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The Alfa Laval PureSOx platform now offers an inline scrubber design

The Alfa Laval PureSOx exhaust gas cleaning system is a flexible choice for SOx abatement. Its compact construction and multiple configurations, combined with custom engineering, make it easy to adapt for individual vessels. With the launch of an inline I-design scrubber, the PureSOx platform is now even more versatile.

Alfa Laval PureSOx, which has more reference installations than any other single SOx scrubber technology, is already the leading choice for SOx compliance in Emission Control Areas (ECAs). Visitors to Marintec China 2015 will be able to explore the PureSOx platform, which now includes an inline scrubber design.

“Through open-loop, closed-loop and hybrid arrangements, PureSOx can be suited to any vessel’s sailing profile,” says René Diks, Manager Marketing & Sales, Exhaust Gas Cleaning at Alfa Laval. “By adding an inline scrubber design to the already flexible PureSOx platform, we’ve made PureSOx even easier to adapt to individual vessel constructions.”

A reliable and flexible inline design

The inline scrubber design, or I-design, builds directly on the proven PureSOx technology. It provides an additional alternative for vessels with more complex structural needs, such as certain cruise ships and RoPax vessels. “While inline configurations should not be seen as a default,” says Diks, “they can make it easier to accommodate the specific challenges of certain vessels.”

An important consideration in creating an inline PureSOx scrubber was the water trap, which is not formed naturally as it is in the existing U-design. “Because the absorber section is located atop the jet section in the I-design, no water trap is created between the two,” says Diks. “A key focus was eliminating the potential for water backflow, which is done by means of an internal water trap combined with overboard arrangements.”

As with the U-design PureSOx scrubber, the I-design scrubber can be configured with multiple

inlets. This reduces space needs and installation costs by allowing one scrubber to handle exhaust gas from multiple sources, including boilers as well as the main and auxiliary engines.

Reflux for spotless operation

A further alternative for inline PureSOx configurations is reflux. This option is especially attractive for cruise ships, RoPax vessels and other vessels that carry passengers, as it reduces the risk of dirty water droplets discolouring the ship's deck.

Reflux involves the creation of two separate loops: one for the jet and a second for the absorber. In the jet loop, clean water is evaporated by means of the waste heat in the exhaust gas. The vapour is then recondensed as clean water in the absorber loop.

As a result, the water in the absorber stage is significantly cleaner and the risk of deck discolouration is greatly reduced. Since the soot is concentrated in the initial jet stage, the water cleaning unit has a lighter burden as well.

Core expertise in water cleaning and more

The water cleaning unit is a vital component of any closed-loop or hybrid PureSOx system. When the scrubber is in closed-loop mode, the unit removes soot from the circulation water, thus protecting the scrubber and enabling compliant discharge of bleed-off.

The PureSOx water cleaning unit uses centrifugal separation, an Alfa Laval core technology that is completely unaffected by pitch and roll. This sets it apart from other cleaning systems on the market. Like the reflux principle, it is a patented solution unique to Alfa Laval.

“The water cleaning unit is one of many aspects that make PureSOx such a reliable choice for SOx compliance,” says Diks. “The PureSOx platform is built on a solid foundation of Alfa Laval core technology and scrubber experience, and the new possibility of inline configurations will give even more ship owners reason to choose it.”

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

For further information, please contact:

René Diks

Manager Marketing & Sales
Business Unit Exhaust Gas Cleaning
Alfa Laval Nijmegen BV, The Netherlands
Phone: +31 24 352 3180
E-mail: rene.diks@alfalaval.com

Anne Kirstine Senderovitz

Communication Manager and VP
Marine & Diesel Division, Alfa Laval
Phone: +45 51 23 45 56
E-mail: annekirstine.senderovitz@alfalaval.com

www.alfalaval.com/puresox

Editor's notes

About Alfa Laval

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, in 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 2014, posted annual sales of about SEK 35.1 billion (approx. 3.85 billion Euros). The company has about 18 000 employees.

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