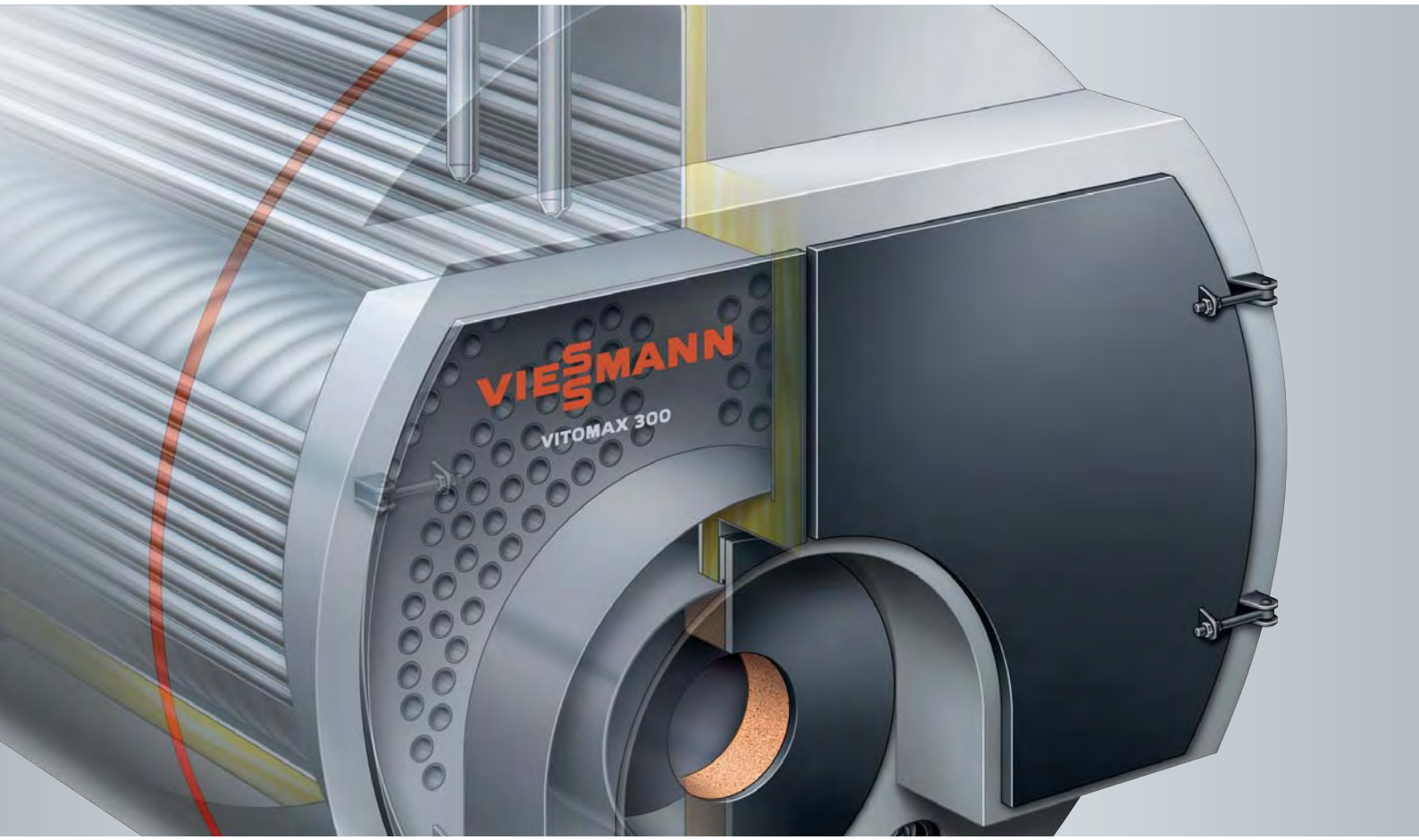
VIESMANN

climate of innovation

Steam Boilers and Waste Heat Boilers




VIESSMANN

System solutions for cost-effective steam generation

Energy efficient and clean provision of heat in conjunction with high levels of operational safety and system reliability are essential requirements for production facilities and industrial plants. In order to design boiler house concepts appropriate for the task in hand, individual requirements must first be established so that tailor-made system solutions can be developed. This requires expert advice plus a comprehensive range of services and steam boilers, the characteristics of which allow cost-effective and futureproof steam generation.

Due to their design and configuration, Vitomax industrial/commercial boilers deliver the best possible conditions for meeting individual customer requirements in a broad range of applications. Many design details of the Vitomax boilers and long experience in building large industrial/commercial boilers ensure outstanding quality and provide for high levels of operational reliability and a long service life.

Experts from our industrial boiler team in Berlin cooperate with their local partners in developing economical and futureproof solutions based on your individual plans. Design in accordance with the Pressure Equipment Directive and country-specific regulations takes into account all requirements and safety statutes for every piece of equipment, from the initial concept through to commissioning.

The comprehensive product range from Viessmann includes low pressure and high pressure steam boilers up to 26 t/h as well as waste heat boilers. The flame tube/smoke tube design with low combustion chamber loading, the internal back water-cooled reversing chambers and the water-cooled burner aperture without refractory linings ensure clean combustion of oil and gas with all conventional, commercially available advanced burner systems. The design selected for you, into which a number of patents and components with design protection have been integrated, guarantees the highest level of efficiency at all times.

Viessmann industrial/commercial boiler technology means perfectly coordinated system technology, including:

- Control/monitoring systems
- Instrumentation & control technology
- Combustion systems with fuel supply
- Water treatment
- Feedwater tank with thermal deaeration
- Pipework and flue systems
- Heat recovery systems
- Water analysis

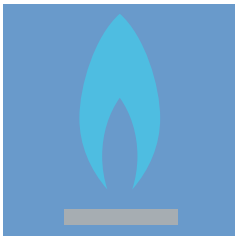
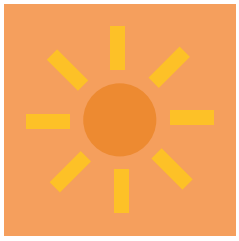
Contents

About this brochure

Anyone searching for a new steam boiler or waste heat boiler for the purpose of modernisation or new-build needs comprehensive information. Obtain an overview of the potential solutions and the innovative products and services from Viessmann.

Saving energy and protecting the climate

Viessmann is well aware of its responsibilities for protecting the environment and preserving natural resources. Our company philosophy and products are geared towards fulfilling this duty.

"Nothing is so good that it cannot be improved". This maxim is part of Viessmann company policy. In this industry, Viessmann can rightfully claim to be the leader in quality and technology, and as such our aim is to continually set new standards.

This applies in particular to our product range, which is closely geared towards significantly lowering the consumption of fossil fuels and gradually replacing them with sustainable sources of energy.

At around 40 %, the heating market actually accounts for the largest proportion of energy consumption. The rest is shared by "goods transport", "personal transport" and "power". These are values that can also be applied approximately to other industrial countries. Rising energy costs mean the emphasis is on reducing the consumption of fossil fuels as quickly as possible.

Steam boilers and waste heat boilers
Steam is used in many industrial processes as an energy source and as a medium for carrying chemical substances.

Typical application areas are, amongst others, the paper and building material industry, refineries, the pharmaceutical industry and processing of food on an industrial scale. Steam drives turbines for the generation of power, vulcanises rubber products and sterilises packaging.

The generation of steam for industrial purposes and its "handling" differ significantly in some points from conventional heat generation in heating technology using water as the heat transfer medium. In particular, high pressure steam generation in the higher output range requires special equipment for the systems concerned.

Viessmann provides efficient and energy-saving heating systems for oil and gas in the medium and large commercial/ industrial boiler segment. Renewable energy systems, such as solar, biomass and natural heat, complete the comprehensive product range.

At Viessmann, work is constantly being carried out to find new environmentally responsible solutions. The result is environmentally friendly, cost-effective and efficient heating systems.

Low pressure steam boilers

VITOMAX 200-LS
Type M233

Low pressure oil/gas steam boiler
2.9 to 5 t/h
0.5 (1) bar
Efficiency: 92 %

VITOPLEX 100-LS
Type SXD

Low pressure oil/gas steam boiler
0.26 to 2.2 t/h
0.5 (1) bar
Efficiency: 91 %

High pressure steam boilers

VITOMAX 300-HS
Type M95A

High pressure steam boiler
5 to 26 t/h
Up to 25 bar (28, 30 bar on request)
Efficiency: up to 97 %
(with integrated economiser)

VITOMAX 200-HS
Type M73A

High pressure steam boiler
0.5 to 4 t/h
Up to 25 bar (28, 30 bar on request)
Efficiency: up to 96 %
(with integrated economiser)

VITOMAX 200-HS
Type M75A

High pressure steam boiler
5 to 26 t/h
Up to 25 bar (28, 30 bar on request)
Efficiency: up to 96 %
(with integrated economiser)

VITOMAX 100-HS
Type M33A

High pressure steam boiler
1 to 6.4 t/h
Up to 16 bar
Efficiency: up to 95 %
(with integrated economiser)

Waste heat boilers

VITOMAX 200-RW

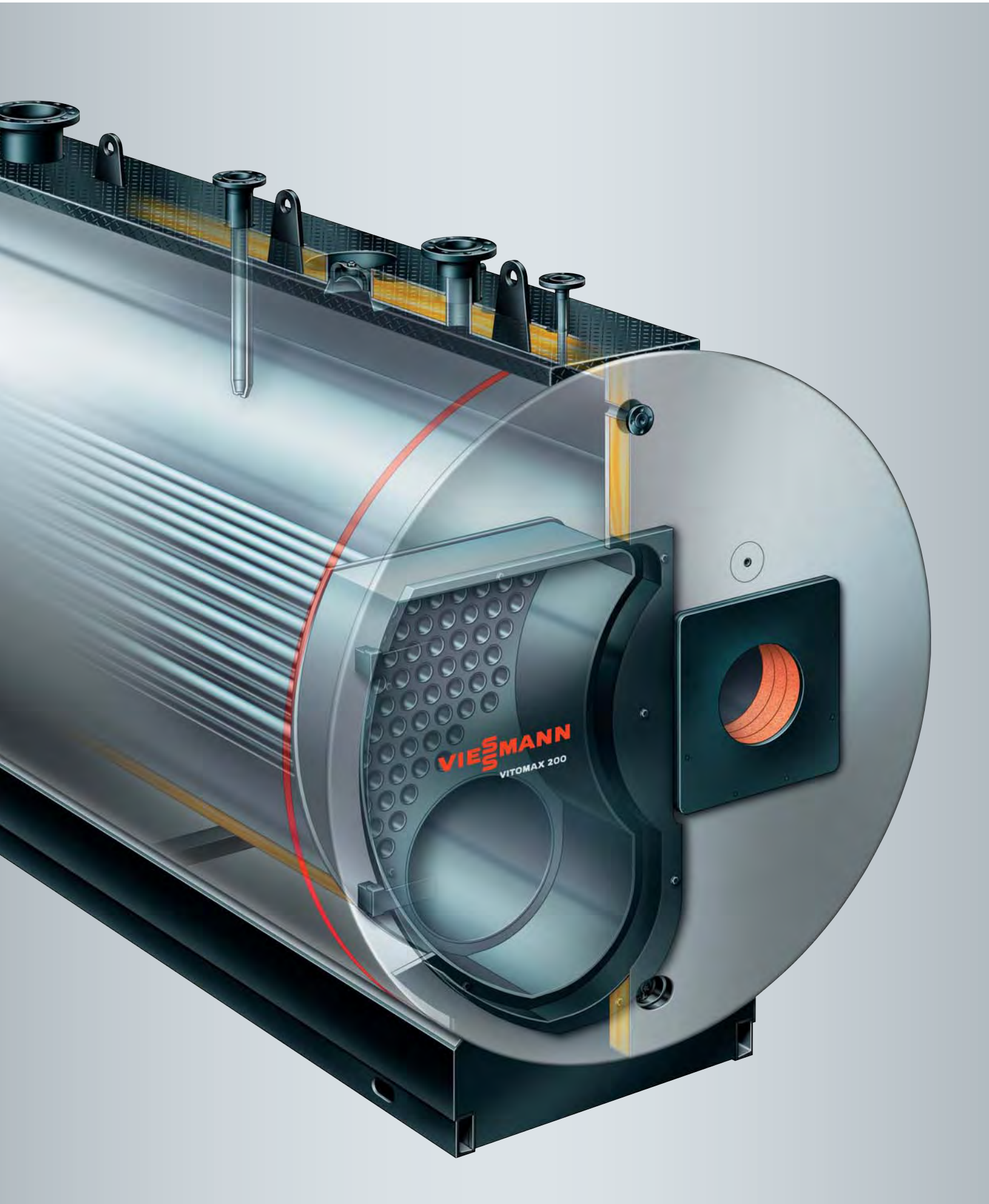
Waste heat boiler for generating heating water

VITOMAX 200-RS

Waste heat boiler for generating steam

Low pressure
steam boilers

Vitomax 200-LS
Vitoplex 100-LS



VITOMAX 200-LS
VITOPLEX 100-LS

Low pressure steam boilers for new-build and modernisation in commercial enterprises and industrial concerns.

The output ranges of the Vitomax 200-LS and Vitoplex 100-LS low pressure steam boilers meet the requirements for air conditioning and heating systems, commercial nurseries and business enterprises, such as laundries and bakeries.

The Vitomax 200-LS and Vitoplex 100-LS are three-pass boilers with low combustion chamber loading. This creates ideal conditions for clean combustion with low nitrogen oxide emissions.

