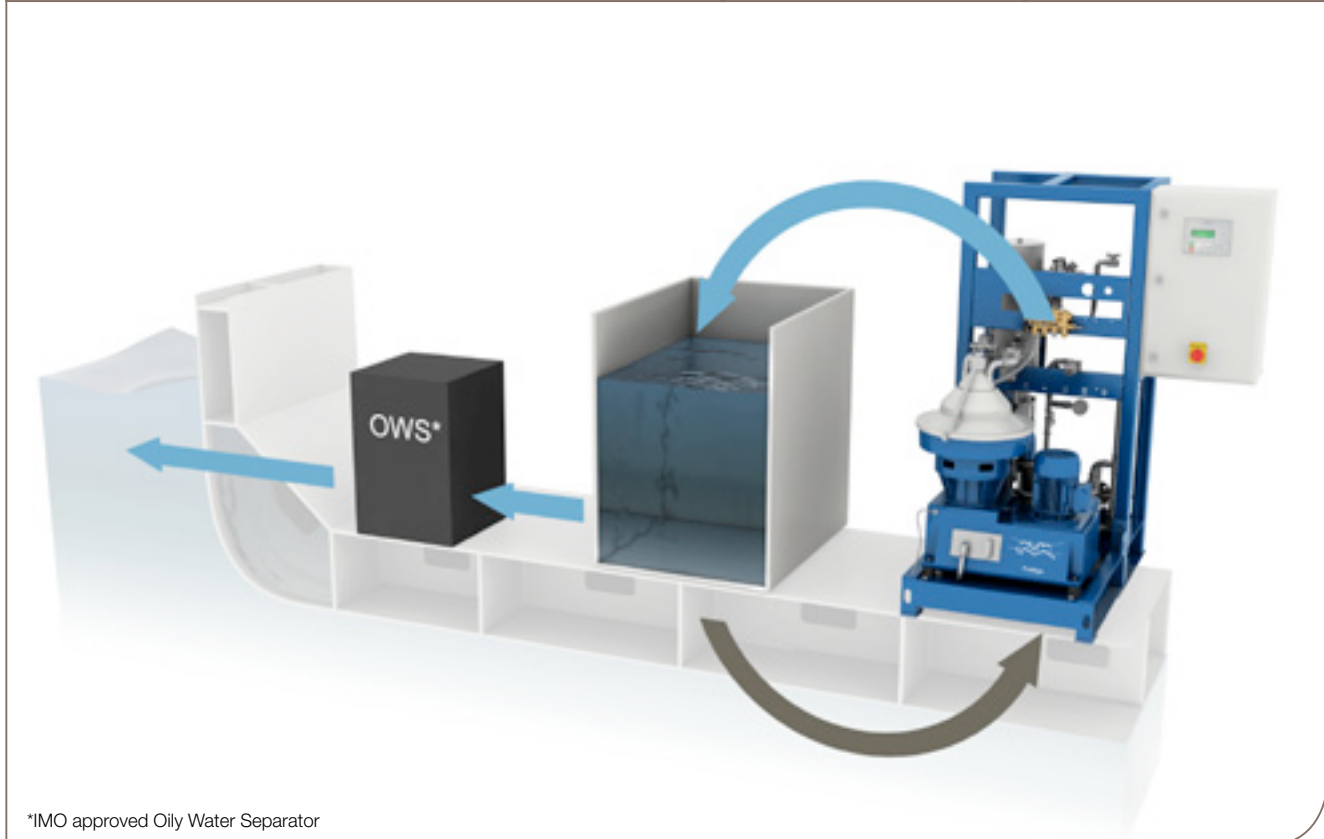




PreBilge

Taking command of bilge water challenges



*IMO approved Oily Water Separator

Stormy waters

International regulations demand the reduction of oil content in bilge water to 15 ppm before it can be discharged into the ocean. Yet while bilge water treatment systems are carefully regulated by International Maritime Organization (IMO) resolution MEPC.60(33) or MEPC 107(49), many ship owners and ship operators possess type-approved systems that fail to do their job at sea.

This lack of performance is a rising concern as discharge limits and the punishments for exceeding them grow increasingly strict. In order to ensure regulatory compliance, many ship owners and ship operators have been forced to equip their treatment systems with costly additional filters. High-performance treatment systems do exist, but for various reasons they have been out of reach for many vessels.

Application

Bilge water treatment is a complicated challenge. Today's bilge water is an ever-changing cocktail containing not only diesel oil and water, but also heavy fuel oil, lube oil, hydraulic

oil, oil additives, chemicals and detergents. This unpredictable mixture has to be separated into three distinct phases: oil, water and sludge.

The process is complicated by the presence of emulsions: even mixtures of immiscible liquids, such as tiny oil droplets mixed into the water phase of bilge water. Although gravity would normally cause these droplets to separate from the water, particles or surfactant chemicals from cleaning products used on board can prevent this from happening.

PreBilge – a new way of thinking

PreBilge is an ideal solution in cases where switching to a new bilge water treatment technology is not a viable option. It does away with the idea that one technology has to be replaced by another. Instead, it works in cooperation with the bilge water treatment system already installed.

Operating principle

PreBilge is installed as a continuous pre-treatment loop, starting and ending at the bilge water tank. It is connected in much the same way that a lube oil separator is connected to

a lube oil tank, and works in a similar fashion. Just as the lube oil separator keeps the lube oil tank clean, PreBilge continuously maintains the bilge water tank, ensuring a clean bilge water feed that the existing treatment system can handle.

Since the oil monitoring and overboard discharge are handled by the existing treatment system, no type approval or adjustment to the vessel's IOPP certificate are necessary.

PreBilge technology

PreBilge makes use of centrifugal separation, which is the most effective means available for dealing with complex bilge water mixtures. So in spite of its compact footprint, it can solve the problems of larger systems.

Employing a force 6000 times stronger than that of gravity, PreBilge removes the heavy oils, particles and emulsions that pose difficulties for other treatment systems. To achieve the same result on its own, a gravitational coalescer would have to possess a settling area of 3000 m².

Because the rotation of the liquid in the separator bowl creates a gyroscopic effect, the process is also immune to the vessel's own pitch and roll. For this reason, PreBilge has the same high separation efficiency in any operating conditions.

Installation and operation

Alfa Laval delivers PreBilge as a compact module with a footprint of 1.5 m², with a progressive-cavity feed pump on a separate skid. Easy to install even in smaller engine rooms, it can be flexibly placed with pipe connections drawn as needed. No proximity to the vessel's bilge water tank is required.

Separator specifications

Hydraulic capacity:	~ 2.0 m ³ /h
Utilized capacity:	0.5 m ³ /h
Bowl volume:	1.5 l
Sludge space volume:	0.6 l
Discharge volume:	1.0 l > 9000 rpm
Motor power:	~ 1.5 kW
Bowl material:	AL 2377
Configuration:	Concentrator with a unique solid-handling distributor design

PreBilge is available in the following configurations:

- 230V, 380V, 400V, 415V – 50Hz
- 230V 440V, 575V, 690V – 60Hz

Several different heating options are available; depending on the vessel's requirements, the PreBilge module can incorporate a steam heater, an electric heater or a plate heat exchanger (PHE) to use hot water as a heating medium, for example engine cooling water. If heating coils or immersion heaters are already available on board, no additional heating is necessary.

PreBilge has a capacity of 500 l/h. It is designed to be run continuously in all operating conditions, with a stop for routine maintenance every 2000 hours.



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How to contact Alfa Laval

Contact details for all countries are continually updated on our web site. Please visit www.alfalaval.com/marine to access the information directly.