



Efficient technology for major tasks

Hot water boilers



BOSCH

Invented for life



Introduction

Bosch Industriekessel offers you shell boiler systems for all applications. Our boilers are not only used successfully in industrial companies, they also offer many advantages to smaller businesses and service companies, as well as in office buildings and residential blocks.

Today we are part of the worldwide Bosch Group and the expertise centre of Bosch Thermotechno-logy for large-scale and industrial boiler systems. Up until the middle of 2012 the systems were sold

and distributed under the LOOS brand name, now we have consolidated our strengths and we sell our products under the Bosch brand name.

This brochure gives you a detailed overview of our range of products and services for hot water boilers. Above all however, the following pages clarify what is particularly important to us at Bosch Industriekessel: the perfect fulfillment of your individual wishes.

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Up to 1500 large-scale and industrial boiler systems are produced annually at our highly modern production sites in Gunzenhausen in Germany and in Bischofshofen in Austria.



Expertise and trust

Bosch Industriekessel is a renowned specialist worldwide for boiler systems of all sizes and performance categories. For over 140 years we have been providing innovation in industrial boiler construction.

Technical pioneering spirit which sets standards

Benefit from experience and the power of innovation: since our founding in 1865 we have specialised in industrial boiler construction and achieved extensive specialist know-how. Strength of innovation, quality awareness and efficiency are the benchmarks for our product range and services. We have become a leader on the basis of this high degree of specialisation.

Reliable energy for the whole world

More than 100 000 boiler systems supplied in over 140 countries are clear evidence of the high quality and reliability of our industrial boilers. We will be pleased to supply you on request details of our numerous references. You will find our systems in practically every branch of industry – among others in the drinks, food, building, chemical, textile and paper industries. Global players such as Coca Cola, BASF, Siemens, Ytong, Heineken, Nestle and Esso rely on our innovative steam and hot water boilers as the local producer next-door.

Industrial boilers with signature and seal

Our highly modern production facilities ensure that our systems have a quality advantage, which is confirmed by the official quality seals of almost all the approval bodies and certification institutes in the world.



To the optimum solution through partnership

Trust and openness between partners are the most important preconditions for mutual success. As a leading manufacturer of innovative boiler technology, we decided early on to distribute our products through specialised companies. Thanks to close cooperation with your particular specialist company, you achieve the optimum solution for your special requirement.

Environment and efficiency

As a responsible and innovative boiler manufacturer, we systematically focus on environmental protection and saving of resources. Our sustainable and efficient systems keep CO₂ emissions low and contribute to a reduction in climate change.

Highest level of efficiency

We were one of the first manufacturers to equip flame tube/smoke tube boilers of all sizes with integrated flue gas heat exchangers in the factory. The heat contained in the flue gases is recovered and the efficiency increased in this way by up to 7 % in dry-running operation and up to 15 % in condensing operation. With our modular designed boiler house components additional energy potential can be used and they also make assembly on site easier and ensure safe operation of your system. All modules are pre-assembled ready to be installed and optimally suitable for retrofitting.

Lowest emissions

Our boiler systems are suitable for liquid and gaseous fuels. The modern burner systems comply without any problems with the guidelines in all countries regarding the prevention and reduction of emissions. A completely neutral CO₂ level can be achieved through the use of bio-oils or bio-gases.

Perfectly controlled, less consumption

Intelligent control and regulating systems provide further opportunities for energy saving. With the system control SCO all boiler controls as well as individual module controls can be combined into a universal management system. This opens up many new possibilities for more efficient use of the entire boiler system. Burner fans reduce the electrical power consumption enormously at times of partial loading. The modern burner systems, controlled by oxygen or carbon monoxide levels, provide for combustion of the highest possible efficiency thanks to minimal excess air levels.

Investments which pay off

With our highly efficient boiler systems and the appropriate boiler house components it is possible to significantly reduce energy consumption and emissions. Through the reduction in running costs a new boiler system is usually amortised in a very short period of time. You save money and the environment at the same time. Are you already thinking about modernising or replacing your boiler system? We would be pleased to advise you!

Our boiler systems are perfectly matched to your requirements. This saves not only natural resources but your financial resources as well.



Modular quality

Reliability and long service life are particular characteristics of Bosch boiler systems.

The high quality of our systems is guaranteed by the most modern production machines, strict quality controls and by continuous improvements and innovations..

Perfectly matched to each other

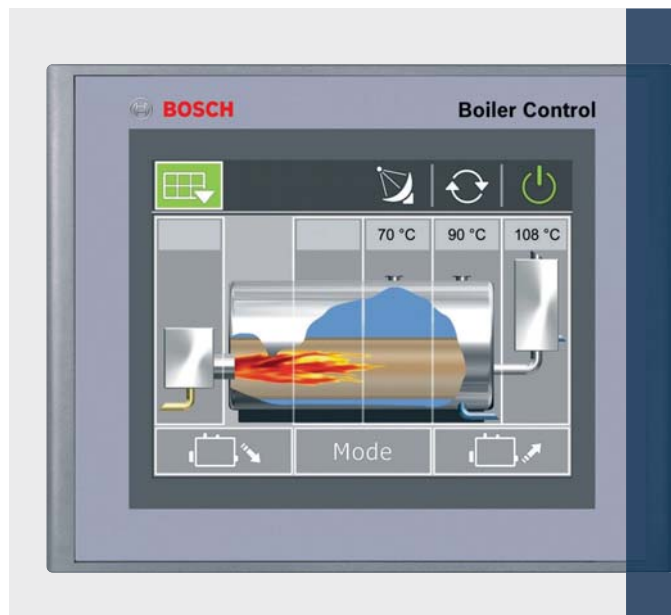
A boiler system tailored to your requirements is a foundation stone on which you can sustainably ensure the competitiveness of your company. We also offer you modular and universal solutions through our complete boiler delivery programme. The sizing and equipment level of the products are designed to individual customer specification with many different options and variants available. The high manufacturing quality guarantees easy and smooth acceptance.

