

Pump Is All It's Cracked Up To Be

Calmar Foods' three Fristam FZX pumps handle all plant needs from front to back as well as CIP, considerably increasing production and shipping capacity, reducing spare parts inventory and maintenance.

Achieving top efficiency with minimal waste is important in any plant, but even more so in a commodity product operation such as egg processing. Calmar Foods (Calmar, IA), a division of Sparboe Food Corporation, cracks and ships more than 216,000 lb. of raw liquid eggs per day at its multi-building complex.

Running 16 hours a day, five to six days per week, new self-priming pumps from Fristam move raw cracked eggs through filters, cooling presses, in and out of holding tanks and transport trucks with added efficiency and productivity. "We installed our first Fristam pump almost nine years ago," says Shane Bell, plant manager. "Prior to that we were using PD [positive displacement] pumps and experienced all kinds of problems. We were replacing seals and gaskets on a weekly basis. Stainless steel rotors and rubber impellers also required replacement three to four times per year. Shell particulates in the freshly cracked eggs, prior to filtering, quickly wore down internal parts, reducing pump efficiency and increasing maintenance time and costs."

Due to factors such as back pressure in the PD pump and incorrect pump-to-pipeline size ratio, the PD pumps needed to be dismantled and cleaned after each load, further diminishing gasket life and productivity. "Foam is an inherent trait of eggs and PD pumps had no vacuum suction capability, especially when rotors and seals wore down," adds Bell. "All this led to incomplete product transfer, product waste, increased sanitation risks and reduced efficiency."

Last year, Calmar installed three upgraded Fristam centrifugal FZX-Series pumps to replace the original Fristam FZ20 and remaining PD pumps. "The pumps handle all our needs from front to back as well as CIP [clean in place] functions," notes Bell. "The FZX-250 pump loads and unloads tank trucks, our '150' pump moves product within the process including filtering, cold pressing [heat exchange] and storage tanks, and we use an unpolished model of the FZX-100 for pumping inedible product out of production."

Calmar increased production and shipping capacity with the new pumps, continues Bell. "For example,

we reduced filling time by 15 minutes for a 48,000-lb. tank truck. We can also now pump product the length of the plant, with the longest pipe section being 250 feet long."

Other benefits include interchangeable seal kits for all three sizes; and identical head impellers, plates and hardware for the 100- and 150-pumps, reducing spare parts inventory, according to Bell. "We also cut down seal replacement to only once per year, this due only to wear we impart in self-imposed daily pump teardowns. Seal replacement is the only maintenance we have done to the pumps since installation."

All of Calmar's pumps were modified with variable frequency drives for better process control as well as minimizing naturally occurring foam formation in the whole-egg product, according to Bell. Pump reversibility allows Calmar to use the same pump for loading trucks as well as CIP return.

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