Perfection and efficiency in modular design

Boiler house components

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 Thermotechnology 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.

With our extensive product range of boiler house components in modular design, we enable you to selectively expand your boiler system and to utilise additional potential for saving energy. This brochure gives you a detailed overview of this. Above all however, the following pages clarify what is particularly important to us: the perfect fulfillment of your individual wishes.

Contents

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 CO_2 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. Additional energy potential can be used with our modular designed boiler house components. Our condensate high pressure plants keep return-flow condensate up to pressure and temperature, so that it can be fed back to the boiler circuit without loss of energy. Process-related heat loss, which is contained for example in steam vapour or desalinated water, can be partially recovered by means of suitable solutions such as our vapour cooler or our expansion and heat recovery modules.

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 CO_2 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. The incorporation of our innovative water analyzer not only protects the system from damage caused by insufficient water parameters, but it also achieves additional energy savings in the consumption of fuel and fresh water. 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 supply 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.

Modules for steam boilers

Our modules for steam boilers allow you to equip your system according to your requirements. They ensure maximum operating safety as well as long service life and a high level of efficiency under the specific operating conditions.

Water service module WSM

The water service module supplies steam boilers with degassed and chemically conditioned feed water and disposes of the desalting and waste water.

- Discharge and storage of condensate and make-up water
- Thermal partial deaeration of the feed water with WSM-T
- Thermal full deaeration of the feed water with WSM-V
- Chemical conditioning of the feed water
- Expansion and cooling of the desalting and waste water
- Cooling of the water samples
- SPC control and display for
  - water level in the container
  - feed water temperature for the WSM-T
  - container pressure for the WSM-V
  - blow-down temperature
- Control for chemical dosing
- Dry running protection feed pump module
- Overflow protection

Construction

All components are piped, thermally insulated and electrically wired in the highest equipment quality level for a multi-functional assembly unit. Elaborate scaffold constructions are not necessary: The compact module is mounted on a stable support device and designed for installing at ground level. All functions are computer-aided and automatically controlled with a programmable controller SPC with touch panel.

Equipment level

The module consists of the steam heated feed water tank, the chemical dosing device, the blow-down and expansion tank, a water sample cooler and the associated fittings as well as the control cabinet. Optionally, there are additional components such as a heat recovery facility for alkalines, a second chemical dosing or feed pump module available. For the WSM-V is a spray or trickle deaerator mounted on the feed water tank.

Benefits at a glance:

- Fast and easing planning, installation and acceptance
- No need for positive suction head, ground level installation
- Ready for operation with just a few connections
- Easy commissioning, maintenance and operation
- Complete warranty unit
- Reliable spare parts supply
- Easy transportation and relocation
- High degassing efficiency with WSM-T
- The highest degassing efficiency with WSM-V
- Reduced consumption of chemicals with WSM-V

Water service module WSM-V for full deaeration for all steam boilers with capacities ranging from 2000 to approx. 100000 kg/h

Water service module WSM-T for partial deaeration for all steam boilers with capacities of up to 8000 kg/h

Steam accumulator module SAM

The module is used for storing a defined energy content that is available as expansion steam during pressure reduction. The application area is the covering of peak loads e.g. if the capacity of a steam generator is exceeded briefly. The greater the water content of the accumulator, the greater the re-evaporation heat is.

The steam accumulator is filled 50 % with water and is heated up with steam to the boost pressure. The accumulator is discharged by opening the shut-off devices on the consumer side. Always the exact same steam quantity that was removed previously is fed into the accumulator. As a result, it is generally not necessary to feed additional feed water into the steam accumulator during operation. A float condensate trap is provided to prevent an increasing water level.

