



Oil cleaning

Removal of particles and water from gear oil.
Marine Propulsion Systems



Evaporation – removal of water from lubrication oil

It's a challenge to keep lubrication oil free of water. An oil cleaning system can help to remove particles and water from oil, even emulsified water.

We make oil greener

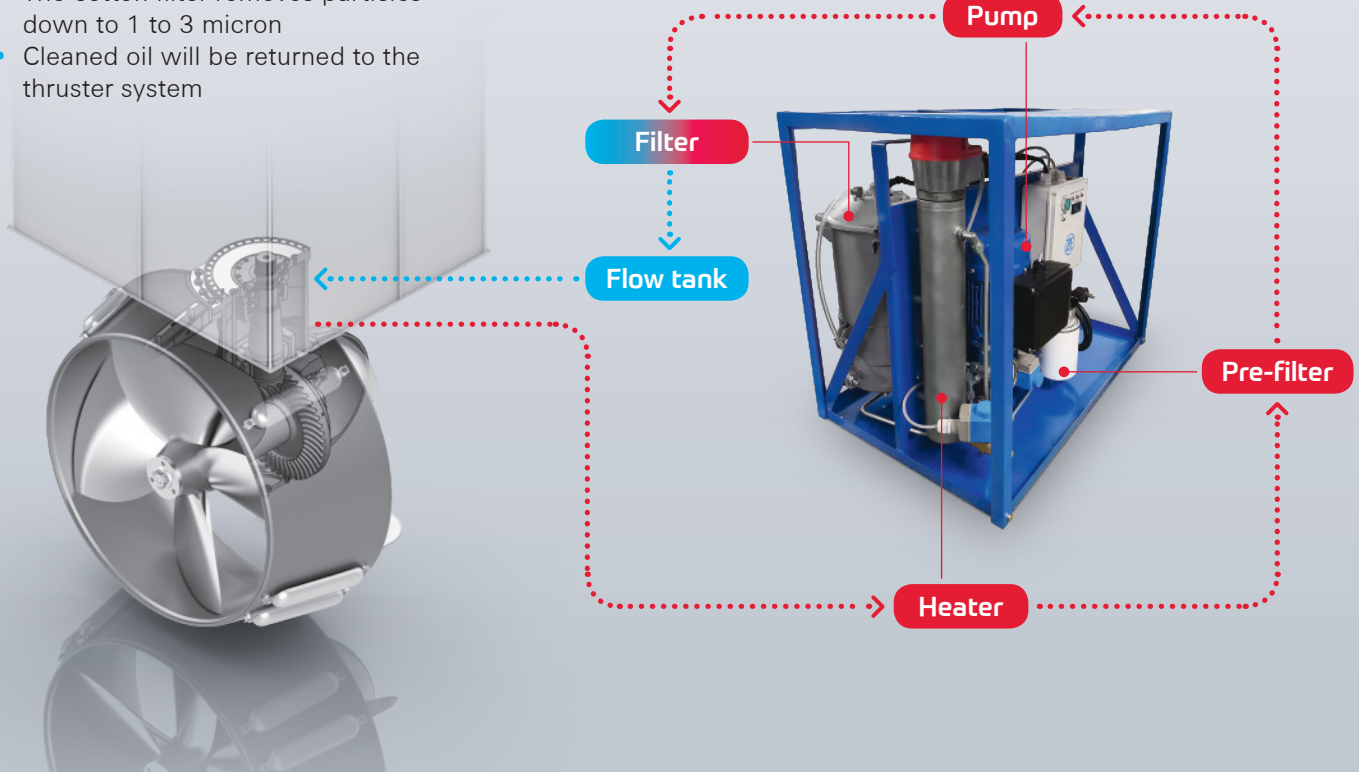
One of the root causes of mechanical failures is contaminated oil. Maintaining oil quality by evaporating water, even emulsified water and particulates helps to:

- reduce mechanical failures and downtime
- reduce operating costs
- fewer oil top ups between changes
- increase lifetime of the equipment.

All these benefits combined will make your business greener.

How does the oil cleaning work?

- Oil from the thruster system is heated
- The pre-filter removes coarse particles
- Pump presses the oil through the filter
- Water will be evaporated, collected and removed in the top of the unit
- The cotton filter removes particles down to 1 to 3 micron
- Cleaned oil will be returned to the thruster system



Biodegradable lubrication oil

The use of biodegradable or EAL-oil (Environmentally Acceptable Lubricant), requires stricter standards for the oil to be kept free of water in thrusters and other systems. Biodegradable oil degrades in water, which means that the oil must be free of water otherwise it decomposes inside the system. Most oil suppliers recommend that biodegradable oil should not have a higher water content than 0.1% (1000 ppm). Therefore, an oil cleaning system is highly recommended.

Water leakage test of biodegradable oil

A test has been carried out on biodegradable oil focusing especially on removing water content from this type of oil.

New oil contains around 200-300 ppm or 0.02% to 0.03% of water. To simulate water leakage, sea water was added to the oil to a level of 2.5% (25,000 ppm). After 4 hours of cleaning, both the number of particles and water content was lower than in new oil.



	Number of particles >5 micron	Water in ppm	Water in %	NAS* grade
New oil	11,410	254	0.0254	6
After added water	18,847	25,000	2.5	7
After 2 hours of cleaning	16,573	1,800	0.18	6
After 4 hours of cleaning	3,723	158	0.0158	4

* National Aerospace Standard

The core of the oil cleaning system is the filter, constructed to maintain high oil quality of lubricating oil systems. To ensure high oil quality, the filter cleans both particles and water simultaneously, including emulsified water.



Oil cleaning system at a glance

- Useable for all types of oil
- Cotton filter and water evaporator
- When operated continuously 600 liters oil per filter per day can be cleaned
- Cleanses the oil to a better quality than new oil
- Removes water, particles as well as gas
- Small investment with a high impact on oil quality
- Significant cost savings
- Extends the lifetime of oil by 10 to 15 times
- Clean oil – fewer mechanical failures and less downtime
- Supports an environmentally friendly use of oil

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