Intelligently controlled

All boiler systems can be equipped with intuitive touchscreen controls. The coherent operating logic with integrated protection functions guarantees a fully automatic operation of the boiler systems. Efficient bus system technology ensures the intelligent networking of the individual modules and enables easy connection to higher-level management systems. For instance the control units of our systems are already laid out for the use of our cost-effective Teleservice.

High performance in a system alliance

Alongside innovative boiler system technology, the ideal energy concept frequently includes additional important components such as combined heat and power, heat pumps or solarthermics. As a company within the Bosch Group we have access to an extensive range of additional system solutions in thermal technology. This enables us to combine different technologies and to implement these for your benefit.





UNIMAT heating boiler UT-L

The UNIMAT UT-L heating boiler is an ideal solution for central heating systems of local heating supply with a diverse application profile.

Proved technology with a high degree of flexibility

The UNIMAT 3-pass design that has proven its worth a thousand times over in practical application. The UNIMAT heating boiler UT-L is offered in various sizes and can also be used as a multi-boiler system in pooled output.

The heating boiler is CE certified and is designed and equipped in compliance with the Directive Relating to Appliances Burning Gaseous Fuels. It is used for a wide range of applications at low temperatures and pressures.

Optimally suited for the most varied tasks

The heating boiler UT-L is used particularly in hospitals, homes, office buildings, residential complexes as well as throughout industry. Its high level of flexibility makes the UT-L ideally suitable for use as a reserve and peak load boiler at heating power stations and combined heat and power plants.

Benefits at a glance:

- ▶ Effective 3-pass design
- ▶ Standard utilisation ratio without flue gas heat exchanger up to 95 % and up to 105 % with condensing heat exchanger
- ▶ Effective thermal insulating materials with a high degree of efficiency
- ▶ Approved for low return flow temperatures from 50 °C
- ▶ Suitable for all burner systems
- ▶ Pollutant reduced combustion thanks to the use of highly developed firing systems and careful matching of the best boiler and burner combination
- ▶ Easy for maintenance thanks to fully hinged boiler front door
- ▶ Robust, reliable and unsurpassed in its durability
- ▶ No burner minimum load level limit for keeping dry on the flue gas side
- ▶ Smoke tube passes free of flow components
- ▶ High permissible temperature spread of up to 50 K

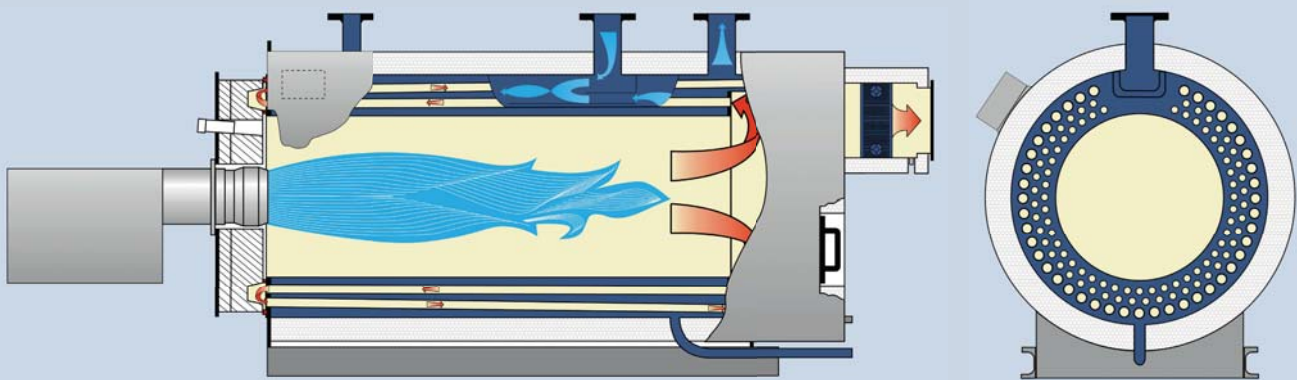
Technical data of the UNIMAT

Type	UT-L
Heat transfer medium	Low-pressure hot water
Design	3-pass flame tube/smoke tube technology
Capacity in kW	650 to 19 200
Safety design overpressure in bar	up to 16
Max temperature in °C	120 (110 in Europe)
Fuel	Oil, gas

Construction

The inserted flame tube ends in an inner water-flushed smoke gas reversing chamber, which leads into the first smoke tube pass. The first smoke tube pass and second smoke tube pass are free of flow components. The functional round design ensures optimal pressure resistance. Furnace, water chamber volume, radiant and convective heating surfaces are perfectly dimensioned and matched to each other.

The boiler front door can be fully hinged, optionally opening to the right or left. The entire cross section of the boiler is freely accessible. Maintenance, cleaning and inspection are thus possible without any problems. The high quality mineral wool matting insulation over the entire boiler body and the special heat insulation material in the front door ensure that there is only a negligibly small radiant loss. The heat generator can already be fitted with an integrated flue gas heat exchanger or condensing heat exchanger ex works on request.



