



Alfa Laval agitators improve quality assurance at a liquid milk processing plant

Major Liquid Milk Dairy, Northeast China

Case story



A major dairy in Northeast China relies on Alfa Laval agitators to maintain product homogeneity throughout the plant.

One of China's largest milk and milk powder producers faced challenges associated with aging tank equipment at one of its liquid milk plants. After reviewing proposals from equipment suppliers, dairy management selected Alfa Laval to install new agitators throughout the dairy to improve quality assurance, safety and hygiene, increase energy efficiency and reduce operating costs.

Improving quality assurance was high on the agenda at a subsidiary of a major Chinese dairy located in Northeast China, which earns RMB 1.8 billion in annual revenues from liquid milk production alone. The plant wanted to address technical inefficiencies, which resulted in milk leakage, incomplete cleaning and high power consumption. Based on its strong, long-term business relationship, the company turned to Alfa Laval for assistance.

Safe, hygienic and competitively priced

The new installation includes a total of 47 Alfa Laval agitators with unique energy-saving EnSaFoil impellers that help prevent product shear and safeguard end-product quality. During installation and start-up, Alfa Laval representatives

were onsite providing engineering support, commissioning the installation, and training dairy employees in agitator operation and maintenance.

These agitators, most of which are side-mounted, maintain homogeneity throughout the plant's raw milk, pasteurized milk and cream processing and storage tanks, which vary in size from 5,000 litres up to 100,000 litres.

"The hygienic design means tank cleaning is faster and more efficient," says Mr. Li, the director of the dairy. "Consequently, the risk of bacterial contamination is minimized."

"What's more, we found the agitators to be competitively priced considering that the equipment also helps our company reduce waste and emissions and deliver safe and hygienic products," he confides.

Simplified service

The new agitator installation makes easy work of maintenance. Wear is low and maintenance minimal, according to the experienced operations staff at the dairy.



Alfa Laval ALS side-mounted agitators with the uniquely shaped EnSaFoil impellers enhance product quality and save energy.

“Essentially, the agitators provide trouble-free operation,” says Mr. Li. “The quality of service, when required, is on the whole good and the delivery time for spares that are not already available onsite quick.”

Wear on mechanical shaft seals, he reports, depends largely on the specific operating conditions. Once these conditions are identified for each individual process, it is easy to plan maintenance with great accuracy due to the high reliability of the agitators.

“Changing an agitator shaft seal is a task our engineers can accomplish quickly and professionally,” adds Mr. Li.

The use of Alfa Laval agitators helps reduce operating costs by reducing the time required to clean the machines, Mr. Li points out.

Greater energy-efficiency, enhanced product quality

The use of Alfa Laval agitators, which are notable for cost-effective, easy-to-install and easy-to-maintain design, provides energy savings of up to 80%, according to company estimates.

Compared to conventional direct-drive agitators with standard pitch impeller blades, Alfa Laval ALS side-mounted agitators with the uniquely shaped EnSaFoil impellers require minimal energy input yet create a higher flow rate with minimal product shear.

“Although it is difficult to quantify the exact energy savings, the savings are considerable,” affirms Mr. Li. “However, I can report that the agitators provide trouble-free operation and consume less power than other agitator types.”

In addition to greater energy efficiency, enhanced product quality also contributes to plant profitability.

“Alfa Laval agitators have enhanced the product quality, which is very important to the reputation of our company,” states Mr. Li confidently.

Payback within three years

In addition to energy savings and enhanced product quality, Alfa Laval agitators also contribute to overall plant profitability in other ways, such as cutting the time and costs associated with cleaning the machines.

“We estimate that it will take about three years to realize full return on our investment,” says Mr. Li. “Payback could be realized more quickly if the plant operated all of the agitators, but right now not all the equipment is in use.”

Solid partnership

Cooperation between Alfa Laval and the dairy operations staff remains close, and dairy management reports full satisfaction with this strong business relationship. In addition to Alfa Laval agitators, the dairy also uses Alfa Laval rotary lobe pumps, valves and manway covers throughout the plant.

Overall, the partnership has been a success. The plant has also been able to decrease breakdown frequency, lower the maintenance time and repair cost as well as reduce the stand-by time of the machines. This results in increased production efficiency, higher product yield, reduced costs and lower emissions.

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How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.