

SEAL-LESS MAGNETIC DRIVE PUMP ELIMINATES CHEMICAL LEAKAGE FOR STEEL COIL COATER

THE CHALLENGE

The customer is a large steel coil coater, operating two coating lines that can accommodate numerous paint systems and over 1,000 colours. The customer's pump system transfers a solvent of MEK (Methyl Ethyl Ketone) with some Xylene, Toluene and Benzene, from a charge tank, into the plant - as part of their painting and production process. In this application, the solvent is drawn from the charge tank into the plant as needed, which means the pumps involved in the process have to stop and start multiple times an hour to maintain the required pressure in the transfer tank (45 PSIG). This frequent stopping and starting causes constant mechanical seal failures on their pumps. Mechanical seal failure causes the solvent to leak into the environment in an explosion-proof area, creating safety concerns for plant operators, as well as loss of production, increased maintenance costs, and other issues for the plant.

THE SOLUTION

Our application expert - Sean Mason - worked with the customer and our engineering team to find a seal-less pump solution. A Price Pump 2MS75MD Mag-Drive pump with a VFD and control panel was selected and installed to solve the customer's problem. This solution was chosen for a number of reasons including:

- ▶ The seal-less design eliminates any leakage issues, improving the safety for operators and plant personnel and saving the customer thousands of dollars/per year in lost chemical costs.
- ▶ The Pump is designed to withstand caustic or corrosive substances, reducing maintenance requirements and saving service and parts costs.
- ▶ The reliable pump operation reduces downtime and improves production efficiency.

THE RESULTS

- ▶ Improved Safety
- ▶ Reduced Downtime
- ▶ Improved Efficiency
- ▶ Saved Money

For more information on this solution or if you have a fluid handling challenge of your own - Contact a John Brooks Company Application Expert today!



STEEL COATING | CHEMICAL TRANSFER

PRICE PUMP WITH VFD & CONTROL PANEL SAVES THOUSANDS PER YEAR IN CHEMICAL COSTS

TECHNOLOGY UTILIZED

Price Pump 2MS75MD Mag-Drive Pump A Horizontal Centrifugal Pump with Flows to 60 GPM (227 LPM) and Heads to 320 feet (98 Meters).

- ▶ **Minimum Recommended Flow:** 2 GPM (7.5 LPM)
- ▶ **Maximum Working Pressure:** 300 PSIG (21 bar)
- ▶ **Maximum Solids Size:** 0.03" (0.762 mm)
- ▶ **Maximum Temperature:** 350 °F (177°C)
- ▶ 3/4" x 1" FNPT Suction / Discharge Ports
- ▶ 316 SS Construction
- ▶ PTFE O-Rings
- ▶ Carbon Bushings
- ▶ 5" Impeller Diameter
- ▶ 5 HP, 3600 RPM Explosion-Proof Motor

HOW A MAGNETIC DRIVE PUMP WORKS

- ⦿ A magnetic drive pump uses a magnetic field to rotate the pump impeller instead of a direct drive connection between the impeller and the motor.
- ⦿ There's an outer magnetic bell housing mounted on the end of the pump shaft and aligned on the outside of the rear casing. Inside the pump, a smaller magnet rides on an internal shaft and bushing assembly that's connected to the pump's impeller.
- ⦿ When the pump motor starts, the outer bell housing rotates while affecting the inner impeller magnet. As both magnets turn together, their magnetic field rotates the impeller, which displaces the fluid.