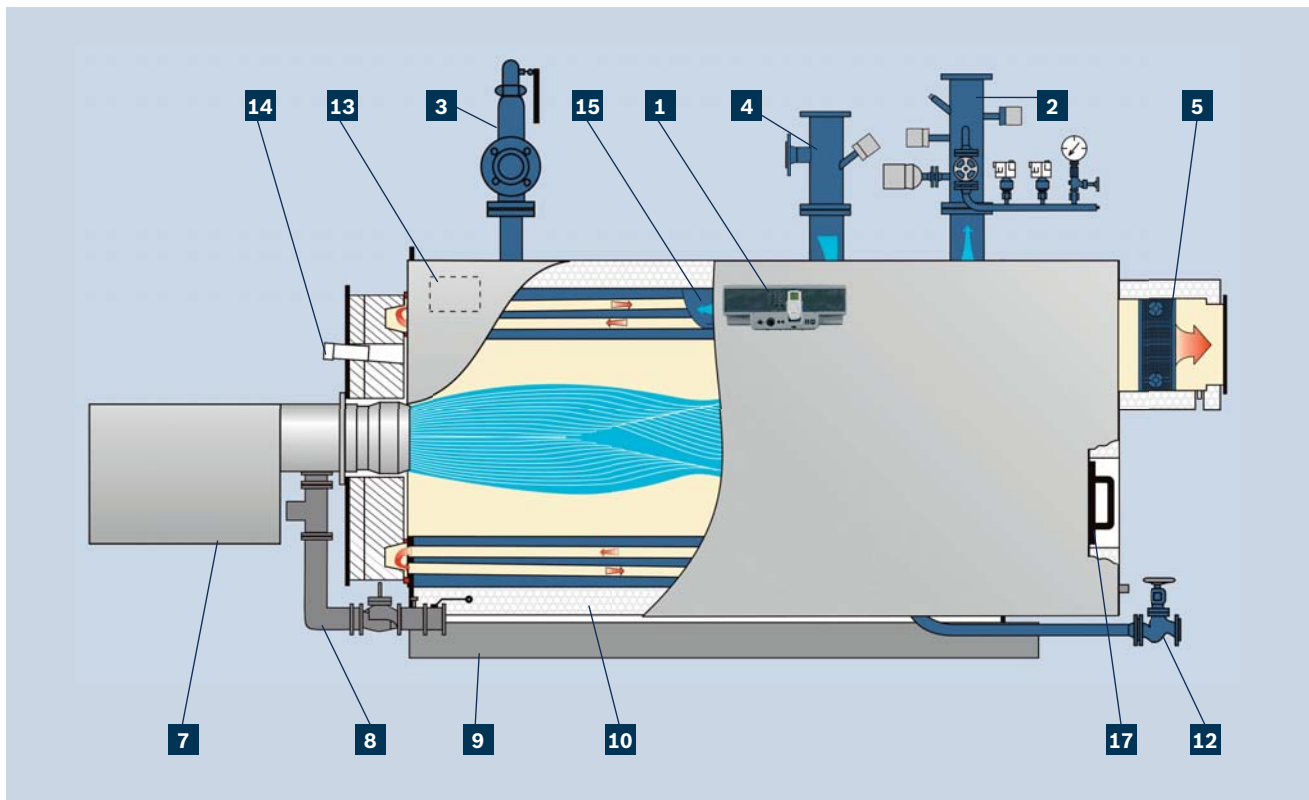
Associated boiler house components:

- ▶ Water treatment module WTM
- ▶ Flue gas heat exchanger ECO 1/7
- ▶ Flue gas heat exchanger ECO 6 for condensing use
- ▶ Supply/Return flow adapter piece SP/RP
- ▶ Return flow temperature safeguard RTS
- ▶ Gas regulation module GRM
- ▶ Oil circulation module OCM
- ▶ Oil supply module OSM
- ▶ System control SCO

Equipment level

The UNIMAT heating boiler UT-L is offered as a fully operational unit including equipment*. The high quality equipment includes the boiler pressure vessel, burner unit, flue gas heat exchanger or condensing heat exchanger and the control and safety techno-

logy, that is already wired with the integrated terminal box. Pre-assembled, plug-in and coded cable bundles simplify the electrical wiring installation between the boiler control cabinet and the terminal box.



- 1** Boiler control CFB (alternatively: boiler control BCO in the switchgear cabinet)
- 2** Supply flow adapter piece with
 - temperature limiter
 - temperature controller
 - level limiter
 - pressure indicator
 - pressure limiter (max.)
 - manostat tube shut-off valve
- 3** Full-lift safety valve
- 4** Return flow adapter piece
 - temperature monitor
 - connection for safety expansion line
- 5** Flue gas heat exchanger ECO

- 7** Burner
- 8** Gas regulation module
- 9** Base frame
- 10** Insulation with protective shell
- 12** Drain shut-off valve, maintenance-free
- 13** Terminal box
- 14** Sight hole
- 15** Injector device for inner temperature boosting
- 17** Inspection opening, flue gas side

* the equipment level is variable and can be freely configured to customer requirements

UNIMAT hot water boiler UT-M

The UNIMAT hot water boiler UT-M is a further development of the successful UT boiler construction. It is used in areas where medium to high temperatures required.

Extensively tried and tested, proven a thousand times over

The proven UNIMAT 3-pass design has been used for decades – with overwhelming success. The UT-M is offered in various sizes and can also be used as a multi-boiler system in pooled output. It is CE certified and is designed and equipped in compliance with the European Pressure Equipment Directive.

With a wide range of application options

The UT-M proves its outstanding efficiency in central heating systems for district and local heating supply. But the versatile hot water boiler is also used for commercial and industrial heating applications in the most diverse sectors.

