EXTENDING PUMP LIFE IN ABRASIVE APPLICATIONS

Universal® Positive Displacement Pumps with Diffusion Hardening

When it comes to pumping abrasive materials, equipment failure often feels inevitable. But with the right engineering approach and materials expertise, Waukesha Cherry-Burrell® (WCB) continues to prove that durability and performance can go hand in hand.



Challenge

A leading manufacturer struggled with frequent rotor failures caused by highly abrasive whey protein concentrate (WPC) media. Standard positive displacement pump materials wore down quickly, forcing routine shutdowns, increasing maintenance needs and driving up operational costs. These setbacks limited both throughput and productivity.

Solution

Waukesha Cherry-Burrell solution makers recommended a Universal Series Positive Displacement Pump with diffusion-hardened rotors, body and cover. Unlike conventional surface treatments, this diffusion hardened treatment penetrates the metal, hardening it from within. The result: greater durability without compromising performance.

To ensure reliable, long-term operation, the engineering team customized the pump by treating not only the rotors but also the pump covers and bodies.

Pump has been running 6 times longer than previous pump, and is still running.

Result

The pump has been running for over 12 months and counting. Compared to the standard pump, this is greater than six times longer without needing to stop and replace rotors. The customer reported no measurable degradation in flow consistency or pressure and experienced a significant reduction in both downtime and maintenance costs. These improvements translated to greater operational efficiency and long-term savings—proving the impact of material innovation in demanding applications. WCB's diffusion hardening option offered a dependable path forward when failure isn't an option.



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