



For healthy finances.

QUANTUM chillers are providing increased energy efficiency and cost savings at Schön Klinik Vogtareuth.

Schön Klinik is a privately-funded clinic group that specialises in orthopaedics, neurology, psychosomatic medicine, surgery and internal medicine. At 17 locations in Bavaria, Schleswig-Holstein, Hessen and Hamburg, 8,800 doctors, nursing staff and therapists treat 94,000 patients from all insurers every year.

At Schön Klinik Vogtareuth, around 16,000 patients from all over the world are treated every year. The clinic is highly specialised in neurology, orthopaedics, spinal surgery, hand, elbow and foot surgery, as well as neurosurgery, epilepsy surgery and heart and vascular surgery. The clinic is also an international leader in the treatment and rehabilitation of children with neurological and orthopaedic illnesses.

Many requirements, one solution: QUANTUM

The customer's desire for more energy efficiency was the main focus of the cooling concept. The solution is QUANTUM, with its impressively high energy efficiency, especially under a partial load. At Schön Klinik Vogtareuth, one QUANTUM chiller runs during normal operation, and a second chil-

ler is added when required. Redundancy was of equal importance during the planning. To ensure the safety of the patients at all times, a third, existing QUANTUM chiller was set up for emergencies. A hospital should be a place of convalescence, therefore a good room climate must go hand-in-hand with the quiet that is so important to patients: a cooling concept for clinics should always consider the resulting structure-borne and airborne sound. The right temperature is also essential for sensitive medical equipment to function correctly. A QUANTUM chiller meets these requirements: the oil-free magnet bearings are especially quiet and smooth-running, and the staggered start prevents starting current peaks, while the use of EMC filters protects against electromagnetic interference.

Clinic Doubles in size after expansion

The new cooling concept for the Schön Klinik in Vogtareuth was attended by a new building. A new operating wing was added to the existing building, doubling the overall area of the clinic. A QUANTUM with a cooling output of 480 kW was already in use in the old building. This machine was moved to the new cooling centre. A chiller with a scroll compressor from another manufacturer was also being used in the existing building. It was operating with the environmentally harmful and no longer permitted R22 refrigerant. Just one reason why this chiller is no longer in use.

Turning 3 into 2 - thanks to efficient technology

The building extension meant a significant increase in the cooling requirement of the clinic, with the need for three new chillers.

The use of open flash economizers enabled the cooling specialists from ENGIE Refrigeration to provide a solution that required only two QUANTUM chillers (each with a cooling output of 355 kW).

Additionally, it was possible to convert the heat exchangers that were initially set up adiabatically into more economical and lower-maintenance dry coolers. And one particular benefit was that the quiet, vibration-free operation of the QUANTUM chillers used meant that no additional building measures were necessary, such as special foundations or insulation. Therefore, the operator saved not only the cost of an additional chiller but also these investments in the building.

Time and space at a premium

An existing hospital cannot simply be closed, and so the work was carried out during its ongoing operation and to a tight deadline. The chillers were installed by means of a ceiling shaft, and only when the new chillers were in position and in service was the existing QUANTUM chiller moved. It now functions as an emergency chiller, ensuring the cooling redundancy so important for a hospital.



Open-Flash-Economizer.

Schön Klinik Vogtareuth - Overview of features

- 2 QUANTUM chillers (type X045) with 355 kW for cooling all areas of the hospital:
 - Air-conditioning systems: Operating theatre, intensive care, clean rooms, central sterile materials supply
 - Machine cooling: MRT and CT
 - Recirculation coolers: EDP, IT and medical IT in the operating theatres
 - Chilled ceilings: Intensive care
- 1 QUANTUM chiller (type X060) with 480 kW as an emergency chiller always provides 60% of the cooling output
- Intensive consulting on the components integrated into the cooling process, such as pumps, re-cooling systems and buffer storages
- ENGIE Refrigeration is the service partner of Schön Klinik: Analyses the ongoing operation and works consistently on the energy optimisation concept



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