



TECHNOLOGY BROCHURE

High-performance steam boiler and hot water boiler plants for industry



Steam boilers with
outputs up to 120 t/h
and hot water boilers
with outputs up to
116 MW



HKB – leading manufacturer of industrial boiler plants in Europe and Asia

HKB is a specialist in the development and manufacture of major turnkey plants for generating steam and hot water.

The steam boilers have an output of up to 120 t/h, with operating pressures up to 130 bar and hot steam temperatures approaching 485 °C.

HKB hot water plants deliver up to 116 MW. They work at pressures of up to 50 bar and deliver hot water at temperatures up to 250 °C. Higher outputs can be achieved by cascading multiple boilers.

For this, HKB can build custom boilers up to ten metres wide and 40 metres long.

Individual solutions for international markets

An increasing demand from many industrial sectors, the quality of the products and the proximity to the customer have led to continuous growth in this market segment.

For industrial clients, Viessmann supplies standard Vitomax double flame tube boilers as well as individually designed large scale plants.

Powerful biomass systems for environmentally responsible steam and hot water generation with low CO₂ emissions also form part of the product range.

Assembled and tested components

With direct access to a harbour on the river Maas, HKB can ship complete boiler systems of almost any size to their destination without difficulty. This means individual components can be pre-assembled at the factory and tested for perfect function, so assembly times are reduced and errors avoided.

Sembcorp Utilities Wilton (United Kingdom)





Double flame tube boiler

▶ Steam boilers with outputs up to 120 t/h and
hot water boilers with outputs up to 116 MW ▶

Core components for steam and hot water generation

HKB offers six different boiler types, effectively covering almost all energy demands in the medium and large output ranges.

Flame tube boilers

Thanks to their excellent design and high equipment level industrial/commercial boilers offer the best conditions for fulfilling individual customer requirements. The detailed construction of the boilers and the company's vast experience in this sector ensure superior quality, high operational reliability and a long service life.

As hot water boilers, flame tube boilers deliver up to 20 MW. In the steam boiler version they offer an output of up to 28 t/h, depending on type.

Vitomax D double flame tube boiler

The Type D Vitomax double flame smoke tube boilers deliver saturated or hot steam at a rate of 12 to 58 t/h and warm or hot water from 10 to 38 MW. An economiser can be installed downstream for even greater efficiency. This utilises the waste heat to heat the feed or return water, thereby reducing energy bills.

Water tube and shell boilers

Combined water tube and shell boilers offer steam outputs of up to 80 t/h at temperatures up to 400 °C. Adding an economiser results in a system efficiency significantly greater than 95 %. This boiler type is also designed for generating hot water at up to 58 MW.

Water tube boilers

Water tube boilers have a capacity of up to 120 t/h saturated or hot steam, and can also be used for supplying hot water. HKB is a member of the EckRohrKessel® Group, which counts 34 affiliated companies worldwide. The water tube boiler is manufactured under licence.

Waste heat boilers

In a waste heat boiler, steam is produced from the waste heat of a gas turbine or gas engine. The output of these boilers is determined by the customer's specific requirements.

Biomass boilers

Alongside oil and gas fired systems our product range also includes boilers for operation with solid fuel or biomass.



Water tube boiler in corner tube design



Combined water tube and shell boiler



Waste heat boiler



Five Double flame tube boiler Vitomax D

Product solutions and services from a single source

HKB offers an extensive range of engineering services and can also provide support in developing individual solutions.

A powerful energy system also requires pressure vessels, countercurrent systems, heat exchangers, compressed air tanks, flue-gas coolers, oil pressure vessels for hydraulics, process tanks and flue stacks.

HKB supplies these modules in all common steel types, with the relevant acceptance certificates for all major markets:

- Europe – EN 12953, TRD
- United Kingdom – BS (British Standard)
- China – Cina License
- North America – ASME
- Russia – GOST

Our engineers actively assist customers and can participate in product development on request.

Fast and reliable customer service

When complex industrial and commercial systems require servicing, reliable and fast customer service is of the essence. In the event of a fault, HKB's technicians are available around the clock.

They have the right solution to every problem – from converting a boiler to replacing a burner. With older systems, customers are advised on all aspects of boiler house modernisation, as well as heat recovery for reducing energy costs.

Maintenance work such as boiler cleaning on the water and flue gas side, boiler conversion and repairs, flame tube replacement and regular maintenance are a matter of course.

Where required, HKB can also provide a suitable replacement boiler from its hire stock.



Quality inspection of a double flame tube boiler



Installing a boiler through the roof of a 120 m high building



Fast service around the clock



Double flame tube boilers being manufactured at HKB's facility in Venlo, Holland.

▶ HKB installs two of the largest double flame tube boilers in the world ◀

The manufacture of high-quality paper products requires large quantities of process steam to smooth the paper.

To ensure a reliable supply of process steam at a paper factory, two of the world's largest double flame tube boilers are being installed. Commissioned by Iggesund Paperboard SA, a leading manufacturer of cardboard packaging and paper, HKB is supplying the boilers to the company's Workington site in northern England.

