Vacuum Assisted Oil Mist Eliminators
Reciprocating Engines & Turbines

SOLBERG®

Our Vacuum Assisted Oil Mist Eliminators are designed for field upgrades and new reciprocating engines and turbine installations around the world. Our high efficiency filtration systems eliminate vented oil mist emissions while controlling engine pressure in crankcases and turbine lube oil reservoirs. We offer either vapor extractor and static options based on application requirements.

Series Specific Applications

Reciprocating Engines: Stationary

- Crankcase ventilation systems ensure environmental compliance and protect surrounding workplace from harmful oil mist emissions
- Open and closed system designs
- Prevents engine intake system contamination & seal leakage
- Improves engine performance
- Controls crankcase pressure
- Applications: landfill gas to energy, standby power, prime power and mechanical drive

Gas & Steam Turbines

- Retrofits and upgrades to replace outdated and inefficient vapor extractors for lube oil systems
- Typical systems include: high efficiency coalescing element, vacuum / pressure controls and integrated bypass device to simply maintenance and reduce operating costs
- Applications: peaking, nuclear, and base load power plants

Reciprocating Engines: Marine

- Crankcase ventilation systems ensure safety and reliability
- Unique piping configuration for easy installation, self regulation and seal leak prevention
- Captures vented oil mist emissions and reduces breathing and slipping hazards
- Applications: passenger ships, workboats, military vessels

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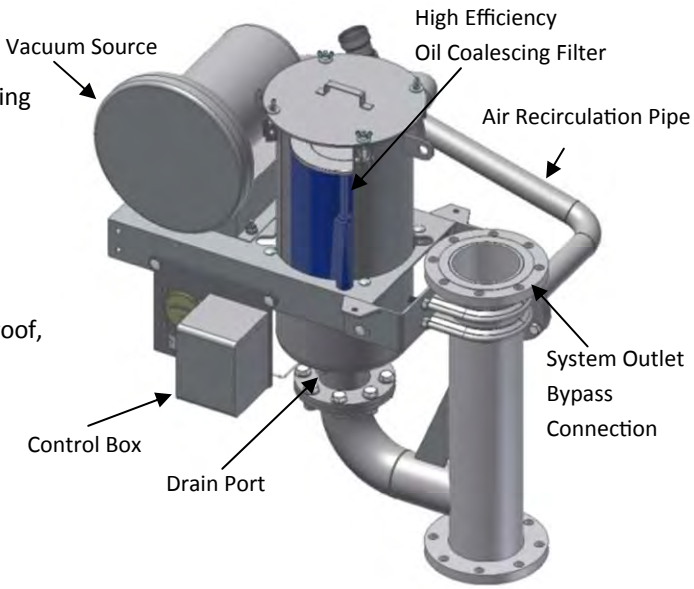
SOLBERG® Vacuum Assisted Oil Mist Eliminators

1 - 2550 m^3/h

Features

- Eliminates visible oil mist emissions
- High efficiency and long lasting replaceable coalescing elements
- Rugged carbon steel construction
- Industrial grade powder coat finish
- Drain ports for oil recovery
- Control valves for precise pressure regulation
- Large assortment of motor options (Explosion proof, ATEX, etc.)
- Integrated vacuum relief for motor protection
- Contact factory for specific flow ratings and sizes.



Recirculation System Configuration Example

Technical Specifications

- 0.3 micron media; 99.97% efficiency
- Flow range: 1-2550 m^3/h (1-1,500 ft^3/m) std, higher flows are available on request
- Pressure Rating: 1 bar full vacuum (most models)

Environmental Compliance

Based on the U.S. RICE NESHAP* ruling, stationary engines over 300HP must be equipped with a crankcase ventilation system by 2013. The objective is to reduce the harmful crankcase emissions emitted into the environment.

Solberg is committed to partnering with plant operators around the world to update their equipment and lessen their environmental impact.

* *Reciprocating Internal Combustion Engines*
National Emissions Standards for Hazardous Air Pollutants