Benefits at a glance:

- ▶ Effective 3-pass design
- ▶ Standard utilisation ratio without flue gas heat exchanger up to 95 % and up to 105 % with condensing heat exchanger
- ▶ Effective thermal insulating materials with a high degree of efficiency
- ▶ Approved for low return flow temperatures from 50 °C
- ▶ Suitable for all burner systems
- ▶ Pollutant reduced combustion thanks to the use of highly developed firing systems and careful matching of the best boiler and burner combination
- ▶ Easy for maintenance thanks to fully hinged boiler front door
- ▶ Robust, reliable and unsurpassed in its durability
- ▶ No burner minimum load level limit for keeping dry on the flue gas side
- ▶ Smoke tube passes free of flow components
- ▶ High permissible temperature spread of up to 50 K

Technical data of the UNIMAT	
Type	UT-M
Heat transfer medium	High-pressure hot water
Design	3-pass single-flame tube/ smoke tube technology
Capacity in kW	750 to 19 200
Safety design overpressure in bar	up to 16
Max temperature in °C	up to 190
Fuel	Oil, gas



Construction

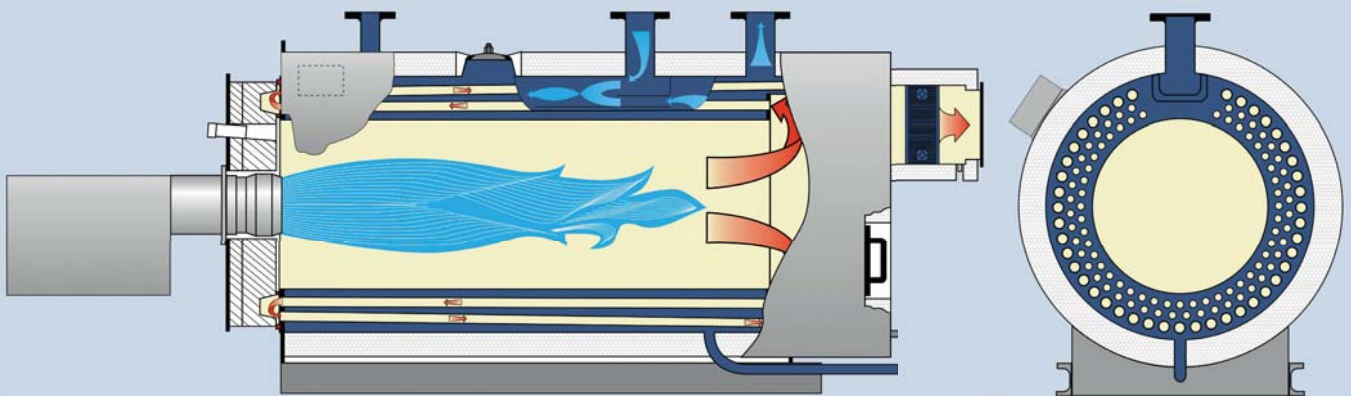
The inserted flame tube ends in an inner, water-flushed smoke gas reversing chamber, which leads into the first smoke tube pass. The first smoke tube pass and second smoke tube pass are free of flow components. The functional round design ensures optimal pressure resistance. Furnace, water chamber volume, radiant and convective heating surfaces are perfectly dimensioned and matched to each other.

The boiler front door can be fully hinged, optionally opening to the right or left. The entire cross section of the boiler is freely accessible. This ensures simple and easy maintenance, cleaning and inspection. The high quality mineral wool matting insulation over the entire boiler body and the special heat insulation material in the front door ensure that there is only a negligibly small radiant loss. The heat generator can already be fitted with an integrated flue gas heat exchanger or condensing heat exchanger ex works on request.

The certification in accordance with European Pressure Equipment Directive ensures a high operational and safety temperature level up to a max. of 190 °C.

Associated boiler house components:

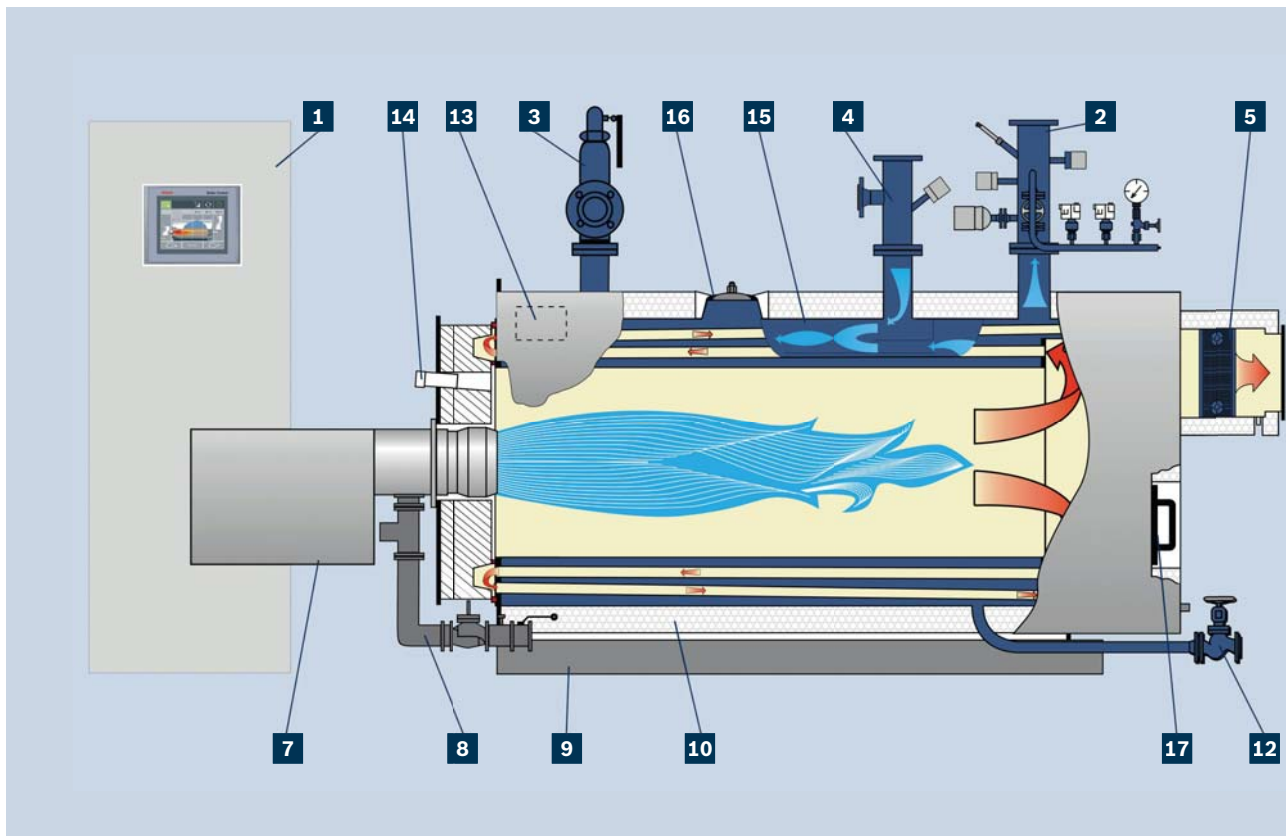
- ▶ Water treatment module WTM
- ▶ Flue gas heat exchanger ECO 1/7
- ▶ Flue gas heat exchanger ECO 6 for condensing use
- ▶ Supply/Return flow adapter piece SP/RP
- ▶ Return flow temperature safeguard RTS
- ▶ Gas regulation module GRM
- ▶ Oil circulation module OCM
- ▶ Oil supply module OSM
- ▶ System control SCO