Construction

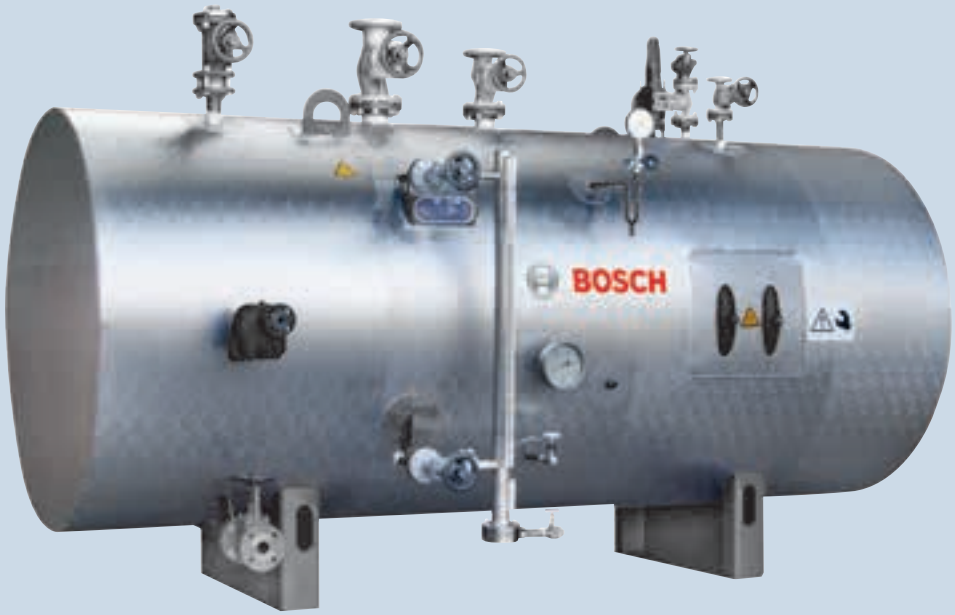
The steam accumulator consists of a horizontal cylindrical container with a built-in steam nozzle pipe.

Equipment level

The module is thermally insulated and delivered with assembled equipment ready for operation. The module is fitted with a venting, drain shut-off, filling shut-off, steam inlet and outlet valve, an overflow and overpressure valve, a direct temperature display as well as a water level display.

Benefits at a glance:

- Balance of brief power peaks
- Reduction of water entrainment and its negative effects
- Reduction of switching frequency of steam generator
- Reduction of the energy consumption and wear



Steam accumulator module SAM

Condensate service module CSM
Condensate high pressure plant CHP

Condensate from steam consumers is channeled, collected and temporarily stored in the condensate service module. A condensate pump pumps the condensate back into the feed water deaeration plant if the corresponding need for water arises. Unpressurized condensate service modules are usually installed near the consumer.

With the condensate high pressure plant the condensate is kept at pressure and temperature so that expansion steam losses are prevented or significantly reduced. The condensate is fed directly to the steam boiler via the condensate pump if necessary. Deaeration once again of the high-pressure condensate is not necessary. Condensate high pressure plants should always be used if the discharge into the feed water tank or unpressurized condensate service module would be accompanied by a great deal of expansion steam loss due to the condensate parameters.

Construction

All components are piped, thermally insulated and electrically wired in the highest equipment quality level for a multi-functional assembly unit. The unpressurized condensate service module is mounted on a stable support device and designed for installing at ground level. The condensate high pressure plant is prepared for open installation and needs a positive suction head of at least 1.5 meters. All functions are computer-aided and automatically controlled with a programmable controller.

Equipment level

The system consists of the components condensate tank, condensate pump module, control cabinet and equipment. The system's piping and thermal insulation is pre-installed ex works.

Benefits at a glance:

- Decrease in energy and water consumption by reducing make-up water quantities
- Minimisation of expansion steam losses, desalination and blow-down quantities, less chemical consumption and reduced corrosion potential in the steam condensate system when using condensate high pressure plants

The unpressurized condensate service module collects the condensate streams and channels them back into the water/steam circuit via the deaeration system.

The amount of fuel, make-up water requirement and use of chemical dosing agents for the water treatment can be reduced drastically by a condensate high pressure plant.

Blow-down, expansion and cooling module BEM

The purpose of the blow-down, expansion and cooling module BEM is the recovery of all hot waste water of a steam boiler system. This waste water is collected, expanded and cooled down to the permitted, set discharge temperature in the module. The module is designed for multi-boiler systems with a max. of 3 steam boilers.

