



Savings and sustainability

The Alfa Laval Aalborg AV-6N exhaust gas waste heat recovery boiler



The bright way to profitable power



Alfa Laval is a provider of optimum solutions for high-performance waste heat recovery. The Alfa Laval Aalborg AV-6N is able to recover waste heat from various exhaust gas sources. It increases the total efficiency of your CCP (Combined Cycle Plant), CHP (Combined Heat and Power) or industrial plant.



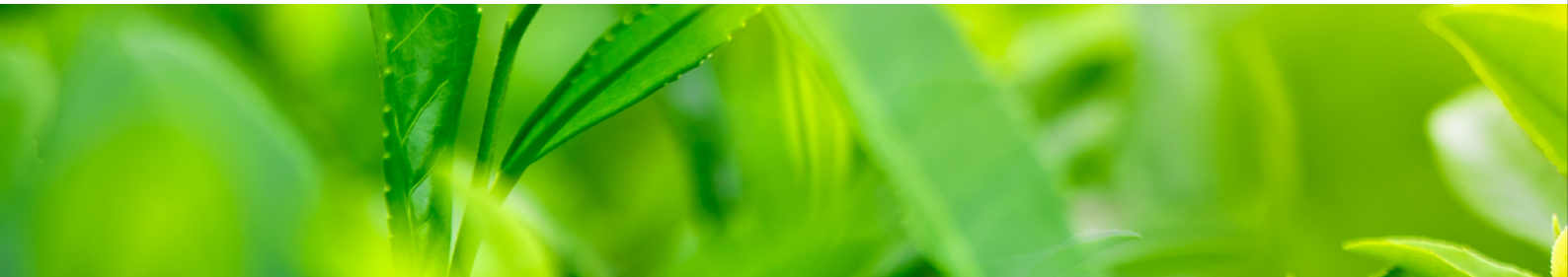
The Aalborg AV-6N is a robust, highly efficient water tube boiler for utilizing heat energy from engine/gas turbine exhaust or process industry flue gas that would otherwise be released into the air. This means reduced fuel use, leading to remarkable cost savings and lower CO₂ emissions.

Payback in many ways

Steam and/or hot water produced with the Aalborg AV-6N can be used directly in your own plant or neighbouring processes to save energy and improve your earnings. However, it can also be utilized in electricity generation, district heating/cooling, air conditioning and freshwater generation processes. Depending on your process or application, the payback time can be very short – for example, less than a year in CHP installations.

Fast and easy to install

Compact and cost-effective, the Aalborg AV-6N is flexible and easy to install – even in existing facilities. The Aalborg AV-6N design concept allows deliveries from standardized, ready-made solutions to fully tailored, site-assembled modules. This provides high customer value, especially when retrofitting boilers into existing ducting.



Alfa Laval Aalborg AV-6N

Customer benefits

- Higher maintained boiler output and low exhaust gas pressure drop due to effective online cleaning and optimized heating surface configuration
- High system efficiency due to long-term operational experience and application know-how
 - > Maximum long-term earning potential
 - > Minimized plant downtime
- High availability and low costs for operation and maintenance due to natural circulation
- Fast start-up due to small water volume inside the boiler
- Increased reliability and minimized risk of soot fire due to natural circulation
- High vibration resistance due to unique tube support
- Small footprint and lightweight design
- Fast and cost-effective standardized delivery – or tailor-made supply for specific requirements

Unique boiler construction

The Aalborg AV-6N has a proven design based on hundreds of operating references. A unique supporting arrangement without endplates – enhanced through computer analyses – ensures a boiler structure that resists vibration and thermal stress. This allows it to sustain even the most demanding operational conditions found in engine-based heat recovery applications.

A boiler unit may contain several heating sections within the same construction, such as multiple superheaters, evaporators, economizers and preheater sections.

Horizontal Aalborg AV-6H

The Aalborg AV-6H is a compact, workshop-assembled waste heat recovery boiler module with a horizontal layout. Typically used after gas engines for hot water heating (CHP), it can be placed on a second floor above the engine, as an example. The Aalborg AV-6H is fast and easy to install, yet it allows maximized access for maintenance and service through an integrated walkable service area.





