



TECHNICAL INFORMATION

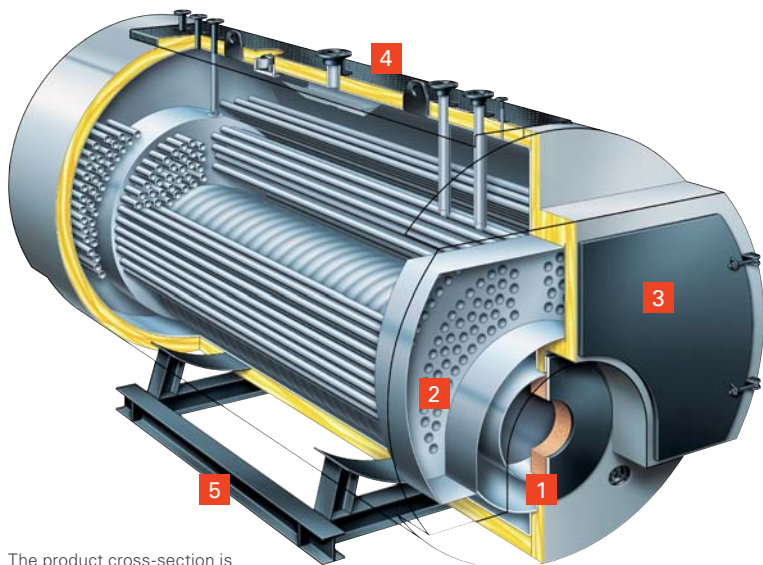
Vitomax HS high pressure steam boiler  
as low NO<sub>x</sub> version: ideal for industrial use



**Vitomax HS**

High pressure  
steam boilers with  
an output of 1.0 to 31.5 t/h  
and pressure levels of  
6 to 25 bar

## HIGH PRESSURE STEAM BOILERS



The product cross-section is only an example of what the Vitomax HS high pressure steam boiler may look like. Deviations are possible depending on the order.

### VITOMAX HS

- 1 Water-cooled and wear-resistant burner entry point
- 2 Low stress design through optimum expansion clearances
- 3 Easy to open hinged cleaning doors without the need to remove the burner and fuel supply
- 4 Walk-on cover
- 5 Boiler support with longitudinal I-beams for better load distribution and ability to connect components, pipework, etc.

### TAKE ADVANTAGE OF THESE BENEFITS:

- + Vitomax HS high pressure steam boiler, 1.0 to 31.5 t/h
- + Pressure levels: 6 to 25 bar
- + High combustion efficiency in excess of 95 %
- + Steam chamber, precisely sized for the output, with low load (no water entrainment)
- + Integral steam drier for high steam quality
- + Corner stays arranged in pairs reduce stress in the boiler
- + Optimum flame tube geometries for clean combustion
- + Longest possible inspection intervals and easy to service due to sufficient inspection and access ports
- + Highly efficient insulation complete with protection in the form of 1 mm thick, painted sheet steel. No soft aluminium

Vitomax HS high pressure steam boilers meet all the statutory requirements for clean combustion. The efficiency of these boilers with economiser is over 95.5 percent, even at 100 percent load.

