

Number one
in crankcase ventilation

alfdex[®]

Turning the world



a little greener

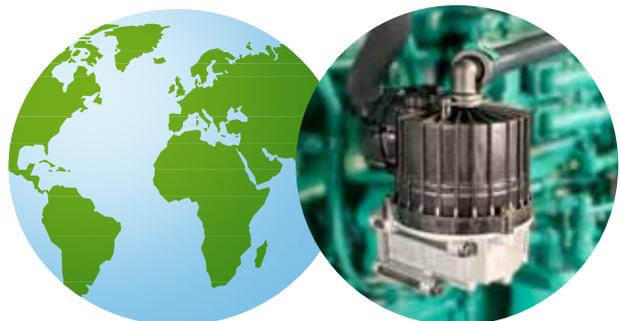


Alfdex® is the world's leading supplier of highly efficient solutions for the cleaning of crankcase gases from diesel engines. Solutions that will satisfy environmental requirements for a very long time to come.

The Alfdex oil mist separator is a unique product. It breaks new ground for crankcase ventilation on both present-day and future diesel engines by eliminating oil and soot from the blow-by. The separator, sealed for life, keeps turbochargers and intercoolers running at peak performance. Yet it requires no maintenance or service.

All truck manufacturers in North America and almost all in Europe are now using Alfdex separators. Several hundred thousand heavy trucks are annually equipped with an Alfdex system.

And in July 2012 the one millionth Alfdex separator left the production line at the plant in Landskrona, Sweden.





On highway

Alfdex is the world leader in the on-highway segment where the Alfdex solution is applied on medium and heavy duty trucks and buses.

The Alfdex solution is used by Mercedes-Benz, Freightliner, FUSO, Western Star, Setra, Volvo, Renault Trucks, Mack, UD Trucks, Scania, Kenworth, Peterbilt, Caterpillar, International Trucks, IC Bus and MAN.



Off highway

The off-highway segment is a strong growth area. Here the Alfdex solution is applied on diesel engines for tractors, forestry equipment, generators, boats, combine harvesters, military vehicles, locomotives and construction vehicles.

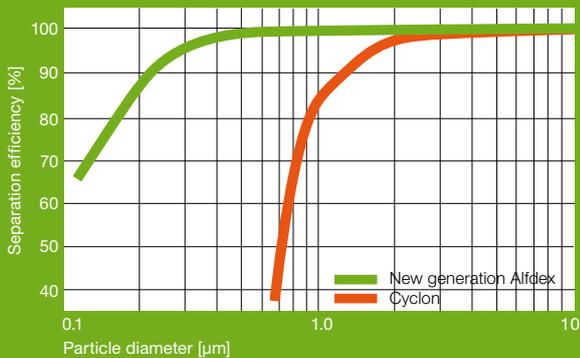
The Alfdex solution is used by John Deere, AGCO Power, Volvo Penta, Volvo Construction Equipment and Navistar Defense.

In 2010 Alfdex won the 2009 Supplier Innovation Award from John Deere for its unique separator technology.

Exceptional



Performance at 10,000 rpm and 200 litres/minute



Technical info

- Separation efficiency: Close to 100%, depending on version and application.
- Blow-by gas rate: 50-600 lit/min, depending on version.
- Temperature range: -40°C to +130°C, peak +140°C up to 5% of service life. Can be modified to be positioned close to hot components (i.e. turbocharger, etc).
- Internal pressure drop: None (instead there is small controlled suction extracting gases from the crankcase).
- Pressure control: An internal pressure control valve makes sure that the crankcase pressure is kept within specified range.
- Service life: Designed for a service life L10 of up to 1,000,000 miles (1,600,000 km) or 20,000 hours, whichever comes first.

cleaning efficiency

The Alfdex oil mist separator uses the centrifugal separation technique to prevent unclean ventilated crankcase gases returning to the inlet of diesel engines or being emitted to the environment. It is an application for diesel engines in the capacity range 5–16 litres.

The oil mist separator is built around a rotating conical disc stack. An oil turbine at the bottom of the centrifuge drives the disc stack. Part of the lubricating oil circulating in the engine is routed to a nozzle that directs an oil jet to drive the turbine. The oil and soot particles are removed from the gas by means of centrifugal forces of around 2,500–3,000 G at a separator speed of 7,000–9,000 rpm.

The centrifugal force makes the droplets and particles coalesce and form larger clusters that flow towards the outer edge of the discs. From there they are discharged onto the inner wall of the separator housing. The droplets and particles then flow down to the bottom of the separator, before finally being returned to the engine sump.

