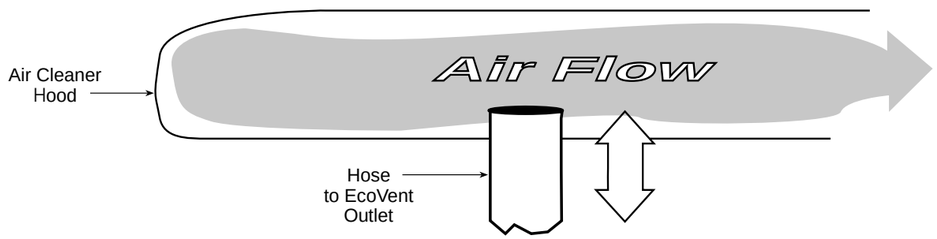

Figure 6 • Move the outlet hose into or out of the air flow to adjust the pressure.

2. If the EcoVent's outlet hose is connected directly to the air intake ducting, adjust the control valve on the outlet hose until the manometer shows the proper reading.

   Once the initial proper gauge reading has been established, do not adjust the location of the hose or the control valve during the life of the EcoVent element.

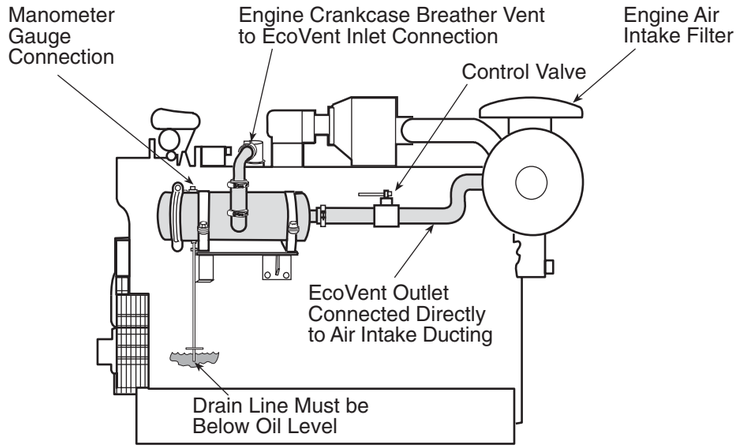

Figure 4 • Completed installation, showing the oil being returned to the engine.

If the Engine Uses Natural Gas or Fuels Containing Sulfur or Halogen Chemicals

7. Connect a drain tube to the drain port on the underside of the EcoVent.

8. Connect a drain valve to the drain tube.

9. Place an oil reservoir at the end of the drain tube. How often you drain the EcoVent depends upon the amount of oil in the engine crankcase fumes and the condition of the engine.

10. Check the adjustment of the EcoVent by starting the engine and running it at normal operating speed. The U-tube manometer gauge should have a 0" to 0.3" H_2O positive pressure reading. If not, adjust the air flow until it does. See the Section entitled Adjusting the Air Flow for more information.

Nelson EcoVent Recirculator

If You Are Returning the Oil to the Engine

If the engine does not use natural gas or fuels that contain sulfur or halogen chemicals, you can return the oil collected directly to the engine oil sump.

⚠ **CAUTION**

If the engine uses natural gas or fuels that contain sulfur or halogen chemicals, **do not** return the collected oil to the engine. If this applies to your installation, please turn to the next section for more information.

7. Connect a drain tube to the drain port on the underside of the EcoVent.

8. Place the other end of the drain tube into the engine oil sump, *below* the oil level line.

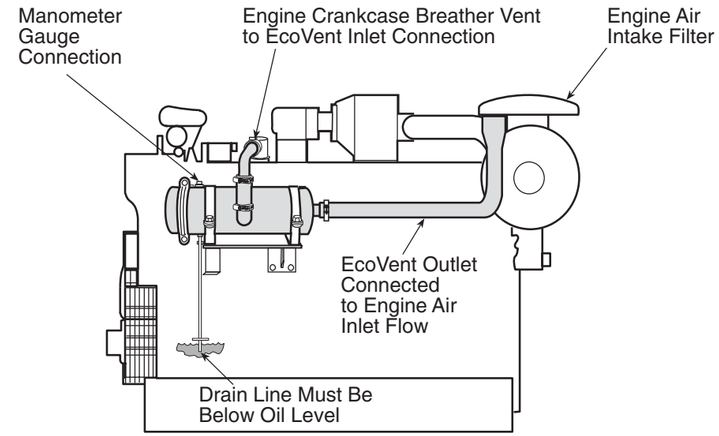

Figure 2 • Completed installation, showing the oil being returned to the engine.

