



## CompAir PureAir™ Technology in Operation at Mast-Jägermeister

### Customer

Mast-Jägermeister

### Location

Wolfenbuettel, Linden, Germany

### Application

Bottling of alcoholic drinks

### Product

D75H SR oil-free compressor

### Customer Benefit

Guaranteed air purity / energy consumption reduced

### 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

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.

The CompAir DH units feature PureAir™ 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."

### 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%.



The new bottling line produces 20,000 bottles per hour



**CASE STUDY**

**FOOD AND BEVERAGE**

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### Technical Data at a Glance

- High-quality reverse osmosis water filtration - for absolute air purity
- Digitally-controlled SR motor - for precise speed control
- Near isothermal compression – for significantly reduced energy consumption
- Extremely low bearing loads and low speeds - for long life operation of the air end up to 48,000 hours
- 2-stage filtration passes clean air to the compression chamber - for longer service life
- Oil less operation with fewer parts to maintain

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 be reduced by up to 25%.

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.”

### High Performance - Low Maintenance

The design, bearing technology and materials used, make the compressors extremely resistant to wear and also significantly reduce

### 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.

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Werner Struck  
Mechanical Engineer



*Processing plant at Mast-Jägermeister*