

"Achieve the highest oil filtration  
standard and the most attractive  
return on your filter investment  
with GreenOil"

## Off-Line Oil Filtration Solutions



**GREENOIL** | **STANDARD**®

# UNIQUE COMBINED PARTICLE AND WATER SEPARATION



The necessity of absolute clean oil is commonly known as good practice. Downtimes and repairs may be reduced 5-10 times for hydraulic systems, 4-8 times for lubrication systems oils, and lifetime may be prolonged 4-8 times. Improved filtration is thus vital to reduce cost, repairs, and downtimes.

*The unique combined GreenOil filter yields a new top class standard for particle filtration.*

## Effectively removes particles from oil

Oil replacement do not remedy particle contamination fully. Residues and silt are still present, with an off-line filter this is removed over time.

The filter process in a GreenOil filter preserves oil specification, and considering particles and water enhances quality beyond that new oil.

## Removes free, emulsified and bound water

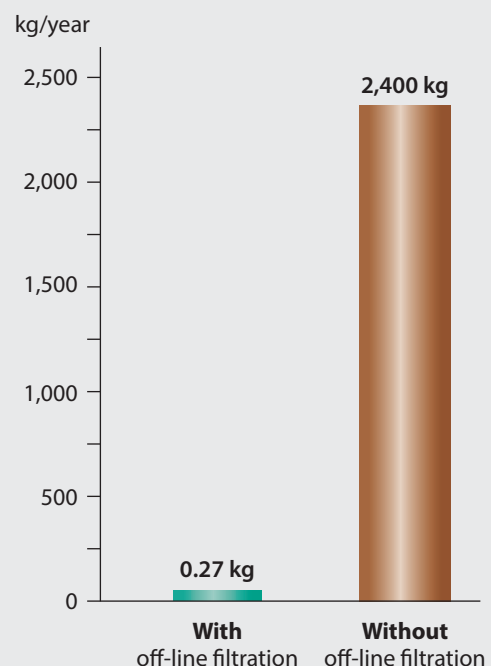
It is normally encountered that oil systems require dry oil to fulfill expectations to service lifetime. By condensation water builds up in installations not constantly operating. In any installations water ingress or contamination is a constant source for unnecessary oil change, corrosion and break-down.

The patented GreenOil water separator does not utilize any service parts and the power consumption is extremely low. The oil is not stressed by direct heating and water separation is a continuous process. The principle operates with heated air.

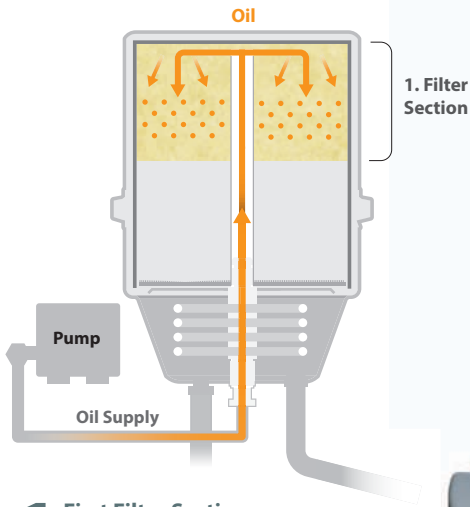


## Circulation of particles per year

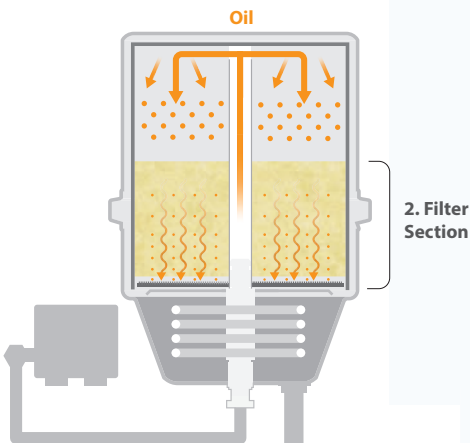
The hydraulic pump in a small hydraulic power pack circulates on a yearly basis 0.27 kg particles with off-line filtration and 2,400 kg particles without off-line filtration.



