Newsletter
2/2013

BOSCH
Invented for life

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In Focus

Welcome to Issue 2/2013 of the Bosch Industrial Newsletter! Here you can find interesting case studies from the automotive and food industries, plus our highlights from this year’s ISH Energy. We also present the new Bosch air preheating system for the very first time.

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 boiler system with "Condition Monitoring basic**"**
Preemptive condition monitoring at the bottling plant

At the Altmühltaler Mineralbrunnen GmbH bottling plant in Treuchtlingen, Germany, a new steam boiler system from Bosch Industriekessel has been in operation for several months now. It is one of the first systems to be equipped with the new "Condition Monitoring basic" boiler management function. This ensures consistently high efficiency and availability of the system, and has been available as a new standard functionality within the Bosch boiler control (BCO) since March this year.

Various plant data are analysed and evaluated by the innovative software and displayed for the operating personnel via the traffic light model: green means everything is perfect, orange and red indicate progressive deviations in the boiler's operating mode or inefficient operation. The calculation algorithms work out diagnostic forecasts, allowing operating methods that could lead to a drop in efficiency, increased wear or unplanned stoppages to be identified at an early stage and thereby avoided.

"Condition Monitoring basic" detects, for example, unfavourable start-ups, incipient water and flue gas side soiling or corrosion risk due to flue gas condensation. Efficient and predictive maintenance messages help prevent unplanned down times.

The high data transparency also facilitates energy-optimised boiler operation. Optimisation potentials are highlighted by determining and displaying meaningful plant data, including the boiler load profile, the number of burner cycles or the thermal losses caused by desalting and blow-down.

The state-of-the-art steam boiler at Altmühltaler Mineralbrunnen GmbH, featuring the new "Conditioning Monitoring basic" function which operators can access via the BCO boiler control.

The operator also receives a swift and cost-effective solution to malfunctions via the tele-service in the BCO boiler control. Other system equipment includes an integrated economizer and dual firing for economic and environmentally-friendly operation. The boilers are fired with either natural gas or light fuel oil.

With a capacity of 4000 kilograms per hour, the Bosch boiler reliably provides the process steam required by the bottling plant. The steam is used in the production processes such as cleaning, pasteurisation and sterilisation. The steam boiler system was moved into position and installed by plant construction company Dankl Dampfsysteme GmbH & Co. KG from Freilassing, Germany. The customer service team at Bosch Industriekessel was responsible for commissioning the system.

1st level: Start page with the new button "Condition Monitoring"

2nd level: Selection menu with four areas: operation monitor, function values, consumption values and measurement values

3rd level: Detailed view with new optical display in form of "traffic light function"

New:
More efficiency with the Bosch air preheating system

The new Bosch air preheating system will be available from July this year. It will preheat combustion air and reduce flue gas temperature. Boiler system efficiency will be up to two percent higher. The system is based on a hydraulic interconnection which comprises far fewer components than commercially available two-circuit systems.

The Bosch air preheating system is offered as a standardised version for Bosch single or double flame tube steam boilers with duoblock burners. The system is economically viable from boiler capacities of approximately five tonnes of steam per hour. The option of installing the fan on the boiler top enables the realisation of an extremely compact system with a small supporting surface. The return on investment (ROI) is usually between 1.5 and 2 years.

Efficient heat supply at Volkswagen Slovakia

Covering an area of 1,780,058 m², the Volkswagen Slovakia plant at Bratislava is the home of the production facilities for the Volkswagen Touareg, Audi Q7, Volkswagen up!, Škoda Citigo and SEAT Mii models. For this automobile manufacturer, awareness of the environment, reducing emissions and saving resources are areas in which it is important that appropriate action is taken. It was with these considerations in mind, therefore, that Volkswagen Slovakia turned to Bosch Industriekessel for the heating and process heat supplies in its production facilities, choosing its efficient and environmentally-friendly hot water boilers.

