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Newsletter
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BOSCH
Invented for life



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In Focus

In our latest issue you can look forward to: The exciting success story for our 150th company anniversary – how Loos became Bosch, Rauch Fruchtsäfte – efficiency by air preheating, Cefak – natural medicine with steam from Bosch and a huge steam boiler on its journey to Chile.

If you would like to be always up to date and receive information at first hand, you can subscribe to our free digital Newsletter with the form attached. We hope you enjoy browsing through this issue.

Passion for power - **Bosch Industriekessel is celebrating its 150th company anniversary** From a boiler manufacturer to a system supplier

This year Bosch Industriekessel is celebrating its 150th company anniversary. The company started as a small boiler manufacturer under the Loos family name. In the past decades it has become a leading global system supplier for industrial boilers. Since its foundation the company repeatedly revolutionised the heat and process energy technology in the large performance range: New and further developments continuously improved the efficiency and the durability of boiler systems.

Today the product range also includes system combinations with integration of combined heat and power units and renewable energies as well as products for waste heat utilisation. Internally developed, intelligent controls and web-based remote functions facilitate higher energy efficiency and provide an optimum interaction of different energy generators. Passion for power - this is our guiding principle. "We are building on a solid foundation that we have created in the past decades. For the future it is very important to use and to network energy much more efficiently. To achieve this we are developing concepts, we are offering system solutions and we are conducting research and development," explains Markus Brandstetter, managing director of Bosch Industriekessel GmbH.

The history of the company began in 1865, when Philipp Loos founded the "Dampf-Kessel-Fabrik PH. LOOS" in Neustadt an der Weinstrasse (Palatinate). In 1917 today's headquarters in Gunzenhausen (Bavaria) were built up to develop a series production of standing steam and hot water boilers. Those boilers proved to be successful on the market. New production locations were established in Schlungenhof near Gunzenhausen in 1958 and four years later in Bischofshofen, Austria.



From a boiler manufacturer to a system supplier: Bosch industrial boilers then and now.

Advancement through innovation

In 1952 Loos developed and patented the horizontal three-pass flame tube/smoke tube boiler with internal water-flushed rear flue gas reversing chamber - today market standard worldwide. During the course of its history the boiler manufacturer brought further innovations on the market that are still setting benchmarks in the industry today. In 1977, for example, the company developed a fully automatic water level control for a 72-hour operation without permanent supervision. Further procedures and boiler system modules e.g. for water treatment, heat recovery and PLC-based control technology followed. These components did not only optimise the boiler operation, they also facilitated system planning and installation significantly.

High quality boilers from Germany and Austria

In the past, boiler pressure vessels were laboriously joined with rivets. The introduction of the welding technique at the beginning of the 20th century led to significant quality improvements and optimised working processes. In 1966 automation found its way into production and as the world's first boiler manufacturer the company used a numerically controlled flame-cutting machine for plate cutting. Today state-of-the-art-manufacturing and testing facilities, welding robots, laser cutting machines and X-ray chambers in connection with the expertise of the specially trained employees ensure highest quality and perfection. Up to 1,800 customised industrial boilers with transportation weights of up to 108 tons leave the production facilities in Germany and Austria per year.

Globally active

Over 115,000 systems in more than 140 countries: When Bosch Industriekessel talks about its market today, it is a trip around the world. Already in the 1980s, first sales subsidiaries were established outside Europe, for example in Asia. Due to the continuous expansion of our sales and service networks at home and abroad the export share currently makes up more than 60 percent.

The 150th anniversary - a joint success

150 years after the foundation of the company, Bosch Industriekessel looks back to this eventful history with pride, characterised by technical revolutions and innovations. The partnership and the trustful cooperation with planners and plant construction companies as well as the expertise and passion of around 700 employees have significantly contributed to this success.



Employee party in Gunzenhausen for the company's 150th anniversary.

Rauch Fruchtsäfte relies on a Bosch steam boiler with air preheating system

Air preheating saves up to 41,000 euros in fuel costs

Rauch Fruchtsäfte GmbH & Co OG has expanded its process heat supply at the Nüziders location in Austria with a new Bosch steam boiler system. Thanks to its integrated economizer and air preheater (APH), the system operates particularly energy-efficient. The air preheating alone saves up to 41,000 euros in fuel costs annually and reduces the CO₂ emissions by 175 tons per year.