Construction

A closed, upright container mounted on a support structure, with various feed and drain connections. The lower half of the module is filled with water during operation, the upper half is expansion space. The prevailing media temperature is recorded and converted to an electrical signal with the temperature measuring transducer in the lower part of the module. Mixed cooling is achieved by the supply of cold, softened make-up water and the waste water is safely drained off when the permitted discharge temperature is reached. The discharge temperature can be controlled by the control system of the water service module.

Equipment level

The module comprises a vertical cylinder sealed off with blank plates at both ends and all around with protection against contact. It is offered fully assembled ex works with all necessary fittings and thermally insulated.

Expansion and heat recovery module EHM

The module recovers a substantial amount of the heat quantity contained within the hot water (waste water/condensate) of a boiler system. In the expansion tank the water that is under pressure is expanded. The expansion steam produced thereby supports the heating of the feed water tank. In the downstream heat exchanger the make-up water of the boiler system is preheated and the desalinated water/condensate is cooled to a temperature of approx. 35 °C.

Construction

The module comprises an expansion tank, an integrated heat exchanger for heat recovery, the bearing structure and the necessary equipment.

Equipment level

The module is offered fully assembled ex works with all necessary fittings and thermally insulated.

Expansion, heat recovery and blow-down module EHB

The module comprises the combination of the expansion and heat recovery module EHM with the blow-down, expansion and cooling module BEM. Its purpose is therefore the recovery of the energy contained within the hot water (waste water/condensate) and the discharge of waste water taking into account the permitted discharge temperature.

Construction

The module consists of an expansion tank as well as a waste water and cooling tank. A heat exchanger with associated fittings is integrated for heat recovery.

Equipment level

Two cylinders one above the other sealed off with blank plates at both ends, a pick-up station, all necessary fittings, the piping one below the other and thermal insulation are included in the scope of delivery and are offered ex works fully assembled.

Benefits at a glance:
- Fast and easy assembly with few connections, ready for immediate operation
- Exact compliance with official guidelines thanks to automatic operating mode

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- Increase in efficiency of the system
- Reduction of the fuel, cooling water and waste water costs

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Vapour cooler VC

In thermal, full deaeration systems, exhaust vapour accumulates inherently. Without a vapour cooler, exhaust vapour would be dissipated into the open air. In the vapour cooler, however, the exhaust vapour condenses by means of a heat exchanger. The accumulated thermal energy generated during the cooling of the exhaust vapour is used to heat up the make-up water.

Construction

Plate-type heat exchanger with threaded connections, wetted parts are made of stainless steel.

Equipment level

The module comprises a heat exchanger with associated fittings.

Benefits at a glance:

- Heat recovery and thus efficiency improvement
- Useable energy for additional heating or for transfer to separate water circuit

Pump module PM

The module is used for extracting the feed water from the feed water tank into the shell boiler or for extracting the condensate from the condensate tank into the deaeration system. The pump module can optionally have a motor with a frequency converter for infinitely variable, demand-related water quantity control.

Construction

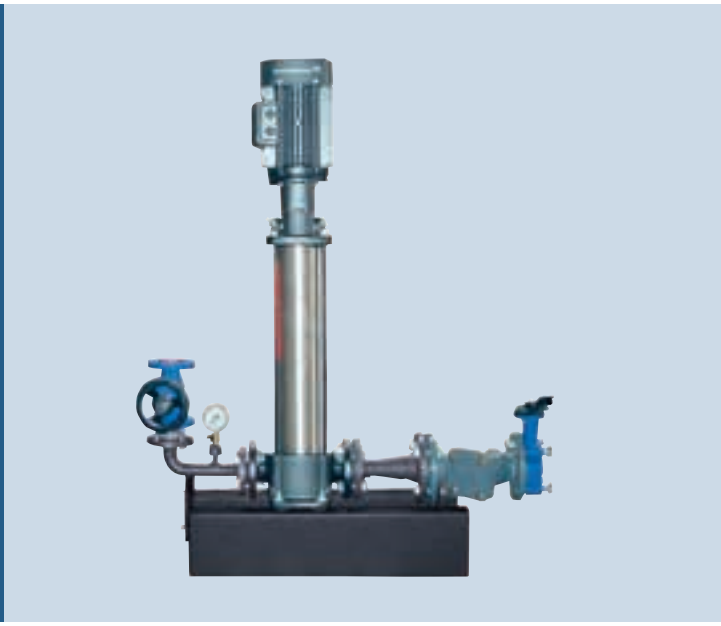
The supplied pumps are vertical multi-stage high-pressure centrifugal pumps with a fully enclosed, fan-cooled motor. They are designed especially for use in shell boilers.