Each of the three Unimat UT-HZ type boilers has a thermal capacity of 20 MW and is built for increased energy utilisation with integrated flue gas heat exchangers, enabling efficiency rates of almost 96 % to be recorded. Burner equipment is another important component if environmentally-friendly operation and minimum emission values are to

be achieved. The speed-controlled fan increases efficiency, reduces power consumption and lowers noise emission at partial load. Oxygen control ensures that the air quantity is just right for optimum combustion, which in turn has a positive impact on fuel consumption. The settings for the boilers and the system are made via the BCO and SCO management systems. A wide variety of operating data can be accessed on the touch panels in the form of curve diagrams and totals displays. This makes control function power optimisation significantly easier than would otherwise be the case.

Bosch Industriekessel is providing Volkswagen Slovakia with an efficient and environmentally-friendly solution for energy provision. Order processing and expert support for boiler technology was purchased locally from Robert Bosch spol. s r.o. from Slovakia. The planning contract has been awarded to Ing. Marián Kapišinský from Levice. The boilers were brought in and installed by the plant construction companies Stavimex Bratislava and IDS Energy Piping Levice.

Bosch at ISH Energy
Convincing large-scale system presentation

Missed the ISH? Don't worry – you can still visit us this year at the Drinktec trade fair in Munich (16-20 September 2013). You can find us at Stand 100 in Hall B6.

Following the successful change of brand name from Loos and Köhler & Ziegler to Bosch in 2012, Bosch presented itself at this year's ISH Energy for the first time with its complete large-scale system portfolio. The high visitor frequency, the positive feedback on the new products and the new stand design under the Bosch brand all imply a convincing trade fair presentation.

An interactive multimedia table invited visitors to tap into the extensive project knowledge from over 110,000 plants supplied worldwide. Three products and two system combinations were demonstrated on the stand in the form of a CHP system, a four-pass steam boiler with waste heat utilisation facility and an ORC system. Bosch also debuted the prototype of a cross-technology system control. The innovative function "Condition Monitoring basic" for industrial boilers was another new product.

The product highlights at a glance:

"Condition Monitoring basic" for industrial boilers
The preemptive condition monitoring concept has a positive effect on maintaining a consistently high level of system efficiency and availability of steam, hot water and boiler systems. The BCO boiler control analyses, evaluates and transparently displays the system data via a traffic light model. Operating characteristics that could lead to a drop in efficiency, increased wear or unplanned stoppages can be determined at an early stage and thereby avoided.

Combining CHP and large boilers

The combination of a CHP and a self-firing flue gas boiler for process steam generation sparked particular interest. The steam boiler has an additional smoke tube pass, which uses the waste gas heat from the CHP for base load steam generation. Peak loads are covered by the integrated firing. The costs to the plant operator are 20 to 40 percent less than those for a separate flue gas boiler. Bosch can offer its customers all the components of this system.

Utilising waste heat potential – with ORC technology

Bosch ORC solutions use waste heat to generate electrical energy. They are suitable for all situations where large quantities of otherwise unusable waste heat are produced. ORC technology is a viable option in a wide range of sectors. It can also make sense to install an ORC system in conjunction with a combined heat and power plant.

A glance into the future of system controls

The cross-technology system control for large-scale systems is currently a major focus of development work at Bosch. Bosch presented a prototype for this system at ISH Energy. The new control unit will combine various products, including a boiler, combined heat and power plant, and accumulator, to form an efficient energy system linked by a single operating interface. This system control is due to be launched at the end of 2013.

Roshen Confectionery
17 shell boilers in use

Roshen Confectionary Corporation, headquartered in Kiev, is one of the world‘s leading manufacturers of confectionary goods. Around 200 different kinds of confectionary products are made, the total output being some 450 000 tonnes per year, at seven sites in the Ukraine, Russia and Lithuania. To supply the required energy, 17 efficient shell boilers are now in operation in the Roshen plants.

Bosch supplied the first two steam boilers for Roshen in 2007. The tried and proven three-pass flame and smoke tube boilers stood out in terms of reliability and energy efficiency. A further 14 steam boilers and a heating boiler were therefore employed in the five years that followed. In total, almost 150 000 kilowatts of installed power are available for confectionary production.

Thanks to the global distribution network, the Bosch Team was able to ensure direct customer contact, one-to-one advice and fast response times in the Ukraine, Russia and Lithuania. The boilers were provisioned and installed by experienced plant construction companies „Kotlogaz“ from Kremenchug, Ukraine and „Castrade“ from Vilnius, Lithuania.

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