Newsletter
1/2015

BOSCH
Invented for life

Bosch Industriekessel GmbH
Nuernberger Strasse 73
91710 Gunzenhausen
Germany
Tel. +49 (0)9831 56-0
Fax +49 (0)9831 56-92957
eMail info@bosch-industrial.com

www.bosch-industrial.com

Contents

In Focus

Welcome to Issue 1/2015 of our Bosch Industrial Newsletter. From the efficient energy concept with CHP unit and four-pass boiler for the Traunstein Hospital up to the modular steam boiler system for a chocolate factory and the delivery of large boilers for a French heating plant, Bosch offers a suitable solution for every application. Learn more about this and our news on the innovative system control MEC in our ISH trade fair information.

If you would like to be one of the first to read the latest news straight from the source, you can subscribe to our free digital Newsletter with the postcard attached. We hope you enjoy browsing through this issue.

Bosch presents Energy generation 4.0
Modular efficiency concept and intelligent controls

Frankfurt, March 10 - 14, 2015: On the ISH Energy, the World's leading trade fair for the sanitary, building, energy and air conditioning technology and renewable energies Bosch completely focuses on the subject Energy generation 4.0. With the new product family Master Energy Control (MEC) the steam, hot water and power generators from Bosch can be combined to intelligent systems. Higher efficiency, maximum availability and 24/7 remote service are only some of the customer benefits of a networked energy generation system.

The intuitive user interface of the MEC system allows to view and evaluate the state of a system fast and clearly. With the optional remote connection (MEC Remote) the users can safely access their systems. If required, the experts from Bosch Services provide online support around the clock and suggest optimisations.

Thus, Bosch sets new standards in terms of system availability, reliability and service level compared to other solutions on the market. On the ISH Energy the system can be tested. A Bosch expert will give a live demonstration of the safe access to a test system, for example, in Kazakhstan.

Interactive efficiency configurator for heating and process heat
Another highlight on the trade fair are the interactive configurators for efficient heating and process heat. Whether it is the retrofitting of a heat exchanger, switching from oil to gas operation or air preheating with waste heat, here, trade visitors can acquire an impression of the economic efficiency of different modules and combinations.

When and for whom does a combined heat and power unit pay off? What benefit does the use of waste heat from cooling units have? And which increase in efficiency can intelligent system controls and efficient hydraulics provide? At the Bosch stand on the ISH Energy interested persons receive information about the hidden saving potentials in their current system.

Industry-specific energy concepts and system solutions
With 150 years of experience Bosch has unique knowledge in the area of specific requirements of different industries and users. More than 110 000 successful projects in more than 140 countries are a clear proof of the high competence in the area of energy generation systems.

Highly specialised configuration tools and experienced experts ensure extraordinarily quick and precise customer-specific offer generation. Thus, one of the focal topics at the Bosch stand are energy concepts for different industries. Besides technical information on thermal system solutions from Bosch, our experts will demonstrate the customer benefits by providing insight into innovative reference projects.

The MEC system combines different Bosch industrial products to one intelligent overall system

Perfect combination: CHP unit with four-pass boiler

Efficient system solution from Bosch for the Traunstein Hospital

The operator

The Traunstein Hospital is an academic teaching hospital of the Ludwig-Maximilians-Universität München and a hospital with regional specialised medical services in diagnosis and therapy. As the largest hospital in the „Kliniken Südostbayern AG“ hospital association the Traunstein Hospital ensures medical care for the city of Traunstein and the entire southern Chiemgau region. The hospital has a total capacity of 518 beds at 22 wards and provides of two emergency wards. Several day clinics and competency centres ideally complement the treatment and diagnostic options. Attached to the Traunstein Hospital is the rescue helicopter station „Christoph 14“.

The project

As part of the renovation of its central energy generation and sterile supply department, Traunstein Hospital has decided on an efficient system solution from Bosch. The system consists of a combined heat and power unit (CHP) with four-pass boiler that are perfectly matched with each other. In future, the system will provide part of the required electrical power and heat, as well as the required process steam for the hospital operation. The energy system is completed by intelligent Bosch control technology. The integrated remote technology, for example, facilitates the forward-looking monitoring of the CHP unit. The retrieval of relevant system data is performed by means of a protected web portal with commercially available devices. The same process is used when banking online using PC, tablet or smartphone.

For energy-intensive operations such as hospitals the use of CHP units is especially profitable. The continuous, simultaneous power and heat demand ensures long operating times and thus substantially contributes to reduce electricity costs. The waste heat of the motor powered by natural gas is used for heating the building, DHW heating and for heating the helicopter platform of the hospital in the winter months. The snow- and ice-free helicopter landing pad ensures a rapid treatment for emergency patients.

