



The Piesau glassworks, that has occupied this site since 1622, has now been modernized to the latest State-of-the-art.

picture: Kaeser

Michael Bahr, Coburg

Piesau Glassworks opts for efficient air technology

Traditional glassworks successful on the open market

Entry into the open market proved to be a successful venture for the German Piesau Glassworks in Thuringia. Incorporation into the Heinz Glass Group and modern technology has turned this former East German glassmaker into a competitive presence on the international market. The modernization of the compressed air supplies was an important contribution to this success.

Specialists for small glass containers

The manufacture and processing of glass has a long tradition in the Thuringian Forest and a glass works has existed in Piesau since 1622. The combination of long tradition and substantial knowledge, together with the modern plant installed after the fall of the wall, made the transition from a communistic to a market-driven enterprise possible. Incorporation into the Heinz Group

opened markets and opportunities that the Piesau team took full advantage of, forging business links to prominent German and international customers. With its workforce of about 185, the company is the largest employer in the area.

The product range comprises small glass hollowware for cosmetics, spirits and other drinks and for semi-luxury foodstuffs and gift articles made of glass. As well as clear glass, the Heinz Group can quickly change over to opaque or colored glass production with the same tooling. Various finishing processes, such as acid etching, spraying and silk-screen printing can also be offered. With about 45% of production going to export, Piesau Glassworks has proved its international competitiveness.

Betriebspraxis

High performance, modern glass technology

In Piesau a 50 and a 100 ton melting furnace feed IS (Individual Station) machines which use a single, double and triple-drop process to produce blown, press-blown and pressed vessels. These vessels are produced using highly specialized melting and processing technology and are available in the weight range 12 to 750g and capacities of 5 to 1000 ml.



Compressed air is the main energy carrier for glass vessel production

Whereas the melting furnaces run on electricity and gas, compressed air is the main energy medium for the processing machines. The air is mainly used for blowing the raw vessels and initial and final blowing. At present, five IS machines with 40 individual operating stations are and each station consumes 3.5 m³ of compressed air per minute.

The versatile product range of the Piesau glass works includes small vessels for cosmetics, semi-luxury foods and high quality glassware for the table.

Picture : Glassworks Piesau

Air is also used for gas valve control, bulk material transport, operating flaps, etc.

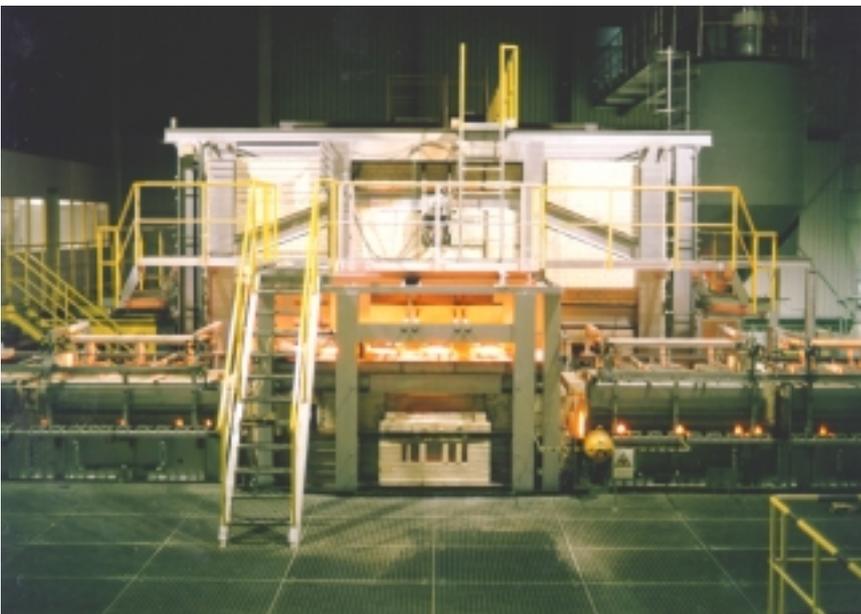
The primary air main supplies an overall air consumption of 205 m³/min. In addition, vacuum is needed for handling, packing and transport equipment.

Highly efficient air and vacuum center

In the new air system, seven larger FS, ES and DS Kaeser screw compressors provide air for the 5 bar primary air main and two smaller SK models provide control air at 6 bar for the secondary air main. Vacuum is generated by three Kaeser BSV 100 screw vacuum packages and the air is treated by refrigeration dryers and filters downstream. Two air receivers of 5000l capacity each serve as buffers.

Intelligent control and monitoring (VESIS)

All three compressor systems are controlled and monitored by a "Vesic" master controller using modern bus technology. This system, working on a SIMATIC basis, can adapt modern compressor control technology, air treatment technology and monitoring technology precisely to the individual requirements of the factory. In addition, it can be combined with a central control system without problem. Control of the individual components of the air center, that is, the compressors, dryers, filters, condensate drains, control valves and other treatment equipment is taken over by the smallest element of the VESIS system integrated in the equipment concerned. Using Sinec-L1 technology, this element can communicate with the supervisory level of the air center that is provided with the expertise of a proven microprocessor master controller, including Kaeser's measurement, control and regulating system (MVS/MCR).



A 50 and a 100 ton melting furnace feeds the Individual Station (IS) machines

picture: Kaeser

Betriebspraxis



All kinds of hollowware are produced on the 40 individual operating stations with the help of compressed air.

picture: Kaeser



Vacuum is used for handling, transport and packaging of the glass vessels.

picture: Kaeser



Seven larger KAESER FS, ES and DS screw compressors feed a 5 bar air main with the necessary compressed air.

picture: Kaeser

Important events occurring in the air system can be recorded (retrospectively as well) and displayed in plain language. By even loading of the compressors, automatic monitoring of all equipment and precise matching of the compressor performance to the current air demand, the intelligent controller also ensures maximum availability, extremely efficient operation of the air center and significantly increased maintenance intervals. It is also capable of controlling one or several air systems working independently (up to a maximum of 16 compressors). With Sinec-L2 bus technology (Profibus), the controller can be linked to a control center that can receive the air center's data and, if required, initiate corrective measures. The unlikely event of a controller malfunction is also well provided for in that the compressor's internal controller is automatically switched in, ensuring the supply of compressed air to the factory. The VESIS master controller therefore ensures high efficiency as well as optimum reliability and availability.

Commercially decisive

For technical director Falko Kaestner, the efficiency of the Kaeser system was the deciding factor: "Thanks to the good performance and optimized workload of the compressors I anticipate an early payback on investment. The improved ventilation of the air center brought about an



Two smaller KAESER SK screw compressors (to the left) generate the control air at 6 bar. The Vesis master controller (right) ensures even loading of the compressors, automatic control, monitoring and maximum availability of the compressor packages.

picture: Kaeser



Three KAESER BSV screw vacuum pumps supply the factory with the vacuum required.

picture: Kaeser



Two from altogether four refrigeration dryers of the station. The large-scale installations of the type Kaeser TL 7300 are responsible for the air treatment.

picture: Kaeser