VITOMAX 200-LS
Type M233
Low pressure steam boiler
2.9 to 5.0 t/h
0.5 (1) bar

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VITOPLEX 100-LS
Type SXD
Low pressure steam boiler
0.26 to 2.2 t/h
0.5 (1) bar

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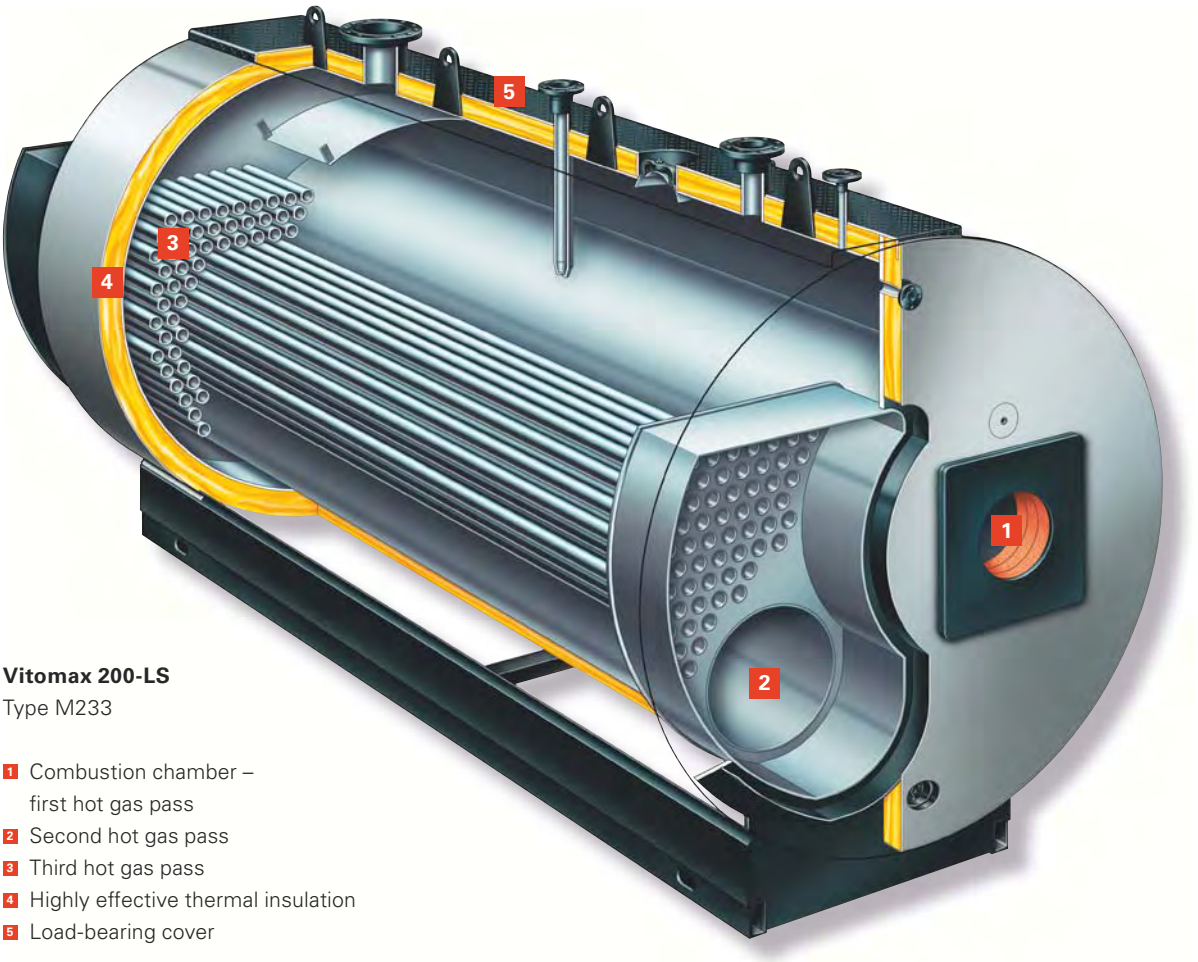
Low pressure
steam boilers

Vitomax 200-LS
2.9 to 5.0 t/h

The Vitomax 200-LS (type M233) is a low pressure steam boiler conforming to the requirements of the EC Pressure Equipment Directive, EN 12953 and TRD regulations. It can be operated with a permissible operating pressure of up to 1 bar (high pressure) and has a steam output of between 2.9 and 5.0 t/h.

In this output range, the Vitomax 200-LS meets the requirements of all applications demanding low pressure steam, such as commercial nurseries and business enterprises.

Clean combustion
The Vitomax 200-LS is a three-pass boiler with low combustion chamber loading (< 1.2 MW/m³). This creates ideal conditions for clean combustion with low nitrogen oxide emissions.



Vitomax 200-LS
Type M233

1. Combustion chamber – first hot gas pass
2. Second hot gas pass
3. Third hot gas pass
4. Highly effective thermal insulation
5. Load-bearing cover

Vitomax 200-LS low pressure steam boiler
Deckers Pilzen complex, Holland

Take advantage of these benefits

- Low pressure steam boiler with steam output from 2.9 to 5.0 t/h
- Three-pass boiler with low combustion chamber load (< 1.2 MW/m^3), resulting in clean combustion with low nitrogen oxide emissions
- Economical energy consumption – boiler efficiency: 92 %
- High steam quality due to large steam chamber, large evaporator and an integral demister
- High serviceability due to water-cooled reversing chambers without refractory linings, large cleaning door and pivoting combustion chamber cover
- Load-bearing boiler cover on top of the steam boiler included in the standard delivery – simplifies installation and maintenance and protects the thermal insulation against damage
- Low radiation losses due to 100 mm thick composite insulation and completely water-cooled front and rear flue gas reversing chambers
- Low pressure drop on the hot gas side due to convection heating surfaces with large hot gas tubes
- Vitocontrol control panel enables activation of all boiler-specific regulation and control equipment
- Connection flanges for mounting necessary instrumentation, control and safety fittings
- Extensive range of matching accessories available
- CE designation according to the European Gas Equipment Directive 90/396/EEC or the European Pressure Equipment Directive 97/23/EC

Vitoplex 100-LS
0.26 to 2.2 t/h

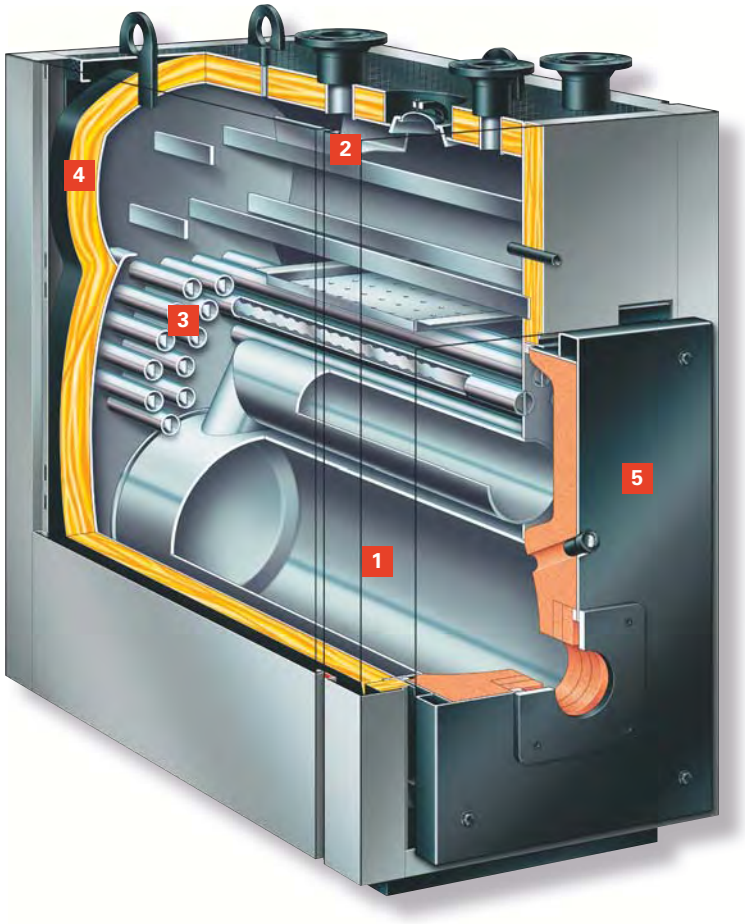
The Vitoplex 100-LS is a compact three-pass boiler for generating low pressure steam in the output range between 0.26 and 2.2 t/h. This boiler is designed for a permissible operating pressure of 1 bar (high pressure). Subject to requirements, the operating pressure can be reduced to 0.5 bar (low pressure). The output range of the Vitoplex 100-LS meets the requirements for air conditioning and heating systems in commercial nurseries and business enterprises, such as laundries, where low steam pressures are required. The design of this boiler has been tried and tested in thousands of applications.

Large water capacity, in conjunction with long distances between the hot gas pipes and large clearances between inbuilt parts and the boiler shell, provide for excellent natural circulation and reliable heat transfer, resulting in high operational reliability and a long service life.

The low material loading through the completely water-cooled rear reversing chamber and the absence of refractory linings result in an extremely low-stress boiler construction.

High steam quality
The very forgiving behaviour in the event of load fluctuations brought about by the large water capacity is judged to be extremely positive. Thanks to the boiler design, residual moisture in the steam is prevented, even in the event of sudden or high steam demand, and high quality steam is made available continuously. The large steam chamber, with a correspondingly large evaporator and integral steam drier, supports the forgiving characteristics of this boiler.

Clean combustion
The very low combustion chamber volume loading in conjunction with the three-pass design enable this boiler to comply with even the strictest of emission limits.



Vitoplex 100-LS
Type SXD

1. Generously proportioned flame tube for clean combustion
2. Integrated steam drier
3. Large expansion clearances between the pipes themselves, and between the pipes and the boiler shell, for a long service life
4. Highly effective thermal insulation with sheet steel casing
5. Large-sized boiler door facilitates cleaning and maintenance of the boiler

System with one Vitoplex 100-LS low pressure steam boiler and two Vitoplex hot water boilers

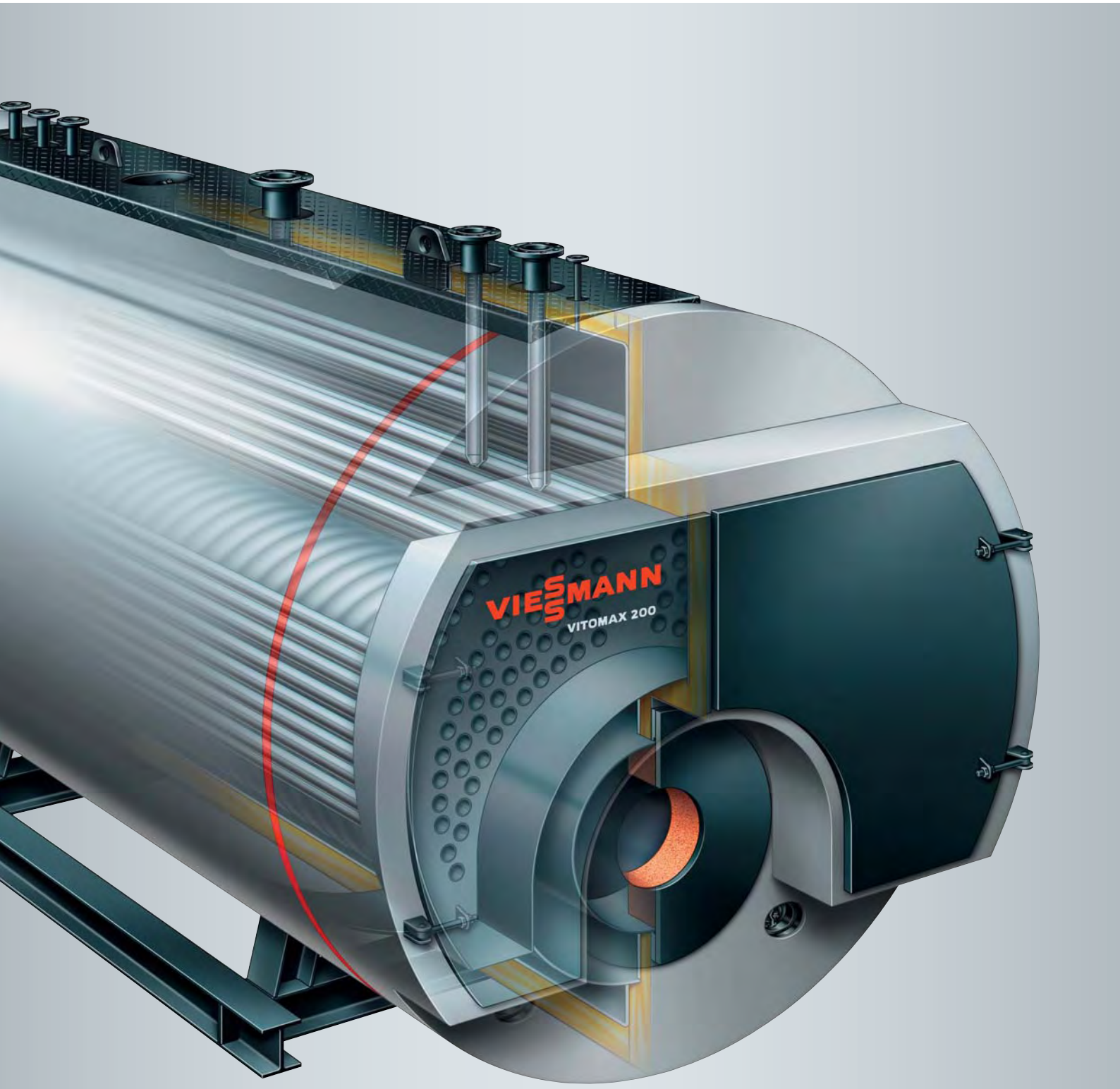
Safety fittings of the Vitoplex 100-LS

Take advantage of these benefits

- Low pressure steam boiler with steam output from 0.26 to 2.2 t/h
- Economical energy consumption – boiler efficiency: 91 %; up to 95 % if an economiser is used
- Three-pass boiler with low combustion chamber load, resulting in clean combustion and low emissions
- Large steam chamber and large evaporator increase the steam quality
- Low heat losses due to thermal insulation of the entire boiler body
- Connectors for mounting necessary instrumentation, control and safety fittings
- Extensive range of matching accessories available
- With load-bearing boiler cover – for easier installation and maintenance
- Easy conversion to hot water operation
- Thousands in long-term use

High pressure
steam boilers

Vitomax 300-HS
Vitomax 200-HS
Vitomax 100-HS
0.5 to 26 t/h



VITOMAX 300-HS
VITOMAX 200-HS
VITOMAX 100-HS

High pressure steam boilers are designed for the generation of saturated or superheated steam.

