

Crankcase Ventilation System

Overview

The crankcase ventilation system purges crankcase gases to the intake manifold. The crankcase ventilation system consists of:

- An expansion chamber separator
- A cyclonic oil separator unit with an integrated pressure limiting valve (F-650 / F-750, F-Series Super Duty)
- A stainless steel check valve (F-650 / F-750, F-Series Super Duty)
- An oil collection chamber
- A pressure regulating valve
- A crankcase ventilation heater (F150 and Transit)
- A crankcase ventilation sensor (Transit)

Combustion blowby gases enter the rear port of the crankcase vent assembly and pass into an expansion chamber where the larger oil droplets fall out of the blowby gases due to a rapid decrease in flow velocity. The remaining blowby gases flow through into the cyclonic oil separator unit. The blowby gases are then separated into smaller cyclone oil separators which force the smaller oil droplets to the side walls so they drain out and flow to the oil collection chamber. The remaining lighter gases flow to the intake manifold.

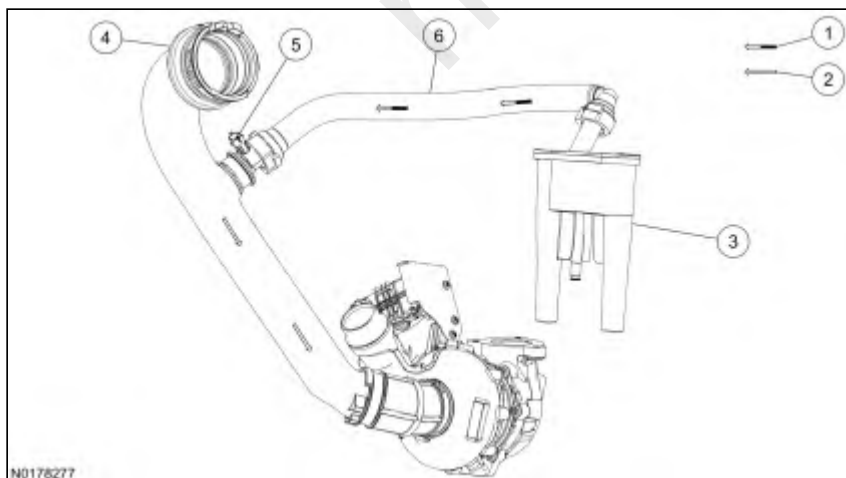
The F-650 / F-750 and F-Series Super Duty has as oil collection chamber has a drain port and a stainless steel check valve. The check valve allows the smaller oil droplets to return to the crankcase while blocking the gases in the oil return path. The oil separator works using cyclonic technology to eliminate the need for a filter media inside the canister.

For F150 and Transit, there is an integrated pressure regulating valve which prevents excessive vacuum levels from being applied to the crankcase. For F-650 / F-750 and F-Series Super Duty, there is an integrated pressure regulating valve on the side of the cyclonic oil separator which prevents excessive vacuum levels from being applied to the crankcase.

For Transit, maintenance is not required and the crankcase ventilation is integral to the valve cover. For F-650 / F-750 and F-Series Super Duty, maintenance is not required and the canister is replaced as an assembly.

For additional information on the crankcase ventilation sensor, refer to [Engine Control Components](#) in this section.

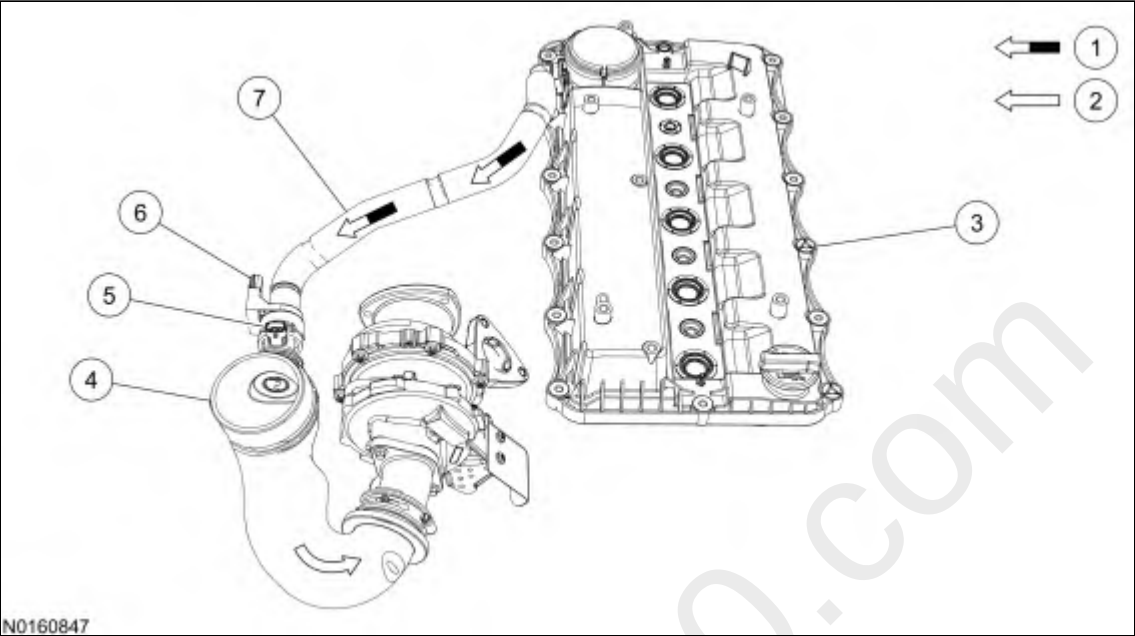
Crankcase Ventilation System (F-150)



