

RELIABLE PUMPING IMPROVES TURPENTINE PROCESSING

Universal® 2 ND (U2 ND) Positive Displacement Pump



Challenge

A pulp and paper industry customer struggled with transferring multiple products from a wood digester using a centrifugal pump. The process required handling both turpentine, a low-viscosity fluid with low vapor pressure, and tall oil (soap), a high-viscosity byproduct containing solids. The centrifugal pump faced persistent cavitation and vapor lock issues due to the two-phase flow of turpentine. Additionally, the wide viscosity range between turpentine and tall oil caused excessive shear during transitions, further worsening cavitation and leading to frequent pump damage. The customer needed a reliable solution to efficiently handle both fluids while reducing cavitation, maintenance, and operational disruptions.

Solution

The Waukesha Cherry-Burrell® Model 220 U2 ND positive displacement pump was installed to resolve these issues. Operating at a low speed of 300 RPM, the U2 ND significantly minimized shear, heat generation, and energy consumption, eliminating cavitation when handling turpentine. The pump's ability to manage varying viscosities ensured smooth transitions between products, preventing process interruptions.



Result

Switching to the 220 U2 ND allowed the customer to efficiently transfer multiple challenging products with minimal disruption. The reduced shear prevented two-phase flow, eliminating cavitation. Maintenance demands dropped significantly, improving uptime and operational efficiency. Additionally, the pump's clean-in-place (CIP) feature streamlined cleaning, enhancing reliability while saving time and effort.

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