

ABRASIVE EGG PROCESSING

Equipment

Waukesha Universal 1 series
Circumferential piston Pump



**WAUKESHA
CHERRY-BURRELL™**
An ITT Company

Industry / Application

An industrial egg processor* uses positive displacement pumps to transfer liquid egg from breaker machines through filtration and into holding tanks.

Although larger shell fragments are removed by a ¼-inch wire mesh strainer, smaller abrasive shell particles remain in the product. The pump must also accommodate substantial viscosity variation, ranging from approximately 50 to 3,000 cps as product composition and processing conditions change.

Problem

Previously installed pumps experienced timing problems and struggled to operate efficiently across the full viscosity range.

Residual shell particles contributed to erosive wear, while internal slip at lower viscosities reduced pumping efficiency. The pump also needed to generate sufficient pressure to transfer the product through a downstream 0.033-inch filter.

Because the pumps are dismantled and hand-cleaned every day, complex mechanical seals also increased maintenance cost.

*) The company name is not disclosed due to confidentiality.

Solution

A Waukesha Universal 1 Series pump equipped with External Circumferential Piston (ECP) rotors was selected for the application.

The larger crossover clearances of the ECP rotor design eliminated the timing problems experienced with the previous pumps. At the same time, the U1's long slip path helps control internal backflow, allowing efficient transfer across viscosities from approximately 50 to 3,000 cps while limiting erosive wear.

Simple single O-ring shaft seals also provide an economical solution for equipment that is dismantled and cleaned daily.



Result

The Waukesha U1 provides reliable transfer of abrasive liquid egg from the breaker machines through filtration and onwards to the holding tanks.

Stable performance is maintained across the wide viscosity range without the previous timing problems. Controlled internal clearances and the long slip path minimise erosive wear, helping extend pump service life and reduce maintenance requirements.

The economical single O-ring seals further simplify daily servicing and help reduce operating costs.



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