JOHN BROOKS
Keeping our world flowing™

Case Study

Wilden AODD Pumps Outperform Yamada in Titanium Dioxide Pigment Manufacturing

Wilden AODD Pumps for abrasive fluid refinement.

Technology Utilized:

Wilden PS1500 Pro-Flo Shift Bolted Plastic AODD Pumps

- Max. Pressure: 100 psi (6.9 bar)
- Max. Flow Rate: 271 GPM (1,024 LPM)
- Max. Suction Lift: Dry - 17.5' (5.3m) Wet - 28.4' (8.3m)
- Displacement Per Stroke: 1.42 gal (5.4 L)
- Reduced Air Consumption & Kilowatt Usage
- Large-Solids Passage
- High Suction Lift
- Bolted Construction for Superior Containment
- Ease of Operation and Maintenance

How The AODD Pump Works:

- An Air-Operated Double-Diaphragm pump (AODD) is a positive displacement (PD) pump. It works with two flexible diaphragms alternately filling and discharging chambers, compressed air feeds into and vents from air chambers that create the pumping action.
- The way these pumps operate also grants them the ability to self-prime, deadhead, and run dry with low shear. These characteristics enable them to quickly reach and maintain desired flow rates throughout an entire production run and withstand the abrasion of the shear-sensitive fluids.

JBCS-P19-082721

THE CHALLENGE

The customer manufactures Titanium Dioxide (TiO2) pigments for paints, plastics, sunscreen, cosmetics, and food products. Since TiO2 must be refined into a uniform particle size using chloride and sulphate processes, the application requires AODD pumps capable of handling highly viscous and abrasive liquids. Although the customer initially considered a lower-cost Yamada pump, our application expert demonstrated why a Wilden AODD pump is the better long-term investment.

THE SOLUTION

Our pump application expert met with the customer and outlined three areas of concern using the Yamada pump over the Wilden AODD Pump. After discussing and reviewing the following findings, the Customer's Engineering Team agreed that the Wilden AODD pump is the better choice for their application.

1. Pump Flow: The Wilden pump has a higher flow rate with a greater efficiency translating to almost $3,800 savings per pump/year, and a single Wilden pump can accommodate the customer's flow requirements better than two Yamada pumps.

2. Energy Savings: The Wilden pump requires less energy and air consumption to run. With each pump running 24/7, we can show +/-$2,500 air consumption yearly savings- meaning the Yamada pump consumes almost twice as much air as the Wilden.

3. Pump Parts: Wilden has significantly fewer parts (6-8, depending on the type of the valve) than Yamada (60-80). Generally, more parts to repair means more chances for error in re-assembly, and more costs for the replacements and labour.

THE RESULTS

- Cost Savings
- Energy Savings
- Increased Efficiency

1-877-624-5757 • johnbrooks.ca • industrialsales@johnbrooks.ca