Vitomax-HS boilers are high pressure steam boilers in accordance with category IV of the Pressure Equipment Directive 97/23/EC, with a permissible operating pressure of 6 to 25 bar. Even when the steam boilers were only at the design stage, our engineers were collaborating closely with globally represented burner manufacturers. The result is three boiler types in this series that offer minimum emissions and a high degree of flexibility:

- **Vitomax 300-HS (type M95A)**
  Thanks to 3-pass technology and its generously proportioned combustion chamber, this boiler complies with the most stringent emission requirements.
- **Vitomax 200-HS (type M73A)**
  The lateral arrangement of the flame tube resulted in a highly compact boiler design.
- **Vitomax 200-HS (type M75A)**
  A classic boiler design. The flame tube is arranged centrally, offset slightly downwards; the hot gas flues of the second and third passes are arranged symmetrically above.
- **Vitomax 100-HS (type M33A)**
  A steam boiler employing the reversing flame principle for classical applications, such as laundries, meat processors, etc.

For the generation of superheated steam, a superheater is integrated into boiler types M95A and M75A between the second and the third pass, above the front reversing chamber. This allows temperatures above saturation pressure to be achieved.

VITOMAX 300-HS
High pressure steam boiler
Type M95A
5 to 26 t/h
Up to 25 bar
(28, 30 bar on request)

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VITOMAX 200-HS
High pressure steam boiler
Type M73A
0.5 to 4 t/h
Up to 25 bar
(28, 30 bar on request)

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VITOMAX 200-HS
High pressure steam boiler
Type M75A
5 to 26 t/h
Up to 25 bar
(28, 30 bar on request)

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VITOMAX 100-HS
High pressure steam boiler
Type M33A
1 to 6.4 t/h
Up to 16 bar

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Vitomax 300-HS
5 to 26 t/h

The Vitomax 300-HS (type M95A) high pressure steam boiler satisfies all the latest legal requirements for combustion with particularly low emissions. Further development has also enabled boiler efficiency to be increased to 97 percent.

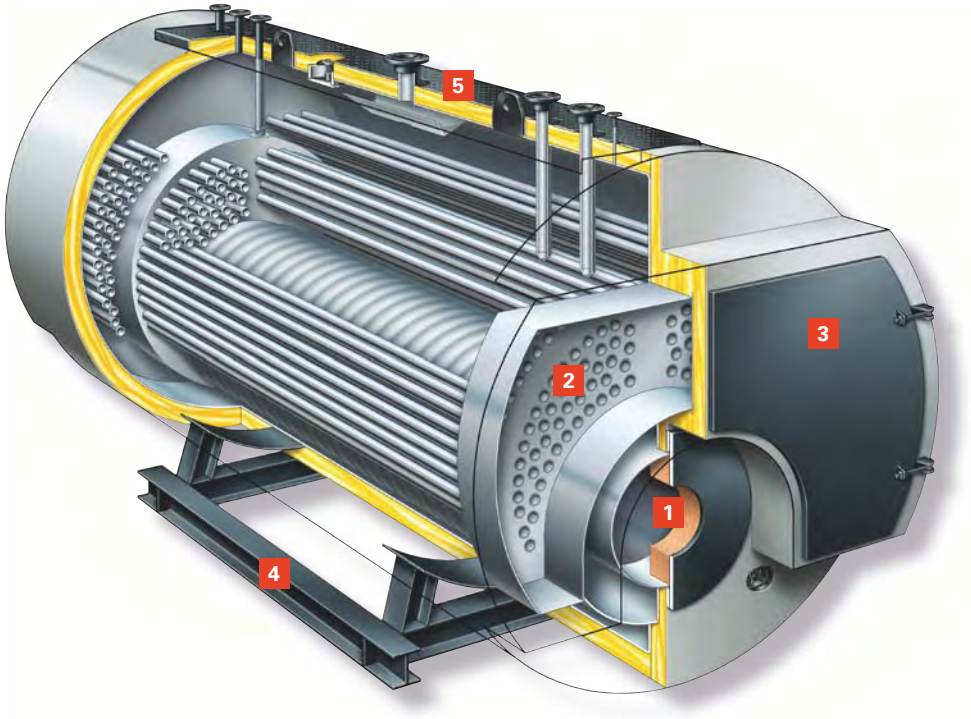
Irrespective of the fuel used, the boiler delivers an output of up to 26 tonnes of steam per hour. It has been conceived especially for manufacturing industries, where large amounts of steam are constantly required. Thanks to its large evaporator, high steam quality with low residual moisture is a key feature. The Vitomax 300-HS can be operated very flexibly with light or heavy fuel oil, bio-oil or even (bio) natural gas.

Low NO_x levels and high efficiency
Due to their special design, Vitomax boilers need not be fitted with refractory linings for the installation of the burners. This guarantees a constant temperature around the burner head, with low NO_x levels – the otherwise usual reflection from the refractory lining is not applicable. The burner insertion point and the rear flue gas reversing chamber of the Vitomax 300-HS are water-cooled. Hence the energy in the flue gases is used exclusively for steam generation.

Long-term boiler operation
The spacing between the smoke tubes, as well as from the smoke tubes to the boiler shell and to the flame tube, are well above requirements. The shearing force on the end face floors caused by different linear expansion in the smoke tubes and the flame tube is therefore extremely low. This design guarantees a long service life for the Vitomax 300-HS.

Particularly easy to service and maintain
Just like all other Vitomax boilers, the Vitomax 300-HS is equipped with numerous inspection and access ports for servicing and maintaining all the important points inside the boiler. As a result, Vitomax high pressure 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 operating costs.

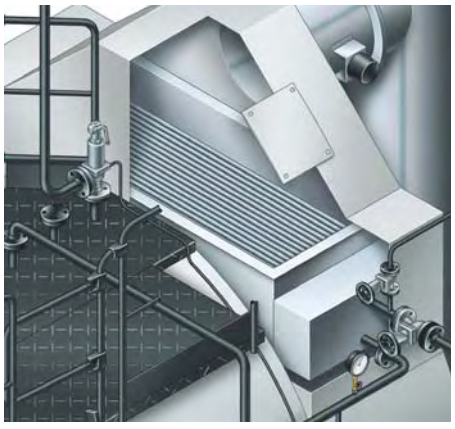
Flexible application
Customer-specific requirements can be taken into consideration in the design of boilers in this series.



Vitomax 300-HS
Type M95A

1. Water-cooled burner entry point with large combustion chamber to the rear
2. Large expansion clearances
3. Large, lightweight cleaning doors without refractory linings facilitate cleaning and maintenance
4. Stable base frame with longitudinal supports that can be lengthened according to requirements
5. Load-bearing cover

Vitomax 300-HS (type M95A) high pressure steam boiler



View of the integrated economiser in a steam boiler

Take advantage of these benefits

- Vitomax 300-HS (type M95A) high pressure steam boiler
- Output: 5 to 26 t/h, subject to fuel
- Pressure levels: 6, 8, 10, 13, 16, 18, 20, 22, 25 bar
- Fuels: Fuel oil (HEL), NO_x emissions (< 150 mg/m^3 flue gas) S-oil, Masut 100 natural gas, NO_x emissions (< 80 mg/m^3 flue gas)
- 3-pass steel boiler without refractory lining
- Dry reversing chamber at the front; rear reversing chamber completely surrounded by water
- High efficiency – up to 97 %
- 120 mm thermal insulation
- Generously sized steam chamber with low steam chamber load
- Integrated steam drier for high steam quality
- Corner stays arranged in pairs reduce stress in the component
- Generously sized flame tubes for clean combustion
- Longest possible inspection intervals
- Easy to service due to numerous inspection and access ports
- Use in manufacturing industries, as well as food processing, fertiliser production, construction materials, paper, beverage, chemical and pharmaceutical industries, hospitals and refineries

Vitomax 200-HS
0.5 to 4 t/h

Economiser fitted on a Vitomax 200-HS

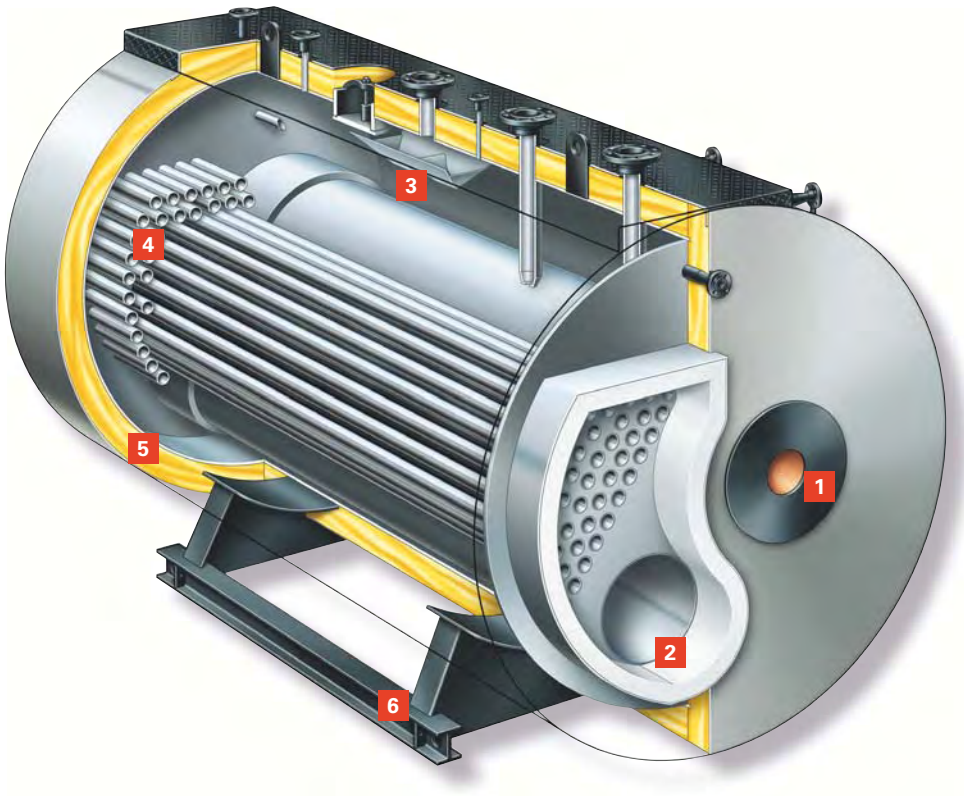
With the Vitomax 200-HS (type M73A) high pressure steam boiler, Viessmann meets the requirements of efficient steam generation. The permissible operating pressure extends from 6 to 30 bar. The output range extends from 0.5 to 4 tonnes of steam per hour.

The Vitomax 200-HS is used in manufacturing industries, as well as food processing, fertiliser production, construction materials, paper, beverage, chemical and pharmaceutical industries, hospitals and refineries. Optionally, the high pressure steam boiler can be operated with light fuel oil (HEL), liquid gas or (bio) natural gas.

Reliable design
The spacings between the smoke tubes, as well as from the smoke tubes to the boiler shell and to the flame tube, are well above requirements. The shearing force on the end face floors caused by different linear expansion in the smoke tubes and the flame tube is therefore extremely low, guaranteeing a long service life for these steam boilers.

The corner stays of the boiler are always arranged in pairs. As a result, the forces are distributed, reducing the stress in the component and increasing the service life. In every case, the values lie well below the limits permitted by the FDBR trade association.

Flexible application
Customer-specific requirements can be taken into consideration in the design of boilers in this series.



Vitomax 200-HS
Type M73A

1. Flame tube with water-cooled burner insertion point
2. Front flue gas end chamber
3. Steam drier
4. Generously sized pipe spacing to reduce stresses
5. 120 mm thermal insulation with sheet steel casing
6. Stable base frame (I-beam supports as option)

Vitomax 200-HS high pressure steam boiler

Vitomax 200-HS steam boiler with downstream economiser

Take advantage of these benefits

- High pressure steam boiler with steam output from 0.5 to 4 t/h
- Three-pass boiler – clean combustion with low nitrogen oxide emissions
- Insensitive to load fluctuations
- High steam quality due to large steam chamber, large evaporator and an integral steam drier
- Economical energy consumption
- Low radiation losses due to 120 mm composite thermal insulation and water-cooled burner feed-through
- Low pressure drop on the hot gas side due to convection heating surface with large hot gas tubes
- Load-bearing boiler cover on top of the steam boiler included in the standard delivery – simplifies installation and maintenance and protects the thermal insulation against damage – extendible to platform
- Robust base frame makes boiler foundations superfluous
- Large selection of matching accessories simplifies system integration
- Robust shipping and installation protection, as standard
- Approval according to European Pressure Equipment Directive 97/23/EC and/or specific national regulations. By exceeding the minimum requirements set by the FDBR guidelines, Viessmann boilers achieve the longest permissible inspection intervals

Vitomax 200-HS
5 to 26 t/h

The Vitomax 200-HS high pressure steam boiler meets all the latest requirements specified for advanced steam boilers. With the optional integrated economiser and associated system technology, the steam boiler utilises fuel with particular efficiency.