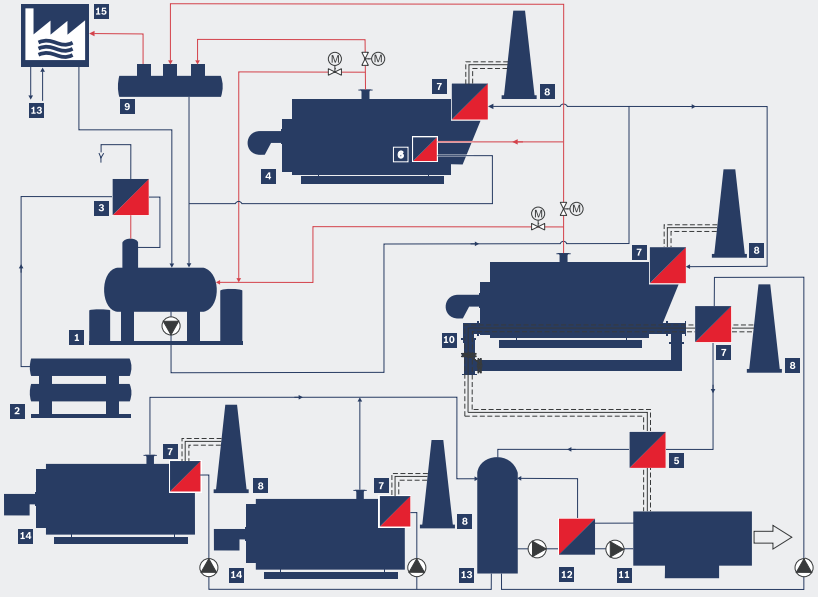
In order to further increase the efficiency of the system the remaining flue gas heat of the CHP is used in the Traunstein Hospital for steam generation. For this purpose, the used UL-S steam boiler is equipped with a fourth pass where flue gases transfer heat to the water. Peak loads are covered by the natural gas-powered firing. Downstream of the boiler a heat exchanger ensures that maximum heat is recovered from flue gases. The hospital benefits from an extremely economic, continuous steam supply for optimal sterilisation and hygiene.

© Kliniken SOB AG

In order to ensure a maximum steam supply reliability an additional UL-S steam boiler with heat maintenance is integrated. With the help of a built-in heating coil in the boiler end the steam generator is kept warm at reduced pressure. This ensures significantly faster availability and increases the service life of the system due to a reduced number of cold starts. In addition, for boosting the heating an UT-L heating boiler is used. Modular boiler house components for heat recovery and water treatment complete the total system. These perfectly matched components increase energy efficiency and ensure an operation with optimised service life.

The conception and planning of this pioneering system was undertaken by the consultant engineers Ingenieurbüro Dickert. The fitting and the installation of the energy system was performed by the plant construction company Auma-Tec during ongoing operation without interrupting the supply.

Simplified piping diagram of the energy system in the Traunstein Hospital



1 Water service module
2 Osmosis plant
3 Vapour heat exchanger
4 Steam boiler
5 Flue gas heat exchanger
6 Heating coil
7 Economizer
8 Chimney
9 Distributor
10 4-pass boiler
11 CHP
12 Heat exchanger
13 Heat storage tank
14 Hot water boiler
15 Consumer

Chocolate factory with a new Bosch boiler system
Modular system technology provides high efficiency and reliability

The Zvečevo chocolate factory has renewed its energy supply at its location in Pozega, Croatia with a Bosch steam boiler system. The system works especially energy-efficient and reliable due to the modular components for heat and condensate recovery, thermal water treatment and control. Compared with the previous steam generation an increase in efficiency of over 15 percent is expected.

The two new natural-gas-powered U-MB-type steam boilers replace three boiler units with a useful life of approx. 30 years. Equipped with standard integrated economizers the waste heat potential is now efficiently used. In the heat exchangers feed water is pre-heated with hot flue gases to 140 °C before it is supplied to the boilers. The fuel consumption reduces as the boilers need much less energy to heat-up the feed water. A reduction of the flue gas temperature minimises emissions and protects the environment.

The thermal deaeration of the feed water ensures a long lifetime of the system and a continuous high steam quality. This procedure protects boilers, components and piping against corrosion. In the water service module WSM-V the water is freed of dissolved gases by heating-up. Subsequently, corrosion inhibitors are added to the feed water in order to bind residual oxygen and carbon dioxide.

By recirculating condensate into the water circuit large quantities of fuel can be saved. The installed condensate service module CSM collects the warm condensate from the steam consumers and feeds it back into the water service module. The lower demand for cold make-up water reduces water and energy consumption. An integrated monitoring system prevents harmful contaminants from penetrating the condensate.

For a boiler-protecting start-up process from a cold state the system is equipped with an innovative control variant. At the push of a button or by means of an external request signal the boilers start-up automated. The operator is relieved from extensive manual activities like the stepwise opening of the main steam valve. During normal and heat maintaining mode integrated protective functions increase reliability and safety. The equipment version SUC (Start-up Control) is available via the boiler control BCO. The teleservice connection offers additional support. Upon request, a Bosch service specialist remotely analyses and optimises the operating data of the system.

The higher-level system control SCO provides for an optimal interaction of boilers and components. The integrated sequence control ensures that even at sharp fluctuations in the steam demand the boilers are always operated at the optimal operating point. Thus, an efficient operation of the multi-boiler system is ensured. Both boilers are equipped with a heat maintenance device via the burner system in order to guarantees a faster availability.

Due to the modular design of the system and the ready-to-connect control technology a fast and error-free assembly by the plant construction company Emax was possible. From consultancy, project planning up to commissioning, the team of Robert Bosch d.o.o. from Croatia competently supported the customer. In addition, Bosch offers services like regular maintenance.

Steel colossuses through the streets of Nantes

Two Bosch UT-HZ hot water boilers have been delivered from the Bosch factory in Gunzenhausen to the French city of Nantes. Each of the boilers weighs 70 tonnes and is over ten metres long and almost 5 metres wide. The steel colossuses are being used in the new heating plant at ERENA, a company owned by the energy supplier Cofely GDF SUEZ. With a total output of 60 megawatts, they will in future support the heating supply to 41 000 homes in Nantes. Bosch's partner of many years, the LCI Group from Carvin in France, was responsible for managing the project on site.

Fax reply

Newsletter application:
please complete and send by fax to: **+49 9831 5692222**

I would like to receive the Newsletter in digital form in future. ☐ German ☐ English

Name*

Company name

Company address

eMail address*

Date* Signature*

*Mandatory field