Equipment level

The UNIMAT hot water UT-M boiler is offered as a fully operational unit including operating equipment*. The high quality equipment includes the boiler pressure vessel, burner unit, flue gas heat exchanger or condensing heat exchanger and the

control and safety technology, which is already wired with the integrated terminal box. Pre-assembled, plug-in and coded cable bundles simplify the electrical wiring installation between the boiler control cabinet and the terminal box.



1 Control switchgear cabinet with boiler control BCO

2 Supply flow adapter piece with

- temperature limiter
- flow limiter
- temperature controller
- level limiter
- pressure indicator
- pressure limiter (max.)
- manostat tube shut-off valve

3 Full-lift safety valve

4 Return flow adapter piece

- temperature monitor

- connection for safety expansion line

5 Flue gas heat exchanger ECO

7 Burner

8 Gas regulation module

9 Base frame

10 Insulation with protective shell

12 Drain shut-off valve, maintenance-free

13 Terminal box

14 Sight hole

15 Injector device for inner temperature boosting

16 Inspection opening, water side

17 Inspection opening, flue gas side

* the equipment level is variable and can be freely configured to customer requirements

UNIMAT hot water boiler UT-H

The UNIMAT UT-H hot water boiler is used in the case of high pressure and high temperatures requirements and for district heating or process heating applications.

Efficient technology

The UNIMAT UT-H hot water boiler is a shell boiler with one flame tube, built in 3-pass technology. Flue gases flow through the flame tube and smoke tubes on the inside and boiler water flows around them on the outside. The flame tube, internal water-flushed rear smoke gas reversing chamber, first smoke tube pass and second smoke tube pass are all arranged for optimum flow within the cylindrical pressure vessel. A flue gas heat exchanger can be supplemented for heat recovery from the modular kit.

Versatile applications

Important areas of use are local and district heating generation, commercial operations in all sectors of the economy, the processing industry and supply industries, as well as communal buildings. As base load, peak load and reserve heating boilers at district heating plants.

Benefits at a glance:

- ▶ Intuitive boiler control on SPC basis with very high transparency of operating data
- ▶ High level of efficiency due to 3-pass technology, an integrated flue gas heat exchanger and effective heat insulation materials
- ▶ Up to 93% boiler efficiency without, up to 96% boiler efficiency with flue gas heat exchanger and up to 105% with condensing heat exchanger
- ▶ Suitable for all burner systems
- ▶ Pollutant reduced combustion thanks to the use of highly developed firing systems and careful matching of the best boiler and burner combination
- ▶ Easy for maintenance - conveniently accessible on both the flue gas side as well as the water side
- ▶ Robust, reliable and unsurpassed in its durability
- ▶ Acceptance in accordance with the European Pressure Equipment Directive - applied almost worldwide
- ▶ Simple extension options thanks to integrated module technology
- ▶ Smoke tube passes free of flow components
- ▶ High permissible temperature spread of up to 40 K
- ▶ The boiler can be equipped with a separate fourth pass for waste heat use
- ▶ The boiler body can also be used as a pure waste heat boiler behind combined heat and power plants or gas turbines

Technical data of the UNIMAT

Type	UT-H
Heat transfer medium	High-pressure hot water
Design	3-pass single-flame tube/smoke tube technology
Capacity in kW	820 to 18 300
Safety design overpressure in bar	up to 30
Max temperature in °C	up to 240
Fuel	Oil, gas