Equipment level

The pump module is delivered fully assembled ex works on a console with pressure indicator, shut-off, filter and non-return valves.

Benefits at a glance:

- Preassembled ready to be installed for fast assembly
- Speed-controlled version for increasing the efficiency of the flue gas heat exchanger
- Reduction in power consumption and increase in operating convenience



Feed water regulation module RM

If no speed-controlled feed pump is available, continuous regulation with the feed water regulation module RM is recommended as an alternative for all boilers fitted with modulating burners and flue gas heat exchangers. The module ensures longer flow-through times of the flue gas heat exchanger and thus optimum heat recovery from the boiler waste gases. At the same time, the minimum quantity required for the feed pump cooling is ensured via the feed water regulation module.

The prefabricated module is used at a suitable location in the feed water pressure line. It is switched as inflow control.

Equipment level

The feed water regulation module for infinitely variable control consists of a feed water control valve, discharge device, dirt retention device and two shut-off valves as well as a bypass device.

Benefits at a glance:

- Increase in efficiency of the flue gas heat exchanger
- Reduction of the pump circuits
- Constant boiler water level
- Reliable minimum flow rate for cooling the feed pump

Steam distributor SD

In the distributor, the generated steam mass flow is distributed to the consumer and residual moisture is separated and drained.

Construction

A collecting pipe with an order-related number of pipe outlets is fully assembled with flange connections and all necessary fittings for a module unit.

Equipment level

The distributors are fitted and delivered thermally insulated with pressure indicators, shut-off, non-return and condensate drain valves.

Benefits at a glance:

- Reduction of grid losses by centralised distribution for systems with complex consumer structures
- Savings thanks to centralised operation and maintenance

Flue gas heat exchanger ECO stand-alone

The flue gas heat exchanger is designed to save energy through lowering the flue gas temperature by heating the mains return water.

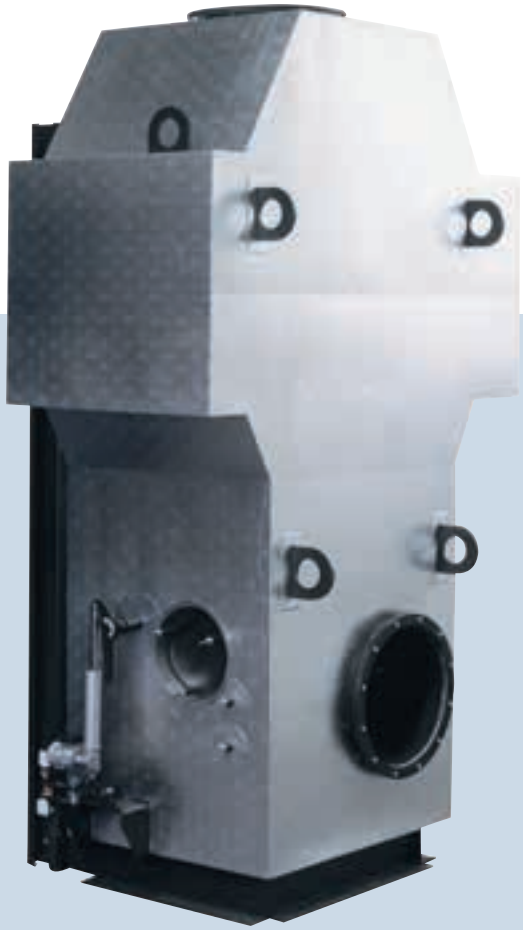
Flue gas flow contains significant heat potential at high temperature. Economiser modules with their highly-efficient heat recovery surfaces utilise this heat potential and thus increase the boiler efficiency of new or existing steam boiler systems significantly. The downstream flue gas heat exchanger from the boiler is used for "dry" operation for heating up feed water. To use the condensing technology, the flue gas condensation can take place in an additional downstream flue gas heat exchanger module and make-up water can be heated up. The subsequent installation in existing single-flame tube steam boiler systems can be carried out extremely easily by these modules.