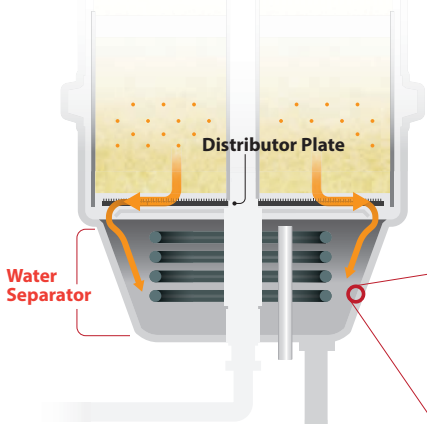
# GREENOIL FUNCTIONAL PRINCIPLE



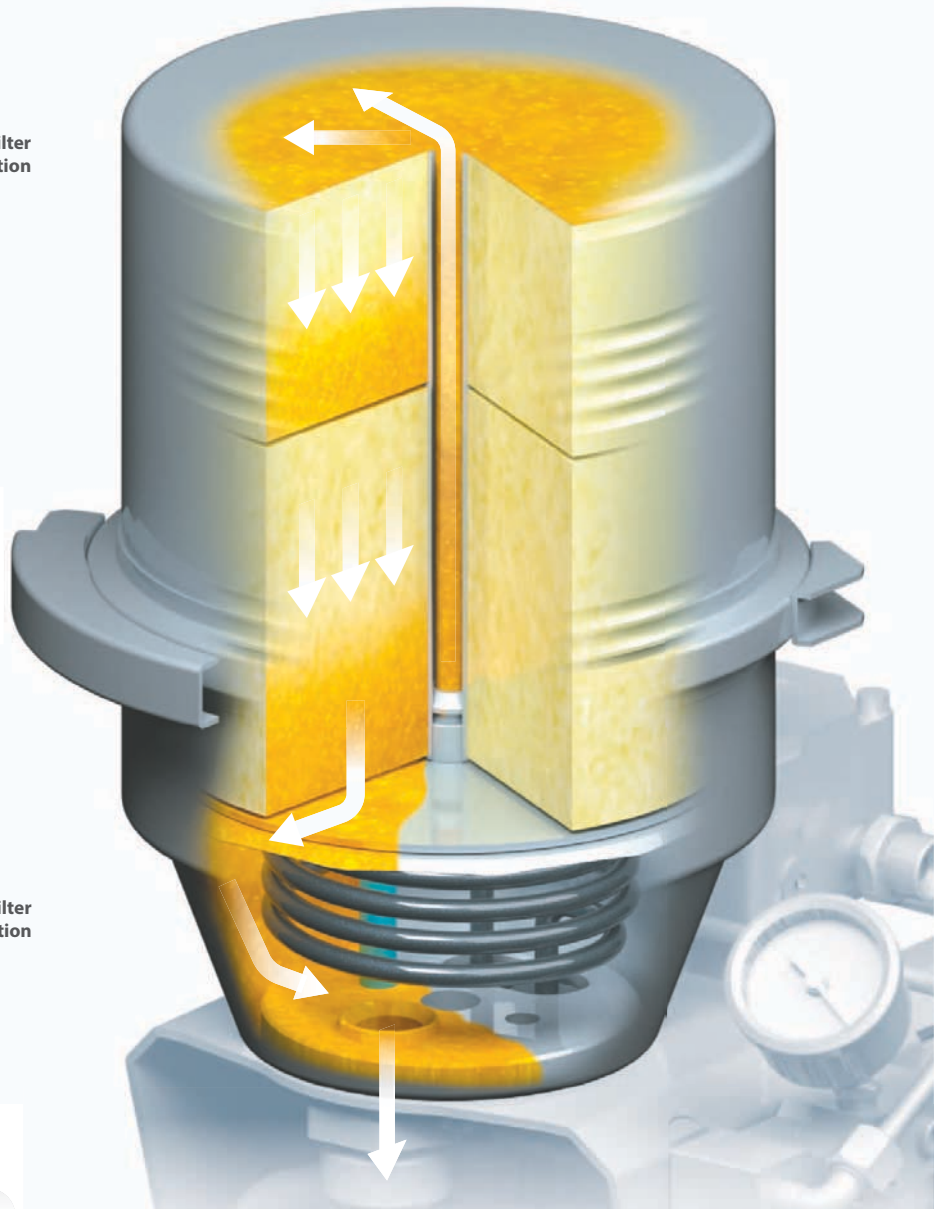
**1 First Filter Section**  
The first part of the filter insert is designed to retain sludge and bigger particles. Purpose is dirt holding capacity, efficiently increasing filter lifetime.



**2 Second Filter Section**  
The second part of the filter insert is designed with a high level of deep filtration. Purpose is to retain fine particles, ensuring best oil quality.



**3 Water Separation**  
The unique patented water separator is designed to remove free, emulsified, and bound water. Purpose is to remove any water contamination.