Process steam for 200,000 tonnes of chromo cardboard per year

The industrial production of paper and cardboard products requires large quantities of steam. Cellulose pulp is blended, with the addition of steam, into an aqueous mash.

A sieve then skims off individual layers that are dried, pressed and smoothed under steam. In Workington, 200,000 tonnes of chromo cardboard are produced each year.

Up to 115 tonnes of steam per hour

The two Vitomax D HS double flame tube boilers deliver up to 115 tonnes of steam per hour. The burner output of each flame tube is approximately 19 megawatts, so complete output at full capacity is 38 megawatts.

With such high outputs it is essential to use the fuel, in this case natural gas, as frugally as possible to safeguard economical operation. The boilers are accordingly fitted with economiser exhaust gas/water heat exchangers that preheat the boiler feedwater with residual heat from the exhaust gases.

HKB boilers meet the most stringent safety requirements

The technical standards and regulations for the safe operation of steam boiler plants do not take account of the very large outputs provided by the two Vitomax D HS boilers. Each boiler

therefore requires special approval, for which detailed evidence of the quality and strength of materials used for all safety related components must be provided.

A comprehensive system of sensors also captures temperatures and pressures in various parts of the plant. This data is monitored via a separate control system, which is additional to the main boiler control unit. This means that if one control unit fails, the other unit can detect any deviations from set values and can compensate accordingly.

Transport by sea

With boilers measuring eleven metres in length and weighing almost 100 tonnes, transport to the installation site by sea is ideal. The HKB factory is only 300 metres from the port on the river Maas. From there, the boilers are transported to Rotterdam on an inland vessel, and then transferred to cargo ships.

The journey continues across the English Channel and the Irish Sea to Workington. In Workington the transit by land is again minimal – the town of 25,000 inhabitants is situated directly on England's west coast.

Iggesund Paperboard SA

The Swedish company Iggesund Paperboard SA is one of the world's leading manufacturers of high-quality cardboard and paper. The company's origins date back to the 18th century. Paper has been manufactured on the Iggesund river in Sweden ever since.

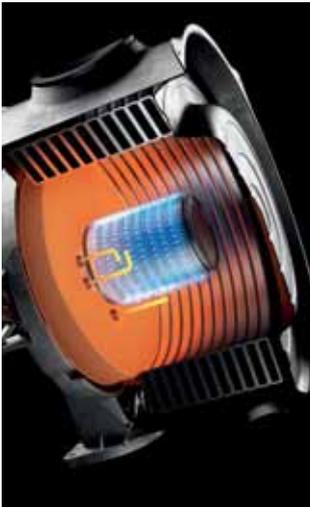
Today, 900 employees work at the company's head office, and 330,000 tonnes of cardboard packaging are produced each year. Just under 400 people are employed at the company's UK site in Workington.



The boilers are operating in Workington, at the UK site of Iggesund Paperboard SA.



The production of paper requires a constant supply of saturated steam in large quantities.



MatriX-Plus burner

Viessmann comprehensive range

- Boilers for oil or gas
- Combined heat and power generation
- Hybrid appliances
- Heat pumps
- Wood combustion technology
- Biogas production plants
- Biogas upgrading plants
- Solar thermal
- Photovoltaic
- Electric heating/DHW systems
- Refrigeration systems
- Accessories

Milestones of heating technology

As an environmental pioneer and technological trailblazer for the heating sector, Viessmann has been supplying exceptionally clean and efficient systems for heating, refrigeration and decentralised power generation for decades. Many of the company's developments are recognised as heating equipment milestones.

Sustainability in action

As a family business Viessmann takes the long view and places great value on acting responsibly; sustainability is firmly enshrined in the company's principles. For Viessmann, sustainability in action means striking a balance between economy, ecology and social responsibility throughout the company; meeting current needs without compromising the quality of life of future generations.

With its strategic sustainability project, Viessmann demonstrates at its own head office in Allendorf (Eder) that the energy and climate policy goals set by the German government for 2050 can in fact be achieved today with the help of commercially available technology.



We create living spaces
for generations to come.



Number 1 Trade Partner for the
15th consecutive time

Practical partnership

As part of its comprehensive range, Viessmann also offers a wide selection of complementary services. These services include a comprehensive training and further development programme for trade partners at the well equipped training facilities of the Viessmann Academy.

With its new digital services, Viessmann offers innovative solutions such as the operation and monitoring of heating systems by smartphone. Users benefit from greater reassurance and convenience, whilst contractors can keep a constant eye on the systems for which they are responsible.



Viessmann is a leading international manufacturer of efficient energy systems.

VISSMANN GROUP IN FIGURES

1917

— Viessmann was founded

12.000

— employees

2.5

— Group turnover in billions of euros

54

— export share in percent

23

— production companies in

12

— countries

120

— sales offices worldwide

74

— countries with agents and sales companies



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