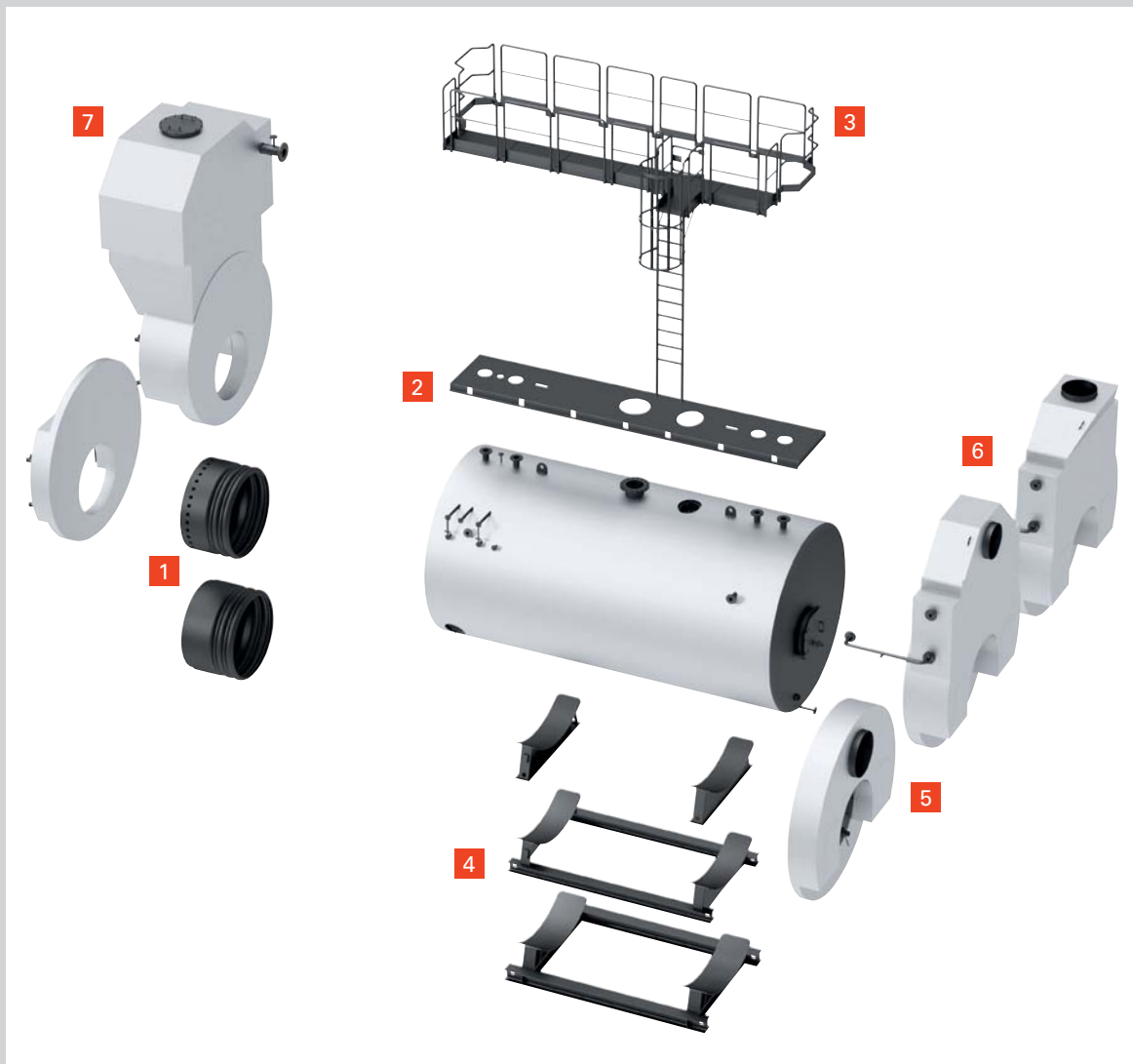
When using gas, the Vitomax HS delivers an output of up to 31.5 tonnes of steam per hour. It is used in manufacturing industries such as food processing, fertiliser production, construction materials, paper, beverages, chemical and pharmaceutical industries, in hospitals and refineries, where steam is used as a process, propulsive or reaction medium.

Thanks to its large evaporator with integral steam drier, high steam quality with low residual moisture is a key feature. The Vitomax HS can be operated very flexibly with light or heavy fuel oil, bio-oil or even (bio) natural gas.

### High quality ensures high operational reliability

The three-pass boiler is designed for clean combustion and low emissions. A good-sized flame tube in the steam boiler enables the fuel to burn very well, leading to lower nitrogen oxides. An optional water-cooled burner entry point ensures that less heat is radiated, because no concrete refractory lining is used. This is likewise reflected in the low nitrogen oxide values. Across all boiler sizes, the flame tube is installed centrally within the boiler and is not offset to the side. This design guarantees a long service life for the Vitomax HS.

The large flame tube design enables the optimum burner flame burnout length, resulting in clean combustion. This is a great advantage compared with standard boilers.



### Modularity – equipment level variations

- 1** Burner entry point:
  - a) Lined (standard)
  - b) Water-cooled – maintenance-free/wear-resistant (option)
- 2** Boiler cover:
  - a) Without boiler cover/round insulation (standard)
  - b) Walk-on boiler cover prepared for platform mounting (option)
- 3** Modular operating platform  
(Option – only in conjunction with walk-on boiler cover)
- 4** Boiler support:
  - a) Cross plates (standard < 14 t boiler weight)
  - b) Cross plates with longitudinal I-beams  
(Option < 14 t boiler weight/standard > 14 t boiler weight)
  - c) Full I-beam version (option)
- 5** Flue gas collector with outlet to the rear:  
Round version (standard)
- 6** Integral heat exchanger and flue gas collector:
  - a) Integral heat exchanger with flue gas collector and outlet to the rear (option)
  - b) Integral heat exchanger with flue gas collector and outlet to the top (option)
  - c) Flue gas collector with outlet to the left or right also possible
- 7** Front reversing chamber with superheater module (option)

**Two cleaning doors facilitate maintenance**

To make servicing and maintenance particularly easy, there are sufficient inspection and access ports for carrying out important checks inside the boiler. As a result, Vitomax high pressure steam boilers achieve the longest possible inspection intervals. Easy to open boiler doors and a cleaning door at the end of the boiler also ensure that maintenance is simple and contribute to low running costs.

