

Cheese Curd Transfer

Higher Curd Quality with Increased Yield

The challenge

Cheese curd is a fairly delicate substance and as such, no damage should be permitted as a result of pumping processes. Damaged cheese curd can lead to increased 'fines' that are lost to the whey stream, which in turn reduces cheese yield. Furthermore, damaged curd is typically more resistant to dressing, which means greater dressing quantities are required to improve the product's appearance and consistency.

By the very nature of their operation, certain pump types will unfortunately break curd into small particles that pass through whey screens on drain tables, where they collect. This is because the standard meshing rotors used by rotary-style pumps, for example, create a compression action that damages sensitive products like cheese curd. The result is that, after each cycle, these fines have to be added manually back to the drain tables for reprocessing.

Customers transferring cheese curd require a pump that gently produces a constantly displaced volume. This will generate a higher cheese yield by lowering the fines content.





At one location,

samples were taken of the suspended solids found in the whey after it was separated from the transferred curd and whey mixture. After installation of the MasoSine pump, the average suspended solids decreased from 0.37 to 0.33, an approximate 11% decline. Furthermore, since the MasoSine pump has been in place, the plant claims to have 19% fewer fines.

The reduction of fines also has another benefit. Because fines can plug or 'blind' the drain table, fewer quantities of fines means less downtime is required to unplug the belt, leading to a subsequent increase in productivity.

The solution

The unique MasoSine pump design is ideal for the transfer of cheese curd. The MasoSine pump's large open cavities, a constant displaced volume, and gentle transfer of product from inlet to discharge transfers curd with little damage. Because this lowers the amount of fines created it produces higher curd yield and higher fat content. The latter is also an important factor in generating greater product yield.



The MasoSine pump is designed to handle viscous, shear-sensitive products while providing powerful suction lift and pulse-free laminar flow. A sinusoidal rotor in the pump creates four symmetrical compartments in the pump housing. As the rotor turns, these compartments provide a positive displacement of product from suction to discharge, thus transporting product through the pump while maintaining product quality. A sliding gate within the pump prevents the return of product past the discharge and back into the suction side of the pump.

Customer success

Curd and whey applications typically call for MasoSine pump models such as SPS6, MR160 or EC60. These are all six-inch positive displacement pumps that can operate at speeds up to 320 rpm in curd applications to replace an equivalent positive displacement rotary style, double shaft, double rotor unit. MasoSine pumps are usually paired with a variable frequency drive in order to optimize pump speed and flow rate. Applications usually involve emptying double-O vats and transferring to drain tables.

Maintenance is also simplified greatly when used MasoSine pumps, which are capable of being cleaned in place. The pumps also disassemble easily for manual clean-out-of-place.