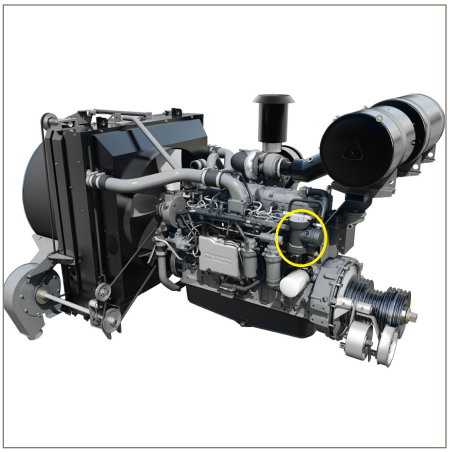
Power-Gen Filtration

Si3100 Super Impactor Crankcase Ventilation Separator For Diesel Engine



Market Application Publication

The Challenge

The customer supplies engines to many of the world's leading manufacturers of tractors and other farm machinery. They needed a highly efficient, compact, "fit for life" closed crankcase ventilation system (CCV) for their 6 Cylinder Diesel Engines, used in many diesel generator applications. The customer developed the engines for demanding back-up power supply systems with a power range of 12 to 1800 kW. Previous Sisu CCV systems had a large footprint on the engine as well as a replacement element interval.

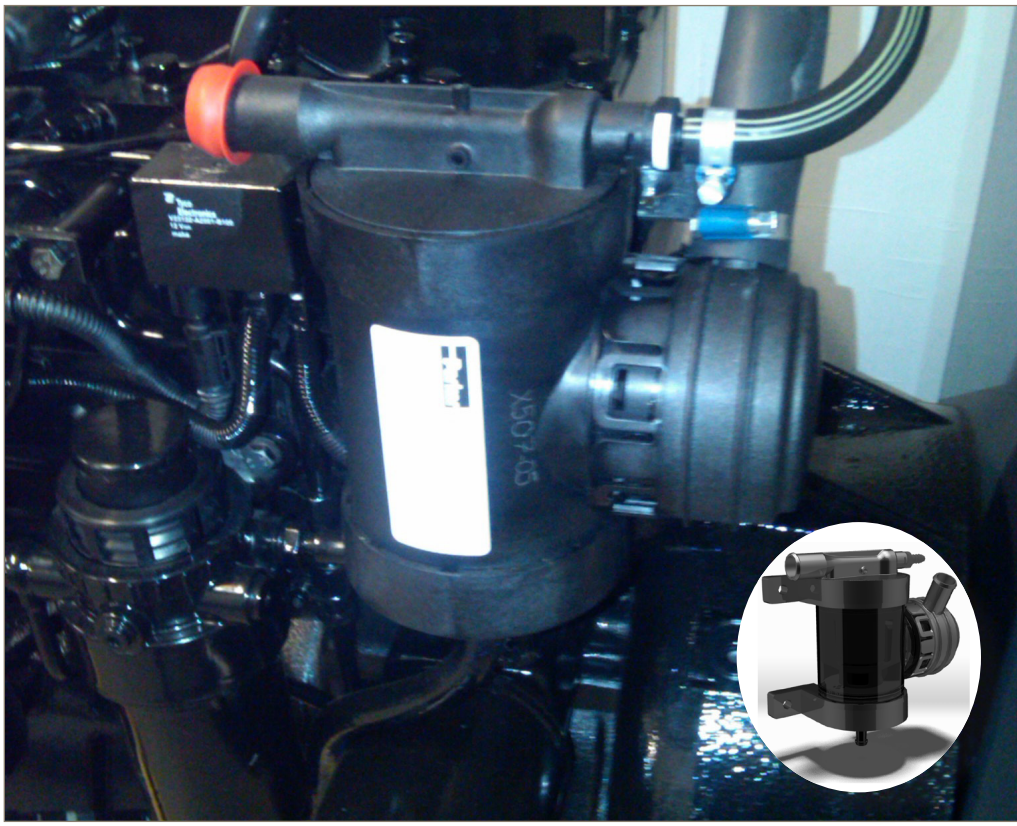
The Solution

Racor was able to provide a solution with the Si3100 Super Impactor (Si3) crankcase ventilation separator.

Why Racor was Chosen as the Solution

The Super Impactor CCV eliminates environmental pollution from crankcase emissions, allowing open and closed crankcase circuit solutions at >95% efficiency, with no service element.

Smaller, lighter, more economical and with higher efficiencies than its closest rivals, the system also includes the ultimate crankcase pressure regulator offering the tightest crankcase pressure control.



The Super Impactor has been tested under laboratory conditions as well as in field trials. Performance shows that the Si3 exhibits exceptional separation efficiencies across the key aerosol size distribution ranges seen in crankcase blow-by, both when an engine is run at rated power and torque but also across the engine speed and power output range. Typically, the Si3 will remove upstream blow-by aerosol oil challenge, reducing it to below 0.2g/hr downstream of the Si3 depending upon application. The Si3 has been validated on current and future Euro / EPA compliant engines and demonstrates tight crankcase pressure regulation control across all engine conditions and turbo depressions.

The Super Impactor technology will be available for medium, heavy, and industrial sized engines controlling blow-by gas up to 1500 liters per minute whilst maintaining crankcase pressure limits and efficiencies throughout the engine life. The cleaned gas can be closed to the intake system and high separation efficiency prevents damage to turbo compressors and intercooler systems. Alternatively the cleaned gas can be returned to atmosphere and satisfy the total engine emission regulations of the future. The technology enables the return of separated oil back to the crankcase sump and provides long lasting prevention of oil consumption.

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Super Impactor Specifications

Specifications	Si3100	Si3200
Maximum Flow Rate	3.53 CFM (100 LPM)	7.06 CFM (200 LPM)
Port Sizes		
Inlet (Hose Connection)	1.02 in. (26 mm)	1.02 in. (26 mm)
Outlet (Hose Connection)	1.02 in. (26 mm)	1.02 in. (26 mm)
Turbo boost inlet (SAE J2044)	0.39 in. (10 mm)	0.39 in. (10 mm)
Oil drain outlet (Hose Connection)	0.51 in. (13 mm)	0.51 in. (13 mm)
Weight in grams (without check valve)	2.02 lb (0.92 kg)	2.02 lb (0.92 kg)
Crankcase Regulation Pressure	+/- 4 inH_2O (10 mBar)	
Max Operating Temperature	- 40° F (-40° C) to 356° F (180° C)	

Key Features

RSL0268 Rev - 12/15

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