Options

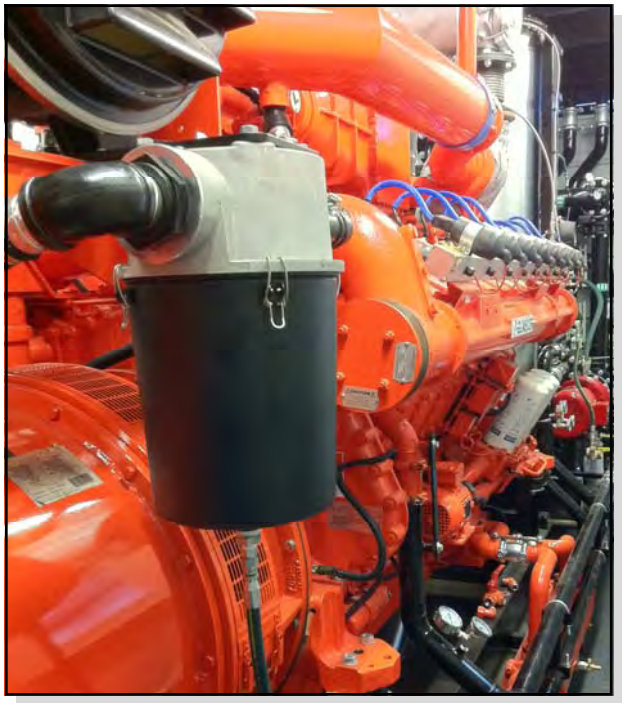
- Redundant equipment to ensure continuous operation
- Full automation: PLC and DCS compatible
- Stainless steel construction for harsh environments
- Custom coating and colors
- ASME Section VIII or PED pressure certifications
- Explosive environ. options: ATEX, Class I Div. 1, etc.
- Motor listings: UL, CE, IEC, CSA, IEEE, KOSHA, etc.
- Motor accessories: Heaters, starters, switches, VFD, etc.
- Skid mounted units for ease of transport & installation
- Service and maintenance platforms
- GOST certification

Static Oil Mist Eliminators
Capture Vented Crankcase Emissions

CCV Series

Solberg designs and manufactures high efficiency Closed Crankcase Ventilation Systems to capture oil mist and particulate emissions (blow-by) from the crankcases of a reciprocating engine.

Solberg's closed systems protect an engine's turbo, intercoolers and exhaust catalysts from oil mist and particulate contamination. The results are optimized engine performance and a reduction in costly repairs and maintenance.



Closed Crankcase Ventilation System
Guascor Engine Installation

Solutions Designed For

- Caterpillar
- Jenbacher
- Waukesha
- MTU
- Guascor
- Wartsila
- Cummins
- Fairbanks Morse

Typical Applications

- Electric Power Generation
- Marine Power Generation
- Marine Propulsion
- Gas Compression

Solberg Closed Crankcase Ventilation System With Integrated Vacuum Control Valve

CLV Package

Benefits & Purpose

- Captures the hazardous oil mist and particulate emissions "blow-by" vented from the crankcase.
- Achieves 99.97% efficiency for 0.3 micron oil mist and particulate
- Protects the turbocharger, intercoolers and exhaust catalysts from contamination and damage.
- Prevents potential health hazards from entering the surrounding environment and workplace
- Maintains required crankcase vacuum via integrated self-regulating valve
- Recovers expensive lube oil lost during the venting process, which allows for efficient operation and lower maintenance costs

Note: Model offerings and design parameters may change without notice. See www.solbergmfg.com for most current offering.

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Series Specific Applications

- Vents for Oil Reservoirs, Crankcases, Bearings, Coupling Guards
- Compressor, Turbine, Gearbox, Engine Applications

Features

- Eliminates visible vented oil mist emissions
- High efficiency fiberglass filter elements: 99.97% removal efficiency for 0.3 µm oil mist
- Carbon steel construction with durable powder coat finish
- Low back pressure filter element design: Pleated and wrapped fiberglass options
- Extensive flow range
- Continuous operating temp: 20°C (68°F) - 80°C (180°F)
- Contact factory for specific flows and sizes.

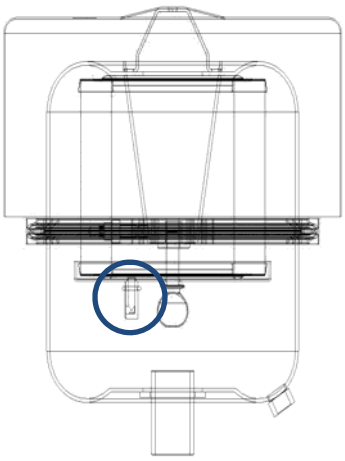
Options

- Stainless steel construction
- Special coatings and finishes
- Internal drain-back mechanism
- Alternative filtration media (wire mesh demister, vane separator)
- Multiple configurations
- Vacuum assisted oil mist eliminators (See page 5-10 to 5-11

Gearbox Application

CVH Series

CV Series



Static Vent Oil Mist Eliminators w/Internal Drain-Back Mechanism

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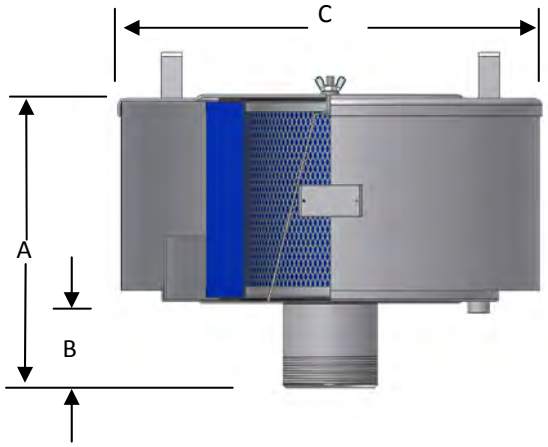
Static Vent Oil Mist Eliminators
CVB Series



