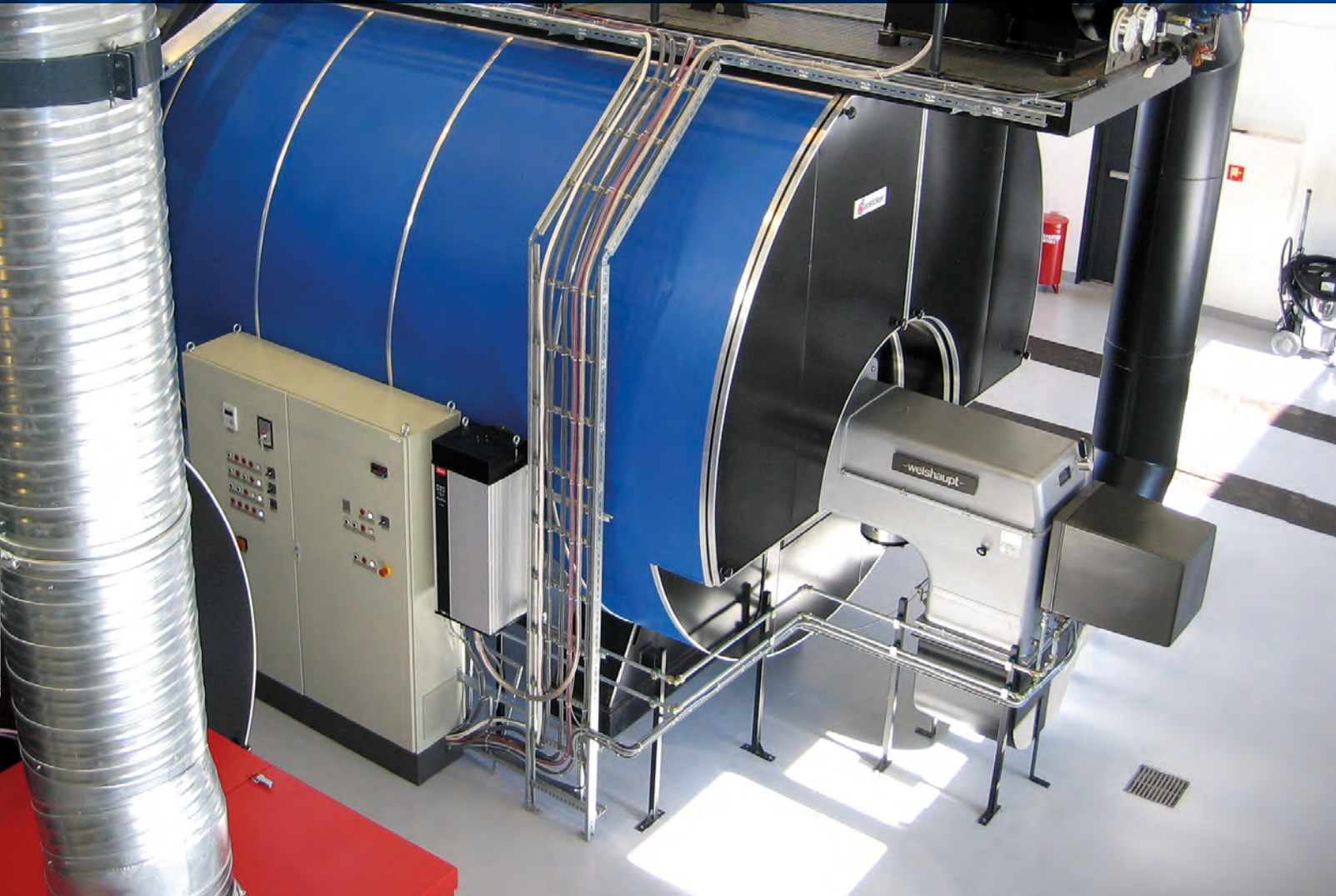


# MANUFACTURER OF BOILERS FOR INDUSTRIAL, COMMERCIAL AND DISTRICT HEATING USE



In Europe since 1935

 **danstoker**





# OIL & GAS BOILERS



## In oil & gas range of boilers we offer:

- 3 - pass hot water boilers, shell and tube
- 3 - pass steam boilers, shell and tube

We can also make a custom-made combination of a water-tube and flue gas boiler.

In our offer we also have a wide range of accessories for oil and gas boilers.