Construction

In the lower part, the flue gases are collected and flow through the integrated heat exchanger in the upper part for heat recovery.

Equipment level

The module is mounted on a stable base frame and has rails at the back for transportation. Servo drive, piping of the connections, flue gas control and drain shut-off valves are fully assembled and included in the scope of delivery as well as thermal insulation ex works.



Benefits at a glance:

- Increase of the boiler efficiency
- Reduction of the fuel consumption
- Easy retrofitting of existing systems

Water analyzer WA

Smooth boiler operation is dependent on good water quality. The water analyzer takes over the continuous measurement and monitoring:

- pH value in feed water
- O_2 content in the feed water
- residual hardness in the make-up water
- pH value in boiler water

All data is transmitted to the system control SCO via the bus system. Together with the boiler water conductivity and conductivity of the condensate streams all relevant water parameters are thus available in the SCO. Demand-based controlling and monitoring tasks can be performed fully automatically. If set limit values are exceeded, all parameters are transferred to the fault message storage of the SCO. Continuous logging of the data is also possible. This can either be transmitted to a higher-level management system via Profibus or output directly to a local printer via a defined interface.

Construction

The water analyzer consists of an analysis part and electronic part, which are housed in two interconnected factory-fitted wall-mounted cases.

Equipment level

The analysis part includes the measuring modules:

- TH-Control for measuring the residual hardness in the make-up water after a water softening system
- pH control for measuring the pH value in the boiler content water of a max. of 3 boilers and in the boiler feed water
- O_2 control for measuring the O_2 content in the boiler feed water
- In the lower area, the sample preparation with flow-through coolers for feed and boiler water as well as control valves for switching and distribution of the individual mediums

The electronic part consists of:

- Power supply
- Electronics of the measuring modules
- Communication processors for the data exchange between WA und SCO

Benefits at a glance:

- Reduced input of dosing agent due to precise continuous measurement and control
- Increase of operating safety due to analytically correct measurement results
- Time-saving due to automatic measurement
- Fast reaction is possible by means of immediate signalling in the event of deviations
- Reduction of damage caused by insufficient water parameters
- Reduction of desalting and blow-down losses by means of demand-based dosing
- Reduction of make-up water, dosing agent and heating-up steam by means of less desalination and blow-down losses

Modules for hot water boilers

Our modules for hot water boilers make assembly easier for you and ensure safe operation of your system. They are preassembled ready to be installed and optimally suitable for retrofitting.

Supply flow adapter piece SP

A flange adapter including safety equipment for closed systems.

Construction

A tube with flange connections for the supply line with mounting of the safety equipment.

Equipment level

The supply flow adapter piece is fitted with a built-on level limiter, maximum pressure limiter, pressure indicator, manostat tube with shut-off valve, shut-off valves (emptying, test function) and shut-off valve with test connection.

Benefits at a glance:

- Preassembled ready to be installed for fast assembly
- Exact compliance with official guidelines

Return flow adapter piece RP

Flange adapter for installation at the return flow nozzle.

Construction

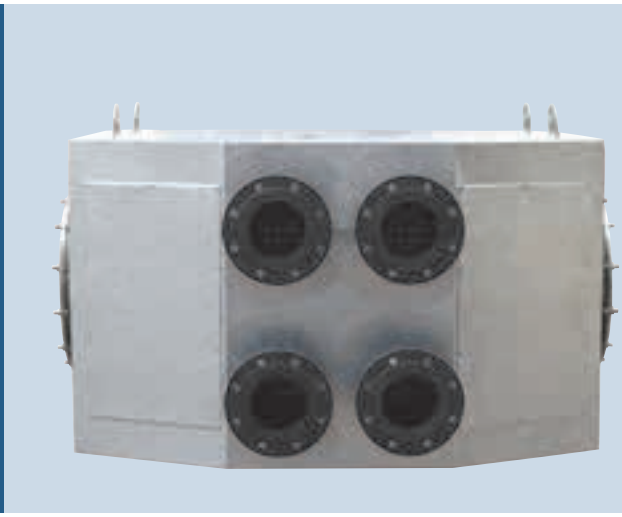
A T-tube with various flange connections and a connection for the temperature monitoring.

