



The chilling system was manufactured in STULZ's Hamburg factory and delivered straight to the construction site.



The site is in the heart of the city, which is why noise protection was such an important consideration.

Still cooling for Sparkling wine

Cooling system for Rotkäppchen-Mumm

For its production of alcohol-free alternatives, Rotkäppchen-Mumm was on the lookout for a cooling system for its vacuum dealcoholization plant in Eltville am Rhein, Germany. The main challenge here was minimizing the noise of the running system in the interest of nearby residents, and coping with throughput variations inherent in the production. A successful solution was finally found by the supplier and production team working closely together.

The Customer

Rotkäppchen-Mumm is Germany's largest producer of Sekt (sparkling wine), and produces its well-known Rotkäppchen Sekt alongside spirits and wines such as Chantré, Echter Nordhäuser and Blanchet. With total sales in 2016 of around 271 million bottles of Sekt, spirits, wine and wine-based beverages, the company accounts for 55.4 % of the German Sekt market, achieving overall sales figures of 986 million euros.

The Project

Rotkäppchen-Mumm needed a chilling system for the vacuum dealcoholization process for the production of its alcohol-free alternatives, such as "Rotkäppchen Alkoholfrei" and "Mumm Dry Jahrgang Alkoholfrei", at its Eltville plant. However, the site is situated in the town's historic center, right next to the banks of the Rhine. Rotkäppchen-Mumm therefore



wanted to prevent noise disturbance to residents. So the first challenge was to install a liquid cooling system that could provide the necessary cooling capacity and operational reliability, but with the lowest possible noise level.

The greatly fluctuating water flowrates posed a further challenge. The degree of required cooling varies greatly depending on the production phase, so that sufficient reserves are required for fail-safe operation (see header image).

Planning and Design

In order to generate the required cooling capacity and satisfy the noise constraints, Rotkäppchen-Mumm chose a CyberCool 2 from STULZ with a cooling capacity of 860 kW. The unit's "Axi-Top" fan diffuser attachments are specially designed to maximum efficiency while guaranteeing minimal noise levels. Moreover, deliberately oversizing the heat exchangers of the chiller allows the system to run at a reduced fan speed. This also has a positive effect on sound output. Another advantage of this oversizing is the increased energy efficiency and durability of the system, which covers approx. 70 % of production capacity even with a single refrigerant circuit.

To ensure fail-safe operation, the vacuum dealcoholization process demands dramatically different water flowrates in the various phases. To meet this challenge, a 6 m³ buffer tank was designed and installed, to always provide sufficient water for each phase of the process. The tank

TECHNICAL DATA

Cooling Capacity: 860kW

EER incl. chilled water pump: 2,8

Refrigerant: R134a

Evaporation Temperature: -2°C

Refrigerant Agent : 30%
Propylen-Glycol

Refrigerant agent inlet: +6°C

Refrigerant agent outlet: 0°C

Ambient Temperature: +35/-20°C

Sound Output: 88dB(A)

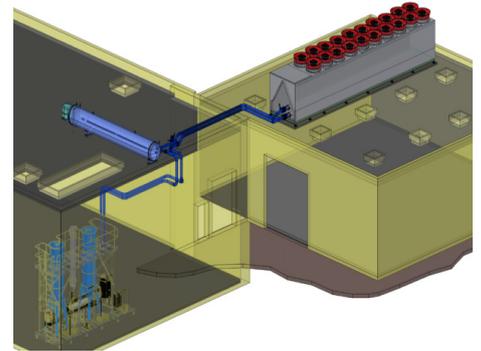
Compressor: Bitzer screw compressor

and all pipework was constructed of stainless steel 1.4571 to AD2000. What's more, the system features two redundant refrigerant circuits, each of which is equipped with a Bitzer screw compressor.

Implementation

The chilling system was manufactured at STULZ's Hamburg plant and tested on the company's own performance testing station to ensure it met the necessary operating and design conditions. This considerably reduced time spent on start-up at the customer's site. Production and installation planning, including individual components and pipework, was all in 3D for greater peace of mind, and was performed on site.

Since Rotkäppchen-Mumm had purchased a turnkey solution, STULZ coordinated acceptance testing by the approved inspection agency and was continually at hand during this process.



Schematic diagram of the cooling application