**Water-cooled and low NO<sub>x</sub> levels**

The rear flue gas reversing chamber of the Vitomax HS is water-cooled from the rear as well as the sides, so the energy in the flue gases is used exclusively for steam generation. With the optional water-cooled burner entry point, no concrete is used anywhere in the boiler. This makes it wear and

maintenance-free, eliminating the need to replace it during the service life of the boiler. Unplanned downtimes required for drying out or repairing the concrete refractory lining are completely eliminated. This results in notably lower maintenance costs and higher availability. The water cooling guarantees a constant temperature at the burner head – the otherwise usual reflection from a refractory lining (which causes thermal nitrogen oxide to form) does not occur.

**Futureproof (BImSchV) due to clean combustion**

In addition, the Vitomax HS from Viessmann scores highly for its low nitrogen oxide levels (NO<sub>x</sub> levels). When operated using natural gas, the NO<sub>x</sub> levels of the Vitomax HS are impressive at < 70 mg/m<sup>3</sup>. The steam boiler system from Viessmann thus meets the strict requirements of the

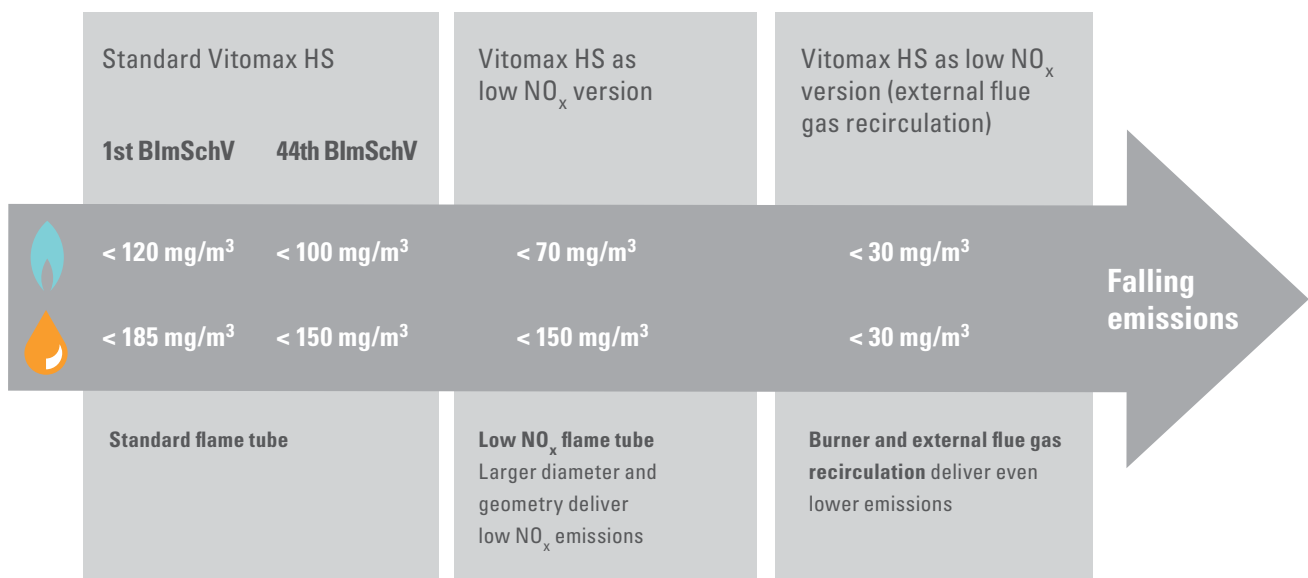
new regulations on emissions, such as the requirements of the German Immissions Ordinance (BImSchV).

**Further options:**

- Walk-on boiler cover
- Modular operating platform (with railings) with kick plate on the boiler top for installation and maintenance work

The walk-on boiler cover simplifies installation work and offers outstanding operating convenience. Inspection ports and fittings on the boiler top are conveniently accessible. Retrofitting the boiler platform later on is easy thanks to integral support points.

**Emission regulations**



## SPECIFICATION



### **VITOMAX HS** as low NO<sub>x</sub> version **HIGH PRESSURE STEAM BOILERS**

	<b>Vitomax HS (low NO<sub>x</sub>)</b>
<b>Steam mass flow rate</b>	1.0 to 31.5 t/h
<b>Pressure levels</b>	6 to 25 bar (higher on request)
<b>Efficiency levels with ECO</b>	> 95 %
<b>NO<sub>x</sub> emission levels* for gas/oil</b>	70/150 mg/Nm <sup>3</sup>
<b>CE designation</b>	to DGRL (Pressure Equipment Directive)
<b>Declaration of Conformity</b>	to EN 12953 and trade association agreement

\* with commonly available burner makes



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