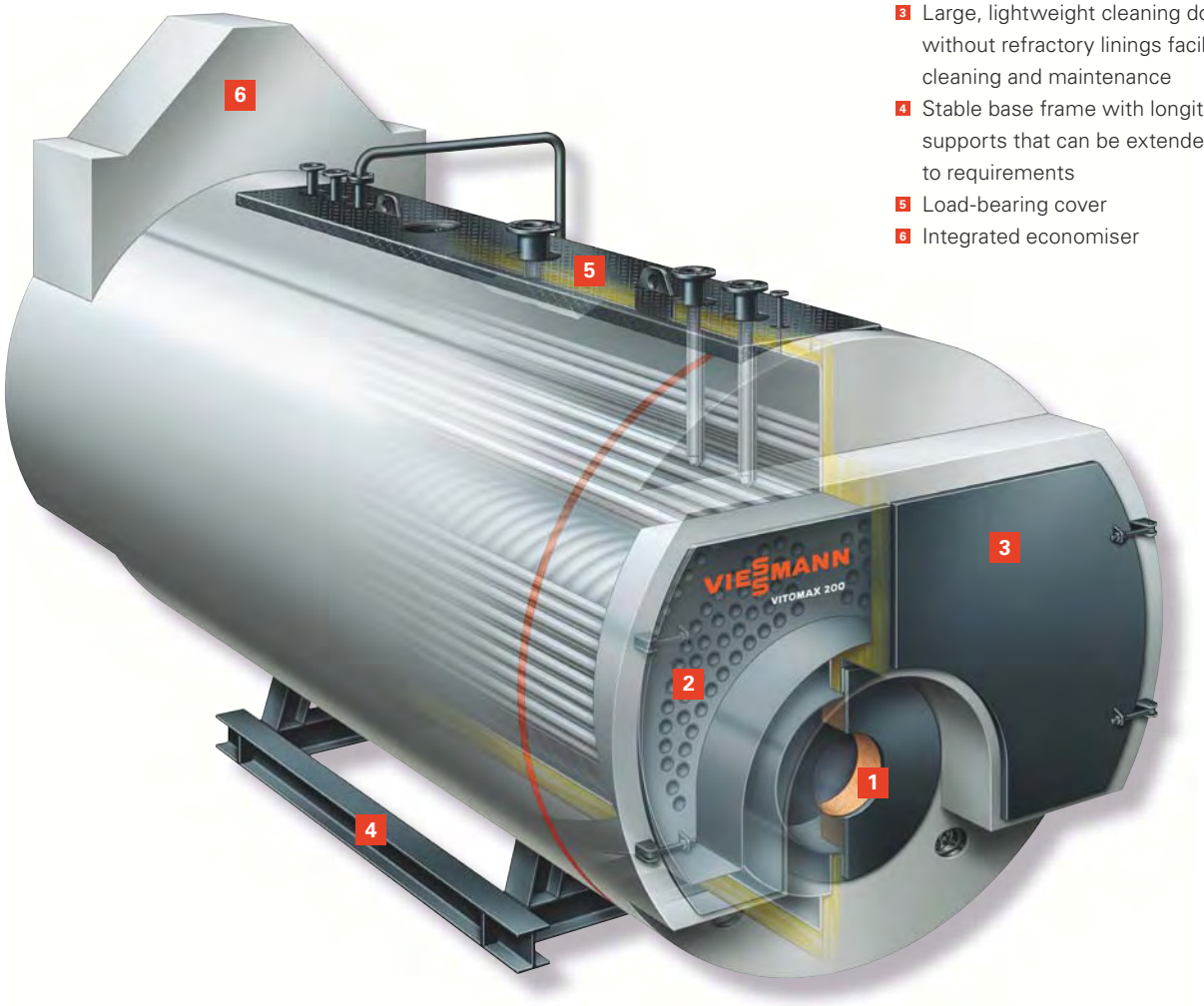
Clean combustion
Operation of the three-pass boiler is environmentally friendly with clean combustion throughout the entire output range. A defined and constant temperature where the flame is created supports stable flame formation and reduces NO_x emissions.

High steam quality
A refractory lining is not required, since both the burner insertion point and the rear reversing chamber on the flue gas side are fully water-cooled. This results in all the generated heat being used completely for steam generation. A high steam quality with low residual moisture is generated in the steam chamber with its large evaporator. The burner is inserted through a water-cooled jacket.

Flexible application
Customer-specific requirements can be taken into consideration in the design of boilers in this series.

Vitomax 200-HS
Type M75A

1. Water-cooled burner insertion point for consistently low emission levels
2. Front flue gas reversing chamber
3. Large, lightweight cleaning doors without refractory linings facilitate cleaning and maintenance
4. Stable base frame with longitudinal supports that can be extended according to requirements
5. Load-bearing cover
6. Integrated economiser



Special version of the Vitomax 200-HS steam boiler for burning animal fat

Vitomax 200-HS steam boiler with superheater

Take advantage of these benefits

- High pressure steam boiler with steam output from 5 to 26 t/h
- Three-pass boiler with and without economiser
- Permissible operating pressure from 6 to 25 bar
- Boiler support in the form of an open steel beam construction (I-beam)
- New optimised arrangement of connectors (water level indicator, T.D.S. electrode)
- Manostat bracket on the boiler side
- Integrated economiser can also be fitted and welded on site if necessary
- Two dewatering connectors on the flue gas collector form part of the standard delivery
- Load-bearing boiler cover for installation and maintenance supplied as standard; extendible to platform
- Greatest flexibility due to customer-specific design
- Approval according to European Pressure Equipment Directive 97/23/EC and TRD regulations, in conjunction with [German] trade association agreements

Vitomax 100-HS
1 to 6.4 t/h

The affordable Vitomax 100-HS can be employed in manufacturing industries, as well as meat processors, laundries, hospitals, the beverage industry (small breweries, dairies) and small-scale industrial concerns. It is the ideal boiler "for everyone who simply needs steam". Optionally, the high pressure steam boiler can be operated with light fuel oil (HEL), liquid gas, natural gas or bio gas.

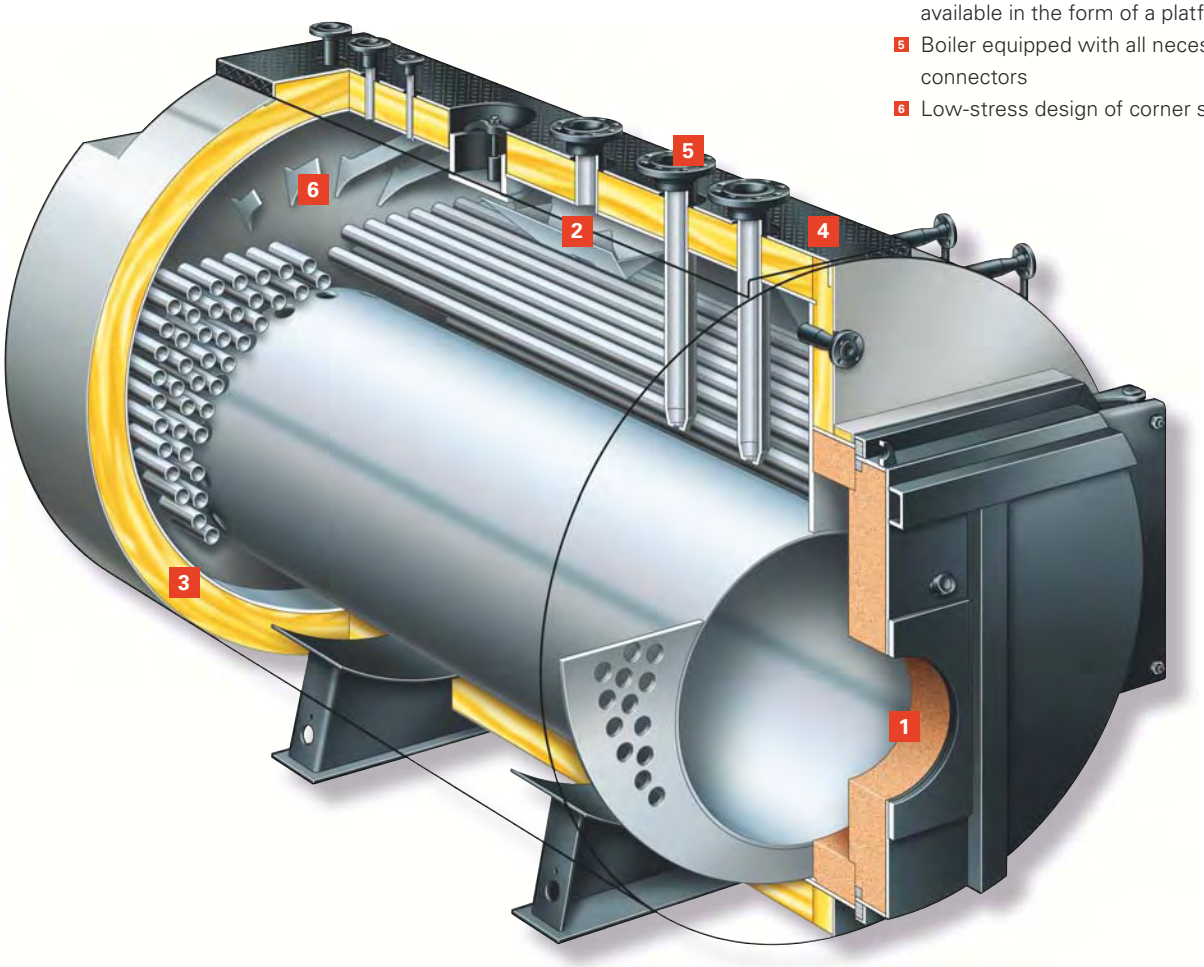
The permissible operating pressure extends from 6 to 16 bar. The output range extends from 1 to 6.4 tonnes of steam per hour.

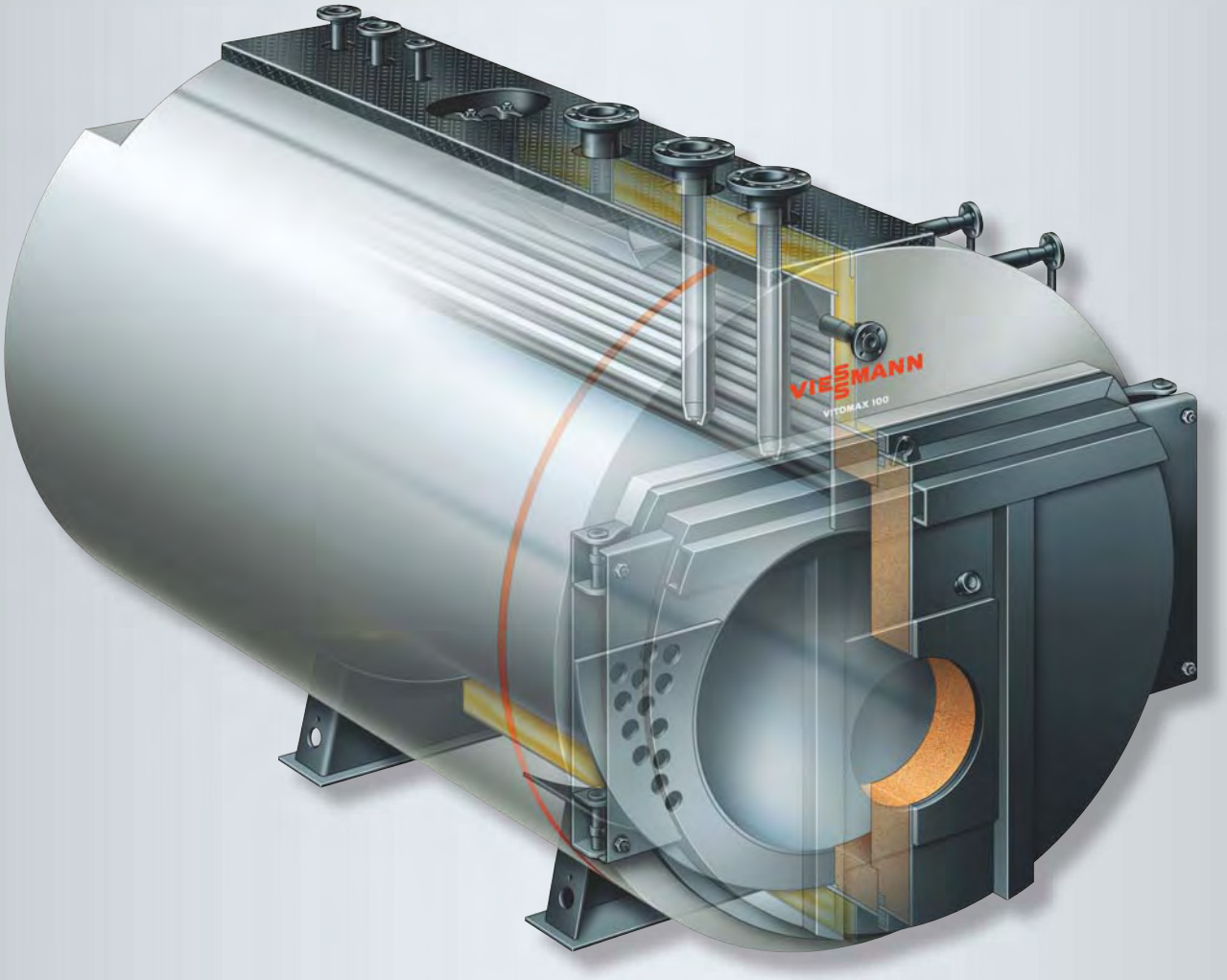
Reliable design
The spacing between the smoke tubes, as well as from the smoke tubes to the boiler shell and to the flame tube, are well above requirements. The shearing force on the end face floors caused by different linear expansion in the smoke tubes and the flame tube is therefore extremely low, guaranteeing a long service life for these steam boilers.

The corner stays of the boiler are always arranged in pairs. As a result, the forces are distributed throughout the component, reducing the stress and increasing the service life. In every case, the values lie well below the limits permitted by the FDBR trade association.