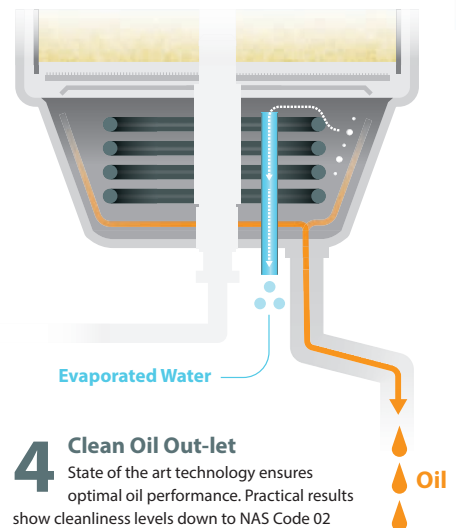
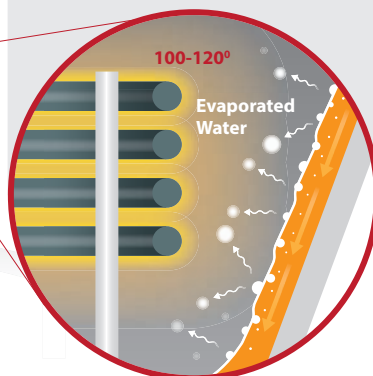


## Water Separation Principle

The principle operates **without any direct heating of the oil.**

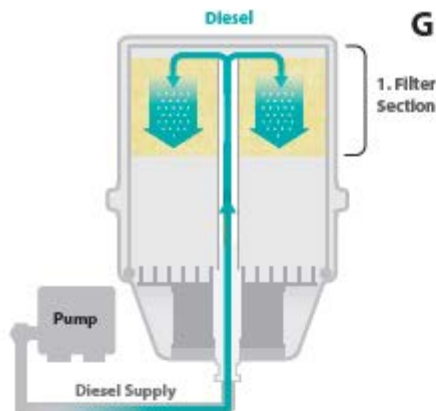
In the separation chamber the oil flows as a thin oil film down the chamber wall. A heat coil heats the air in the chamber to 100-120° C.

**Heated air and radiation evaporates water from the thin oil film.** Increased pressure from the evaporated water leaves the chamber through the venting pipe.

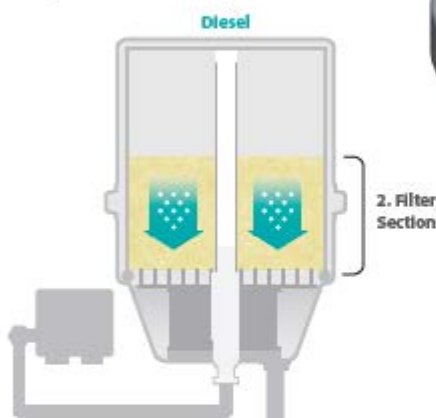


**4 Clean Oil Out-let**  
State of the art technology ensures optimal oil performance. Practical results show cleanliness levels down to NAS Code 02 (NAS1638) and water down to 30 ppm.

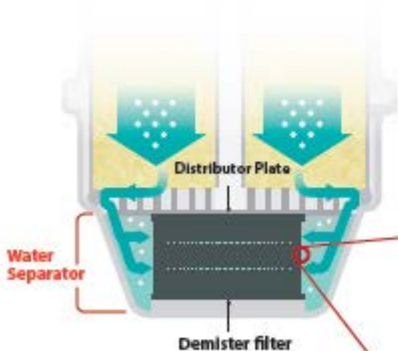
# GREENOIL FUNCTIONAL PRINCIPLE FOR DO/MGO



- 1 First Filter Section**  
The first part of the filter insert is designed to retain sludge and larger particles. This section has a high dirt holding capacity and increasing the lifetime and efficiency of the filter.