Reliable natural circulation

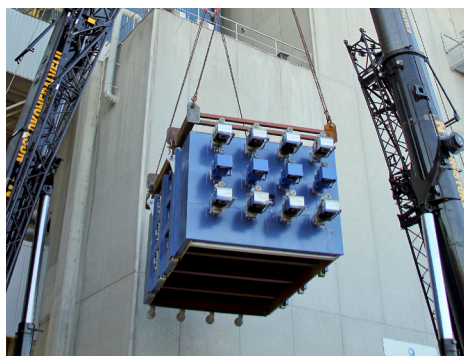
For steam applications, the Aalborg AV-6N is delivered with natural circulation as standard. Natural circulation uses a physical phenomenon to drive the water through the boiler, rather than relying on circulation pumps. Advantages include:

- High reliability and cost effectiveness
- Minimized risk of soot fires
- Reduced power consumption
- Small footprint
- Fast installation with less foundation work, piping and cabling

Easy cleaning

The tube arrangement of the Aalborg AV-6N heating surface ensures easy maintenance and service. The Aalborg AV-6N can be cleaned during operation, which reduces the need for engine or process shut-downs. In addition to standard high-efficiency steam soot blowers, other types of cleaning equipment can be selected on a case-by-case basis.

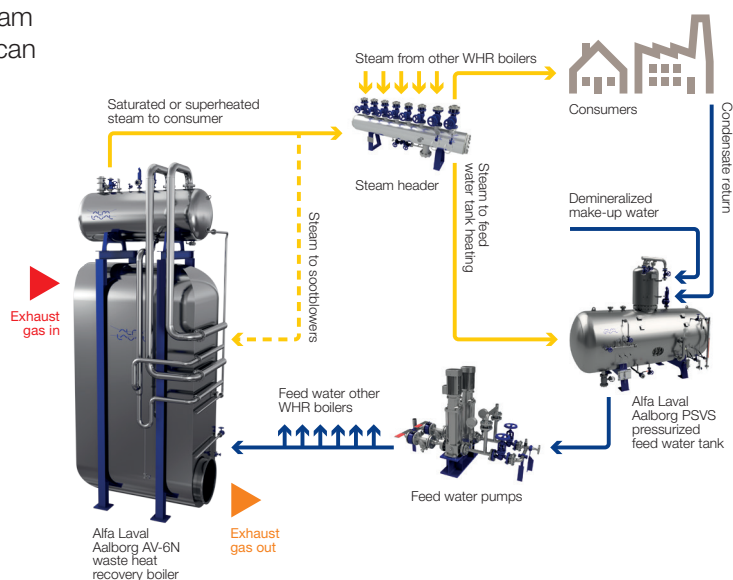
An Aalborg AV-6N module being retrofitted at an existing process industry site – one example of the flexible design concept.



Technical data (typical)

| | |
|-------------------------|---|
| Exhaust gas amount | 5–60 kg/s |
| Exhaust gas temperature | <610°C |
| Pinch point | 10–20°C (min. 5°C, limited by feasibility only) |
| Design pressure | <40 bar(g) |
| Steam temperature | <450°C |
| Circulation | Natural (or forced on request) |

Basic principle of heat recovery steam system



A wide range of applications

The Aalborg AV-6N can be used with various types of heat sources. Since continuous innovation is in focus, new solutions are always being developed. Correct design and high reliability are ensured by Alfa Laval's vast experience in exhaust gas waste heat recovery.

Engine waste heat recovery

The Aalborg AV-6N is ideal for waste heat recovery in the secondary cycle of engine power plants, where it can be used to boost electricity and/or thermal output (CCP/CHP) and reduce fuel consumption.



Gas turbine waste heat recovery

The Aalborg AV-6N can be used to recover heat energy after gas turbines ≤ 20 MWe. With its built-in online cleaning, the Aalborg AV-6N is especially suitable for gas turbines operated with LFO/HFO.



Process flue gas waste heat recovery

Industrial plants have a wide variety of potential sources for recovering flue gas waste heat. For example, the Aalborg AV-6N can be used to capture the heat from flue gas after burners, furnaces or kilns.



Supply according to your needs

Your Aalborg AV-6N solution can be as comprehensive – or as simple – as you need it to be. Alfa Laval can deliver complete solutions that include all accessories and structures, but also modularized solutions or standalone boiler equipment that let you handle a greater scope locally.

Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com