Features

- Eliminates visible vented oil mist emissions
- Carbon steel construction with powder coat finish
- Low back pressure filter element design: Pleated and wrapped media options
- External drain-back mechanism
- Extensive flow range available upon request

Series Specific Applications

- Air/Oil Separation Vents for oil reservoirs, crankcases, bearings, coupling guards
- Compressors, turbines, gearboxes, engines and more

Technical Specifications

- 0.3 micron media; 99.97% efficiency; Typically 5 PPM or less*
- Continuous operating temp: 20°C (68°F) - 80°C (180°F)

* 150 PPM challenge or less

Options

- Stainless steel construction and resistance coatings
- Alternative filtration media (Wire mesh demister, vane separator)
- Vacuum assisted style available: **BAE Series**

Outlet Size	Outlet Type	Assembly Part Number	Dimensions - mm A	B	C	Approx. Wt. kg	Replacement Element Part No.
1"	MPT	CVB-WP848-100	189	51	156	1.4	WP848
1 1/4"	BSPT	CVB-WP848-126	189	51	156	1.4	WP848
1 1/2"	BSPT	CVB-WP848-151	189	51	156	1.4	WP848
2"	BSPT	CVB-WP850-201	302	64	260	2.5	WP850
2 1/2"	BSPT	CVB-WP850-251	302	64	260	2.5	WP850
3"	BSPT	CVB-WP274-301	375	76	508	6.8	WP274
4"	BSPT	CVB-WP274-401	400	102	508	6.8	WP274
DN100	FLG	CVB-WP274-DN100	400	102	508	9	WP274
DN125	FLG	CVB-WP374-DN125	508	102	508	17	WP374
DN150	FLG	CVB-WP374-DN150	533	127	508	18	WP374

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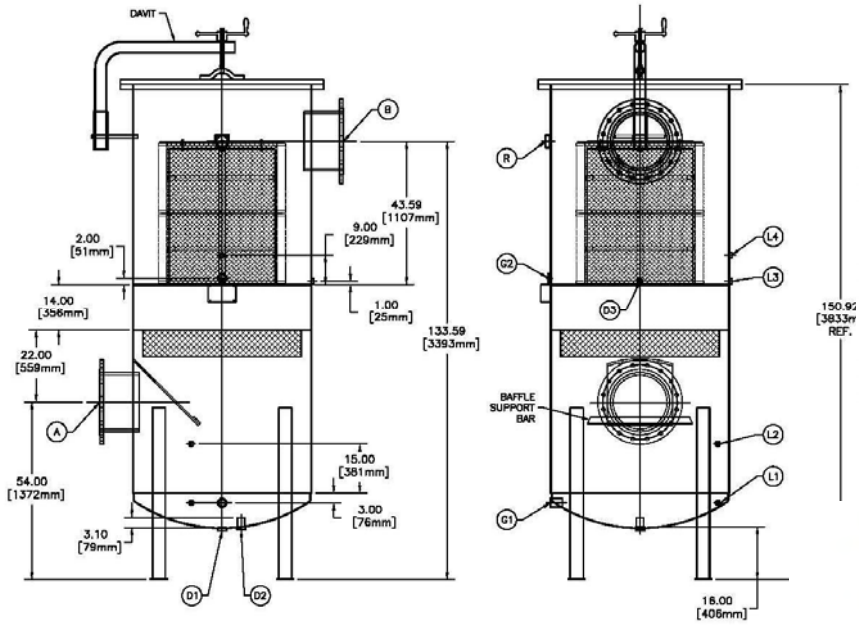
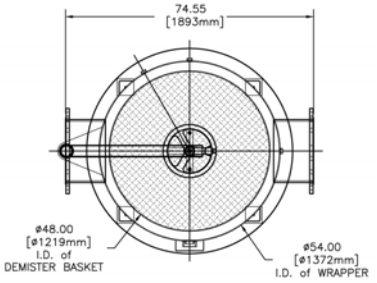
Natural Gas Filtration
Oil Separators





Note: Drawings are shown with sample dimensions only.

Series Specific Applications

- Landfill and Bio-Gas recovery
- Fuel for reciprocating engines and gas turbines
- Gas compression
- Compressor packages
  - Rotary Screw
  - Centrifugal
  - Reciprocating
  - Vane

Features

- Protects equipment from condensate, oil, and particulate entrained in the gas stream
- Multi-stage separation
  - 316 SS vane pack or demister pad for heavy condensate and oil removal
  - High efficiency 99+% final filter elements
- Rugged carbon steel construction
- Contact factory for model offering and availability

Options

- Special standards: PED, CRN, ATEX, ASME Vessel code sec. VIII division I
- Stainless steel construction
- Special coatings or finishes
- Replaceable filter elements in various efficiencies for particulate removal
- Gauge ports, float switches
- Custom leg supports
- Flush port for vessel cleaning
- Removable vessel lid for element service
- Davit arm for vessel lid removal

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Notes

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