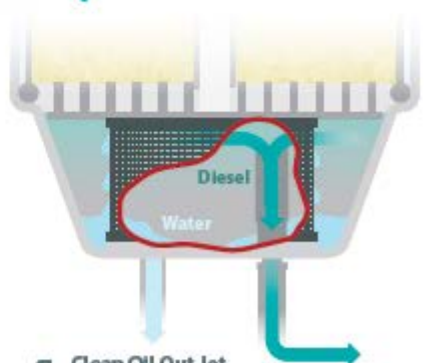
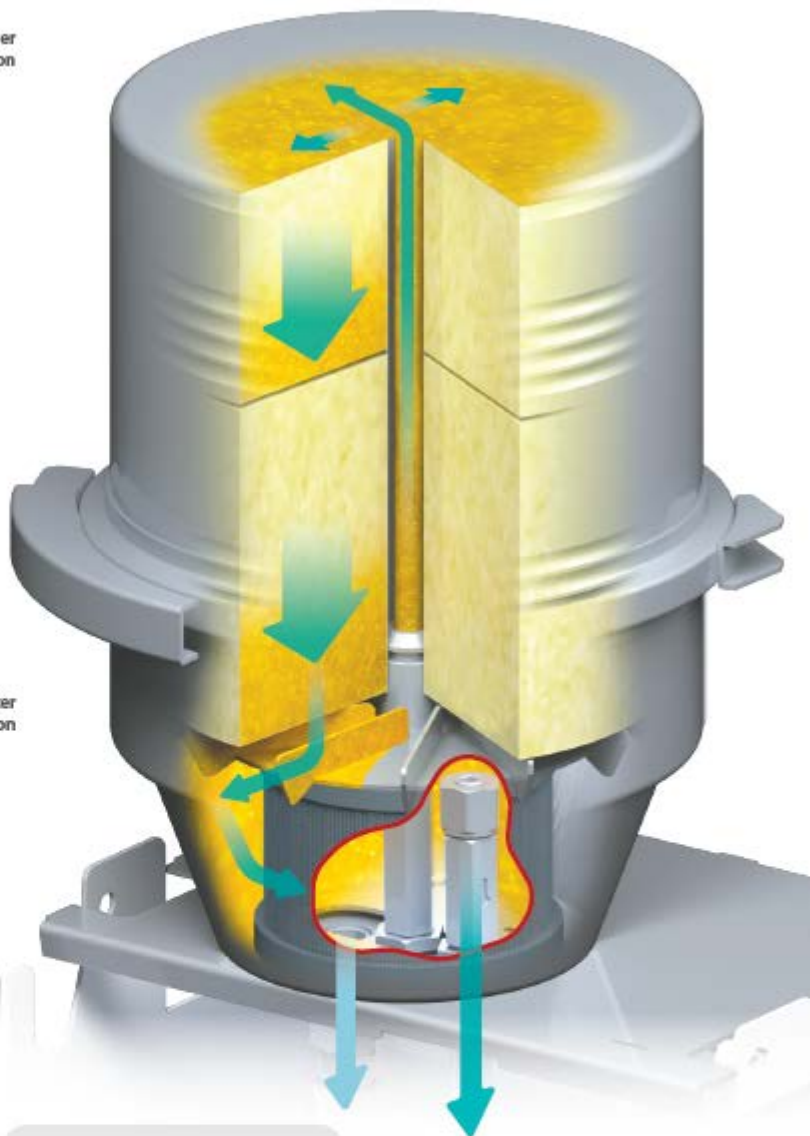
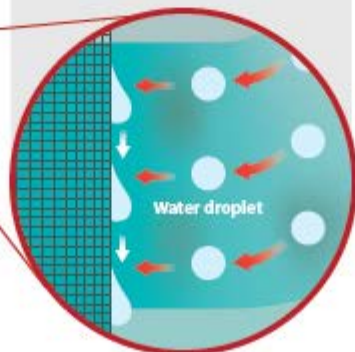
- 2 Second Filter Section**  
The second part of the filter insert is designed for deep filtration where smaller particles are retained ensuring best oil quality. Furthermore, this filter section coalesces the small water droplets which bind together creating sufficient density for treating.



- 3 Water Separation**  
The unique water separator is designed to demist any water contamination. The demister traps the water droplets permitting oil to pass and the water is then rejected to the water collection tank.

## Water Separation Principle

Apart from oil pressure the principle operates without energy needs. The demister treats coalesced water droplets, then settles in the systems collecting tank and water is eventually drained and removed from the system.



- 4 Clean Oil Out-let**  
Clean oil, free of water leaves the separation chamber at the oil outlet. State of the art technology ensures high quality treatment of oil performance. Practical results show cleanliness levels down to ISO 15/14/12 and water below 100 ppm.

## State of the Art Oil Filtration

GreenOil design, produce and market a unique series of oil off-line filters, breaking traditions in which oil cleaning has been performed for decades.

Since 2008 thousands of filter systems have been installed onboard all types of vessels and in industry. Leading ship owners and industrial manufacturers have invested in GreenOil products to improve operational stability and save maintenance costs.

*GreenOil Standard ApS – State of the Art Oil Filtration.*



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