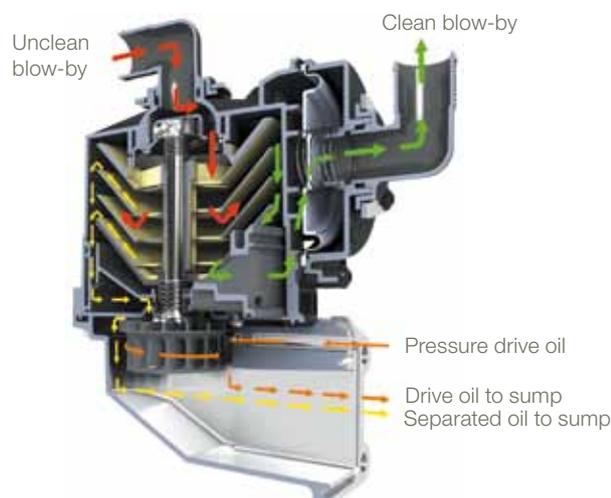
The clean crankcase gases are then either returned to the engine (Closed Crankcase Ventilation) or emitted into the air (Open Crankcase Ventilation). In the CCV version the integrated pressure control valve keeps the crankcase pressure at optimal level.

It is this principle that is the secret behind the exceptional cleaning efficiency.

Superior technology for crankcase ventilation

The advantage with an oil-driven solution is that there already is a surplus of oil flow available from the engine's lubrication pump. This is more than sufficient to drive the separator. Using oil to drive the unit also guarantees that the bearings are properly lubricated throughout the separator's service life, which is the same as the lifetime of the engine.

- Oil droplets and soot are removed from the blow-by and returned to the oil sump. The cleaning performance is as close to 100 percent as is possible using modern technology.
- Leads to reduced oil consumption. No oil is ventilated to the environment.
- No waste product, e.g. a filter, that needs to be recycled.
- Can be fitted into any diesel engine and be either block or remote mounted.
- Low power consumption.
- Meets the requirements set out in forthcoming legislation related to crankcase ventilation.
- No maintenance or service required during the service life of the diesel engine.



A young company with an

Even though Alfdex was established only a decade ago the story started long before this. In 1877 the Swedish inventor Gustav de Laval demonstrated his idea of using the centrifugal force to separate cream from milk. De Laval's idea has over the years created one of Sweden's largest companies – Alfa Laval.



In 1997 a couple of leading engine manufacturers approached Alfa Laval in the search for a technology to clean crankcase gases from diesel engines. This was the embryo to Alfdex, since it was the first time centrifugal separators were used to separate a liquid from a gas.

Soon truck manufacturers became aware of the new application, since they were now facing tougher emission legislation. As this was a new market segment for Alfa Laval, with very different demands, the company decided to find a competent partner already well-known to the automotive industry. Haldex became the number one choice.

In 2001 Alfa Laval and Haldex agreed to jointly develop and market separators for cleaning crankcase gases from diesel engines, primarily for medium and heavy trucks. The result of this cooperation is a separator with extremely high cleaning efficiency.

In 2011 Concentric took over the Haldex holding of the Alfdex shares.



impressive story



Owned by two



global players



Alfdex AB is a 50/50 joint venture between Alfa Laval and Concentric. Alfa Laval is a leading global provider of specialized products and engineering solutions. All based on Alfa Laval's key technologies of separation, heat transfer and fluid handling.

Concentric is a global company specializing in fluid dynamics and fluid power technologies. Thus providing better fuel economy, emissions reduction, vehicle control and productivity in trucks, buses and off-road vehicles.

Alfdex is located in Tumba outside Stockholm and in Landskrona in the southwest of Sweden. In Tumba our main objects are R&D and design. In Landskrona we are primarily involved in production, administration and logistics.



Think Alfdex and forget all about it

Almost everyone working at Alfdex is an engineer. This means that we speak the same language as our customers. We develop a close, efficient relation that can continue for a long time. This close collaboration guarantees that we deliver cost-efficient solutions with top performance based on the customer's specific needs.

We give you excellent performance for the continuous, ultra-efficient cleaning of crankcase gases. Thanks to the separator, the engine consumes less oil. The Alfdex oil mist separator has a service life that is as long as the engine itself. And it requires no maintenance or service.

Think Alfdex and forget all about it.

**Alfdex AB**

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