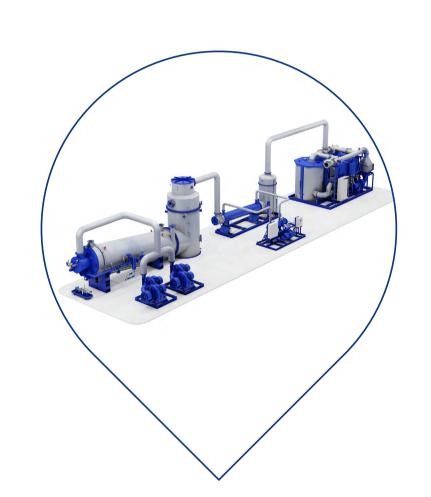
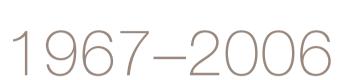
Alfa Laval PureS0x milestones

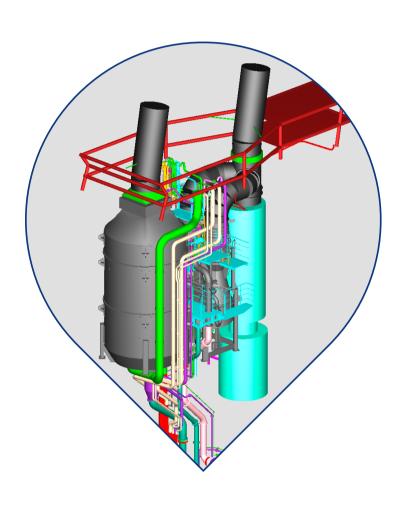
For a decade and more, Alfa Laval PureSOx has been at the forefront of exhaust gas cleaning. What follows are some of the landmark developments in that time – key steps for the system that keeps customers a step ahead.





Foundation in inert gas systems

Over 4000 inert gas systems sold with a scrubber section from Smit Gas Systems in Nijmegen, the Netherlands, lay the foundation for an Alfa Laval SOx scrubber solution.



2006

Exhaust gas cleaning developed

To enable compliance with upcoming MARPOL Annex VI regulations, Alfa Laval experts develop a concept for using wet scrubber technology to clean SOx from exhaust gases. The finished system is named Alfa Laval PureSOx.



A decade at sea



First PureSOx pilot system The first customer pilot project begins and

a PureSOx system is installed on board DFDS Ficaria Seaways.



Second PureSOx pilot system A second PureSOx pilot system is installed on board the Spliethoff vessel M/V Plyca.



Lloyd's Register approval Lloyd's Register approves the PureSOx system on DFDS Ficaria Seaways. After extensive testing and system improvements, it meets MARPOL Annex VI criteria and is allowed to

operate with the vessel sailing on HFO.



Alfa Laval Test & Training Centre The Alfa Laval Test & Training Centre is inaugurated in Aalborg, Denmark. A PureSOx test system at the facility is connected to a 2 MW MAN engine, allowing the scrubber to be pushed to its limits under controlled conditions. This accelerates the speed and quality of testing.



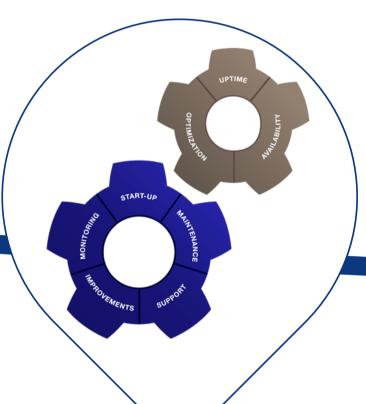
Alfa Laval celebrates a century at sea

2017 marks the 100th anniversary of Alfa Laval's first marine separator delivery. In the century following, Alfa Laval's marine industry offering has expanded into 17 different product groups. Alfa Laval's marine separator expertise is a key component of the PureSOx water cleaning unit.



Global sulphur cap ratification

The global sulphur cap of 0.5%S is ratified by IMO in October 2016. Set to enter into force on 1st January 2020, the regulation will apply to all seagoing vessels.



Alfa Laval 360° Service Portfolio PureSOx is supported by Alfa Laval's global marine service network, and a wide range of PureSOx services are now formalized in

the Alfa Laval 360° Service Portfolio. Based on this flexible service platform, customized agreements can be created to meet customer needs.



ECA 0.1%S limit

On 1st January 2015, the SOx Emission Control Area (ECA) limit enters into force in Europe and North America. By this time, 17 vessels are already sailing with a PureSOx scrubber on board.



100 orders for PureSOx

In September 2017, sales of PureSOx systems pass the milestone of over 100 orders.

READ MORE >>



PureSOx Connect The PureSOx Connect portfolio of data-

driven services is introduced. Three modules are available at launch, offering simplified compliance reporting, remote service possibilities and benchmarking tools for fleet optimization.



1.5 million operating hours

The review and updating of PureSOx designs draw on lessons learned in all the accumulated operating hours at sea. Improvements are implemented continuously, yet all PureSOx systems ever sold remain in operation and in compliance.



10 years of PureSOx at sea

Alfa Laval celebrates the 10th anniversary of the first PureSOx installation. The system on DFDS Ficaria Seaways is still in use and providing reliable compliance with MARPOL Annex VI.