Thermal deaerators | Condensate tanks | Blow down tanks | Pump units | Economizers



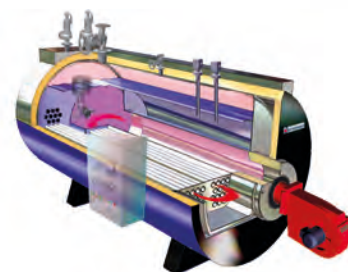
## LOW AND HIGH TEMPERATURE HOT WATER BOILERS

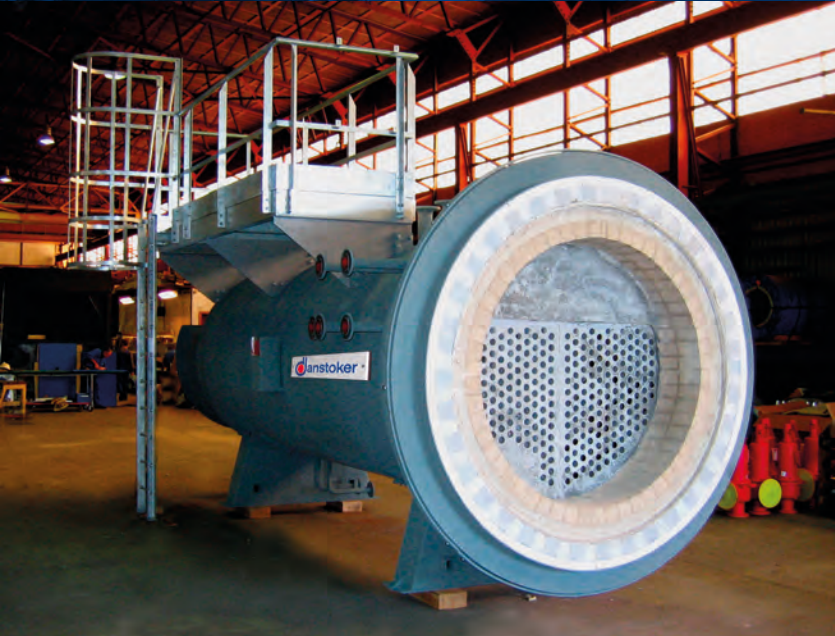
<b>Type:</b>	3-pass, shell and tube
<b>Fuel:</b>	oil / gas
<b>Capacity:</b>	from 800 kW to 50 MW
<b>Pressure:</b>	up to 36 bar(g)



## LOW AND HIGH PRESSURE STEAM BOILERS

<b>Type:</b>	3-pass shell and tube
<b>Fuel:</b>	oil / gas
<b>Steam rating:</b>	630 - 68 000 kg/h
<b>Pressure:</b>	0,7- 43 bar(g)





## WHRB BOILERS

## BOILERS FOR CO-GENERATION SYSTEMS



- We design and develop non-standard boilers and economizers for heat recovery from exhaust gases originating from chemical and industrial processes.
- The waste heat is recovered in single, double or triple-pass boilers provided with low-temperature economizers or integrated superheaters in the steam boilers.

- Danstoker's exhaust gas steam boilers are supplied as single or double pass boilers with integrated economizers and/or superheaters.
- More than 2500 units sold worldwide



## WATER OR STEAM BOILERS

**Type:** generally intended for generation of low and high temperature hot water or steam

**Parameters:** up to 43 bar(g)- water/ steam

**Capacity:** depending on the exhaust gas volume. Max. 40 kg/sec. exhaust gas

## WATER OR STEAM BOILERS:

**Type:** horizontal/vertical boiler designed for installation after engines (water/steam) or turbine (steam)

**Engine size:** 0,4 – 20 MW, max 46 kg flue gas/sec., max 43 bar(g)

**Turbine:** max 29 kg flue gas/sec., max 43 bar(g)



# BIOMASS & SOLID FUEL BOILERS



We offer a wide range of accessories for biomass boilers.

Thermal deaerator | Condensate tank | Blow down tank | Pump unit | Economiser | Superheater | Danblast\*

\* Our boilers are usually equipped with Danstoker's automatic pneumatic cleaning system: Danblast



