

Process safety comes first

Neopac relies on process save and energy-saving gwk technology



Neopac is a company of Hoffmann Neopac AG with approximately 370 employees. Neopac's core business is the production of tubes with high barrier properties for the pharmaceutical, dental and cosmetic industry. The range includes a wide locking range for various applications, high-quality decoration from offset and screen printing and hot foil stamping and a technical development competence centre for customer-specific tube packaging in addition to the broad tube range.

Neopac in Oberdiessbach works 13 tube lines running in 3 and 4 shifts. Per line and hour approximately 5000 tubes are produced, which amounts to approx. 400 million tubes per year. Process safety is paramount at Neopac. The company sets relies on the expertise and experience of the system supplier for the heating and cooling technology, the gwk Gesellschaft Wärme Kältetechnik mbH from Kierspe.

Review: Spectacular heat recovery system laid the foundations for a long-term partnership.

In 1986 a heat recovery system with heat pumps was installed which consisted of seven circuits in total. These were merged together to a plant. Production was provided by 4 cooling circuits, three of them as closed and one open cycle with temperature from 6 ° C to 30 ° C.

Production and storage facilities were provided with 50 ° C warm heating water, the heat dissipation served as office heating at 65 ° C, and supplied a paint shop via a cascaded coupling with a separate heat pump with 95 ° C hot water.

Conducted study showed an annual reduction in oil consumption by 150 000 l, which was guaranteed by gwk. Even an annual reduction in oil consumption to 200,000 litres of oil was realized after the implementation of the project. This spectacular project describes R.A. Zeppenfeld in detail in his book [1].

Reduce operational costs and energy consumption with an individual re-cooling plant

Production at Neopac was complemented by additional tube lines due to the positive order situation last year.

On request of the company gwk Gesellschaft Wärme Kältetechnik mbH from Kierspe (Germany) expanded the existing cooling system through a re-cooling plant individually tailored to the needs of the customer. Reduction of current operational costs and energy consumption were the requests at Neopac that had to be fulfilled. To counter the ever-rising energy costs, the company placed a targeted energy saving policy at the heart of thinking in the design process of the plant.

Andreas Bigler, the infrastructure manager is convinced of the cooperation with the gwk: „Due to the good experience with the consulting and implementation services of the gwk employees, we placed this order too with the specialist from the Sauerland“.

Cooling system ensures process quality

Process quality is often directly dependent on the temperature stability of cooling water. Gwk cooling provides all production areas of company Neopac and provides thus the required temperature stability that is so paramount for process safety.

An interesting example of a tailor-made and energy-saving solution is the operating central cooling system with a dual-circuit with a first cardiovascular tube cooling circuit and a second circuit to cool hydraulics.

Cycle 1 is used to cool the tube mould group. The mould circuits are cooled by compact air cooling systems with a feed temperature of 10 ° C. For a flexible and energetically optimal adjustment of the system to different production workloads, circuit 1 was equipped with energy-saving and air-cooled industrial chillers with continuous power regulation and winter relief loop. The chillers can be by-passed at certain temperatures or run in partial-load operation, thus resulting in sustainable electrical savings results.



The energy-saving hermeticool system in dual-circuit-cooling configuration abandons completely the option to use the costly refrigeration compressors at low outside temperatures.

return temperature of 13 ° C, the chiller is run in partial mode. This is the case for example in the transition between summer and winter, thereby the water returning from the consumer is pre cooled by the gwk hermeticool, the chillers take on only a supplementary cooling function in this system status.

At greater temperature differences or low ambient temperatures the cold water is generated not by the expensive operation of chillers but with minimal energy consumption using fan cooling. In the summer times cold production is done exclusively by the energy-optimised chillers. They are equipped with continuous regulated screw compressors to reduce energy consumption. This positively affects the operational reliability and service life of the refrigeration machine.

