

Alfa Laval PureSOx

Don't just comply.
Be a step ahead.



Customer Seminar
Hong Kong
31 October 2018

Erik Haveman
Global Sales Director
PureSOx

Exhaust Gas Cleaning Market – Turbulent!



Decide where you stand!

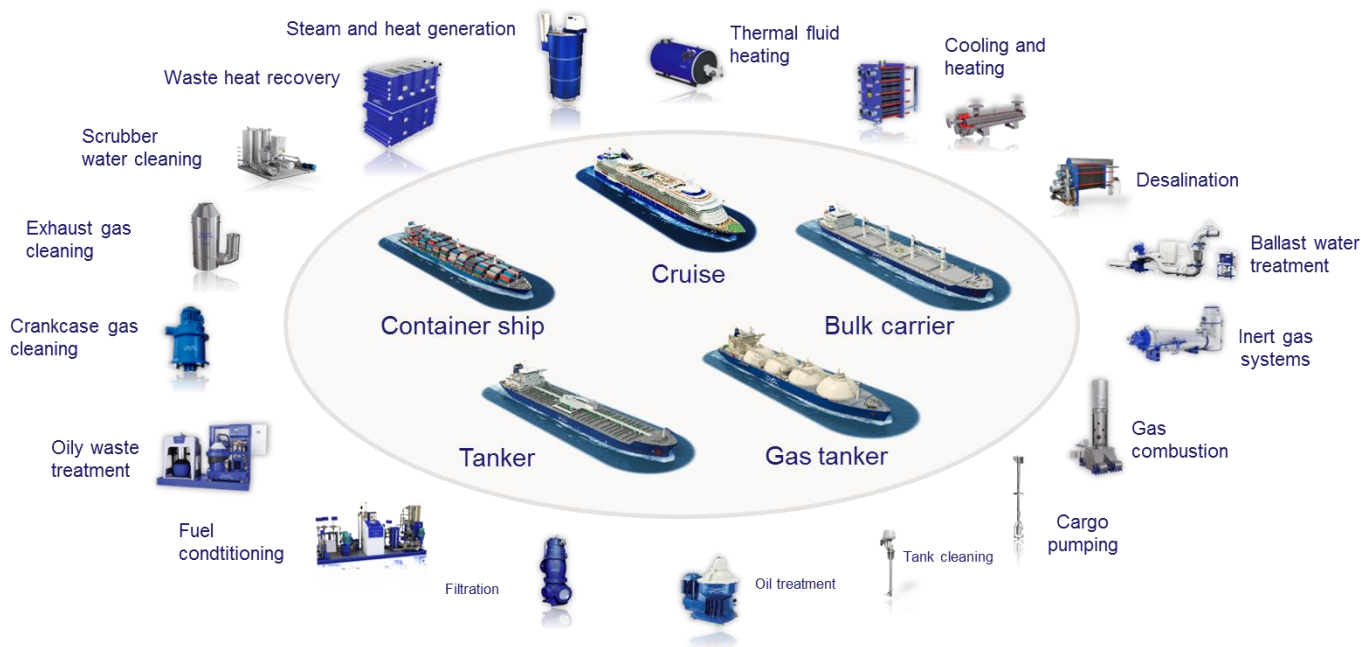
- › LNG, Scrubbers or low-sulphur fuels?
- › Scrubber delivery as well as dry dock slots may fill up quickly.
- › Secure your delivery slots today!



Alfa Laval on board

Product, system & application leadership

17 product groups



Business Unit Gas Systems

Specialized in the development of two products



PureSOx
Exhaust Gas
Cleaning Systems



Alfa Laval Smit Inert
Gas Systems

PureSOx history



1967-2009

Inert Gas

Over 4000 Inert Gas Systems sold with a scrubber section from Smit Ovens Nijmegen, The Netherlands.



2009

First pilot

First Alfa Laval PureSOx pilot installed on board DFDS Ficaria Seaways.



2012

Second pilot

Second Alfa Laval PureSOx pilot installed on board Spliethoff's M/V Plyca.



2013

Lloyd's Approval

Approval by Lloyd's Register for PureSOx on board DFDS Ficaria Seaways: after extensive testing and improving the system, it meets MARPOL Annex VI and is allowed to sail on HFO.



