

Innovative compressed air supply in an industry with tradition

A "Wheel" Investment

Michelin is making the Kronprinz wheel factory in Solingen-Ohligs, Germany, fit for the future with a comprehensive investment program. An important part of the program involved modernisation of the compressed air supply which was converted to "Sigma Air Utility".



The facade "hides" the air system



Discs and rims are being welded together



Welding the rim



Welding complete



Automated processes for efficient production



Lorry wheel rim profiling

The wheel factory in Ohligs was founded in 1897 as the "Kronprinz Incorporated Company for Bicycle Parts", by Rudolf Kronenberg and Carl Prinz. The company had been part of the Mannesmann group since the 1930s, but after the group was taken over, it was sold to Michelin by Vodafone.

The world market leader in tyre manufacture was primarily interested in the OEM business Kronprinz has with every major player in the German car manufacturing industry. Borbet, an alloy wheel manu-

facturer, is now also located at this site and the entire plant is supplied with compressed air from the Michelin factory's new compressor station.

Answering the call of progress

From its beginnings as a bicycle wheel rim manufacturer Kronprinz has always been an innovative company. The expanding automobile industry enabled the company to grow and become one of the foremost OEM wheel manufacturers for cars and trucks.

Kronprinz played a significant part in the development of today's automobile wheel design of pressed wheel disc and welded rim.

At the beginning of the 20th Century, the necessary procedures and machines, for example for welding steel tubing which was just as strong and lightweight as seamless pressed steel tubing, were developed by the outstanding engineer Rudolf Kronenberg. Today, approximately 800 employees produce over 30,000 car and truck wheels per day.

A new concept in compressed air supply

The company's innovative approach was illustrated when it came to replacing the site's compressed air supply. Instead of buying compressors and air treatment installations for the 300 m³/min air requirement and having to run them themselves, the Solingen company decided to take a new approach. They provided a suitable room including power supply and let the KAESER experts not only install a new compressor station and air distribution network, but also let them run it. This kept capital spending to a minimum and ensured that Kronprinz resources were not tied up with compressor servicing and maintenance work.

Kronprinz recognised the additional benefits of "Sigma Air Utility" KAESER air-contracting, such as the dependable supply of air, guaranteed air quality any time and unbeatable air cost transparency. Last but not least, they enjoyed tax ad-

vantages and an agreed long term fixed price per cubic metre of air.

Built-in energy efficiency

A screw compressor is at its most efficient when its load is as close to 100% as possible. Therefore, there's virtually no room for improvement with the KAESER compressor station, as the seven base-load compressors (ESD 441) operate with a load of 99.8%! The two peak-load compressors (DSD 241) run at nearly 93%, which is impressive enough, but is in fact outstanding for a peak-load compressor. Of course, this excellent efficiency is no coincidence. It is the result of KAESER's optimised interaction between cutting-edge compressor technology and advanced I.T. solutions. The compressor station is controlled by a "Sigma Air Manager" system which, like the "Sigma Control" fitted to the individual units, is based on robust industrial PC architecture. As the pressure range control works with a narrow spread of ± 0.3 bar, lower maximum pressure is possible. This led to considerably lower consumption, as did elimination of leakage losses through installation of the new air piping network. Including the heating energy savings contributed by the new heat recovery system, the environmental impact is the equivalent to a 4800 tonne reduction of CO₂ emissions into the atmosphere per year. Also saved are the 1.5 mil-

lion cubic metres of water per year which would have previously been required for cooling the compressors.

Rolf Grandt, the maintenance manager, is a happy man, as KAESER compressors are outstandingly reliable and the "Sigma Air Manager" automatically communicates with the KAESER service centre regarding service and maintenance. Michelin-Kronprinz's air supply is now as close to ideal as can be imagined: it is dependable, affordable and almost invisible.



Unbeatable efficiency: the new 2 megawatt compressor station

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Easing the pressure of compressor installation at the Michelin-Kronprinz wheel factory in Solingen, Germany.