Vitomax 100-HS
Type M33A

1. Burner feed-through with flame tube to the rear
2. Steam drier
3. Generous thermal insulation (120 mm)
4. Load-bearing boiler cover (as option available in the form of a platform)
5. Boiler equipped with all necessary connectors
6. Low-stress design of corner stays





Vitomax 100-HS high pressure steam boiler

Downstream economiser

Take advantage of these benefits

- High pressure steam boiler with steam output from 1 to 6.4 t/h, irrespective of the fuel
- Pressure levels: 6, 8, 10, 13, 16 bar
- Reverse flame boiler without refractory lining
- Efficiency from 86.5 to 95 %
- Water-cooled flame tube mounting
- 120 mm thermal insulation
- Flame tube, in the form of a smooth or corrugated pipe depending on pressure level
- Generously sized flame tubes for clean combustion
- Generously sized steam chamber with low steam chamber load
- Integrated steam drier for high steam quality
- Corner stays arranged in pairs reduce stress in the component
- Longest possible inspection intervals due to low-stress design
- Easy to service due to numerous inspection and access ports
- Use in manufacturing industries, as well as meat processors, laundries, hospitals, the beverage industry (small breweries, dairies) and small-scale industrial concerns

High pressure
waste heat boiler

Vitomax 200-RS

VITOMAX 200-RS

High pressure waste heat boiler for the generation of high pressure heating water or high pressure steam.

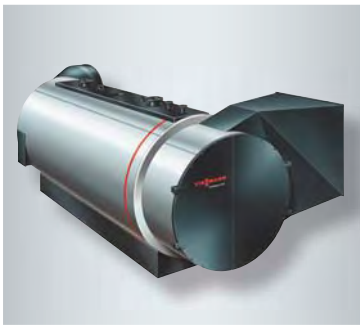
Waste heat boilers utilise the latent heat in flue gases from combustion processes or hot exhaust air flows from industrial processes to generate heating water or saturated steam.

Due to economic and legislative considerations, waste heat boilers are frequently used in conjunction with gas turbines and combined heat and power modules. The impact of rising energy costs, however, has also led to increased use of waste heat boilers to exploit the waste heat generated in industrial processes.

Viessmann waste heat boilers are available in two designs:

- **Waste heat boilers without additional combustion**
  Here, only the exhaust/flue gases/exhaust air is used for generating heating water or saturated steam.
- **Hot water or steam boilers with waste heat utilisation**
  These are conventionally fired boilers that make additional use of waste heat.

The boiler version used is dependent on customer-specific operating conditions.



VITOMAX 200-RS

Waste heat boiler for generating steam without additional combustion

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VITOMAX 200-RS

Waste heat boiler for generating steam with additional combustion

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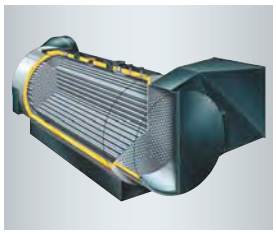
Single-pass waste heat boiler for two exhaust/flue gas sources, hospital in Budapest



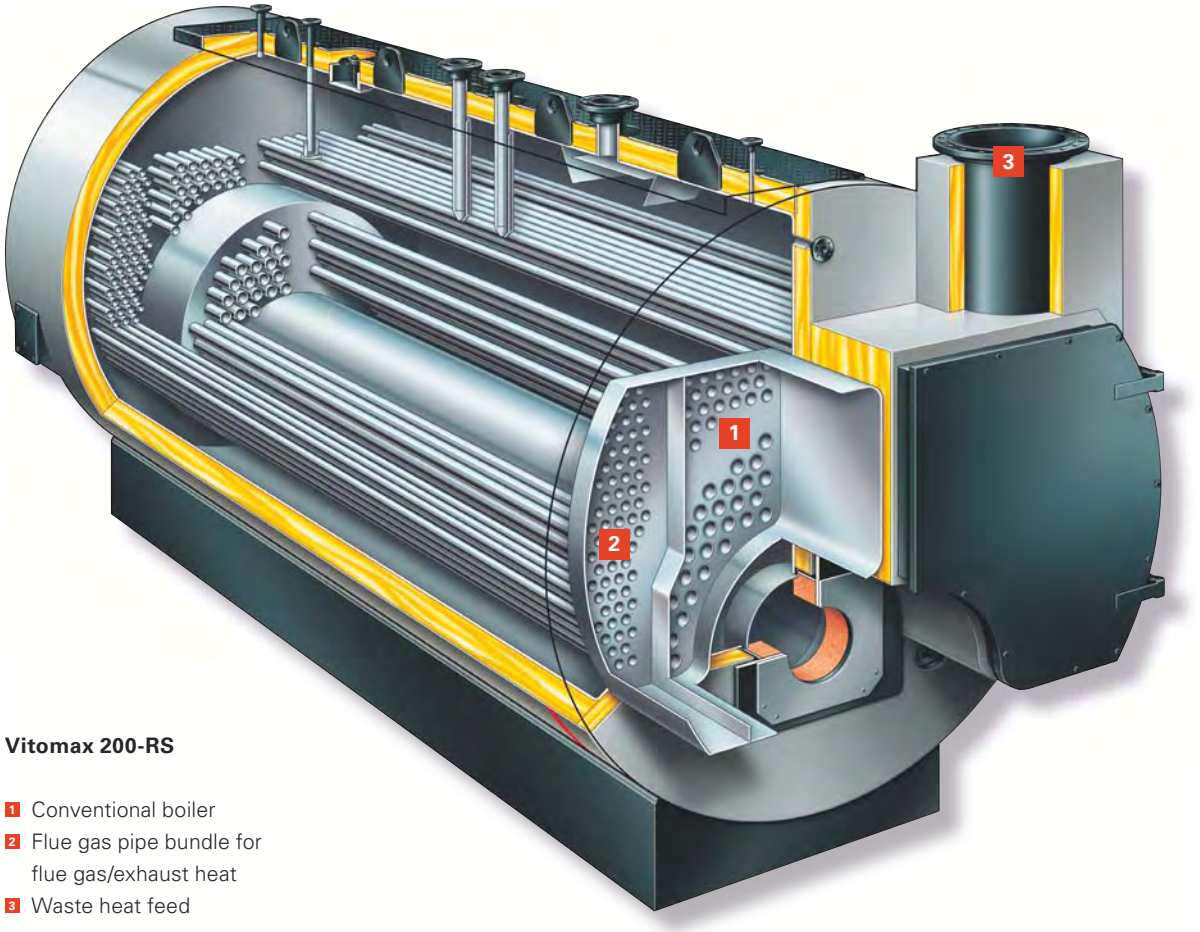
Waste heat boiler – shown here as a single-pass hot water boiler

Waste heat boilers from Viessmann are designed according to the flame tube/smoke tube boiler principle. Here, the hot flue gas is directed through pipe bundles, where its heat is transferred to the water inside the boiler body. Flue gas collectors are positioned on the inlet and outlet side of the waste heat boilers, where cleaning apertures are located and the flue pipes are connected.

By contrast, in flue gas heat exchangers, the water flows through pipe bundles while the flue gas flows around the pipes inside the heat exchanger housing. Flue gas heat exchangers are preferred when using "cooler" flue gases for generating domestic hot water.

To minimise radiation losses, the waste heat boiler is equipped with 120 mm composite thermal insulation encased in a painted sheet steel jacket.

Like all other Vitomax boilers, the waste heat boiler stands on a base frame that spreads the load over a large floor area.

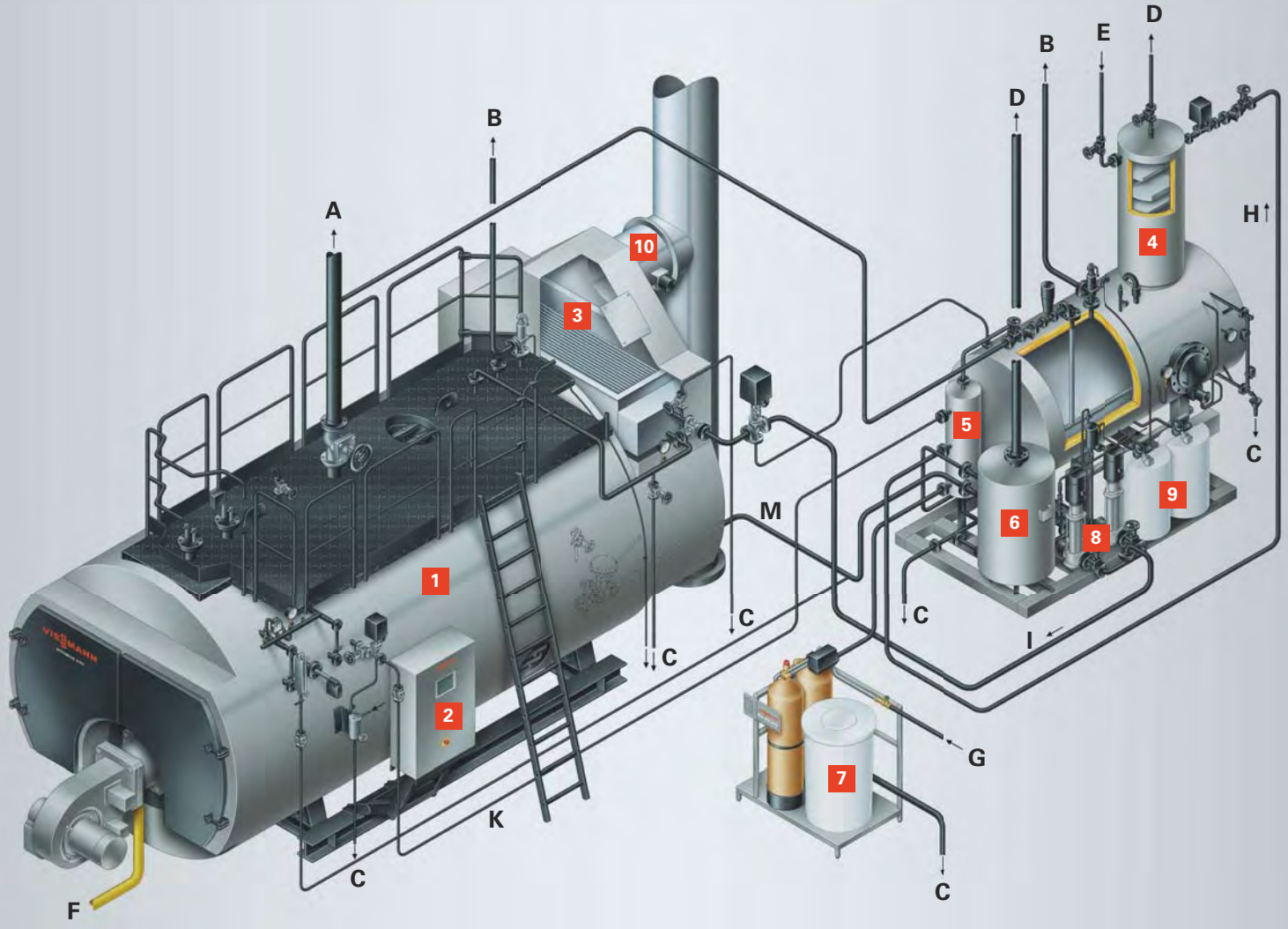


Vitomax 200-RS

1. Conventional boiler
2. Flue gas pipe bundle for flue gas/exhaust heat
3. Waste heat feed

Vitomax 200-RS steam boiler with waste heat utilisation at the Maribor hospital, Slovenia (6 t/h, 13 bar saturated steam)

Steam boiler with waste heat utilisation combined with a conventional steam boiler



Steam boiler system for generating saturated and/or superheated steam

1 Steam boiler
2 Control system (PLC)
3 Integrated economiser
4 Total thermal deaeration system
5 T.D.S. expander with heat recovery
6 Mixing cooler
7 Chemical water treatment
8 Feedwater pumps
9 Dosing stations
10 Flue gas damper

A Steam to the consumer
B Discharge pipe safety valve
C Ventilation and drain line
D Vapour line
E Condensate inlet
F Fuel feed
G Raw water inlet
H Softened water
I Feedwater
K T.D.S. line
M Blow-down line

Components of a steam boiler system

Steam generation requires a wide range of thermal equipment, aside from the steam boiler, for treating the feedwater or recovering energy, as well as pumps, burners and other fittings.

In contrast to hot water boilers, steam boilers are continuously supplied with chemically and thermally treated feedwater. Appropriate measures must be taken to remove substances that are harmful to the steam boiler so that the constituents of water, such as calcium, magnesium, oxygen and carbon dioxide, do not permanently damage the steam boiler over the course of time through pitting corrosion or limescale deposition, for example.

Furthermore, burners, fittings and pumps are required to feed the steam boiler with the necessary energy and supplies. A control system, based on a modular PLC, controls the boiler and activates other components if required. The interplay between all of these components forms a steam boiler system.

Feedwater pumps

Thermal equipment

Vitocontrol control panel

Comprehensive energy management

Vitocontrol control system for maximum performance and safety of the heating system

An essential part of the steam boiler system is its control technology. Here too, Viessmann calls consistently on the best technology available on the market. To ensure safe and convenient operation for you, we have developed a new generation of control panel technology: Vitocontrol.

Function
A programmable logic controller (PLC) regulates all boiler processes that are not relevant to safety. These include boiler steam output and water level control, as well as T.D.S. and blow-down control. If required, auxiliary equipment, such as dosing pumps, thermal water treatment, bypass dampers, flue gas dampers, etc., can also be controlled by the PLC.

All safety functions are implemented, in accordance with specific national requirements, by means of safety-compliant instrumentation and control equipment outside the PLC.

An auxiliary module, which is connected to the telephone network, enables remote monitoring to be conducted if required, with operational and fault messages sent automatically to a control centre. You can therefore communicate with the system from anywhere in the world. Updates, checks and optimisation are possible from any location.

The control program includes the functions of all boiler equipment versions. When retrofitting the respective devices, it is therefore simple for a Viessmann engineer to activate previously inactive functions on the user interface without additional programming.

Operation

The system is operated and programmed using a touch screen in the control panel door. This is equipped with a colour graphic user interface. The most important system measurements can be read at a glance from the standard screen. Orientation on the screen is made easier by the combination of pictorial representation and short texts. The system is well prepared for use in the respective country of destination. The appropriate national language can be selected directly on the user interface.

Messages

Operational and fault messages are issued in plain text in the selected language and recorded in a log file that can be exported any time. An Ethernet interface is available for connection to domestic automation and/or a SCADA system. A Profibus interface can be retrofitted as an option.

