

zudek∞



WHY ZUDEK ZEROMATIK?

For the needs of cooling water in dairy factories, the best solution is to increase efficiency and reduce energy consumption with a direct cooling system.

Unlike ice generators, with our Zeromatik system, the evaporation temperature of ammonia stabilizes and approaches the water temperature to + 0.5 ° C.



This is possible in a plate evaporator in which ammonia evaporates at a temperature of -1°C . Thanks to this we achieve the following goals:

- higher efficiency;
- reduced equipment footprint size;
- flexible regulation of cooling capacity.

An inverter is installed on the electric motors of the compressors in order to continuously monitor and maintain high efficiency, even with partial heat loads.

Additional benefits of the Zeromatik system

For instance, in the processing of milk, ice water is used at about 0.5° C (without glycol). Since coolants of any kind in the dairy industry can damage products, water is used in its pure form. Many dairies use ice accumulation tanks to cool water. However, with this method, ice water at 0.5° C is available only for a few hours, until all the ice melts; then the temperature gradually rises, disrupting the process.



From the ice accumulation tanks to modern systems.

What has changed over the past years?

Ice storage requires large tanks in the form of open pools with thousands of pipes, around which ice is formed and which is used to accumulate cooling energy. Almost all the pipes are covered with ice, which when melting the water reaches temperature to zero degrees. In order to obtain ice, the refrigerant boils at a temperature of -10°C , otherwise the water does not freeze.

About 50 years ago, 90% of dairy factories worked from five o'clock in the morning until noon to produce cheese, butter and milk. Ice accumulation tanks guaranteed a water temperature of $0.5-1^{\circ}\text{C}$ for the first five to six hours and then the water heated. This amount of time was sufficient for cooling and complete the technological cycle. At the present time, dairy production includes hundreds of products, therefore production time has increased, operating in some cases the whole day.

In Europe and also worldwide, 25-30 years ago, the cost of electricity did not affect production as much as today. Now large industrial companies remain competitive due to energy savings. If we consider that at dairy factories 60% of the energy consumed is counted for cooling, Zudek technologies save up to 30% of it. This applies to both large companies as well as dairies of all sizes.



Does your refrigeration equipment allow the company to earn extra income and be more competitive?

Yes. Our Zeromatik plant guarantees for example a stable water temperature of 0.5 ° C throughout the entire production cycle. We are the only manufacturer in Europe that has solid experience not only in the production of ammonia chillers, but also in plate heat exchangers too.

What is Zeromatik system? How much does it reduce costs?

Zeromatik is a patented ammonia-based cooling system that produces a stable water temperature of 0.5° C. It consumes 6 times less electricity required to produce the same amount of refrigeration energy compared to traditional ice accumulation tanks. Installation of equipment is not an issue, since it does not need a large area. In the production of icy water using Zeromatik, 6 kW of cooling capacity takes 1 kW / hour electric energy.

If a coolant with a temperature of -10° C is supplied to accumulate ice and to obtain icy water, Zeromatik system supplies a refrigerant with a temperature of -1 ° C. This 9 ° C difference saves a third of electric power.

Why is Zeromatik the perfect solution for dairy industries?

Because for the production of a wider range of products today, dairy factories need ice water for 12-14 hours a day. The amount of ammonia in Zeromatik systems is two times less than in systems with ice accumulation baths.

The customer installs Zeromatik and “forgets about it.” Is this just a slogan?

No, this is not a slogan, because Zeromatik is controlled by us with the help of a remote control system Telematik.

Energy savings and high efficiency has always been our mission. Zudek is working with this philosophy for more than 25 years.

Sincerely,

Ivan Zudek