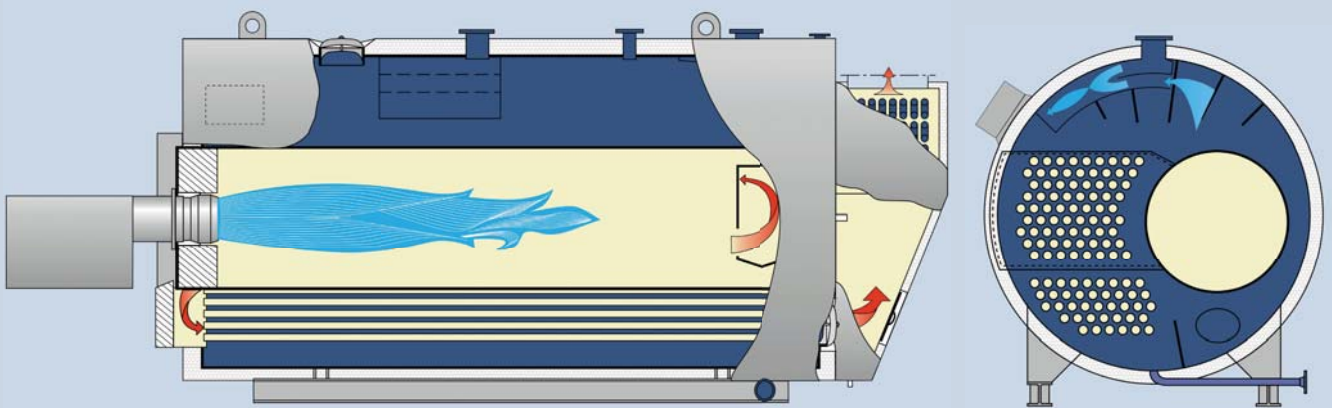


Construction

For decades our three-pass patent has formed the basis – as with the steam technology – for the outstanding and ongoing success of this series, which is still unsurpassed today. The flame tube (first pass) and two smoke tube bundles (second and third pass) are integrated with the water-flushed rear reversing chamber in the pressure vessel in an ideal way. The laterally arranged flame tube and the horizontal rear and vertical front heating gas reversal, produce an optimum radiant and convection heating surface with a large hot water chamber, and all of this within the smallest dimensions. The elastic floors are connected to the boiler jacket by the large continuous flame tube and a high number of gusset stays under even load distribution.

Associated boiler house components:

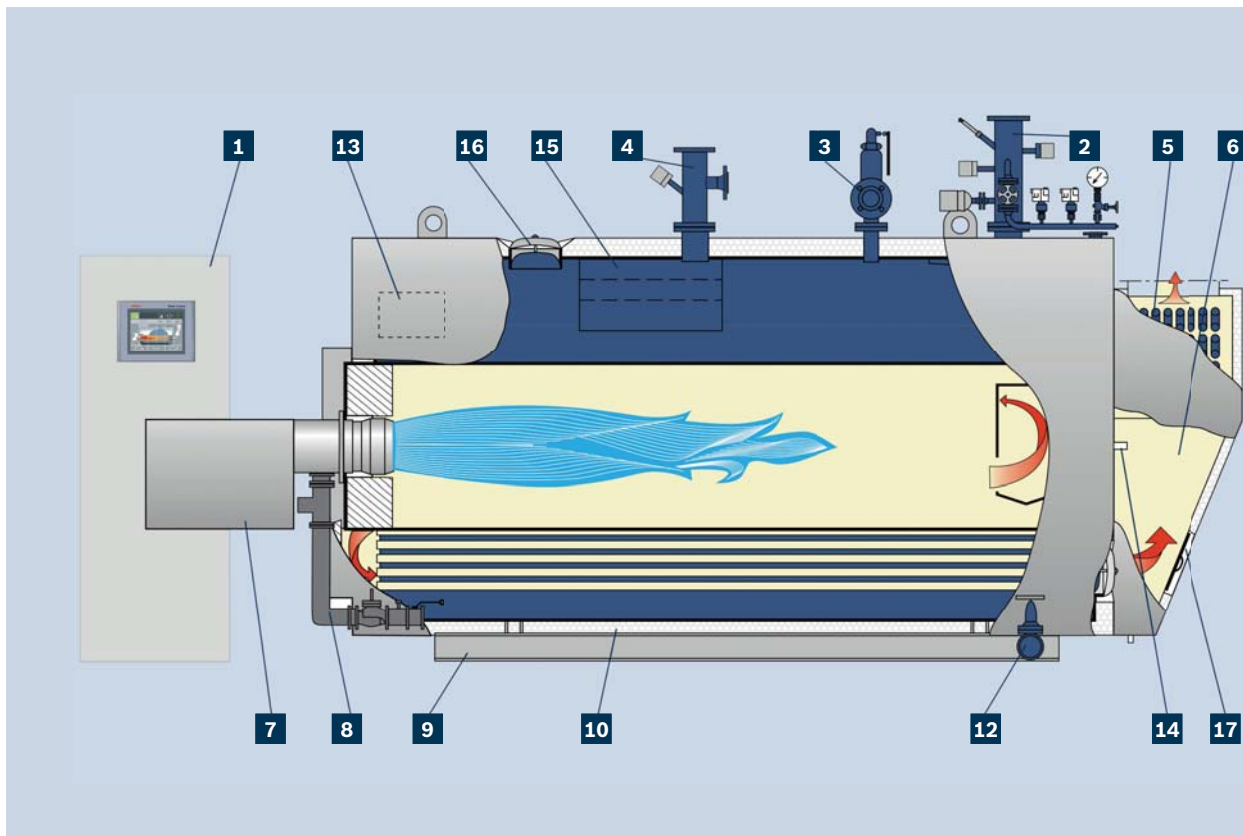
- ▶ Water treatment module WTM
- ▶ Flue gas heat exchanger ECO 1
- ▶ Flue gas heat exchanger ECO 6 for condensing use
- ▶ Supply/Return flow adapter piece SP/RP
- ▶ Return flow temperature safeguard RTS
- ▶ Gas regulation module GRM
- ▶ Oil circulation module OCM
- ▶ Oil supply module OSM
- ▶ System control SCO



Equipment level

All shell boilers offered can be obtained including all equipment* and are therefore fully functional as a unit. The basic equipment level includes the boiler pressure vessel, the control and safety technology, the burner unit, a terminal box and the control switchgear cabinet including the easily

operated boiler control BCO. The integrated terminal box is already wired. Pre-assembled, plug-in and coded cable bundles simplify the electrical wiring installation between the boiler control cabinet and the terminal box.



