



**Alfa Laval in brief**

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

**How to contact Alfa Laval**

Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com)

100000653-1-EN 1807



# Alfa Laval on board

Solutions for vessel performance



Alfa Laval is a global trademark registered and owned by Alfa Laval Corporate AB.

# Together for vessel performance

Over the past 100 years, the marine industry has changed at an ever-increasing pace. Your needs today are in clear focus for us, because we've been here all that time. At Alfa Laval, you'll find a lasting commitment to solving your challenges – through equipment, systems, services and application leadership in all major areas on board.

From bow to stern, we work with you to ensure lifetime vessel performance.

In securing the reliability you depend on at sea, we focus not only on equipment innovation, but also on processes and shared knowledge. So that you stay compliant with tightening marine legislation, we provide complete and proven solutions from retrofit to optimization. And to keep you competitive, we find ways to boost your efficiency in energy use, waste handling and operations as a whole.

Throughout your vessel and throughout the world, your performance is our purpose.





Whether you build ships or sail them, Alfa Laval has the solutions to put you ahead.

Alfa Laval can be found on most ships worldwide. Our growing portfolio offers advantages virtually all key applications on board.

#### Fuel treatment

Alfa Laval separators first opened the door for the fuel oils so common today. That gives us more oil treatment experience than any other marine supplier.

Over the years we've reduced the complexity of our equipment while increasing its efficiency and protection. Through today's Alfa Laval Adaptive Fuel Line, we now do the same on a cross-system level.

#### Filtration

Alfa Laval offers a wide range of automatic fuel and lubricating oil filters for reliable engine protection and lower lifecycle costs.

Our filters have a compact design that enables flexible installation and requires a minimum of space in the engine room. Their high filtration efficiency is matched by a low need of maintenance.

#### Fuel conditioning

Today's wider range of fuels can mean complex safety and performance issues, especially when switching between fuels.

Through cutting-edge automation, Alfa Laval fuel conditioning solutions ensure correct fuel viscosity and lubricity. With a wide range of options, including support for fuel blending, they secure peace of mind in fuel changeover.

#### Oily waste treatment

MARPOL rules allow the HFO fraction of waste oil to be recovered and reused as fuel. Only Alfa Laval PureDry takes advantage of this, minimizing sludge while typically recovering 1–2% of the consumed fuel volume.

Combined with Alfa Laval PureBilge for effective bilge water treatment, the result is an integrated cleaning system that dries up oily waste streams.

#### Crankcase gas cleaning

The oil and particles in crankcase gas are a threat to the environment and human health. Alfa Laval PureVent is a compact solution for removing them, developed in cooperation with a major engine manufacturer.

Using centrifugal separation instead of filters, PureVent returns virtually oil-free air while allowing collected oil to be recirculated as lubrication.

#### Exhaust gas cleaning

Scrubbing exhaust gas removes harmful SOx compounds before they can enter the air. This lets vessels continue using economical HFO, rather than more expensive low-sulphur fuel.

Alfa Laval PureSOx is the scrubber solution at the forefront. Ready for both the 2020 global sulphur cap and the strict demands in Emission Control Areas, it is available in open-loop, closed-loop and hybrid configurations.

#### EGR water treatment

In Exhaust Gas Recirculation (EGR), cleaned exhaust gas is used to reduce the engine's combustion temperature and the formation of NOx. To safeguard the engine and ensure discharge compliance, water treatment is needed.

Alfa Laval PureNOx technology is a streamlined and effective EGR water treatment solution, built on Alfa Laval expertise in centrifugal separation and thoroughly proven at sea.

#### Waste heat recovery

Half the energy from burning fuel is released as heat. Rather than sending it up the funnel, it makes sense to reclaim as much as possible.

Alfa Laval Aalborg solutions recover waste heat from main and auxiliary engine exhaust. In addition to being used for steam or heat, the heat energy can be used to produce electricity and propulsion.

#### Steam generation

For nearly 100 years, Alfa Laval Aalborg solutions have been at the leading edge of marine thermal technology.

Today's boilers, burners and control encompass the best of the efficient features developed over the years, along with new advances like multi-fuel capability. Perfectly optimized, they operate in harmony with each other and the steam consumers downstream.



# aboard

#### Thermal fluid heating

Thermal fluid heating systems are a smart application of thermal expertise. They combine superior heat transport efficiency with low system pressure, as well as low installation and maintenance costs.

Alfa Laval's complete thermal fluid heating systems include the Alfa Laval Aalborg TFO thermal fluid heater, waste heat recovery units, pumps, valves, accessories and intelligent control.

#### Cooling and heating

Having led the shift to today's compact and energy-efficient heat exchangers, Alfa Laval is still pushing limits.

With advanced new techniques such as 100% stainless steel brazing and diffusion bonding, as well as smart design and newly optimized plate patterns, we are achieving entirely new levels of performance.

#### Freshwater generation

Having pioneered freshwater generation over 50 years ago, Alfa Laval now has multi-effect freshwater generators for all capacities.

Among them is the revolutionary Alfa Laval AQUA Blue. AQUA Blue uses only half the pumping energy of other freshwater generators, because its 3-in-1 plate technology requires only half as much seawater.

#### Ballast water treatment

Alfa Laval pioneered ballast water treatment and still sets the benchmark today.

Alfa Laval PureBallast 3 is the third generation of the leading ballast water treatment technology – and the first solution to be revised G8 ready. Type approved by the U.S. Coast Guard as well as by IMO, it offers unmatched performance in the most challenging waters.

#### Inert gas production

For decades, Alfa Laval has optimized the safety of volatile cargo under the Smit name. We produce inert gas through a number of methods, adapted to the safety requirements of IMO and the classification societies.

Most of our inert gas systems use the unique Ultramizing® principle, which atomizes the fuel oil for soot-free inert gas, even at partial loads.

#### Gas combustion

LNG carriers must safely dispose of boil-off gas when it cannot be used for propulsion, or when the tank is prepared for inspection.

Specifically designed for the task, the Alfa Laval Gas Combustion Unit is a convenient, economical means of regulating cargo tank pressure on vessels with dual-fuel or low-speed dual-fuel engines.

#### Cargo pumping

Framo pumping systems are vital for maximizing the utilization of product and chemical tankers. The hydraulically driven submerged cargo pumps provide safe, efficient and flexible cargo handling of any type of liquid cargo.

Improved cargo handling performance gives quicker turnaround time and fewer voyages in ballast.

Framo cargo pumps and other Framo products are sold exclusively by Framo AS.

#### Tank cleaning

Alfa Laval's automated Gunclean Tofteborg tank cleaning solutions represent over 50 years of optimization.

With a helical or criss-cross spray pattern that reaches the whole tank in a fraction of the traditional cleaning time, our single-nozzle and dual-nozzle technologies eliminate both hassle and expense.

#### Service

All equipment needs proper attention to maximize its lifetime value. Our Alfa Laval service experts extend equipment performance, securing both uptime and the highest level of equipment optimization.

Our global network, with facilities in key marine harbours, means availability at any time and anywhere in the world.