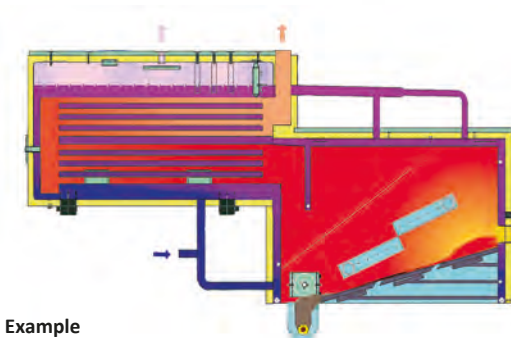
## HOT WATER OR HIGH TEMPERATURE HOT WATER BOILERS

**Types:** low and high temperature hot water boilers, flue gas, box and water tube boilers

**Fuel:** biomass/ solid fuels

**Capacity:** up to 50 000 kW

**Pressure:** 4 to 43 bar(g), design dependent



Example

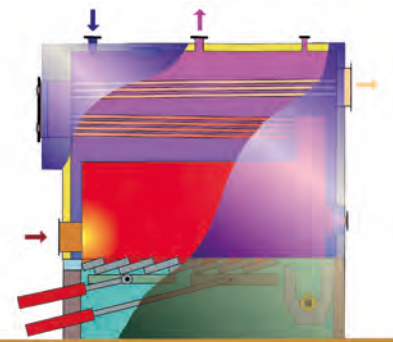
## HIGH PRESSURE STEAM BOILERS

**Types:** steam boilers flue gas and box tube boilers

**Fuel:** biomass/ solid fuels

**Steam rating:** up to 68 000 kg/h steam

**Pressure:** 4 to 43 bar(g), design dependent



Example

# THERMAL OIL BOILERS



## THERMAL OIL BOILERS

TYPE	CAPACITY:
HORIZONTAL	200- 5 000 kW
VERTICAL	200- 5 000 kW
<b>Fuel:</b>	oil/gas, biomass, electricity
<b>Pressure:</b>	up to 10 bar(g), max 350°C



# LOW VOLTAGE ELECTRIC BOILER



- Electric boilers feature a robust design and a wide range of regulation. In terms of installation, operation and maintenance alike, they are usually more economical than conventional boilers, as no chimney, nor mechanical wearing parts are needed.



## LOW AND HIGH TEMPERATURE HOT WATER OR HIGH PRESSURE STEAM BOILERS

<b>Supply:</b>	400 V or 690 V
<b>Capacity:</b>	400 - 4 000 kW
<b>Steam rating:</b>	600 - 6 000 kg/h
<b>Design pressure:</b>	Steam - 13 bar(g), HTHW- 10 bar(g), LTHW- 6 bar(g)



# CONTAINERIZED BOILER PLANTS



- Danstoker's mobile boiler plants are delivered for generation of low and high-temperature hot water or steam in capacities according to the client's specifications.
- The systems can be packaged and built into individual containers or be composed of several container sections for more complex system types.

\* We do not rent out containerized boiler plants.





# WATER TUBE & PANEL WALL BOILERS



Danstoker manufactures high-capacity direct-fired boilers with the radiation section built as a water tube or panel wall unit, while the convection section is a flue gas unit. These boilers – type COMBO – may be fully assembled in our workshop or supplied in more sections to be assembled on site.



## WATER TUBE BOILERS

<b>Type:</b>	Hot water, high pressure hot water and steam boilers
<b>Fuel:</b>	gas, oil, biomass
<b>Capacity:</b>	3- 50 MW
<b>Steam rating:</b>	5 do 55 t/h steam
<b>Pressure:</b>	up to 40 bar(g), design dependent

In co-operation with our subsidiary Boilerworks & Danstoker Poland, Danstoker can supply water tube boilers with

**capacities up to: 100 MW or 150 t/h steam and design pressures up to 85 bar(g)**



# SPECIAL BOILERS



Danstoker develops, designs and manufactures specially designed boilers, matching the plant specific building layout and/or alternative fuels.



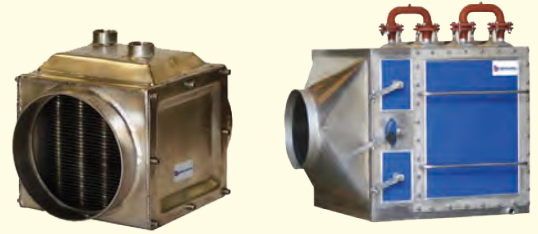
## SPECIAL BOILERS

<b>Type:</b>	Steam, low and high pressure hot water boilers. Flue gas, box and water tube boilers
<b>Fuel:</b>	oil/gas, biomass/ solid fuels
<b>Capacity:</b>	up to 50 000 kW
<b>Steam rating:</b>	up to 68 000 kg/h steam
<b>Pressure:</b>	up to 43 bar(g), design dependent





- We also offer economizers for heat recovery from flue gases, waste gases from industrial processes and hot air. In these devices there is direct transfer of waste heat to another medium, for example to heating water, which results in increased energy efficiency of the device, and thus reduction of energy consumption and care for the natural environment.
- The economizer consists of an exchanger and housing with or without by-pass. The size of the economizer depends on the number and parameters of the media (temperature and waste gas stream, water).