1 Control switchgear cabinet with boiler control BCO

2 Supply flow adapter piece with
 - temperature limiter
 - flow limiter
 - temperature controller
 - level limiter
 - pressure indicator
 - pressure limiter (max.)
 - manostat tube shut-off valve

3 Full-lift safety valve

4 Return flow adapter piece
 - temperature monitor

- connection for safety expansion line

5 Flue gas heat exchanger ECO

6 Flue gas collection chamber

7 Burner

8 Gas regulation module

9 Base frame

10 Insulation with protective shell

12 Drain shut-off valve, maintenance-free

13 Terminal box

14 Sight hole

15 Injector device for inner temperature boosting

16 Inspection opening, water side

17 Inspection opening, flue gas side

* the equipment level is variable and can be freely configured to customer requirements

UNIMAT hot water boiler UT-HZ

The UNIMAT UT-HZ hot water boiler is deployed in all areas where very large amounts of heat are required. The most important areas of use are district heating generation and the processing industry.

Proven over many decades

The UNIMAT UT-HZ hot water boiler is a shell boiler in 3-pass technology with two completely separate flame tubes and smoke gas passages. This 2-flame tube/smoke tube boiler has been in use for decades and is built with separate smoke gas passages. Thus, the boiler is also suitable for operation with only single firing. Flue gas heat exchangers can be supplemented in modular design for heat recovery.

Technical data of the UNIMAT	
Type	UT-HZ
Heat transfer medium	High-pressure hot water
Design	3-pass-2-flame tube/smoke tube technology
Capacity in kW	13 000 to 38 000
Safety design overpressure in bar	up to 30
Max temperature in °C	up to 240
Fuel	Oil, gas

Benefits at a glance:

- ▶ Intuitive boiler control on SPC basis with very high transparency of operating data
- ▶ High level of efficiency due to 3-pass technology, an integrated flue gas heat exchanger and effective heat insulation materials
- ▶ Up to 93 % boiler efficiency without, up to 96 % boiler efficiency with flue gas heat exchanger and up to 105 % with condensing heat exchanger
- ▶ Suitable for all burner systems
- ▶ Pollutant reduced combustion thanks to the use of highly developed firing systems and careful matching of the best boiler and burner combination
- ▶ Easy for maintenance – conveniently accessible on both the flue gas side as well as the water side
- ▶ Robust, reliable and unsurpassed in its durability
- ▶ Acceptance in accordance with the European Pressure Equipment Directive – applied almost worldwide
- ▶ Simple extension options thanks to integrated module technology
- ▶ Smoke tube passes free of flow components
- ▶ High permissible temperature spread of up to 40 K



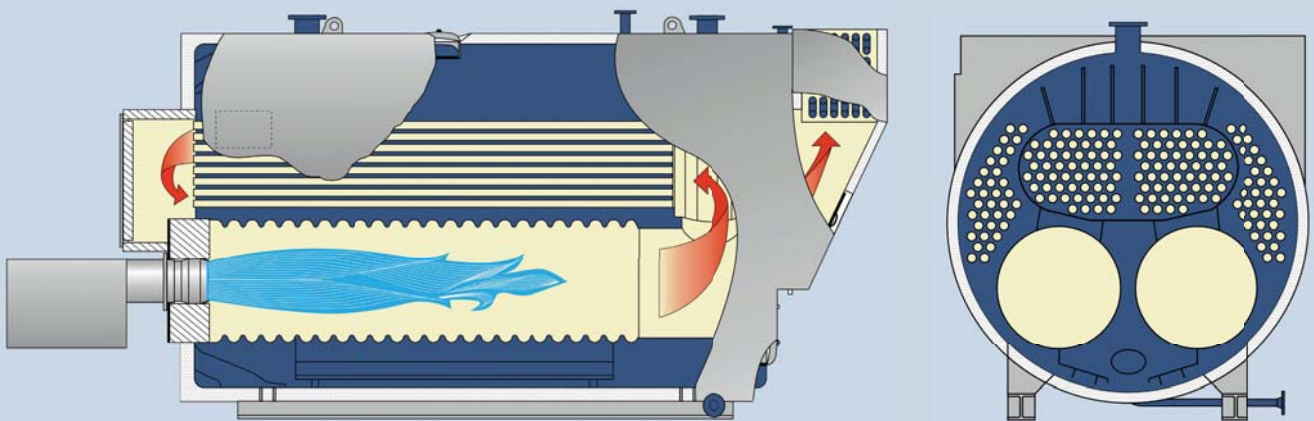
Construction

Its suitability for the unrestricted parallel or single operation of its firing units is not only due to the stable separation on the flue gas side. The special design measures for neutralising the tension forces in single-flame operation are critical for permanent stability. The flame tubes are pushed through in the front and rear floors and welded tightly all around. The water-flushed rear smoke gas reversing chamber is separated with a stabilising tube wall, which has water flowing through, and is also anchored to the rear floor. The large pressure relief surfaces together with the reversing chamber ceiling floor anchoring ensure low stress loads.

The unrestricted single operation provides high load flexibility. The adjustment range is doubled, unnecessary energy losses can be reduced.

