

July 2017

Always at the forefront, Alfa Laval PureSOx continues to develop

Alfa Laval PureSOx is today's most complete SOx scrubber platform, with multiple operating arrangements, two scrubber designs and a range of compliance profiles for meeting the 2020 global sulphur cap. Working closely with customers, Alfa Laval is pursuing improvements and options to make it even more flexible and optimized.



Testing Exhaust Gas Cleaning in the Alfa Laval Test & Training Centre

PureSOx was launched in 2012 to let vessels meet SOx limits while continuing to use economical heavy fuel oil. In the years since, it has become the first choice of ship owners and operators in Emission Control Areas (ECAs). Moreover, it has evolved into a highly flexible scrubber platform, fully prepared for the 2020 global sulphur cap.

Today PureSOx development continues, through both ongoing optimization and the introduction of new options. At the Alfa Laval Test & Training Centre, in particular, the platform is being adapted for the widest range of customer needs.

“Compliance is always in focus, but customers have a broad spectrum of other requirements,” says Erik Haveman, Sales Director, Exhaust Gas Cleaning. “Those can go well beyond open-loop, closed-loop and hybrid arrangements, or the choice between U- and I-designs. Today we can match a vessel’s sailing profile by optimizing PureSOx for different compliance needs, and we offer many options to suit a vessel’s individual circumstances.”

Developing for and with customers

As PureSOx has evolved, Alfa Laval’s vast knowledge and resources have been put to significant use. Alfa Laval core technologies are found not only in the scrubber itself, but also in the patented separator technology of its water cleaning unit and in the heat exchangers used for cooling the circulation water. Additionally, PureSOx has played a central role in much of the work at the Alfa Laval Test & Training Centre in Aalborg, Denmark.

The scrubber at the centre has been used in developing the PureSOx platform, but also for solving individual customer challenges in exhaust gas cleaning. Designed for 1.5 MW, it can be pushed to its physical limits by the centre’s 2 MW engine, which would be unsafe and impractical on board.

“In the controlled environment of the Alfa Laval Test & Training Centre, we can really work with extremes,” Haveman explains. “This lets us innovate and meet design targets more quickly, but it also allows us to explore customer-specific challenges and inquiries. For example, we can look for the best way to cool a hot scrubber for start-up, or find ways to adapt the system for a particular engine type.”

Improvements and options for greater optimization

Work at the Alfa Laval Test & Training Centre and elsewhere has meant continuous improvement of the PureSOx platform, especially with regard to size and resource use. A significant size reduction for the U-design scrubber was announced only last year, and tests have been performed with many different filling elements and sprayer arrangements to find the lower possible water consumption. Minimizing pressure drop across the system, which reduces fuel consumption by the engine, is a further area of focus.

Likewise, new options are being introduced at a steady pace. “Recently we introduced an option for open-loop scrubbing that complies with the strict pH requirements of the US Vessel General Permit,” says Haveman. “For cruise ships and other high-profile vessels, we have also released an Exhaust Gas Reheater option, which warms the exhaust gas plume to reduce the chance of it being visible.”

Combined with multiple operating arrangements, a choice of scrubber designs and the new Global, ECA and Flex compliance profiles, options like these allow the platform to address the specific needs of most vessels on the market. “As the 2020 global cap approaches, more ship owners and operators will be looking at scrubber solutions than ever before,” says Haveman. “Whatever their sailing profile or vessel constraints, the PureSOx platform will give them the flexibility and peace of mind they seek.”

To learn more about Alfa Laval PureSOx and Alfa Laval’s approach to exhaust gas cleaning, visit www.alfalaval.nl/puresox.

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You can also stay up-to-date with marine industry news at Alfa Laval by visiting the [Marine Division’s LinkedIn page](#).

Editor's notes

Alfa Laval is a leading global provider of specialized products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company's equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Alfa Laval's products are also used in power plants, aboard ships, oil and gas exploration, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Alfa Laval's worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval is listed on Nasdaq OMX, and, in 2016, posted annual sales of about SEK 35.6 billion (approx. 3.77 billion Euros). The company has about 17 000 employees.