CompAir

CASE STUDY
FOOD & BEVERAGE

PureAir™ technology at Mast-Jägermeister

In 2006, with growing profits and high product demand, German bitter and liqueur producer, Mast-Jägermeister installed a new bottling line at its Linden facility capable of producing 20,000 bottles per hour.

Complete Equipment Solution

The purity of the compressed air used in the bottling process is critical to the finished product quality. After assessing several manufacturers' systems, Jägermeister chose two CompAir D75H SR machines from licensed dealer Diehl Drucklufttechnik.

Coupled with the excellent lifetime ownership costs, thanks to the machines' minimal maintenance requirements, other key deciding factors included completely oil-free operation and high-energy efficiency.

Air Purity Guaranteed

Compressed air is blown into the bottles to remove any dust or impurities before filling. As this is a critical control point in the process, the client placed high demands on the purity of the air, imposing strict quality standards for oil, contaminant and humidity content.

Overview

Client
Mast-Jägermeister

Location
Wolfenbuettel, Linden, Germany

Application
Bottling of alcoholic drinks

Products
D75H SR oil-free compressor

Customer Benefits
Guaranteed air purity/energy consumption reduced

The CompAir DH units feature PureAirTM technology, meaning that the compressor is water injected and does not contain a single drop of lubricating oil. This assures premium air quality, eliminating any concerns over product contamination.

Werner Struck, mechanical engineer, describes the principles behind the oil-free concept. "Our developers in Simmern combined their expertise in control and drive technology with water injected screw compression... developing an extremely cost effective operation with minimal service costs."

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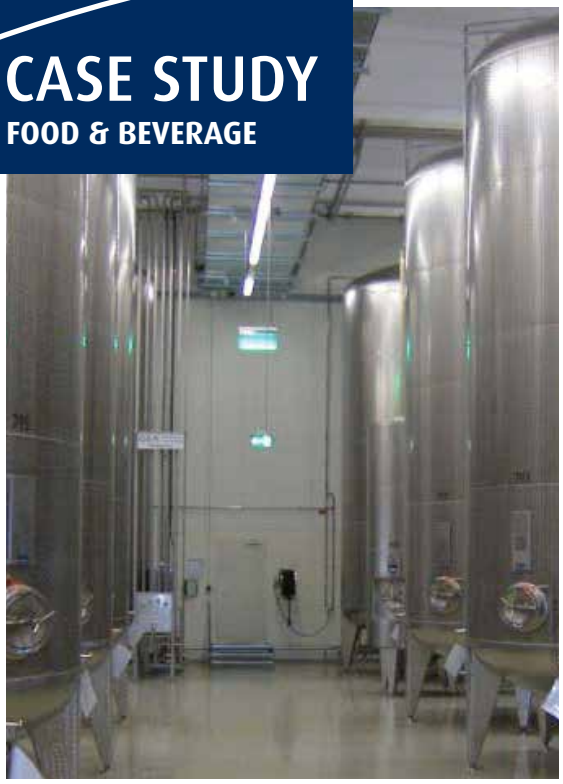

Benefits at a glance

- Guaranteed oil-free compressed air meets food-grade quality standards - avoids contamination and product rework
- Unique Switched Reluctance drive system - adjusts energy consumption to air demand, to reduce electricity costs
- Improved pipework installation helps minimise pressure losses to save energy
- Total equipment supply and service package from one source - simplifying installation and maintenance
- Robust oil-free machine resists wear and tear - less parts to maintain for lower service costs and reduced downtime

Energy Efficiency Optimised

It is a fact that for every bar of pressure lost down the line, the compressor will have to use 6% more energy to compensate. Diehl Drucklufttechnik was able to retain maximum point-of-use system pressure by using larger 89 mm pipework that is less prone to aerodynamic drag. This results in extremely low network losses of 1.8% compared to an older compressed air network, which, depending on its condition can be between 10 and 15%.

In addition, the D75H SR units use an innovative Switched Reluctance (SR) drive system, which measures the discharge pressure and varies the speed of the compressor accordingly, meaning that only the required energy is consumed. Typically a compressor running at 4,000 hours a year is operating at 50 – 70% of its rated load, with maximum power only needed during short periods. Using SR technology, energy costs can by reduced by up to 25%.

High Performance – Low Maintenance

The design, bearing technology and materials used, make the compressors extremely resistant to wear and also significantly reduce both maintenance and operating costs. Achim Baumbach, Director of Diehl Drucklufttechnik explains further, "The principle behind the compressor is fantastically simple. Completely oil free and energy saving operation coupled with few parts and a slow speed mean that the compressors have a particularly long life cycle."

The End Result

Jägermeister is already considering ways to increase productivity. The business could double production, without any additional construction work and the CompAir network could be adapted easily to supply a second bottling line.

> "Our developers in Simmern combined their expertise in control and drive technology with water injected screw compression... Developing an extremely cost effective operation with minimal service costs"

Wener Struck, Mechanical Engineer

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