Associated boiler house components:

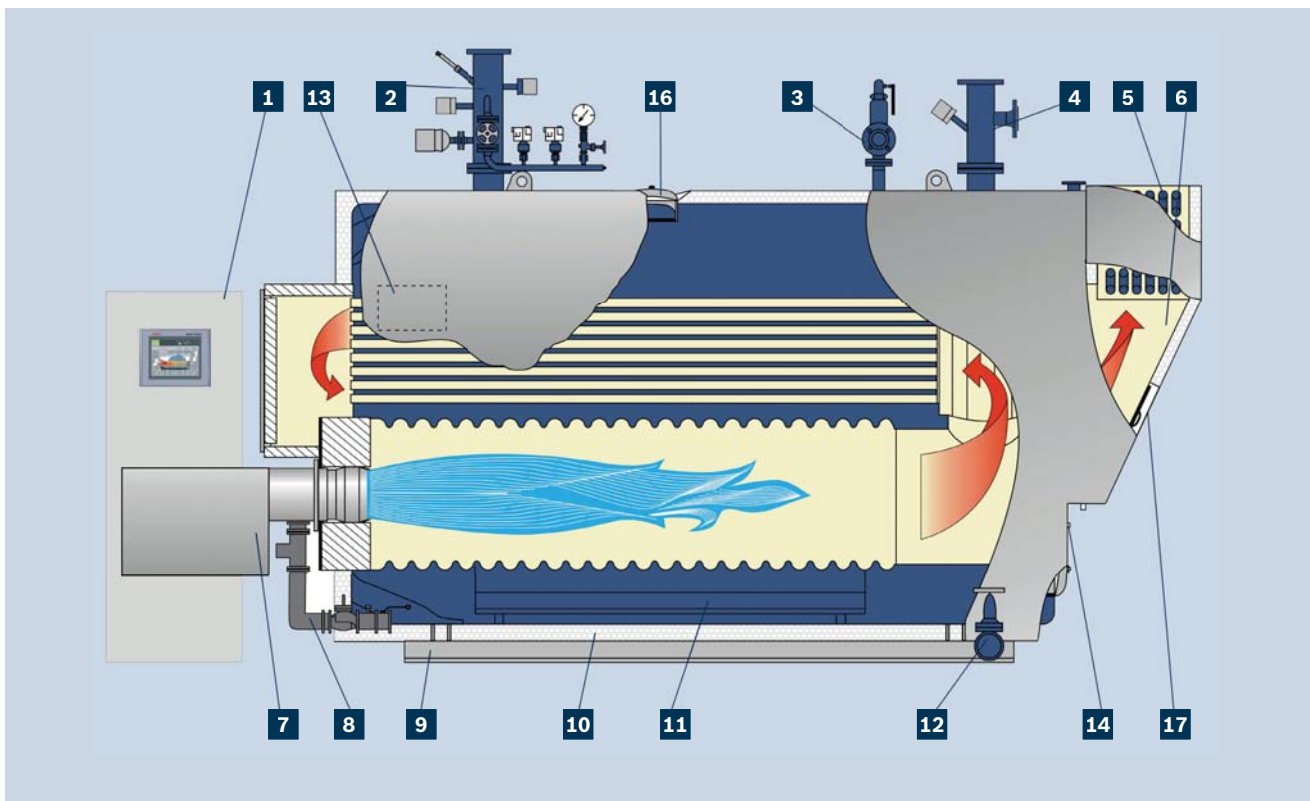
- ▶ Water treatment module WTM
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- ▶ Oil supply module OSM
- ▶ System control SCO



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- flow limiter
- temperature controller
- level limiter
- pressure indicator
- pressure limiter (max.)
- manostat tube shut-off valve

3 Full-lift safety valve

4 Return flow adapter piece

- temperature monitor

- connection for safety expansion line

5 Flue gas heat exchanger ECO

6 Flue gas collection chamber

7 Burner

8 Gas regulation module

9 Base frame

10 Insulation with protective shell

11 Water circulation guide profiles

12 Drain shut-off valve, maintenance-free

13 Terminal box

14 Sight hole

16 Inspection opening, water side

17 Inspection opening, flue gas side

* the equipment level is variable and can be freely configured to customer requirements

We create a lot of steam with our service for you as well

Do you need referral in an emergency to quick and reliable help because breakdowns mean high costs? Do you require support in the modernisation of your existing system? With Bosch Industriekessel and our first class service you are always on the safe side.

Always there for you: first class service

Our customer service is there for you around the clock every day of the year. Thanks to our closely knit network of service areas we can ensure the shortest possible reaction times. Beside maintenance services, fault tracing and repairs, we also offer you support with the regular inspection of your system. Not sure whether your system is still state of the art and working efficiently? Here too we will be pleased to assist you, we will analyse your system and modernise it if required.

During normal working hours contact your local customer service engineer direct, the contact details can be found on the switchgear cabinet of your boiler system. We place great value on personal service, direct contact also saves valuable time.

Customers from abroad should please contact our 24 hour Service Hotline. That also applies if you experience a fault outside normal working hours. If you call from a landline you will reach the centralised Customer Support department. An intelligent telephone software system can select calls on the landline according to their country/ area and it connects them straight to the appropriate customer service adviser.

Your problem will be located in the course of professional advice over the phone, or alternatively the deployment of a customer service engineer will be coordinated.

Service Hotline Germany/International:

+49 180 5667468*

Service Hotline Austria:

+43 810 810300**

Reliable supply of spare parts

Spare parts are available immediately ex warehouse, even those parts which have been in service for many years. Our Spare Parts Hotline is also manned outside business hours and on Sundays and public holidays.

Spare Parts Hotline Germany/International:

+49 180 5010540*

Spare Parts Hotline Austria:

+43 6462 2527-320

For further information on our services, see our brochure on 'Industrial services' and under www.bosch-industrial.com

* EUR 0.14/min from German landline

** max. EUR 0.10/min from Austrian landline

Charges for phone calls from mobile networks and for international calls may vary.





Production facilities:

Factory 1 Gunzenhausen

Bosch Industriekessel GmbH
Nürnberger Straße 73
91710 Gunzenhausen
Germany

Factory 2 Schlungenhof

Bosch Industriekessel GmbH
Ansbacher Straße 44
91710 Gunzenhausen
Germany

Factory 3 Bischofshofen

Bosch Industriekessel Austria GmbH
Haldenweg 7
5500 Bischofshofen
Austria

www.bosch-industrial.com

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Illustrations are only intended as examples |

Subject to change | 01/2013 |

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