

PureVent 2.0

Centrifugal oil mist separator for cleaning crankcase gas



The PureVent 2.0 centrifugal oil mist separator removes 98–99.9% of oil from crankcase gases.

Reducing emissions from internal combustion engines has been a major environmental concern. Up to now, most of the focus has been on exhaust gases.

However, crankcase gas has now come into focus as an area where further emission reductions can, and should, be made.

Application

PureVent 2.0 is a compact centrifugal oil mist separator that, when used with medium-speed diesel or gas engines, is capable of removing 98–99.9% of oil from crankcase gases.

Recovered oil can be re-circulated to the oil sump and used again for engine lubrication.

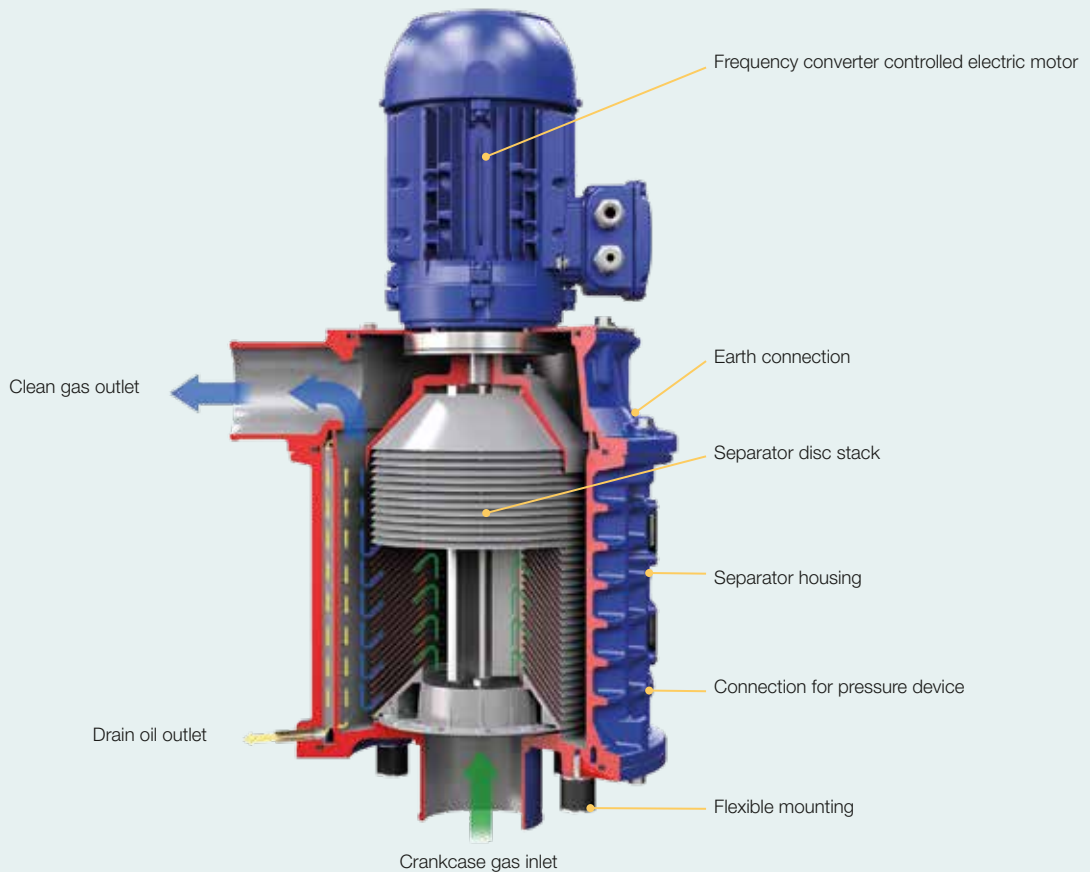
Two installation options are available:

- Open design for diesel or gas engines releasing oil-free crankcase gas directly into the atmosphere.
- Closed design for gas engines re-circulating clean gas to the turbocharger, which further reduces atmospheric emissions and does not promote turbocharger fouling.

Benefits

- Internally compatible for separation of EX Zone 1 classified crank case oil mist. 94/9/EC ATEX Directive: The machinery is classified to be installed and operated in a non-explosive atmosphere. Design code: Ex II 2 /- G c IIB T1 X.
- High separation efficiency. Provides 98–99.9% separation efficiency at 40–150 m³/h.
- Stable pressure conditions. No internal pressure drop. Instead there is a suction that extracts the gas from the crankcase. With a fixed valve on the inlet pipe, the crankcase pressure can be adjusted to a preferred level.
- Recovered oil can be re-circulated to the oil sump.
- No hazardous waste associated with conventional filter solutions.
- Long maintenance intervals. Two-year service intervals eliminate the frequent maintenance requirements associated with filter replacement.

