

Alfa Laval Aalborg XS-TC7A

Waste heat recovery economizer for marine auxiliary engines

The Alfa Laval Aalborg XS-TC7A is an efficient smoke-tube economizer. Easy to install, operate and maintain, it reduces the use of the fired boiler by recovering heat energy that otherwise would be lost through the exhaust gas. This ensures a rapid return on investment.

Thanks to the helix shape of its smoke tubes, the Aalborg XS-TC7A offers a large heat transfer area within a compact footprint. This enhances its performance and makes it the smallest smoke-tube economizer on the market.

Application

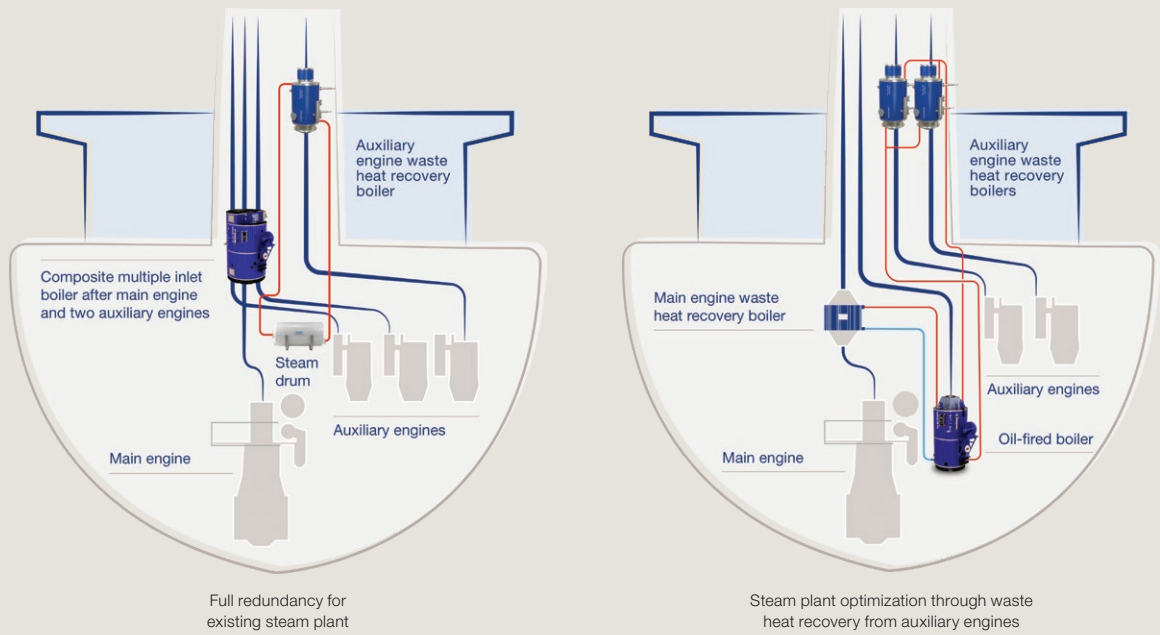
Only a portion of the fuel energy released by marine engines actually goes to propulsion. A large amount of it escapes as heat, and it makes sense to reclaim as much of this energy as possible. This is true not only for main engines, but for auxiliary engines as well.

Steam produced with the Aalborg XS-TC7A can support or fulfil steam needs in port, but it can also serve other functions. For vessels whose long-stroke main engines produce cooler exhaust, it can provide a needed steam boost during a voyage. If there is no steam shortage while sailing, the additional steam produced with the economizer can be used to generate electricity, for example by means of Organic Rankine Cycle (ORC) technology.

Benefits

- Compact and efficient design based on helix smoke tubes
- Easy improvement of Carbon Intensity Indicator (CII)
- Short payback time (typically 1–2 years) through up to 25% fuel savings on the fired boiler
- Reduced wear and maintenance on the fired boiler
- Long service life thanks to self-cleaning Turbo Clean technology



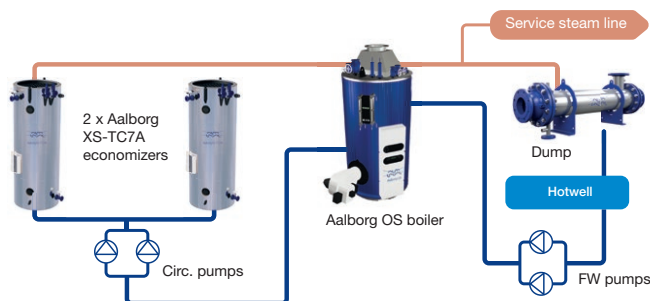


Working principle

The Aalborg XS-TC7A is installed after a vessel's auxiliary engine. When the exhaust gas passes over its heat-exchanging surface, the waste heat energy in the gas is absorbed for the production of steam. The economizer can be adapted for dry running in the event of an emergency.

The Aalborg XS-TC7A features an optimized convection part that augments heat transfer by increasing turbulence at the exhaust gas boundary layer. This contributes to increased steam production while reducing the economizer's weight and footprint.

The economizer is designed for forced circulation and is used in connection with one or more fired boilers, which act as the steam space.



Design

Built for simplicity and reliability, the Aalborg XS-TC7A has a vertical, all-welded design with helix smoke tubes. The helix design of the tubes greatly increases the available heat transfer area, which makes this the smallest smoke-tube economizer on the market. Together with the optimized convection section, it ensures a high ratio of output to weight.

The helix tubes and the economizer's self-cleaning Turbo Clean technology both reduce soot build-up, which makes XS-TC7A easy to clean and maintain. If needed, individual smoke tubes can also be repaired or replaced.

Technical data

Steam capacity	0.1–2.0 t/h
Weight (incl. insulation)	600–13,000 kg
Diameter (incl. insulation)	1090–1550 mm
Height (incl. insulation)	2800–4600 mm
Connections	Flanged
Maximum inlet temperature	500°C
Maximum pressure	10 bar(g)

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