Equipment level

On this return flow adapter piece a flange connection for the expansion line as well as a connection for a thermometer or temperature sensor is already provided.

Benefits at a glance:

- Preassembled ready to be installed for fast assembly



Return flow temperature safeguard RTS

The return flow temperature safeguard of a hot water generator can be realised by means of temperature maintaining or temperature boosting.

Construction

All individual accessory parts such as supply flow adapter piece with safety equipment, return flow adapter piece, supply and return flow fittings, circulation pump and motor three-way valve are prefabricated for the preassembled RTS module.

Equipment level

The return flow temperature maintenance consists of:

- Boiler circulation pump
- Three-way control valve
- Return temperature control
- Shut-off valves supply flow/return flow

The return flow temperature boosting consists of:

- Admixing pump
- Shut-off valve, suction side
- Shut-off valve, pressure side
- Non-return valve, pressure side
- Motor shut-off valve boiler return flow
- Shut-off valve boiler supply flow

Benefits at a glance:

- Short assembly time of just a few hours
- Problem-free compliance with operating conditions

Flue gas heat exchanger ECO stand-alone

For further reduction of the flue gas temperature different flue gas heat exchangers are provided for hot water boilers. There are stand-alone retrofit models without bypass for heating boilers with gas firing as well as with bypass and flue gas switching valve for hot water boilers with oil/gas dual-firing.

To use the condensing technology, the flue gas condensation can take place in an additional downstream flue gas heat exchanger module made of stainless steel.

Construction

Heat exchanger in welded construction for installation downstream of the boiler, with connecting branches for water inlet, water outlet and drainage, and including inspection openings on the flue gas side. In the model with bypass, the hot flue gases are guided through control dampers.

Equipment level

The module fully assembled. Lifting lugs, feet or transport rails and a flue gas control valve are included in the scope of delivery ex works as well as thermal insulation.

Benefits at a glance:

- Improvement of utilisation level
- Fuel savings
- Easy retrofitting of existing systems

Modules for supplies to the boiler

You can configure the operation of hot water and steam boilers according to your needs with our ready-to-assemble modules for supplies to the boiler. At the same time, our technology enables you to optimise your system control and to protect the system from harmful operating influences.

Water treatment module WTM

To avoid boiler scale, it is only permissible to operate boiler systems with softened feed water. In the guidelines on water characteristics, the permitted total hardness for different types of boilers and operational modes is limited. Raw water is filtered and generated in the ion exchange process make-up water to soften the water. The hardening components calcium and magnesium ions are replaced by sodium ions.

Fully automatic designs save operation, prevent operating errors, enable continuous operation and ensure increased utilisation of capacity when using the same raw water hardness.