#### TYPES OF ECONOMIZERS:

- gas / liquid (i.e. flue gas / water, hot air / water)
- gas / gas (recuperators), i.e. fumes / air
- dry economizers (without condensation)
- condensing economizers, wet (with condensation)

#### WE MATCH OUR ECONOMIZERS TO INDIVIDUAL NEEDS OF EACH CUSTOMER:

Required information: :

- Fuel type (gas, biomass oil)
- Flue gas flow in m<sup>3</sup>/h or kg/h
- Flue gas temperature at the inlet to the economizer
- Expected temperature after economizer
- Permissible resistance on the flue side
- The temperature of the heated water/air at the outlet from the economizer.
- Stream of water or expected temperature of heated water/air
- Permissible resistance to water/air
- The composition of exhaust gases and the degree of pollution
- Thermal power required

#### AIR HEATERS:

We also offer air heaters powered by hot water, steam and condensate.

These exchangers are used for heating air, for example for combustion in industrial boilers, for the production of hot air in drying processes, etc.

# ABSORPTION HEAT PUMPS AND CHILLERS



#### ABSORPTION HEAT PUMP

<b>Energy source:</b>	flue gas, steam, high pressure hot water
<b>Capacity:</b>	heat: 500 – 40 000 kW
<b>Technical info:</b>	hot water: up to 80°C. COP: 1,7 - 1,85



#### ABSORPTION HEAT PUMP, DIRECT FUEL FIRED

<b>Energy source:</b>	oil / gas
<b>Capacity:</b>	heat: 200 – 10 000 kW
<b>Technical info:</b>	hot water: up to 80°C. Heat source: NP, LPG, CNG or HSD. COP: 1,4 – 1,45



#### ABSORPTION CHILLER

<b>Energy source:</b>	flue gas or hot water
<b>Capacity:</b>	cooling capacity: 50 – 3 500 kW
<b>Technical info:</b>	lowest outlet temp. chilled water: -5°C. Design inlet temp. cooling water: 25 – 32°C. Min. inlet temp. cooling water: 10°C. Heat source: flue gas down to 270°C or hot water (80-120°C). COP: 0,7 – 0,8

# ABOUT DANSTOKER A/S

Since the outset in 1935, Danstoker has developed into a company whose name is synonymous with high-performance boilers for the international energy sector. Domiciled in Denmark – a country renowned for its far-sighted energy policy – Danstoker’s own policy has been to constantly engage in intensive product development and constructive dialogue with the market players, i.e. combined efforts that have resulted in technical innovation and extensive experience.



Danstoker’s aim is to continue its growth and development via close co-operation with the company’s professional clients, counting among them the most prominent Danish and international suppliers of systems for district heating as well as for industrial and public energy supply. More than 80 years’ experience with boilers guarantees a quality which includes environmental considerations and operational economy as important parameters.

**The keyword for our success is specialization within the boiler technologies that have made Danstoker one of the leading players on the boiler market, i.e.:**

- Boilers for combustion of biomass
- Shell & tube boilers for oil and gas
- Water tube boilers for biomass, oil and gas
- Electric boilers for heat and steam
- Waste Heat Recovery Boilers
- Exhaust gas boilers for cogeneration engines
- Absorption heat pumps and chillers

# ABOUT DANSTOKER GROUP



The Danstoker Group is a part of the Thermax Group. Thermax Limited offers a series of technical solutions for the international energy and environment sectors. Headquartered in India, Thermax is represented in 75 countries with offices and production facilities all over the globe.

Danstoker has 80 years of experience, intensive product development and technical innovation, which resulted in environmentally sustainable and operationally cost-effective boilers for the international energy sector.

The wide range of both standard and customized solutions for hot water and steam, generated from both fossil fuels and biomass is manufactured at the new, state-of-the-art production facilities in Denmark and Poland.



**DANSTOKER  
PRODUCT  
RANGE**

**OIL & GAS BOILERS**

**SHELL & TUBES HEAT EXCHANGERS**

**DEAERATORS**

**THERMAL OIL HEATERS**

**WHRB & CO-GEN BOILERS**

**BIOMASS BOILERS**

**ELECTRIC BOILERS**

**SOOT CLEANING - DANBLAST**

**SUPERHEATERS**

**ECONOMIZERS**

**COMPACT HEAT EXCHANGERS**

**CONDENSERS & VAPORIZERS**



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