

LOWARA BOOSTER SETS USED FOR DAIRY PRODUCTION

The Italian producer relies on Xylem to make the world's favourite cheese

It's the most consumed - and imitated - cheese in the world, with 4 million wheels produced in more than 30 provinces of northern Italy every year. In the province of Cremona, Xylem Lowara pumps are critical to the production of this internationally renowned hard cheese. The dairy plant belongs to one of the largest cooperatives in Italy - a leader in ultra-high temperature (UHT) processing of milk and fresh cream. With a supply of 150,000 litres of milk per day, sourced strictly from the surrounding areas, this plant produces more than 80 kilograms (kg) of cheese and 1,000 kg of whey and cream every day

"Maintaining the correct temperature of the plant and ensuring consistent cooling of the product and the machinery are critical to the production of quality cheese."

These highly sensitive processes and environmental factors require specific attention and reliable systems. The system that manages and distributes cold water throughout the plant, consists of three main elements: an evaporative cooling tower, a heat exchange circuit, and a system that accumulates and distributes the chilled water to be used in the various processes throughout the plant, such as for cooling the cheese after production.



THE ROLE OF XYLEM:

The partnership between Xylem and the dairy producers started in 2004 and has been continuing successfully for over 10 years. The relationship goes well beyond the simple supply of products: together with the customer, Xylem analyses the peculiarities and the characteristics of the plant, identifying the best solutions in support of the services connected with the production processes, and therefore, to meet needs in the best possible ways.



Lowara FH series - centrifugal electric pumps with cast iron body, and AISI 316L stainless steel impeller. Suitable for pumping moderately aggressive hot and cold liquids. The FH series was discontinued at the end of 2014, and replaced with the new e-NSC series.

The solution

Because of their reliability and ease of maintenance, three Lowara booster sets have been installed in the cheese making facility.

In the first production stage, the evaporative cooling tower uses a booster set that consists of three Lowara single stage cast iron FH series pumps at 11 kilowatts (kW) of power. The tower also contains a heat exchanger that is kept constantly wet thanks to the water sprayed from some nozzles.

To distribute the cold water generated by the tower, a heat exchanger was installed between the cooling tower, and a closed loop circuit containing water and glycol. This second stage of the process uses a booster set containing three Lowara single stage cast iron FH series pumps with a power of 22 kW, equipped with flexible joints that facilitate pump maintenance.

In the third stage, the system provides the heat exchange from the closed loop circuit to the water, which is then distributed and used by the various washing and cooling processes required for cheese production. During this final stage, circulation of the water is ensured thanks to a Lowara booster set with two single stage cast iron FH series pumps with a power of 15 kW.



The new Lowara e-NSC series is the natural choice for water transport, heating and chiller systems, fire protection systems and a vast number of industrial applications.

The Lowara e-NSC series:

- Models: DN100, DN125, DN150, DN200, DN250, DN300
- Power: from 18,5 kW to 200 kW (2-pole), from 3 kW to 355 kW (4-pole)
- Heads up to: 120 m
- Flows up to: 1800 m³/h
- Nominal pressure: PN16
- Temperature of pumped liquid: -20 °C to +140 °C, extended temperature version -40 °C to +180 °C

Material Options

- Pump housing: cast iron, ductile iron, stainless steel 1.4401/1.4408, duplex stainless steel 1.4517
- Impeller: cast iron, bronze, stainless steel 1.4401/1.4408, duplex stainless steel 1.4517
- Elastomers: EPDM, FPM and other materials on demand
- Mechanical face seal: Carbon, Ceramic, Silicon carbide and Widia

Configuration Options

Configurations: closed coupled and frame mounted