Construction

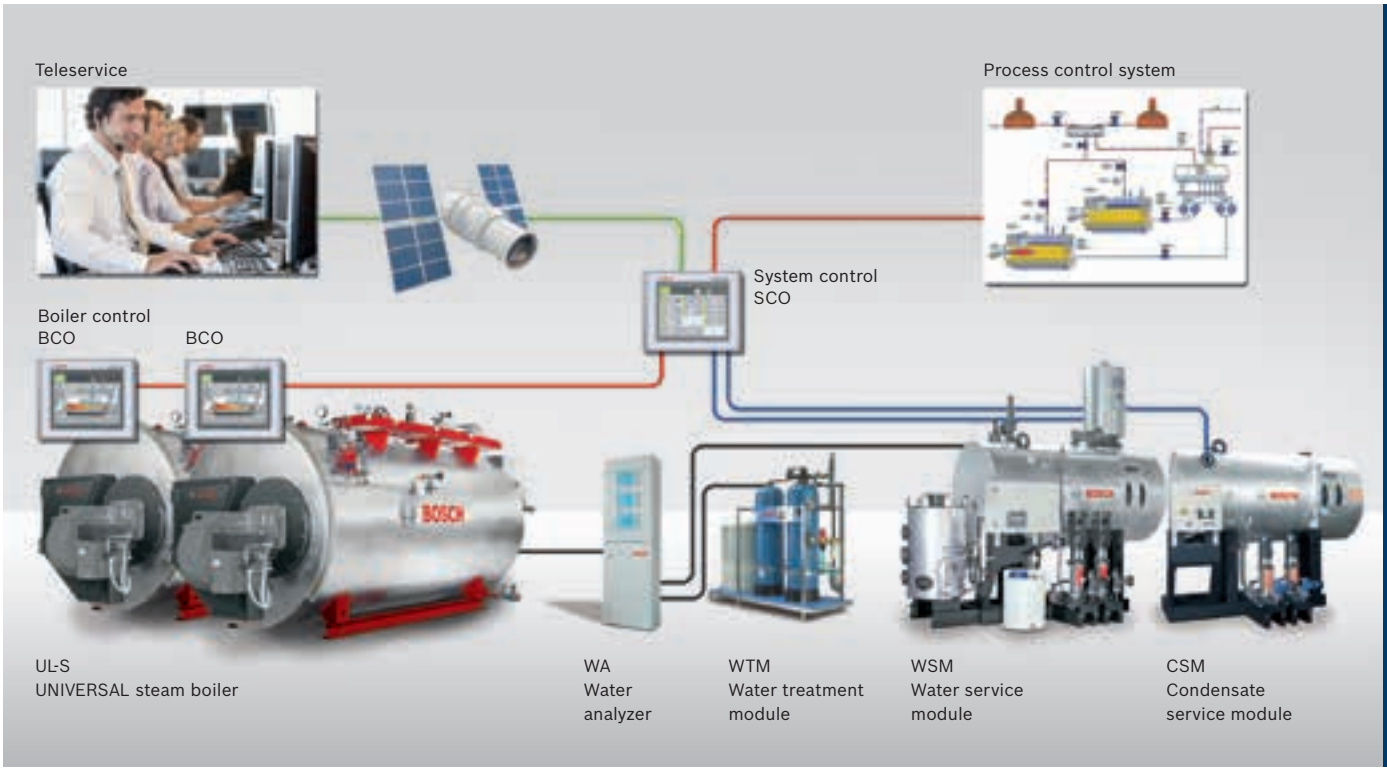
On a support structure, all elements of the water softening system are clearly and functionally arranged fully assembled. The WTM is suitable for all boiler sizes.

Equipment level

The WTM consists of the water softening system and a salt-softening receptacle. A drainage water connection, sampling device, pressure indicator as well as control fittings, shut-off and filter valves complete the module.

Benefits at a glance:

- Constant softened feed water for preventing calcification of the boiler surfaces
- Good heat transfer, high efficiency and long service life of the boiler
- High degree of operational reliability
- Quality-controlled design allows external hardness monitoring to be dispensed with – e.g. for improved utilization of capacity and without the need for permanent supervision of operation even in the case of varying raw water hardness



System control SCO

The SCO combines the controls of steam boilers and/or hot water boilers as well as individual module controls into a overall management system and opens up a multitude of new possibilities. The communication between the individual boiler controls BCO, other possible controls and the SCO takes place via a powerful bus system. Elaborate wiring work and signal separations are therefore rendered unnecessary. Connection to higher-level visualisation and control systems is possible by means of a Profibus DP interface.

Construction

Programmable, powerful control with an operator screen as TFT colour display with touch-sensitive surface.

Equipment level

- Sequence control of multi-boiler systems
- Integration of water analyses
- Integration of deaeration systems
- Integration of condensate systems
- Integration of foreign matter monitoring systems
- Integration of oil supply facilities
- A most diverse range of pressure and temperature controls etc.
- Return flow temperature maintenance (only hot water)
- Weather-driven boiler control (only hot water)

Benefits at a glance:

- Easy connection to higher-level visualisation and control systems
- Integrated monitoring and protection functions against faulty operation
- Extensive storage of operating parameters and operating signals
- Preparation for Teleservice: The operating parameters and operating signals can be accessed via an optional modem
- Intuitive operation through the use of graphical symbols and presentation on modern touch-screen displays

Gas regulation module GRM

The module regulates the constant gas pressure upstream of the burner – irrespective of the level of the input pressure and gas flow rate. Ensures against inadmissible gauge pressure and inadmissible gas flow rate.