Proper refrigerant for more efficiency

Operation is possible even at high ambient temperatures up to 45 ° C through the use of the refrigerant R 134a, a prerequisite for greater energy efficiency. The energy-saving chiller exceeds a comparable cold water production with conventional cooling using R 407 c in terms of efficiency many times over. The environmentally friendly R 134a has no ozone depleting potential and can be used in the long run.

Closed cooling system protects the environment

Process quality is often directly dependent on temperature stability of the cooling water. Because the environmental conditions vary significantly depending on weather and season, precisely reproducible operating parameters can only be created by using self-sufficient cold water systems.

The use of closed systems is useful in view of environmental protection, because with increasing industrialisation an increase of cooling water consumption is noticeable in almost all industries. Water scarcity and the related, rising water costs and increased sanitation conditions require the operation of re-cooling systems with water recycling. This decision was easy for Neopac especially since this showed more cost benefits. In addition to the optimal process control, lower operating and maintenance costs arise associated with return cooling systems compared to open systems.

Cycle 2: is used to cool the hydraulic system. This is cooled with a feed temperature of 27 ° C by a single circuit cooling system with heat exchanger including pump and tank group.

Always clean plant water

Fresh water is oversaturated with oxygen and carries suspended solids and minerals. This clogs the cooling channels of moulds by corrosion or deposits.

GWK cold water circulation units with heat exchanger made of stainless steel, as they have been installed at the company Neopac separate the cooling circuits and thus prevent a blockage. Pumps working with equal, constant pressure ensure stable operating conditions. Cold water circulation units thus help to reduce maintenance costs by always clean and operational machinery.

Win-win situation is always a partnership on both sides.

To cut costs the Neopac committed in their mission to invest in leading-edge technology according to the „best practice“ principle, innovative procedures and collaborate strategically with selected

supplier companies. This is where the partnership contract with gwk Gesellschaft Wärme Kältetechnik mbH comes into place. The technology of gwk is present in all performance classes and all applications. The various technical tasks range from temperature control to cooling and to water treatment. Due to their companies philosophies Neopac and gwk underpinned their partnership in a spare parts and service contract. The actual service with all necessary details was agreed individually by the shop floor directly with Dr. Brehm, the local gwk representation on the basis of this treaty.



Andreas Bigler (right), head of infrastructure Neopac and Hans Dubler CEO Dr. Brehm AG work together confidently and closely for many years.

Thus the partnership between the two companies is strengthened, on the other hand the necessary agreements between local partners are greatly simplified. So is a win-win situation created for the benefit of both Neopac and Dr. Brehm AG, gwk's local service partner. This fair base only makes a long-term partnership viable.

Andreas Bigler praises this partnership: „the spare parts and service contract guarantees us a fast delivery of needed spare parts and assembly by qualified personnel for all machines.“ „This ensures optimal availability of machines and gives us this maximum investment protection“. Hans Dubler of Dr. Brehm AG confirms this: „The partnership agreement with the Neopac is a good example of the gwk service and may be viewed as a model

for other companies." Technical service to ensure system availability, the performance improvement through modernisation and the transfer of know-how are key building blocks. „The gwk service concept avoids accidents, minimises operating costs and extends the lifetime“.

Good advice always pays off

Andreas Bigler is very satisfied with the consulting, implementation and service of gwk Representative Dr. Brehm AG. „We're going very well for years with the team gwk and Dr. Brehm.“ The gwk provides high-quality, flexible and future-oriented equipment and Dr. Brehm here locally in the Switzerland cares for top support and a perfect service. „A good and reliable partnership, that will certainly continue to grow“.

Literature

[1] Zeppenfeld, R. A.: the pioneers of the temperature control technology. October 2007, p. 108-109

company characteristics



Name: Hoffmann Neopac AG
Address: CH-3672 Oberdiessbach, Burgdorfstrasse 22
Industry: Production of tubes for the pharmaceutical, dental, cosmetic and chemical-technical industry.
Product range: Production of plastic and laminate tubes, primary packaging material for medical, dental and cosmetic products
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