Filtration System for
Open and Closed Engine Crankcase Vents
STANDARD & CUSTOM DESIGNS
Helps Meet Environmental Regulations

Open engine crankcase vents produce blow-by gases/fumes which have become a major emissions source as tailpipe emissions are lowered.

Reducing crankcase emissions helps reduce total engine emissions

Standard and Custom Design Options

Allows you to choose - depending on your engine filtration specifications, project size, timing and budget.

Systems for both closed crankcase vents (CCV) and open crankcase vents (OCV).

Proprietary Synteq XP™ Media Technology

High overall efficiency (>95%) keeps turbocharger/intercooler clean

Very high efficiency on small particles prevents significant component wear

Better oil drainage properties compared to other filter media.

Filter service intervals up to 2000 hours

Lower System Cost

No wires or power requirements for operation

Invented by Donaldson

Donaldson has been inventing air filtration systems since 1915.

Spiracle™ products are built with Donaldson Technology

Emissions Contributions Tailpipe & Crankcase

Crankcase emissions levels in diesel engines have remained relatively constant up to 2006. On newer engines, as emissions from tailpipes reduce, crankcase emissions become a greater share of total allowable particulate matter (PM) emissions.

Standard (off-the-shelf) Product Offering

Mid-Size

Integrated pressure regulator prevents excess vacuum in the crankcase

Pressure relief by-pass valve

Latched service cover simplifies filter service

Self-draining, serviceable filter with Synteq™ XP filtration technology

Filter life up to 2000 hours

Plastic housing - lightweight, non-metal

Oil drain connection returns coalesced oil to the engine sump with remote mount check valve

Inlet from engine crankcase

Outlet port back to engine intake (Port 1” / 25mm)

Mounting band with 360° rotation included

Inlet adapters for standard pipe connections

Note: Porting options for filter indicator are available.

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(1) Engine produce varying levels of contaminant, maximum filter life will vary by engine.
A Serviceable Filter System Provides the Greatest Overall Performance

Patent-pending, Synteq XP is a revolutionary new media that has a lower operating pressure drop, higher efficiency and longer filter life compared to traditional media.

Better oil drainage means less pressure drop, improved efficiency and filter life.

Steady State Oil Line Height Comparison after 16 hours

Oil soaked area is blocked or plugged media

Competitive filter drain line

Synteq XP filter drain line

Small Sized

- Latched and threaded service cover simplifies filter service
- Integrated pressure regulator
- Inlet port from engine crankcase 3/4" ID Hose Connection
- Outlet port
- Mounting band with 360° rotation
- Serviceable filter with Synteq™ XP filtration technology
- Plastic housing - lightweight, non-metal
- Oil drain connection

Synteq XP

Custom Applications

If the standard product offering does not meet your requirements, contact Donaldson.

Spiracle Filtration Systems can be produced in a variety of shapes and sizes to match the most difficult spaces.

Retrofit Applications

Over 16,000 Spiracle Systems Installed!

As part of U.S. EPA and CARB regulatory agency initiatives, buses, trucks and municipal fleets throughout the United States are equipped with metal and plastic Spiracle™ crankcase filtration systems.

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(2) Models with modular pressure relief by-pass valve.
Donaldson Crankcase Filtration Development Tools

We understand the crankcase ventilation challenges (pressure, efficiency and size) and have the technical tools and expertise in place to help you continue to reduce your total emissions by managing crankcase emissions.

This crankcase gas test bench is used to verify design concepts by rapidly and accurately measuring filter performance under simulated engine flows, temperatures and aerosols.

Spiracle crankcase filtration systems are efficient over a broad range of oil mist sizes. The oil mist from engine blow-by typically ranges from 30 nanometers to 6 microns in size.

What’s in your engine blow-by gas?

Donaldson has the capability to measure blow-by gas particulate size distribution and concentrations at various engine conditions. This mobile testing capability allows Donaldson engineers to develop optimized crankcase filtration solutions for the specific needs of our customers. The chart on the right is the result from 5.9L 260 HP engine.