Construction

All elements assigned to the standard delivery are arranged in the necessary order and delivered fully assembled on a support structure.

Equipment level

The gas regulation module GRM includes all fittings such as filter, ball valve, shut-off valve etc., which are necessary for the gas-side fuel supply of the burner.

Oil circulation module OCM

The oil circulation module prepares liquid fuels and records the throughput. As a ready to connect extraction module per burner for easy installation in ring mains with a supply pressure of 1.5 bar. The two-chamber oil feed vessel is designed for light and heavy fuel oil pressure atomizing burners with a spill back atomiser system.

Construction

The oil circulation module is combined into a fully assembled compact unit on a carrier plate and is delivered with a protective cover.

Equipment level

The module includes a two-chamber feed vessel, a filter valve, the oil quantity indicator, a shut-off valve, pressure safeguard valve, vent shut-off valve and two drain plugs. For heavy fuel oil operation there is also heating for the filter and vessel.

Oil supply module OSM

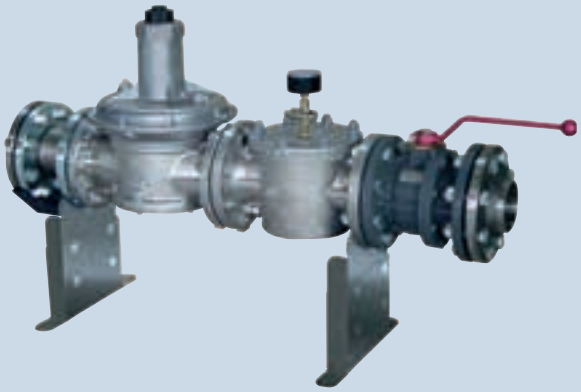
The oil supply module is used for extracting and filtering fossil fuels in ring mains for supplying one or more burners.

Construction

It is preassembled as a single or double station with all fittings in an oil collection vessel for easy installation in the ring main.

Equipment level

Double stations enable filter cleaning without interruption of operations and offer 100 % reserve. The heavy fuel oil extraction module is fitted with electric or combination heating for steam or hot water.



Benefits at a glance:
- Preassembled ready to be installed for fast assembly
- Exact compliance with official guidelines
- Increase of operating safety

Benefits at a glance:
- Preassembled ready to be installed for fast assembly
- Reliable recording of the oil throughput

Benefits at a glance:
- Can be used for all Bosch boiler systems with oil firing and ring mains supply
- Preassembled ready to be installed for fast assembly

Oil pressure regulation module ORM

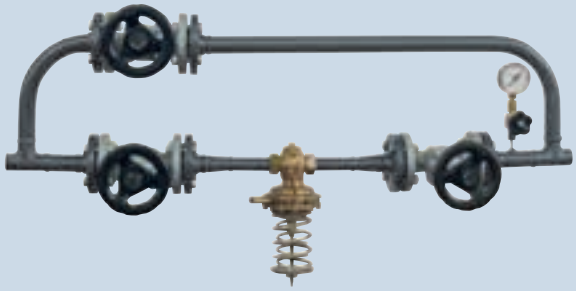
Pressure controlling device for maintaining the pressure in the oil ring line.

Construction

The oil pressure control module consists of a controller, including connection parts such as manometer, manometer valve and a by-pass valve.

Benefits at a glance:

- Preassembled ready to be installed for fast assembly
- Increase of operating safety



Oil preheater module OPM

The oil preheater module preheats the pumpable heavy fuel oil to the atomizer temperature of the respective burner.

Construction

A cylindrical heat exchanger is combined into a compact unit assembled with fittings and delivered on a stable support structure.

Equipment level

The heat exchanger with an extendible tube bundle can optionally be fitted with steam or steam/electrical heating. The module, including the heating control, thermal insulation and all fittings, is preassembled ready to connect.

Benefits at a glance:

- Can be used for all Bosch boiler systems with oil firing and ring mains supply
- Increase of operating safety

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*

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