

Aalborg Micro

Exhaust gas heat exchanger for waste heat recovery



The Aalborg Micro is a compact exhaust gas heat exchanger especially designed for waste heat recovery from small gas turbines as well as from small engines & clean process flue gas. Furthermore, it is also unique when used as an economizer/ condensing economizer e.g. for gas or diesel fired boilers.

Applications

The Aalborg Micro can operate with a diversity of media, including water, steam, triethylene glycol (TEG) and thermal fluid oil (TFO). To date, Alfa Laval Aalborg Micro heat exchangers have been used in different applications across a wide range of industries.

Design

The Aalborg Micro is built in a durable design featuring a heating surface consisting of a number of coaxial tubes arranged in a vertical or horizontal cylindrical shell plate. This, ensures a long-term, trouble-free performance and offers capacities ranging from approximately 250-5000 kW.

The heating surface of the Aalborg Micro has been developed for easy maintenance. Cleaning can be performed either with a pyrolysis process when operating in dry-run mode or using optional soot blower rings with compressed air, steam or water.

When necessary, an integrated regulation damper allows a part of the exhaust gas to bypass the unit's heating surface.

Features	Advantages	Benefits	Values
Water tube coil design with serrated spiral fin tubes	Low media volume	Low inertia	More up-time
	Extended heating surface	Lower footprint & weight	Less space occupied & relatively lower investment
	No external by-pass needed	Lower footprint	Less space occupied & relatively lower investment
Water tube coil design with serrated spiral fin tubes	Dry-run possible	Cleaning possible during operation of engine, turbine or process	Less downtime
Integrated regulation damper	Adjustments during operation	Output can be adjusted according to the need	No exceed production
Integrated cleaning device	Ability to clean the heating surface during operation by using water, steam or compressed air	Extend the time in between major cleaning e.g. via dry-run mode	Less downtime
Basic Micro design	Horizontal & vertical version for in- & outdoor installation	Flexibility	Easy to retrofit & optimum space utilization

Geometry

Weight (incl. insulation)	400 kg to 3900 kg
Diameter (incl. insulation)	950 to 1870 mm
Height (incl. insulation)	1700 to 2800 mm
Media inlet/outlet header	DN100
Exhaust inlet/outlet header	DN450 to DN1000
Insulation	150 mm

Technical data

Capacity	250 – 5000 kW
Exhaust gas side	
Maximum inlet temperature	600 °C (dry-run 530 °C)
Minimum outlet temperature	Dependent on engine fuel and exhaust gas composition
Pressure loss	According to customer requirement

Media side - Aalborg Micro as heat exchanger

Through the tubes	Water/TEG/TFO
Quantity	Max. 160000 kg/h
Maximum pressure	39 bar(g)
Maximum media temperature	365°C

Media side – Aalborg Micro as steam generator

Through the tubes	Water/steam
Quantity	Approx. 4000 kg/h
Maximum pressure	39 bar(g)
Standard norm (Industrial)	PED + GB + ASME
Class (Marine)	DNV/GL/ABS/Lloyds etc.

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