

Exhaust Gas and Waste Heat Recovery Boilers, WHRB

# Hot Water (low & high temperature) and Steam Boilers for Exhaust Gas and Waste Heat

Customized Shell & Tube Boilers for Exhaust Gas Flow up to 46 kg/s, design pressure up to 28 bar-g





Danstoker has delivered close to 2500 exhaust gas boilers on a world-wide scale, and hence we have achieved an outstanding experience within co-generation.

The boilers are custom-tailored and mounted after gas or diesel engines for the generation of:

- Low Temperature Hot Water, LTHW
- High Temperature Hot Water, HTHW
- Steam

Exhaust gas volumes from 1 to 46 kg/s, equivalent to heat outputs up to 15 MW – or about 15 t/h steam.

Special boilers up to 35 MW / 55 t/h steam, and design pressure up to 32 bar-g.

The Danstoker expertise includes tailor-made special boilers for waste heat recovery (WHRB) with capacities up to 35 MW or 55 t/h steam.

Design pressure up to 32 bar-g.

Furthermore, the Danstoker Group may deliver water-tube WHRB-boilers until 100 MW or 150 t/h steam with a design pressure of max. 86 bar-g.







The Danstoker exhaust gas boilers for co-gen are plain tube single or twin-pass boilers, if necessary with an integrated economizer or superheater.

The boilers are often designed as complete units, comprising a high-temperature and a low-temperature section alike.

With a view to extending the intervals between cleanings, the boilers are entirely of the fire-tube type design.

A specialty is the Combi or Composite boiler: a boiler directly fired by gas with an integrated heat recovery section to utilize the hot exhaust gasses from an engine.

Design and development of special boilers and economisers for heat recovery from hot flue gases originating from chemical and industrial processes.

The waste heat is recovered in single, double or triple pass boilers, provided with low-temperature economisers or with integrated superheaters in the steam boilers.

Horizontal or vertical, indirectly fired boilers utilizing the energy from furnaces, kilns, incineration, gasification and chemical processes.

The Danstoker range of products and auxiliary equipment constitute a solid basis for accommodating the clients in terms of specific plant requirements, including e.g. economizers, feed-water equipment, blow-down systems, automatic flue gas by-pass dampers, PI-diagrams, etc.

Typically, the boilers are fitted with the Danstoker automatic pneumatic cleaning system, type Danblast.



**Danstoker develops and custom-tailors individual boilers for exhaust gas and heat recovery solutions**



The Danstoker horizontal and vertical bio-fuel boilers are fire-tube boilers, and if required combined with water-tube sections. Capacities ranging from 200 kW to 50,000 kW or 68 t/h steam up to 43 bar-g.

Typical fuels would be:

Forest residue, bark, sawmill/construction waste, saw dust, wood pellets, fruit stones, straw, agrifibres or traditional solid fuels.

All boiler are adapted to suit the special characteristics of the fuel to be used, and designed in a close co-operation with the supplier of the combustion and fuel-handling equipment.



The development and manufacture of high-performance oil and gas boilers for the energy sector has made Danstoker known as one of Europe's leading boilermakers, featuring a wide range of shell and tube boilers with capacities ranging from 800 to 50,000 kW or 0,2 to 68 ton/h steam up to 43 bar-g and superheated unto 450°C.

Special boilers may, if required, be combined with watertube-radiation sections.



The design of Danstoker's absorption heat pumps / chillers are based on the need for energy optimization. An extra chilling of the exhaust gases makes it possible to transfer the condensing heat in the vapour steam to further improve the system efficiency.

Unlike a compressor heat pump, the absorption heat pump is driven by a high-temperature energy source instead of electric power.

The absorption heat pumps have evaporator chilling capacities from 150 kW to 5,000 kW.



The service staff in the Danstoker after-sales division has many years of experience within a broad variety of jobs regarding energy-technical plants, thereby enabling them to provide quick and efficient service on Danstoker boilers as well as on boilers of other makes.

As we are often already acquainted with the plants, we are able to quickly conduct the necessary adjustments and/or repairs.

Contact: [service@danstoker.com](mailto:service@danstoker.com)