2014

Test Centre

Inauguration Alfa Laval Test & Training Centre, Aalborg Denmark.



2015

ECA 0,1% S limit

Already 17 vessels on the proven route to competitive ECA compliance with PureSOx and 65 more systems on order.



2016

U-design update

The PureSOx U-design is significantly reduced in size and backpressure.



2016

Global Sulphur Cap

The Global Sulphur Cap of 0,50% S was ratified by IMO. The legislation will come into force on January 1st, 2020.



2017

100 orders sold

Milestone of over one hundred orders sold for PureSOx systems reached in September 2017

Facts and figures about Alfa Laval PureSOx

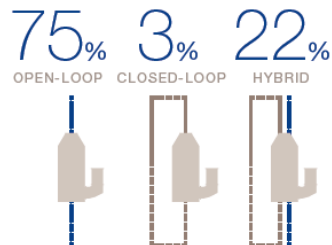
TYPE OF INSTALLATION



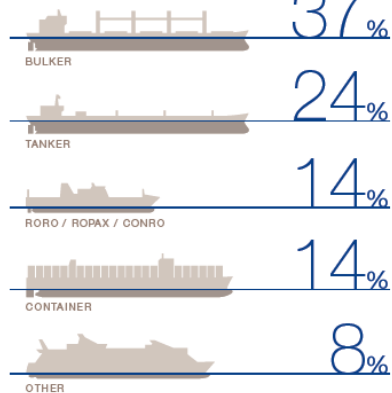
GLOBAL SERVICE CENTERS



PURESOX CONFIGURATION



VARIETY OF SHIPS



100
Years of experience
in marine industry

1.5 million
Total hours of operation

50
Years of experience
with marine scrubbers

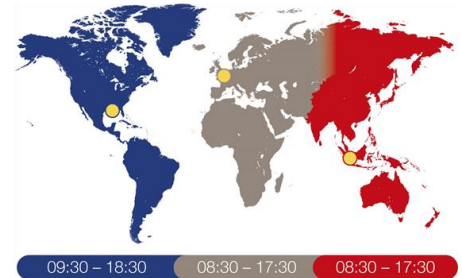
100%
In compliant operation

PURESOX SUCCESS



Preparing for future demand

RELIABILITY



Qingdao manufacturing

<https://www.youtube.com/watch?v=alf62AR8MEg&t=88s>

PureSOx Connect

- › Connect your PureSOx system to the Alfa Laval cloud
- › View your entire connected fleet in an online portal.

Data used for:

- › - Compliance
- Remote service
- Benchmarking



PureSOx Connect

- <https://www.youtube.com/watch?v=qtMnOi9aoFU&t=2s>

Installation success = teamwork

Shipowner

Design Company



Scrubber supplier

Shipyard

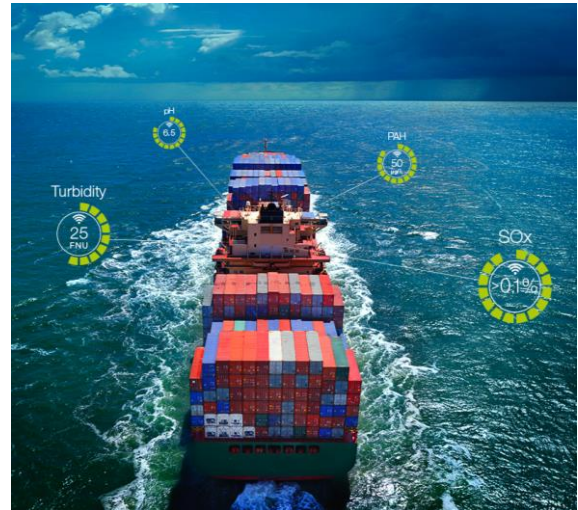
Key points to consider for a scrubber project

- › Supplier experience
- › Yard & design company experience
- › Processes & planning
- › Installation support



Ensuring future flexibility

- › Hybrid Ready
- › Fuels with $>3,5\%S$
- › PureSOx Connect
 - › Reporting & Compliance
 - › Service
 - › Performance & Benchmarking



What will you do?



Alfa Laval PureSOx

Thank you
for listening



Erik Haveman
Global Sales Director
PureSOx