9. Check the adjustment of the EcoVent by starting the engine and running it at normal operating speed. The U-tube manometer gauge should have a 0" to 0.3" H_2O positive pressure reading. See figure 7. If not, adjust the air flow until it does. See the Section entitled Adjusting the Air Flow for more information.

If the Engine Uses Natural Gas or Fuels Containing Sulfur or Halogen Chemicals

7. Connect a drain tube to the drain port on the underside of the EcoVent.

8. Connect a drain valve to the drain tube.

9. Place an oil reservoir at the end of the drain tube. How often you drain the EcoVent depends upon the amount of oil in the engine crankcase fumes and the condition of the engine.

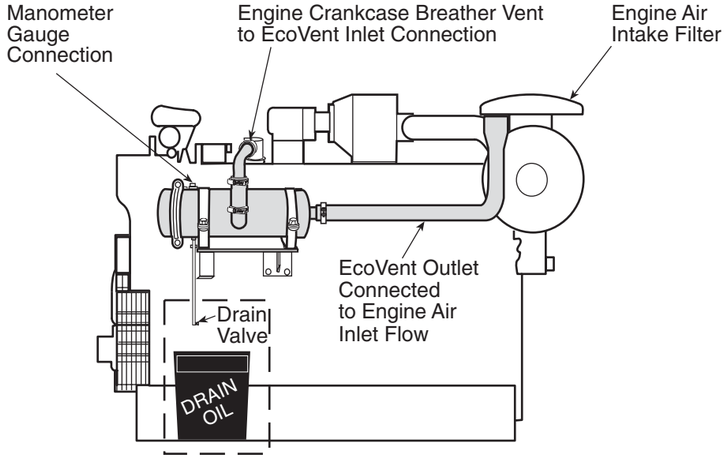

Figure 3 • Completed installation, showing oil being drained to an oil reservoir.

10. Check the adjustment of the EcoVent by starting the engine and running it at normal operating speed. The U-tube manometer gauge should have a 0" to 0.3" H_2O positive pressure reading. If not, adjust the air flow until it does. See the Section entitled Adjusting the Air Flow for more information.

Option 2: Connecting the Outlet Directly to the Air Intake Ducting

See Figures 4 or 5 for an illustration of a correctly installed EcoVent Recirculator.

☞ **NOTE**
In all cases, you can substitute a rigid pipe where the instructions call for a heat-resistant hose.

1. Use the two mounting brackets we have provided to mount the EcoVent on or adjacent to the engine. You must mount the EcoVent horizontally and above the engine crankcase oil level.

2. Follow the manufacturer's instructions to attach the U-tube manometer gauge (which we have supplied) to the manometer gauge connection on the EcoVent.

3. Attach the proper size of heat-resistant hose to the EcoVent's inlet connection and secure with a hose clamp.

4. Attach the end of the hose used in Step 3 to the engine's crankcase breather vent tube and secure with a hose clamp.

5. Attach another length of heat-resistant hose to the EcoVent's outlet connection and secure with a hose clamp.

6. Install a control valve on the hose used in Step 5, then attach the end of the hose directly to the engine's air intake ducting and secure with a hose clamp. You can attach the hose either before or after the engine's air filter. The control valve is used to regulate the maximum 0" to 0.3" H_2O positive pressure reading for the new EcoVent element. See figure 7. Do not adjust this valve after you have properly set it to achieve the 0" to 0.3" H_2O positive pressure reading.

⚠ **CAUTION**
With the EcoVent's outlet hose connected, along with the control valve, directly to the engine air intake ducting, simply adjust the control valve so that the vacuum created by the air flow is 0" to 0.3" H_2O positive pressure reading on the U-tube manometer guage. See figure 7. At normal operating speed a new EcoVent unit must not have more than 0.3" H_2O positive pressure!

If You Are Returning the Oil to the Engine

If the engine does not use natural gas or fuels that contain sulfur or halogen chemicals, you can return the oil collected directly to the engine oil sump.

⚠ **CAUTION**
If the engine uses natural gas or fuels that contain sulfur or halogen chemicals, **do not** return the collected oil to the engine. Please turn to the next section for information on completing the installation if this applies to your installation.

7. Connect a drain tube to the drain port on the underside of the EcoVent.

8. Locate the other end of the drain tube into the engine oil sump, *below* the oil level line.

9. Check the adjustment of the EcoVent by starting the engine and running it at normal operating speed. The U-tube manometer gauge should have a 0" to 0.3" H_2O positive pressure reading. If not, adjust the air flow until it does. See the Section entitled Adjusting the Air Flow for more information.