Benefits of the Vitocontrol control system at a glance:

- Ergonomic graphic user interface on a robust 10.4 inch touch panel
- Process data interface via Ethernet (optional Profibus)
- Modular design for system-specific extension
- Convenient due to complete integration of all system components
- High operational reliability
- Optional remote maintenance interface
- Multilingual
- Factory-tested
- Worldwide spare parts service

Detailed information relating to boiler parameters

Representation of the setting level for a feedwater control valve

A perfect system all round

Reverse osmosis system

Feedwater tank with thermal deaeration

Double-pendulum softening system from Viessmann

Any system is only as good as its weakest components. This is one principle that motivated Viessmann to select the system component supplied. Apart from demands for the highest quality and flexibility, it is of vital importance that the individual components are compatible with one another.

Whether for chemical or thermal water treatment, boiler control devices or safety assemblies, all components we supply are perfectly matched with each other in terms of their functions.

Depending on your individual requirements, and subject to freshwater quality and the amount of condensate, we can supply you with a module for water softening, chemical dosing and thermal deaeration. Depending on the water quality and the respective process, either double-pendulum softening systems, complete desalination systems or reverse osmosis systems are employed.

The benefits of excellent and reliable system technology are obvious: A fully automated operation can ensure that the operating mode of the boiler system is in line with requirements for any period you choose. This improves the steam quality and extends the service life of the boiler. One side effect that cannot be ignored is the significant reduction in running costs. Fewer T.D.S. and blow-down losses of boiler water mean less topping up with treated and heated feedwater.

Feedwater pumps
No compromise is accepted in the case of feedwater pumps either. Whether continuous feedwater control via control valves with pump spill back or the use of inverter-controlled pumps. We only work with renowned manufacturers.

Naturally, the pump is supplied as an assembly which includes all fittings and shut-off valves. This simplifies system design, installation and commissioning. We take responsibility for assigning the right pumps to each boiler, taking into consideration the required operating pressure. You will not be asked to concern yourself with such details.

Boiler platform
Our boilers are equipped as standard with a boiler cover, another feature that simplifies installation for you. Work on or above the boiler can therefore be completed with little effort and without damaging the boiler. The load-bearing boiler covers can easily be extended to a platform with railings and ladders. Our standard platforms comply with both German accident prevention regulations and the Machinery Directive.

Sound insulation
To reduce the level of pump and combustion noise, we supply sound insulation hoods and/or silencers and anti-vibration mounts as standard. These sound insulation measures can be extended on a system-specific basis with encapsulated combustion air fans, silencers for safety valve discharge lines, etc.

Vitomax 200-HS,
type M237 with boiler equipment

Boiler fittings

Attractive services for our trading partners

Installing the Vitomax by mobile crane

Transportation of a Vitomax boiler

Apart from a high steam output, commercial and industrial boiler technology also requires system solutions and services. Viessmann provides both: coordinated and flexible system components and experienced specialists, who offer competent advice. Vitomax boilers are also designed and built to order by our industrial/commercial boiler unit in Berlin, that is to say, specifically in line with customer and country-specific requirements.

Technology alone is not enough. Services in all product areas are becoming increasingly important, from finance to installing the boiler by mobile crane through to commissioning and maintenance of the boiler system.

Viessmann commercial and industrial boiler technology – everything from a single source

Viessmann commercial/industrial boiler technology from Berlin/Brandenburg and from your local Viessmann representative meets all the requirements for solution-oriented collaboration.

- Consultation – comprehensive and competent
- Manufacture – according to country-specific requirements with short delivery times
- Equipment – safety accessories, burners, control panels, boiler platforms, flue gas/water heat exchangers, water treatment systems (both chemical and thermal), flue gas components
- Transportation and installation – with a mobile crane and a team of specialists
- Training and induction – at the Viessmann Information Centre in Berlin and locally in your region
- Commissioning – worldwide by specialist engineers
- Service – from a qualified technical service team

The Viessmann Information Centre and hospitality complex in Berlin further demonstrates our company philosophy. In this facility, designers, heating contractors and operators are trained in preparation for the operation of their industrial/commercial systems. The close proximity of this centre to our production facility in Mittenwalde allows guests to follow every stage of the manufacturing process on site.

Viessmann Information Centre in Berlin

Training and induction

Viessmann industrial services

Service engineers in action

Aside from reliability, system-specific solutions, optimum settings and environmental responsibility, many kinds of services around the boiler operation are demanded from advanced commercial and industrial boiler technology.

Viessmann industrial services provide you with competent specialist personnel worldwide to take care of all your concerns. We are there for you with technical expertise and advice, whether your concern relates to an existing or a new system.

Our scope of services for all makes of shell boiler encompasses:

- Steam boilers
- Hot water boilers
- DHW and industrial boilers
- Waste heat boilers

Our services include:

- Commissioning
- Maintenance services
- TRD inspection/annual service
- Boiler cleaning (dry and chemical)
- Burner maintenance
- System maintenance
- Checking the water system and chemical consistency
- Preparing the boiler for internal inspection
- 24 hour emergency service (requires a maintenance contract)

Boiler inspections
- Internal inspections in cooperation with the responsible inspectors/monitoring body
- Pressure tests in cooperation with the responsible inspectors/monitoring body

Repairs
- Welding work on boilers
- Control panel conversions
- Enhancement and extension of systems to 72 h unattended operation (72 h BosB)

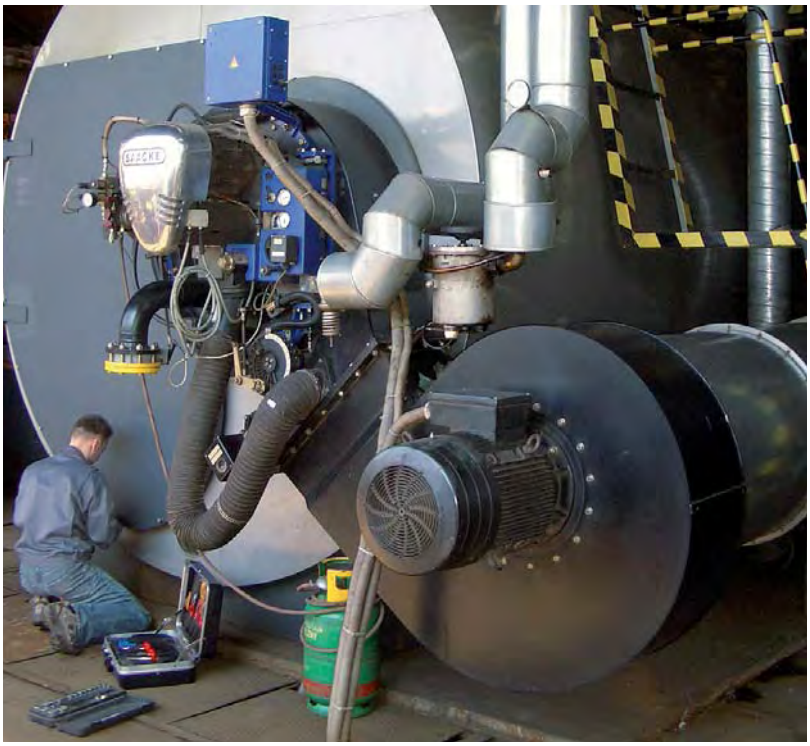
Analyses
- Camera inspections (boiler surveys)
- Sound measurements and thermography
- Analysis and assessment of water quality

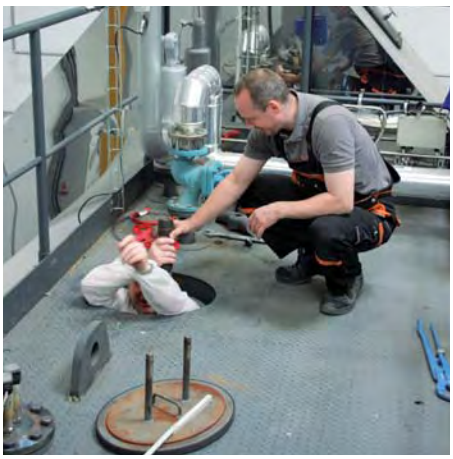
Service
- Training your operating personnel
- Advice

Our tip

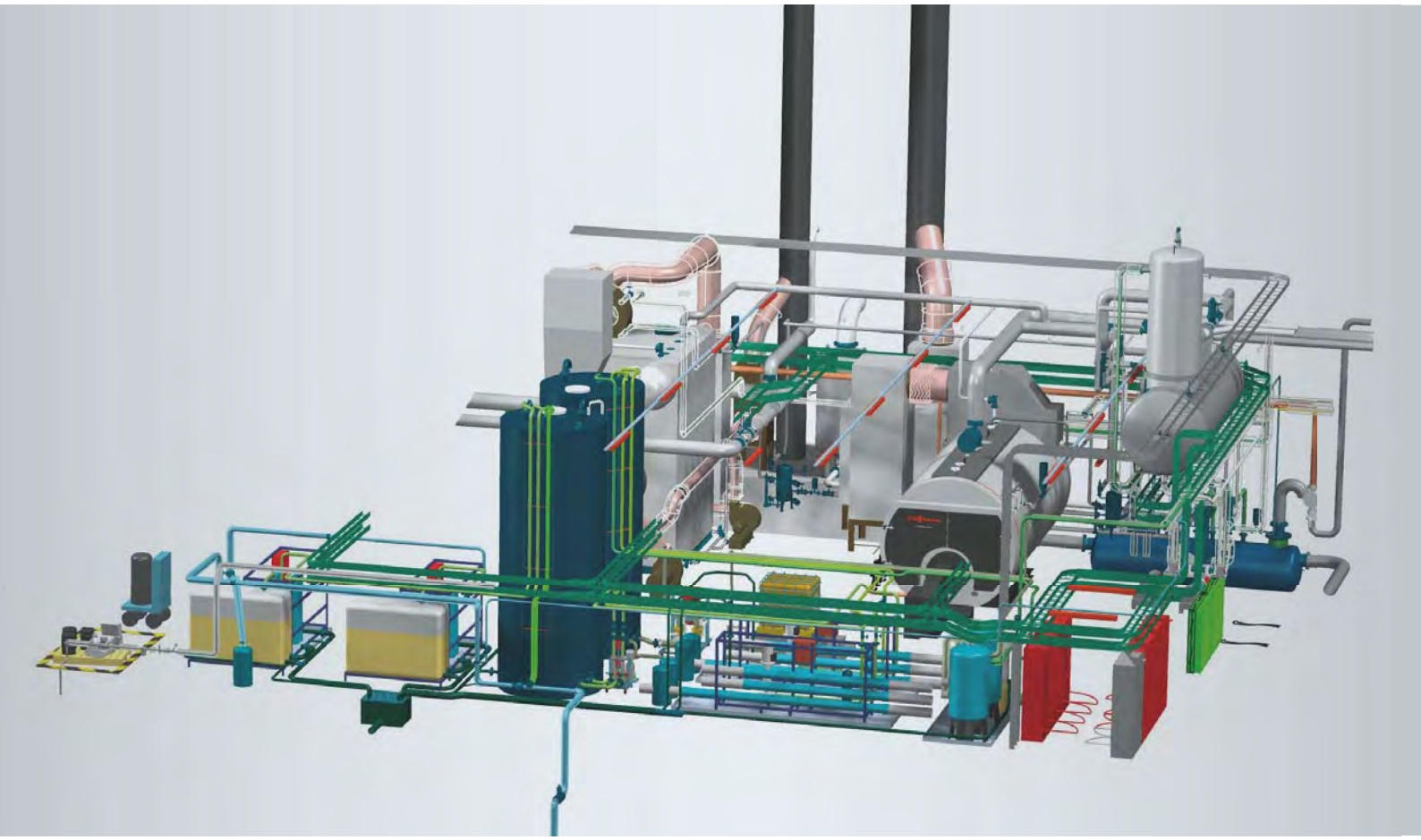
Regular inspections and maintenance assure you optimum availability as well as long-term value retention for your system.

Rational use of energy is not only beneficial to you as the user, but also to our environment.





Boiler undergoing maintenance



3-D boiler room planning

Vitodesk – software expertise from a single source

Vitodesk is the complete software support package for heating contractors, design engineers and architects. All programs support automatic data exchange.

Vitodesk 100
Vitodesk 100 is the free data service from Viessmann. It enables users to select Viessmann products for use in planning and tendering.

Vitodesk 200
Vitodesk 200 is tailored to the engineering and sizing of smaller and medium-sized projects. It is divided into three areas: RES (renewable energy systems), sanitary/heating and air conditioning.

Vitodesk 300
Viessmann has derived its own OEM version from the industry standard AutoCAD program. Apart from the main functions of the full version, this software package offers numerous additional assistants that make engineering and presentation even more convenient and efficient.

Complex heating centres can be designed much more efficiently and precisely with this 3-D program than with conventional software tools. With the help of the 3-D boiler room planning program, you can see in advance, whether the system will fit into the existing boiler room together with all required components. Hence errors can be avoided during the planning phase.

The program assistants not only support you in creating the pipework design, but also provide tools for to-scale engineering of distributors and tanks. The necessary cross-sections and views plus all labels can be created on the design and are updated automatically in the event of changes.

Product management runs unobtrusively in the background. This enables detailed output of bills of material, up to and including the cutting list. With the support of rendered diagrams, the system can be clearly and professionally presented, providing clear benefits prior to order placement.

Clever software supports design engineers and trade experts alike in realising their projects

Advanced construction and manufacturing methods ensure high quality

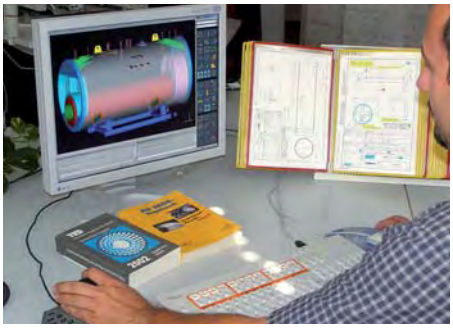
Welding the pressure vessel in the optimum welding position

The commercial/industrial boiler systems are manufactured in Berlin/Brandenburg. Specialist engineers provide consultation and project management tailored to your individual requirements.