Item	Number	Description
1	—	Blowby Gas
2	—	Fresh Air
3	—	Oil Separator Assembly

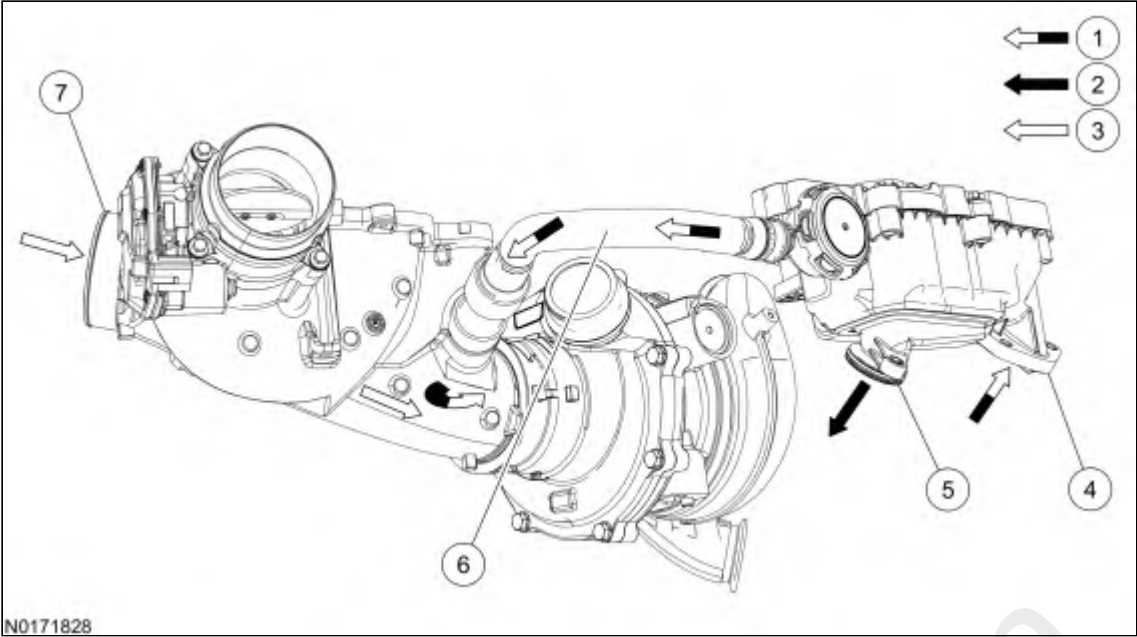
4	—	Fresh Air Intake
5	—	Crankcase Ventilation Heater
6	—	Crankcase Ventilation Hose Assembly

Crankcase Ventilation System (Transit)



Item	Number	Description
1	—	Blowby Gas
2	—	Fresh Air
3	—	Valve Cover
4	—	Fresh Air Intake
5	—	Crankcase Ventilation Heater
6	—	Crankcase Ventilation Sensor
7	—	Crankcase Ventilation Hose Assembly

Typical Crankcase Ventilation System (All Others)



N0171828

Item	Number	Description
1	—	Blowby Gases
2	—	Liquid Oil
3	—	Fresh Air
4	—	Blowby Gas Inlet From Crankcase
5	—	Oil Return From Separator To Crankcase
6	—	Blowby Gas Flow To The Lower Intake
7	—	Fresh Air Intake