

CASE STUDY

FOOD & BEVERAGE



CompAir lowers energy costs at world's oldest brewery

A variable speed, oil-free compressor from CompAir has helped the world's oldest brewery to achieve a 30% reduction in its compressed air energy costs.

Established by the Benedictine monks of Weihenstephan Abbey in 1040, the Weihenstephan brewery in Freising near Munich produces a wide range of premium quality wheat beers.

The brewery aims to manufacture with the most efficient use of resources and during the last few years has embarked on a programme of energy reduction.

Overview

- ▶ **Client**
Weihenstephan Brewery
- ▶ **Location**
Freising, Germany
- ▶ **Application**
Beer Processing
- ▶ **Products**
D22H RS regulated speed, oil-free compressor
- ▶ **Customer Benefits**
30% energy savings/high production reliability

Application Details

Gerd Abstreiter, engineering manager at the brewery explains: "Brewing is an energy-intensive process. As well as electricity, nearly all of our core processes require compressed air and steam." The brewery's existing compressed air system contains two CompAir oil-free piston compressors that supply 7.8m³ and 10m³ of compressed air per minute respectively. One of the compressors operates at full load and the other at half load – providing an economical solution when the

brewery is operating at full capacity from Monday to Friday, but not when production is reduced on night shifts and weekends.

"When the brew house and bottling plant are both inactive, we only need around 1.5 m³ of compressed air per minute to maintain the system pressure and operate the many pneumatic control elements," says Abstreiter. "As a result, the large compressors were spending a lot of time idling, which was uneconomical."

CASE STUDY

FOOD & BEVERAGE



Benefits at a glance

- ▶ 30% reduction in compressed air energy costs
- ▶ Compression temperatures of just 60°C - contributing to low power consumption
- ▶ Variable-speed drive technology matches compressor flow to demand with great efficiency
- ▶ Reliable, clean oil-free air
- ▶ Economical solution to lower compressed air requirements during reduced production periods
- ▶ Reduced maintenance time and associated costs

The company therefore began to look for a new compressor that could economically provide these smaller output volumes. In addition, the brewery repaired leaks in the huge network of pipes, reducing the amount of air lost through leakage by 50%, and also installed a compressor control system.

The Solution

In May 2010, the brewery opted for an oil-free, variable speed D22H RS compressor from CompAir. Featuring PureAir technology, the compressor generates totally oil-free compressed air, making it ideally suited for the brewery's stringent hygiene requirements.

Water is used to lubricate, seal and cool the compression process, providing low compression temperatures of just 60°C – contributing to low power consumption. Variable-speed drive technology matches compressor flow to demand with great efficiency. This means that the unit produces the correct volume of air required by the application at all times.

Taking over the base load on Friday afternoon, the D22H RS ensures a constant pressure level at lower speeds during the weekend until the brew house returns to full operation on Sunday evening. This allows the brewery to cover all load situations whilst avoiding unnecessary idling costs when the demand for compressed air is low. The new setup has also improved production reliability; if one of the two larger compressors fails, there is still enough compressed air to meet all requirements.

A maintenance agreement ensures peace of mind for the brewery, as CompAir is responsible for the continuous availability of the compressors. The simple construction of the DH compressor, using fewer wear-prone parts, has already resulted in lower maintenance time and associated costs for the brewery.

The D22H RS was also integrated into the brewery's compressor control system. This allows operators to monitor the current demand for compressed air and review recent consumption trends, enabling the cost of compressed air to be calculated.

"Together with CompAir we measured the power consumption of the system and found that the combination of the new compressor and the leak repairs has reduced our electricity consumption by around a third," explains Abstreiter.

“Together with CompAir we measured the power consumption of the system and found that the combination of the new compressor and the leak repairs has reduced our electricity consumption by around a third”

Gerd Abstreiter,
Engineering Manager, Weihenstephan Brewery