PureVent 2.0 working principle



Operating principle

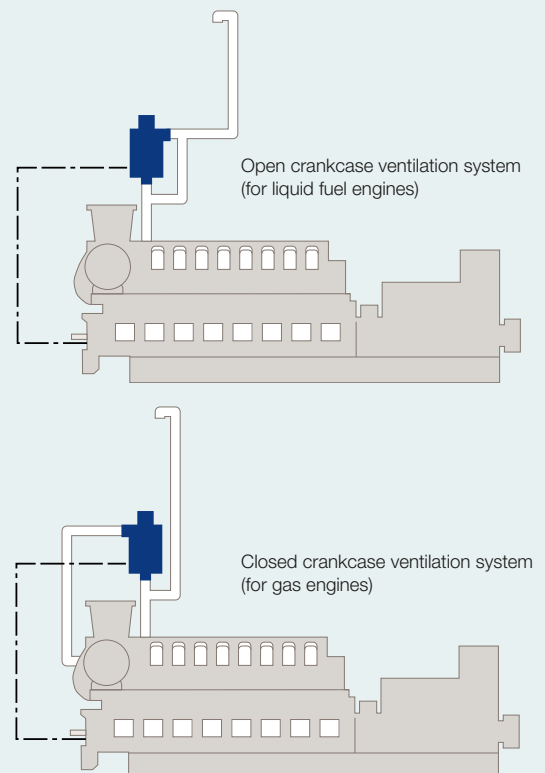
The PureVent 2.0 centrifugal separator consists of a disc stack made of anti-static carbon fibre reinforced poly amide, which is enclosed in an aluminium housing. Connected to this is an electric motor that drives the disc stack. A frequency converter controls the separator motor and speeds up the motor to optimize separation performance at 7200 rpm.

Uncleaned crankcase gas enters through the inlet at the bottom of the unit and passes into the rotating disc stack.

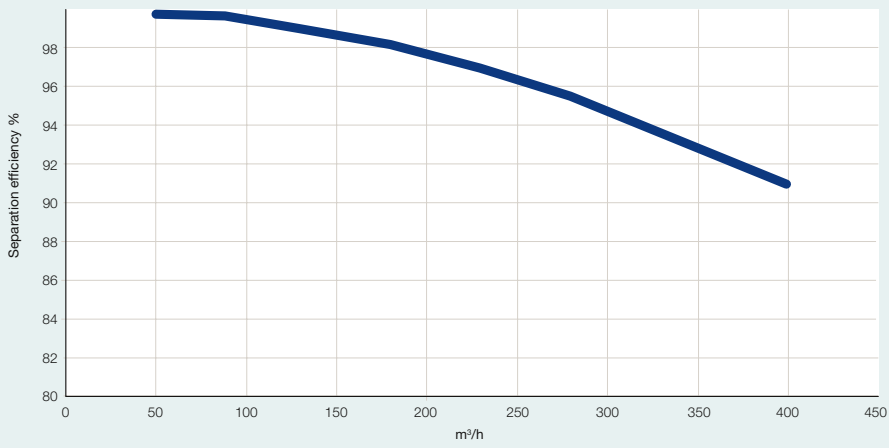
The oil mist is separated in the disc stack; the oil drops are collected on the separator housing inner wall and drained by gravity through the outlet.

Cleaned air can be re-circulated to the engine turbo-charger. This closed system enhances engine performance and safeguards the engine since it eliminates risk of turbo-charger fouling or oil accumulation in the intercooler. Most importantly, a closed crankcase ventilation system eliminates the risk of crank-case gas emissions.

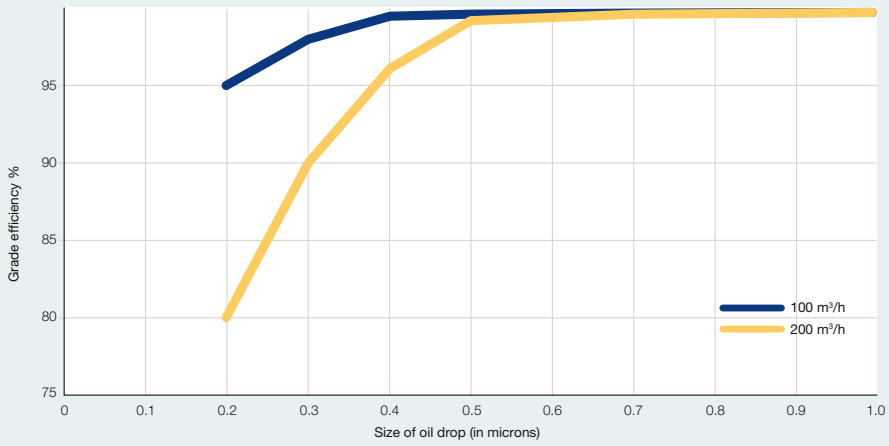
For crankcase gas flows above 200 m³/h, it is possible to run two PureVent 2.0 units in parallel and control both using a common variable frequency drive (VFD).



