



near marine



Together for
vessel performance

For the past 100 years, Alfa Laval has partnered with ship owners, ship operators and shipyards to strengthen and protect marine business. Now as always, our shared goals are in focus.

Alfa Laval has a lasting commitment to solving marine challenges – through innovation, insight and partnership across seventeen product groups and vessel-wide. As business at sea changes, we provide confidence in meeting regulatory demands and keeping operations running smoothly.

And just as importantly, we create smarter ways to save and profit.

The first century was just a beginning. Welcome to a new era of vessel performance.

New 1500 m³/h PureBallast 3 reactor for large flows

With a new UV reactor size of 1500 m³/h, Alfa Laval is increasing the installation flexibility of Alfa Laval PureBallast 3. The new reactor, which handles 50% more

volume than the current largest reactor size, is good news for tankers and other vessels with large ballast water flows.



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The confident choice

Alfa Laval PureBallast 3 is the leading ballast water treatment technology, providing unmatched biological disinfection performance in the most challenging waters.

Optimal BWTS configurations for tankers and more



With the introduction of the 1500 m³/h reactor, PureBallast 3 systems will become even more optimized for large ballast water flows of 1000 m³/h or more. A 3000 m³/h system will be achieved with just two reactors, for example, while other system flows will go from two reactors to one.

Having fewer reactors will further reduce the complexity and cost of installing a large-flow ballast water treatment system. This may strengthen a trend that can already be seen among tankers and other vessels with large ballast water flows, where electrochlorination is giving way to UV ballast water treatment.

The 1500 m³/h reactor will join an existing range of 170, 300, 600 and 1000 m³/h reactor sizes. Alone or in combination, the reactors enable system flows of 32–3000 m³/h, with multiple systems handling even larger capacities.

NOx compliance and savings: EGR water treatment with a difference

Alfa Laval PureNOx technology has long been the choice for water treatment in Exhaust Gas Recirculation (EGR). In response to the global sulphur cap, it will soon be available in two solutions – PureNOx LS (Low Sulphur) and PureNOx HS (High Sulphur).



Built on Alfa Laval's leading separation expertise, PureNOx technology has been proven in thousands of hours of EGR operation in Tier III compliance. Now it will be channelled into two different solutions, optimized according to fuel sulphur level.

On vessels using low-sulphur fuel, PureNOx LS will clean the EGR bleed-off water before overboard discharge. Experience shows that EGR process water cleaning is not needed with low-sulphur fuel, which allows for a setup much like a bilge water system.

On vessels using high-sulphur fuel, PureNOx HS will continue cleaning the process water. However, the presence of a scrubber on board will mean bleed-off can be handled by the scrubber system.



With only one type of water to clean, each water treatment system can be smaller and optimized for more cost-efficient EGR. In addition, both support Eco EGR mode, which can result in fuel savings of up to 6 g/kWh in Tier II operation.

PureSOx Connect makes it easier to comply and optimize

Alfa Laval PureSOx is at the forefront of SOx scrubbing technology, but also of simplifying compliance. PureSOx Connect is a growing range of data-driven services that bring new ways to save time and money.

PureSOx Connect builds on the Alfa Laval Remote Emission Monitor (ALREM), a data reporting and storage device. The ALREM collects PureSOx system data, with the possibility of sending it securely to the Alfa Laval data cloud.

At its most basic, PureSOx Connect simplifies compliance reporting on any vessel where the ALREM is installed. But by applying real-time analytics to the collected data, PureSOx Connect can – over time – predict maintenance needs and provide advance warnings of potential issues.

The market leader

Alfa Laval PureSOx is the market-leading SOx scrubber solution, chosen for hundreds of vessels to date and proven in over 1.5 million hours of compliant operation.



Today PureSOx Connect offers the following modules, available through a subscription-based online portal:

- **Compliance** – generates different types of customized reports, based on local legislation and the vessels and dates selected
- **Benchmarking** – uses collected performance data to help optimize PureSOx and reduce costs over time
- **Service** – lets Alfa Laval engineers use collected diagnostic data to investigate alarms and resolve issues remotely



Optimizing the entire fuel line to address 2020 fuel challenges

Alfa Laval's fuel treatment portfolio encompasses the whole chain from bunker tank to engine. As fuel sulphur regulations change operations on board, separators and other technologies are being optimized and updated to meet the new challenges.

The 2020 global sulphur cap will make fuel choices and fuel handling more complicated. Many fleets will move from existing single-fuel systems to multi-fuel operations, which can result in problems – from clogged fuel systems to engine stoppage – if not managed properly.

Meeting the challenges will affect the fuel line as a whole. Separators will require different capacities and new levels of efficiency, while fuel conditioning systems will need embedded automation to ensure safe changeover. Overall, greater synergy will be needed between fuel line equipment and the engine itself.

Alfa Laval is making this happen. Coming changes include improved touchscreen control for the fuel line, as well as an updated Alfa Laval FlowSync. A new version of the Alfa Laval FCM One Oil, which already provides advanced fuel changeover, will appear by the end of 2018. Combined, the result will be greater engine protection and energy efficiency – despite more varied and less predictable fuels.



Supporting LNG with dual-fuel boilers and more

As emissions legislation tightens, the number of customers turning to gas is growing. Alfa Laval is a trusted and experienced supplier of systems for gas and multi-fuel projects, especially when it comes to boilers.

Alfa Laval has been involved in a long line of dual-fuel boiler projects as customers move to LNG. Over 100 dual-fuel Alfa Laval boiler systems have been delivered to date, many of them based on the Alfa Laval Aalborg OL boiler.

This experience adds value for other customers making the switch. Alfa Laval understands not only the importance of LNG, but also the practical challenges of transitioning to it, having worked with dual-

fuel systems on many of the LNG-powered vessels now in operation.

Meanwhile, the Alfa Laval gas portfolio continues to develop. Today it includes not only boilers, but also robust heat exchangers and fuel gas supply systems for use with LNG. A good deal of the development occurs at the Alfa Laval Test & Training Centre in Aalborg, Denmark, which was recently expanded by 1100 m² specifically for work with gas.



Putting service and marine customers ahead

Service is much more than a nice-to-have. It has an integral role in securing vessel performance – throughout the vessel's lifetime and wherever it sails.

Reliability is a must at sea, which makes service a priority. In an industry where time is money, few vessels can afford a standstill in their operations. Yet there is more to service than avoiding the big costs. It involves keeping equipment optimized and ensuring low running costs over time.

Alfa Laval's service offering is driven by all of these needs. It builds on a comprehensive service network, with resources available 24/7 and in ports worldwide. But it also builds on a wealth of knowledge, covering every major application on board.

Today those resources and expertise are more accessible than ever, both physically and digitally. A good example is PureBallast 3 Computer-Based Training (CBT), which complements face-to-face training and supports ongoing crew development. Another is PureSOx Connect (see page 2), which simplifies compliance and supports optimization through real-time analytics.

Online, on board and globally, the offering will continue to develop. Alfa Laval is committed to helping customers succeed – not only through cutting-edge equipment and systems, but by keeping service at the forefront.