The chosen solution also increases the efficiency by two percent, thereby reducing the primary energy consumption and protecting the environment at the same time. Other reasons for the use of a Bosch air preheating system were the low servicing and maintenance expenditure as well as the low investment costs.

The APH air preheating system essentially consists of two heat exchangers. A large part of the heat is extracted from the flue gas in the integrated economizer and is used to heat up the feed



“The steam boiler was equipped with an air preheating system at the request of Rauch. This component alone increases the efficiency by approximately 2 percent.”

Günther Dostmann, project manager
Intemann, Lauterach

Rauch Fruchtsäfte
in Nüziders, Austria.



water. This results in an efficiency increase of approximately six percent as well as reduced fuel consumption. The flue gas releases its residual heat in the first heat exchanger of the air preheating system. The combustion air is preheated with the waste heat via the second heat exchanger. This additionally reduces the system's consumption.

A further efficiency benefit results from the modulating twin-fuel firing. It burns biogas in mixed operation with natural gas. The biogas is generated from the solid remnants arising from the fruit juice production. The motor speed adapts flexibly to the actual burner output by means of speed control. The result is reduced power consumption and noise-reduced operation. Oxygen control combined with a carbon monoxide probe ensures an optimal fuel-air ratio. It continually records the oxygen level and the unburned components of the flue gas and controls the air supply accordingly. This increases the efficiency of the firing system and reduces the fuel demand.

Bosch's state-of-the-art control systems offer intuitive control and permanently efficient operation: evaluations and analysis by the integrated Condition Monitoring software improve transparency and increase efficiency and availability. The sequence control optimises service life by intelligently switching on and off the pilot and follow-in boiler.

The new Bosch boiler system with a steam capacity of 15,000 kilograms per hour provides efficient and sustainable process steam supply at Rauch Fruchtsäfte in Nüziders. The steam system was brought in and installed by the system installation company, Intemann GmbH from Lauterach. The company ATP architekten ingenieure from Innsbruck was entrusted with the planning of the project.



Effective use of waste heat with the integrated Economizer.

Natural medicine - with steam from Bosch

When it came to the subject of steam, Bosch was there right from the start to help the planning company HKS-Tec and the plant engineering company Gassner with the technical equipment for Cefak's new pharmaceutical production. The particular challenges in the project were restricted placement possibilities and a limited installation altitude as well as high demands for safety, sterility and precision in the pharmaceutical production.

A modular U-MB steam boiler system delivers 600 kg/h of particularly high-quality steam. Thanks to the exceptionally compact construction, waste heat can be harnessed with heat exchangers for flue gas, condensation and demineralisation sludge. The automation of demineralisation and blow-down reduces the need for supervision and saves a large amount of energy thanks to demand-based control.



The boiler type U-MB impressed with its compact design.

Pre-assembled modules allowed a smooth installation of the boiler system. Thanks to the piping diagrams supplied as standard by Bosch, the pipe work on-site only had to be connected. The cabling with plug-in connectors was even easier. All the functions of the electronic control were tested on the virtual system prior to delivery. This ensured rapid commissioning by the Bosch Customer Service.

Intelligent control features such as automatic cold-start, efficiency prognosis and automatic boiler water control reduce losses and make the operation much easier for the boiler operator. Integrated protection devices prevent operating errors and ensure a long service life and a constantly efficient operation.



Boiler system automation and intelligent system control reduce energy losses and the internal consumption of the system.

Huge steam boiler on its travels

11 metres long, 4.3 metres wide, 4.8 metres high and weighing 72 tons - these are the dimensions of the largest flame-tube steam boiler operating in Chile to date. The heavy-load transport of the Bosch industrial boiler took three days from the Chilean port city of Valparaiso to its destination, a production hall of a leading food producer in Santiago de Chile, situated around 115 kilometres away. The starting point of the journey was Gunzenhausen (Germany), where the huge steam boiler was produced.

The boiler delivers up to 40 tons of steam per hour at a pressure of 13 bar. It achieves an efficiency of around 95 percent. Equipped with a dual burner, it can be fired with either gas or oil. Compared to its predecessor, the Bosch boiler saves around 150 cubic metres of gas or 120 kilograms of oil per hour. The boiler is now ready for commissioning and will generate process steam for the processing of milk, yogurt, juice, jam and other food products.



Reply

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