Energy-saving pump action

The advantages of rotary vane technology for glass production – Daniel Hilfiker explains why German glass manufacturer Weck Glaswerk has repeatedly chosen Pneumofore to supply vacuum and compressed air to its IS machines.

Manufacturer of vacuum pumps and compressors for industrial applications Pneumofore supplies the hollow glass industry with centralised vacuum and compressed air systems, designed for the pneumatic requirements of IS [individual section] machines that transform molten glass into containers.

For decades Weck Glaswerk, one of the most historical and renowned glassworks in Germany, has relied on rotary vane technology for the supply of vacuum and compressed air to its IS machines.

History of Weck Glaswerk

Founded in 1900 by Johann Weck and Georg van Eyck, the company that would become Weck Glaswerk was once so renowned for its wide neck glass containers in Germany that 'einwecken' became the nomenclature for storing food in the typical white glass jars with the orange gasket and the glass cover, secured by the metal clamp closure. In the last century, this solution was revolutionary as it notably extended the durability of home-made food such as jams, vegetables, fruit and more. Weck glass containers extensively supported families during the war times by offering food conservation as never before.

After the Second World War, the company built a new glass factory in Bonn-Duisdorf which began producing the Weck preserving jars in 1950. Still owned by the grandchildren of Georg van Eyck, the plant has since been developed into a high-performance, largely automated glass factory, which today produces not only the traditional Weck preserving jars, but also beverage bottles and industrial canning jars for the filling industry as well as glass blocks for the construction industry.

The Weck Glaswerk plant in Bonn, Germany, sports the company's famous red strawberry logo.

Weck Glaswerk produces around 400 million glass containers each year.

Modern day expansion

In 2017 a new vacuum pump was required to cover the expansion of the plant in Bonn. The aim was to improve the vacuum supply, possibly by reducing power consumption. The Weck Glaswerk engineers carefully evaluated the various options and, following a visit to the Pneumofore production plant in Turin, Italy, the decision was made to commission Pneumofore's UV30 rotary vane vacuum pump. Weck kept an eye on the efficiency and behaviour of the air-cooled pump over time; its smooth non-stop operation and ease of (independent) service confirmed the company's trust in Pneumofore.

In 2019 Weck Glaswerk commissioned a second UV30 pump with Variable Speed drive, as well as Pneumofore's low-pressure A400.4 air compressor for the supply of 3 bar(g) pressure. Due to the low rotation speed and consequent low temperature, and the ability to set the desired pressure according to production requirements, Weck Glaswerk has enjoyed the benefits of reduced electric power consumption along with steady pressure from the compressor.

An on-board PLC provides the option to monitor the compressor's


The Pneumofore A400 Air Compressor installed at Weck Glaswerk.

Pneumofore UV30 Vacuum Pump with Variable Speed drive.

performance by interfacing with the plant production data collection and management system. The capacity request will vary depending on the amount of running IS machines and mould sizes. There is no need to run the vacuum pumps and compressors at full load during job-change situations.

Extended use and sustainability

The concept of longevity is innate to the philosophy of Pneumofore and Weck Glaswerk, as reflected by their history and products. Weck manufactures a glass container with a high re-use rate; the jars last several seasons and replacement gaskets for sealing after years of intense usage are easily found in supermarkets. Passed on through generations of home-cooking families, the Weck jar is a hygienic, re-usable, enduring glass container symbolic of a fundamental respect for the environment. Pneumofore is also engaged in the active contribution of lowering emissions. With a clear policy against 'programmed obsolescence', since 1923 the company has been designing its machines to meet the toughest demands of durability and reliability. Tangible proof exists in the form of Pneumofore units still running after 50+ years of continuous operation.

Video testimonial

The steady running of all the Pneumofore machines under full load over the years, combined with confirmed power consumption savings prompted Weck Glaswerk to document the installation of its latest equipment. The video describing the Pneumofore rotary vane machines installed by Weck Glaswerk was recorded in German, however it is available with English subtitles on the Pneumofore website and in several languages on the company's YouTube channel: www.youtube.com/pneumofore

The success of the Weck Glaswerk and Pneumofore collaboration relies on their shared values and similar historic background: family-owned companies that have succeeded through generations and managed to strengthen their identity as independent manufacturers today. ●

Forming of Weck glass containers at the company's IS machine.

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