Alongside industrial boiler manufacture with advanced production systems, such as welding robots, flexible manufacturing systems with CNC machines, laser and plasma cutting and blanking tools, the facility has its own research and development department.

Stresses are analysed using finite element calculation methods, assisting in the optimisation, for example, of pipe layouts or welded joints. These all support and ensure design in compliance with relevant regulations.

Our production technology meets the requirements of all conventional, specific national regulations. Furthermore, we make great demands of the materials used and their processing. In addition to regulations, for example, our welders are subject to supplementary monitoring. Delivery conditions to restrict tolerances and material properties beyond standard levels are also agreed with our suppliers.



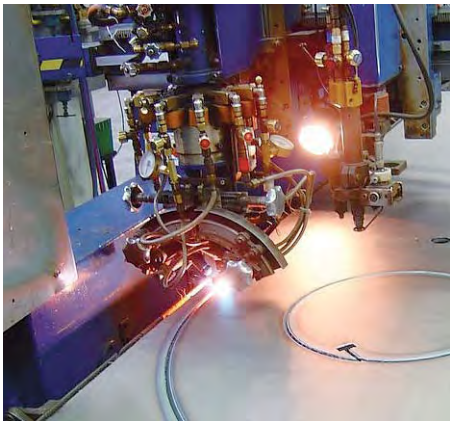
A sufficient number of large cleaning and access ports are located on all Viessmann high pressure hot water, high pressure steam and low pressure steam boilers

Our design philosophy is based on the principle of keeping the impact of boiler load as low as possible. At the same time, particular attention is paid to ensuring low-stress design. This is achieved, for example, by large expansion clearances between components themselves and their relative wall thickness.

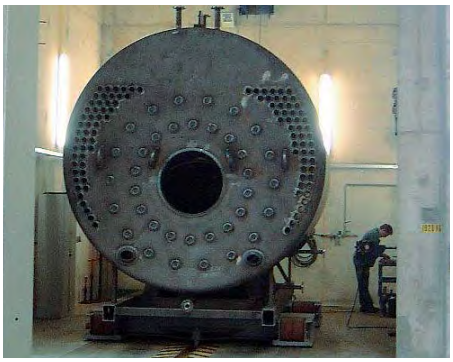
The Vitomax commercial/industrial boilers are manufactured in small batches or are made to order. At the end of production, all boilers are subjected to a pressure test of at least 1.85 x operating pressure, in accordance with the Pressure Equipment Directive.

In accordance with specific national regulations, weld seams are subjected to non-destructive testing with ultrasound and X-ray methods.

Welding the smoke tube with mechanical welding equipment



CNC flame-cutting machine with bevel cutter



X-ray chamber

Reference systems around the world

Top references – top technology from Viessmann in prime locations

L.I.F.E. pharmaceutical plant B. Braun Melsungen AG: Two Vitomax 200-HS high pressure steam boilers deliver up to 40 t/h for the production of infusion solutions

Every day Viessmann commercial/industrial boiler systems face up to a wide variety of challenges around the world. Whether in listed buildings, modern industrial complexes or extensive residential and/or industrial areas: Viessmann takes care of them all.

Products from the comprehensive Viessmann range satisfy every demand and provide solutions for every requirement: for oil, gas, wood, solar collectors and heat pumps – from 1.5 to 20,000 kW. And they set benchmarks in terms of operational reliability, ease of operation, environmental protection and durability.

Steam boiler with superheater at Klaipedos Kartonas, Lithuania

Vitomax 200-HS high pressure steam boiler in a commercial nursery

Vitomax 200-HS, 4 t/h, 16 bar, StoVerotec, Germany

Steam boiler at AZM Asur, Belgium

Steam boilers at the General Hospital of the Peoples Liberation Army in Beijing, China

Steam boilers at Sanovel in Istanbul, Turkey

Steam boilers at the Rivolta Carmignani textile plant in Milan, Italy

Vitomax 200-HS producing 10 t/h, 13 bar, Emmi dairy in Lucerne, Switzerland

Steam boiler in Göttingen, Germany

MAWERA

VIESMANN Group

Mawera –
Wood combustion systems up to 13,000 kW

Mawera, the Austrian biomass specialist for wood combustion systems from 110 to 13,000 kW, is a member of the Viessmann Group. Mawera contributes products from the biomass sector for industrial, commercial and municipal customers to the comprehensive product range.

From boilers to fuel discharge and fuel supply systems, Mawera products are suitable for all types of wood. All system components are supplied from a single source. The various combustion systems are outstanding and can be charged with all types of wood fuel.

Turnkey systems from a single source
Mawera supplies commercial customers with turnkey systems from a single source:

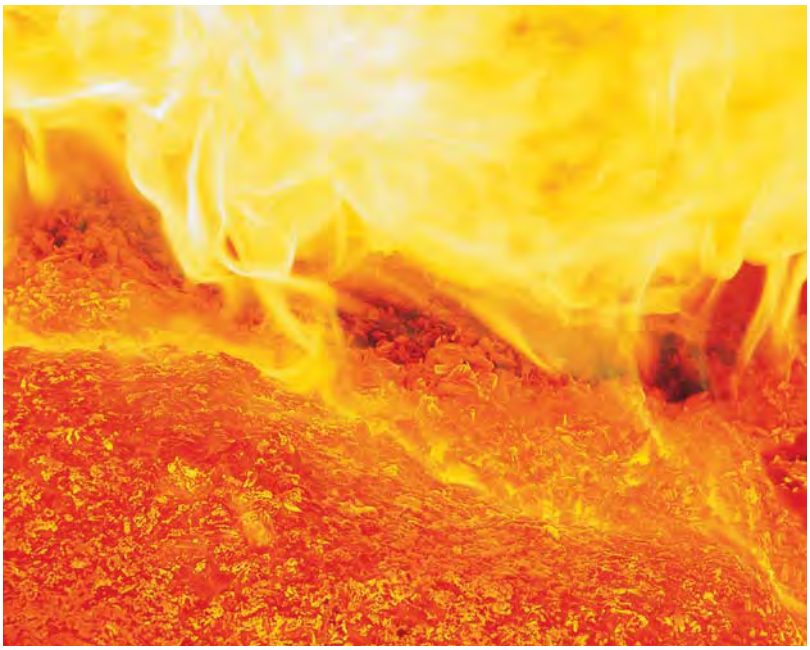
- Combustion systems
- Water and steam boilers, thermal oil heater heat exchangers
- Fuel discharge
- Supply systems
- Flue gas particulate removal
- Chimneys
- Instrumentation & control systems
- Shredders
- Accessories

Wood combustion
An ever increasing number of industrial and commercial enterprises – not only from the world of wood processing – are turning to wood for fuel. It is subject to lower price fluctuations than fossil fuels, it need not be imported and, as a renewable and CO_2-neutral energy source, it makes a major contribution to environmental protection and sustainability.

The Mawera Pyroflex FSB and Pyroflex FSR are used as the wood combustion system (combustion chamber with flat moving grate) in steam generation systems. The essential difference between the Pyroflex FSR and the Pyroflex FSB is the volume of the combustion chamber and the size of the grate, whereby the Pyroflex FSB represents the more compact wood combustion system. Due to the inertia of combustion, the quantity of steam present in the boiler must be shut down using a separate valve in the case of quickly responding steam consumers.

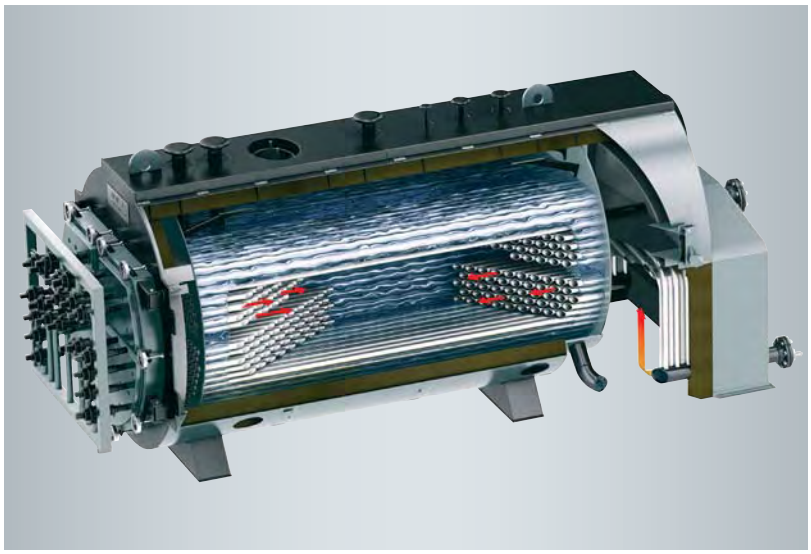
Structure and function
The Pyroflex with flat moving grate is not only suitable for the combustion of biomass, but also in particular for burning special fuels with an elevated ash content or fuels containing a high proportion of foreign matter, e.g. sand, metal residues, etc.
The major benefits of Pyroflex flat moving grate combustion are, on the one hand, its ability to use different biogenic fuels and, on the other hand, a lower particulate content in the flue gas, due to the static fuel bed.

Low NO_x reduction technology
The combustion chamber is supplied as standard with low NO_x reduction technology for fuels with a high nitrogen content.
The low NO_x combustion chamber is a two-stage combustion chamber with an air stage for reducing NO_x emissions. In addition, this effect is amplified by the use of a flue gas recirculation system. The geometry of the combustion chamber in the reduction zone (primary zone) and the oxidation zone (secondary zone) was developed by means of fundamental research on a test system.



View into the combustion chamber of the Mawera Pyroflex

Fuel types (wood fuels)



Mawera high pressure steam boilers

Wood fired high pressure steam boilers
The high pressure steam boilers from Mawera, with an operating pressure from 6 to 25 bar, can be used in combination with flat moving grate combustion systems, Pyroflex FSB (combustion output: 1000 to 2000 kW) and Pyroflex FSR (combustion output: 1000 to 15,300 kW).

The boiler is designed as a 2-pass boiler with cooling shield. The heat transfer is split as follows:
1st pass approx. 80 percent
2nd pass approx. 20 percent

The design of the Pyroflex FSB and Pyroflex FSR steam boilers are characterised by the following special features:

- Modular construction – may be used for the wood combustion systems Pyroflex FSB and Pyroflex FSR
- The boilers can be sited either directly on top of the combustion chamber or freestanding
- Lowest thermal stresses through the design incorporating a cooling shield
- Simply geometry of the pressure-bearing parts
- Low running costs through 2-pass design (low pressure drop on the flue gas side)
- Low radiation losses through 120 mm thick thermal insulation
- Large steam chamber and large evaporator, as well as integral mist collector, for improved steam quality
- The load-bearing cover on top of the boiler is part of the standard delivery and simplifies the maintenance, as well as protecting the thermal insulation against accidental damage
- Alternatively with a boiler control platform
- A pneumatic cleaning system is available to extend the cleaning intervals

Steam output in t/h combines with ECO at a feedwater temperature of 102 °C

Pressure stage [bar]*	Rated output [kW] (boiler with ECO)												
	850	1100	1400	1700	2100	2600	3300	4200	5200	6500	8000	10000	13000
6	1.31	1.69	2.15	2.62	3.23	4.00	5.08	6.47	8.01	10.02	12.33	15.41	20.04
8	1.30	1.68	2.14	2.60	3.22	3.99	5.06	6.44	7.98	9.97	12.27	15.34	19.95
10	1.30	1.68	2.14	2.60	3.21	3.97	5.04	6.42	7.95	9.94	12.23	15.29	19.88
13	1.29	1.67	2.13	2.59	3.20	3.96	5.03	6.40	7.92	9.91	12.19	15.24	19.82
16	1.29	1.67	2.12	2.58	3.19	3.95	5.01	6.38	7.90	9.88	12.16	15.20	–
18	1.29	1.67	2.12	2.58	3.19	3.94	5.01	6.38	7.89	9.87	12.15	–	–
20	1.29	1.66	2.12	2.58	3.18	3.94	5.00	6.37	7.89	–	–	–	–
22	1.28	1.66	2.12	2.57	3.18	3.94	5.00	6.37	–	–	–	–	–
25	1.28	1.66	2.12	2.57	3.18	3.94	–	–	–	–	–	–	–

* Safety valve response

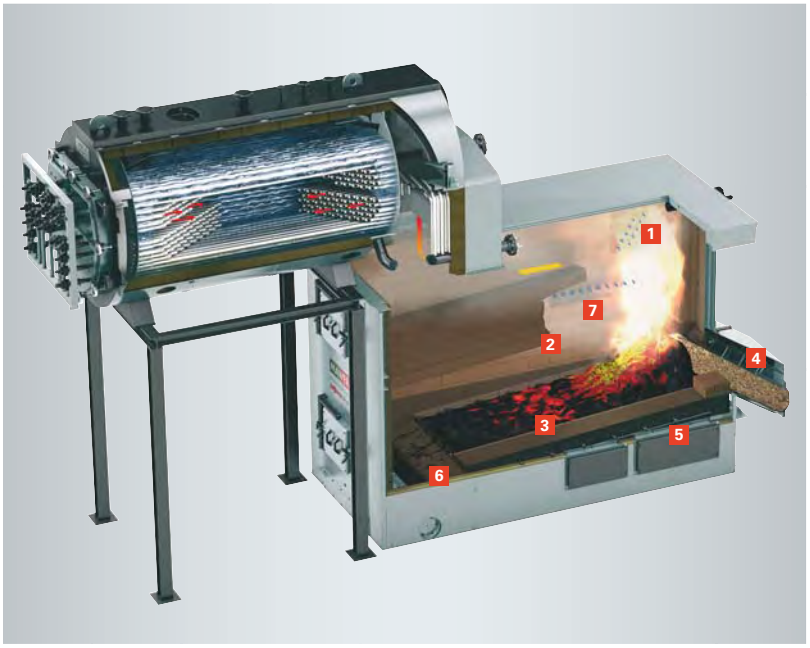
Fuel discharge/transport
Mawera push rod or silo discharge systems are used to discharge fuel from a silo or bunker. Subject to structural conditions on site and the fuel grain size, chain conveyors, push rods or pipe discharge screw conveyors can be used to transport fuel.