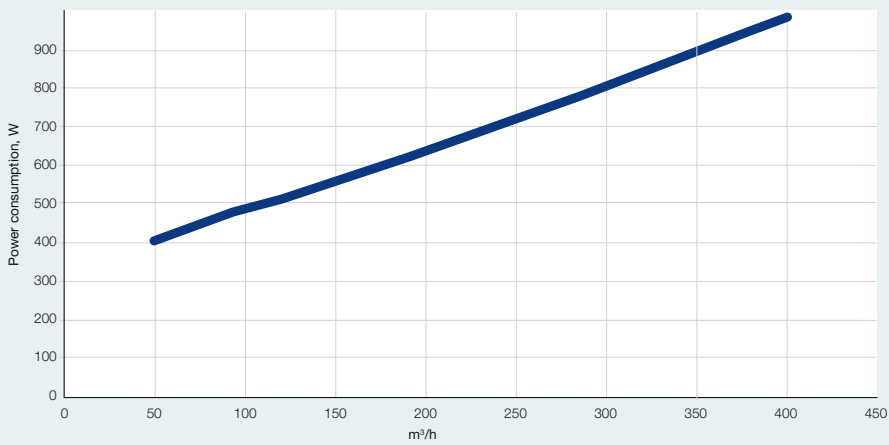
PureVent 2.0 connected to an engine. The dotted line represents the collected oil that can be re-circulated to the engine.



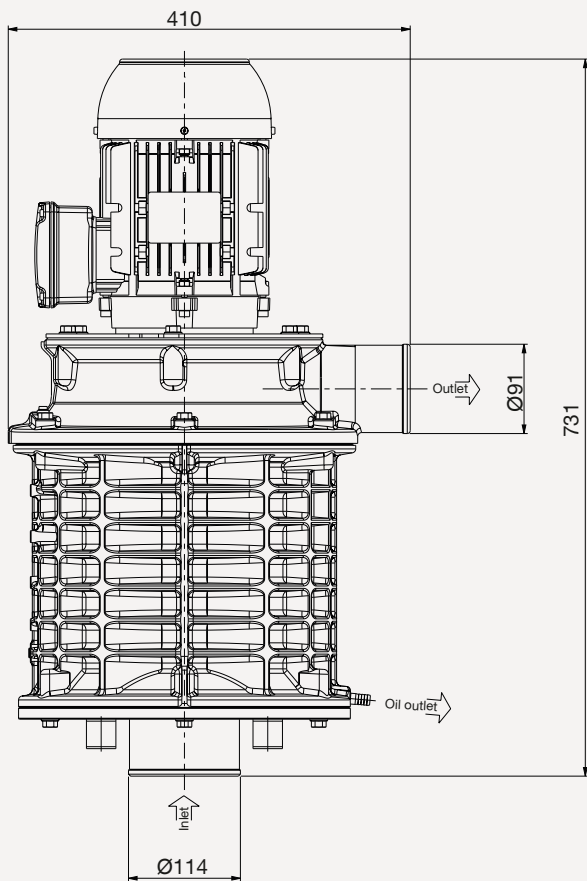
PureVent 2.0 efficiency vs. flow.



Grade efficiency at flows of 100 and 200 m³/h.



PureVent 2.0 power consumption vs. flow.



Operations

- Maintenance intervals
 - Major Service every 16000 hours or five years, whichever comes first.
- Instruction book includes detailed information in electronic format or paper copy:
 - Operating instructions
 - Alarms and fault finding
 - Service and spare parts



Conformity

The mark of conformity confirms that the equipment complies with European Economic Area (EEA directives).

Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com.

Technical data

Performance

Capacity	Max. 400 m ³ /h
Inlet gas temperature	Max. 80°C
Nominal flow	150 m ³ /h
Cleaning efficiency at nominal flow	98.5%
Sound level	72 dB(A)

Dimensions and weights

Size (height x length x width)	698 x 342 x 401 mm
Weight	45 kg

Ambient conditions (operation)

Separator	+5 to +60°C
Frequency converter	+5 to +60°C
Surrounding temperature	+5 to +50°C
Humidity	Must not be exposed to water

Electrical system

Operating voltage	Three phase 380–480 VAC
Frequency	50 or 60 Hz
Power	Max 1.0 kW

Separator

Rotation speed synchronous	7200 rpm
Number of discs	185
Housing	Aluminium casting
Start time	Approx. 30 seconds
Stop time	Approx. 2 minutes
Mounting angle	Max. 3° from vertical line