

BOOSTING PRODUCTION UPTIME WITH PURPOSE-BUILT CHOCOLATE PUMP SOLUTIONS

Universal® Series Positive Displacement Pumps

A major chocolate producer was struggling to pump a range of chocolate formulations—milk, dark and white—without constant clogging, wear and unplanned stops. They turned to Waukesha Cherry-Burrell Universal positive displacement (PD) pumps, backed by decades of chocolate-handling expertise.

Challenge

Chocolate is a two-phase medium: a pump-friendly cocoa butter fat phase and a solids phase made up of cocoa powder, sugar crystals, milk powder and other ingredients. Under shear, these phases tend to separate, causing the pump to move the liquid fat while leaving behind abrasive solids. The result was “hockey-pucking” buildup in tight clearances, higher amp draws, seal failures, occasional motor trips, and time-consuming manual cleaning that still didn’t fully solve the issue.

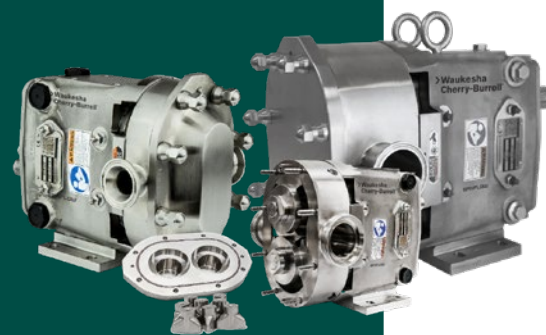
Solution

SPX FLOW application engineers specified WCB Universal PD pumps configured specifically for chocolate:

- Limiting pump speed to 200 RPM or less to reduce shear and phase separation.
- Using Extra Hot Clearance “chocolate” rotors to open internal clearances and prevent solids from trapping.
- Applying double o-ring seals with grease-filled seal chambers, which act like a tandem seal and continually purge solids away from the product-side o-ring.
- Two solutions were recommended: a Universal 1 pump for straightforward COP cleaning, and a Universal 3 pump selected for its higher pressure capability, simplified maintenance through front loaded seals, and quick ship availability. Because time was critical, the customer chose the U3 to restore reliable chocolate processing as quickly as possible.

Result

The producer achieved stable, reliable chocolate transfer with markedly less solids buildup, fewer seal changes and reduced risk of seized pumps or motor trips. Maintenance intervals were extended, manual cleaning time was cut, and the plant gained confidence that even more abrasive formulations—such as high-powder white chocolate—could be handled within the same Universal pump processing configuration.



Less stops for cleanings
(time, materials and parts)
estimated savings for
the plant are +\$100,000
annually.



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