Flue gas particle scrubbers
Multi cyclone scrubbers are used as flue gas particle scrubbers. These achieve flue gas particle values of – subject to fuel – < 60 to < 150 mg/Nm^3 (reference oxygen content 11 or 13 %). Fabric filters or electrostatic filters are used, subject to fuel, to achieve clean particle values from 10 to 50 mg/Nm^3.

Mawera Logic
The Mawera Logic microprocessor controller with touch screen regulates the system. In addition, a modem for remote maintenance, a process management system (MaVis) and an emergency telephone device are available.

The design of the Pyroflex flat moving grate is characterised by the following special features:

- Minimised radiation losses through the complete thermal insulation of the entire boiler system
- The static ember bed causes substantially lower emissions
- Flame temperature control with integral, adapted residual oxygen control
- Advanced microprocessor controller regulates the system with automatic capture of the fuel moisture content and modulation from 25 to 100 % load, whilst staying within the specified emission limits
- Regulated burnout through flat moving grate split into 2 or 3 sections operating at different speeds
- High wear resistance through generously sized grate surface, plus water cooling when using the hydraulic slider
- Overlapping pre-tensioned grate rods ensure little fuel falls through the grate; constant automatic ash removal



1 Secondary air injection nozzles
2 Low NO_x combustion chamber
3 Flat moving grate
4 Fuel supplied via hydraulic slider or screw conveyor
5 Primary combustion air routing
6 Automatic ash removal from the combustion chamber
7 Flue gas recirculation via the grate

Sectional view of the Pyroflex FSB flat moving grate combustion system

The comprehensive range of products and services from Viessmann

Individual solutions with efficient systems

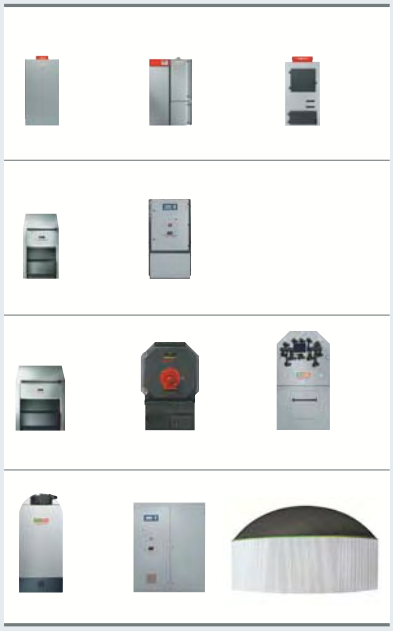
The comprehensive range of products and services from Viessmann
The comprehensive range of products and services from Viessmann offers individual solutions with efficient systems for all applications and all energy sources. As environmental pioneers, the company has, for decades, been supplying particularly efficient and clean heating systems for oil and gas, as well as solar thermal systems along with heat generators for sustainable fuels and heat pumps.

The comprehensive range of products and services from Viessmann offers top technology and sets new benchmarks. With its high energy efficiency, this range helps to save heating costs and is always the right choice where ecology is concerned.

Individual and efficient
Viessmann offers the right heating system for any demand – wall mounted or floorstanding, in individual combinations – all are futureproof and economical. And whether for detached houses or two-family homes, large residential buildings, commercial/industrial use or for local heating networks; for modernising existing properties or new build – they are always the right choice.

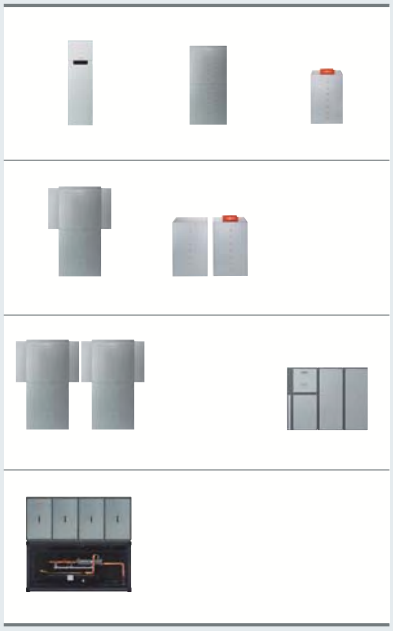
Wood combustion technology, CHP and biogas production

4 – 13,000 kW

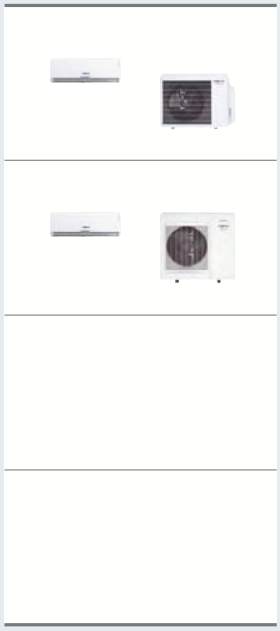


Heat pumps for brine, water and air

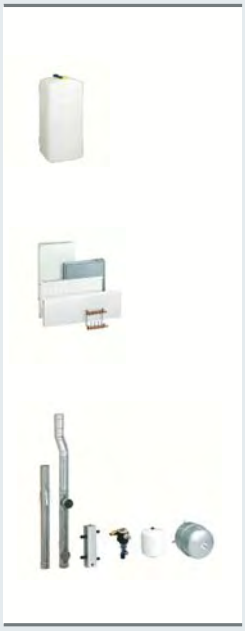
1.5 – 2000 kW



Air conditioning technology



System components



The comprehensive range of products and services from Viessmann: Individual solutions with efficient systems for all energy sources and applications

Key performers

The Viessmann Group sets the technological pace for the heating industry. This is what the Viessmann name represents, and also what the names of the subsidiaries in the Group represent, as they are founded on the same pioneering spirit and power of innovation.

The company offers the following:

- Condensing technology for oil and gas
- Solar thermal systems
- Heat pumps
- Wood combustion systems
- CHP modules
- Biogas plants
- Services

Viessmann is extremely highly specialised in all these market segments, yet at the same time the company has a crucial advantage over specialist suppliers: Viessmann understands heating technology as a systematic whole and offers unbiased advice on technology and fuel type. This guarantees the best solution for every application.

Viessmann Group

VIESMANN
KWT
KÖB
MAWERA
ESS
BIOFERM
Schmack
Carbotech

The comprehensive range of products and services from Viessmann

	Detached houses	Apartment buildings	Commerce / Industry	Local heating networks
Oil low temperature and condensing technology 13 – 20,000 kW	 Architect's own home, Bad Füssing, Germany	 Residential development Zi Wei Garden Xi'an, China	 Ameco A380 Hangar Beijing, China	 European Parliament, Strasbourg, France
Gas low temperature and condensing technology 4 – 20,000 kW	 Detached house, Kevelaer, Germany	 "Wohnoase" residential park in Regensburg, Germany	 Porsche Leipzig, Germany	 European Parliament, Brussels, Belgium
Solar thermal and photovoltaics	 Heliotrop Freiburg, Germany	 HafenCity Hamburg, Germany	 City of Tomorrow, Malmö, Sweden	 The Palm Jumeirah, Dubai
Wood combustion technology, CHP and biogas production 4 – 13,000 kW	 Detached house, Wiesloch, Germany	 Hotel Lagorai Cavalese, Italy	 Congressional Centre, Brunstad, Norway	 Monastery St. Ottilien, Germany
Heat pumps for brine, water and air 1.5 – 2,000 kW	 Loftcube Regional Garden Show, Neu-Ulm, Germany	 Studio flats, Brandenburg, Germany	 University library, Bamberg, Germany	 Residential estate, Pfäffikon, Switzerland

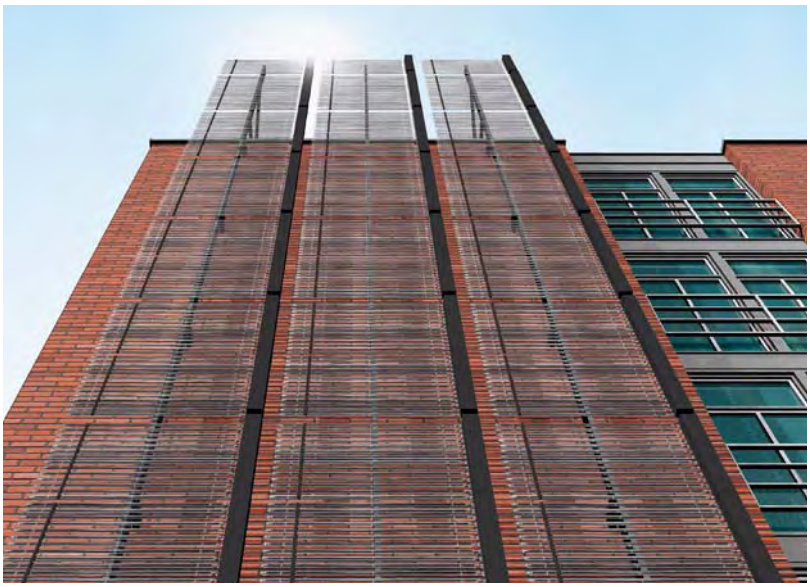
The comprehensive range of products and services from Viessmann:
Individual solutions with efficient systems for all energy sources and applications

Futureproof heating technology for all requirements

Energy consumption worldwide has doubled since 1970 and will triple by 2030. The result: The fossil fuels, oil and gas, are dwindling, energy prices are on the rise and excessive CO_2 emissions continue to affect our environment. Energy efficiency is a must if we want our future to be secure.

In almost every industrial nation, supplying heat to residential and commercial buildings accounts for the largest share of energy consumption – consequently it also offers the greatest savings potential. Advanced efficient heating systems from Viessmann are in use around the world, not only in many private households, but also in numerous major international projects, where they make a sizeable contribution to the efficient use of energy resources.

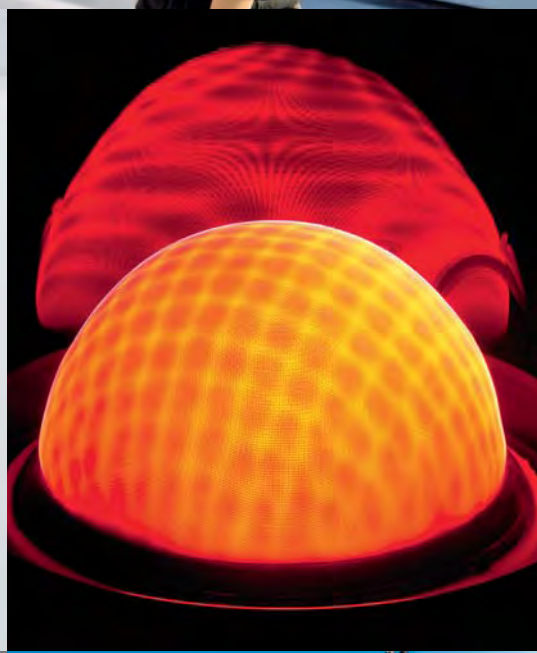
In these projects, Viessmann again and again faces up to the most varied challenges to supply efficient heating technology by offering innovative solutions – in historical listed buildings as well as in modern industrial complexes or in the large-scale residential and industrial arena.



City of Tomorrow, Malmö, Sweden


VIESMANN


VIESMANN
VITOLADENS 300




Naturwärme


Audi
VIESMANN
VIESMA
Clima

Viessmann – climate of innovation

The Viessmann brand promise concisely expresses all that we hope to achieve. It is our key brand message and, together with our brand label, is an identifying feature throughout the world. "Climate of innovation" is a promise on three levels: It is a commitment to a culture of innovation. It is a promise of high product utilisation and, at the same time, an obligation to protect the environment.

Comprehensive range of products and services for all fuel types
Viessmann is one of the leading international manufacturers of heating systems and, with its comprehensive range of products and services, offers individual solutions in the shape of efficient systems for all applications and types of fuel. As an environmental pioneer, the company has been supplying particularly efficient and clean heating systems.

Acting in a sustainable manner
For Viessmann, to take responsibility, means a commitment to act in a sustainable way. This means bringing ecology, economy and social responsibility into harmony with each other, ensuring that current needs are satisfied without limiting the basis for life for the generations to come.

Efficiency Plus
With the sustainability project "Efficiency Plus" Viessmann shows at its Allendorf site, that the political goals set for 2020 with regard to climate and energy can already be achieved today with commercially available technology.

This project demonstrates:
- Environmental protection
- Efficiency with resources
- Securing manufacturing sites for the future

As a result, fossil fuels have been cut by 40 percent and CO_2 emissions reduced by a third.

Effizienz Plus

Viessmann won the German Sustainability Award 2009 for its commitment to climate protection and efficient use of resources.

For the particularly efficient utilisation of energy through the innovative heat recovery centre at the company's main site in Allendorf/Eder, Viessmann was rewarded with the Energy Efficiency Award 2010.

Viessmann Werke GmbH & Co. KG

Company details
- Established in: 1917
- Employees: 9000
- Group turnover: €1.7 billion
- Export share: 50 percent
- 16 factories in Germany, France, Canada, Poland, Hungary, Austria, Switzerland and China
- Sales organisation in 37 countries
- 120 sales offices worldwide
- 3 service providers

Performance spectrum
- Condensing technology for oil and gas
- Solar thermal systems
- Heat pumps
- Wood combustion systems
- CHP modules
- Biogas plants
- Services

VIESMANN

climate of innovation

The Viessmann Group
D-35107 Allendorf (Eder)
Telephone +49 6452 70-0
Fax +49 6452 70-2780
www.viessmann.com

Viessmann Werke Berlin
Kanalstraße 13
D-12357 Berlin
Telephone +49 30 6602-300
Email: Vitomax@viessmann.com

Your heating contractor:

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