CASE STUDY

INDUSTRY: TANK TERMINAL
PROCESS: STORAGE
PRODUCT: MDI
APPLICATION: TRUCK UNLOADING
SOLUTION: TWIN SCREW PUMP WITH MAGNET DRIVE
LOCATION: NETHERLANDS

The Job:

The customer, a huge tank terminal located in Rotterdam, Netherlands, stores chemical products with main focus on MDI.
To avoid contamination of the product, the customer decided to use a twin screw pump with magnet drive.
Although the pump is self-priming, N2 is beeing purged on the truck. The reason for this is the high viscosity of the fluid and thus high friction losses in the small piping. The result is a positive head at the suction of the pump.

The pump is equipped with a special version of the magnetic coupling, namely an increased gap between inner magnet carrier and the containment shell. This reduces friction losses due to the relatively high viscosity.

The Solution:

SLM DSP-2CS 086B-146-16P06 Q2 W

- SLM: Sealless Mag Drive
- DSP-2: Single Volute Twin Screw Pump
- C: Cartridge Design
- S: Grease Bearing Support
- 086: Outer Diameter of Drive Rotor (approx. 3,4“)
- B: Axial Split Modular Casing
- 146: Pitch of Main Drive Rotor (approx. 5,8“)
- 16: Magnetic Coupling Size (approx. 0,6“)
- P: High Powered Magnets
- 06: Magnet Length
- Q2: Magnetic Coupling Designed for Low and High Viscosity Application
- Z: Non-Metallic Containment Shell
- W: Heat Barrier with Secondary Lip Seal

Operating Data:

- Fluid: MDI
- Flow Rate: max 69 m³/h (304 gpm)
- Temperature: 65 °C (149 °F)
- Differential Pressure: 4 bar (58 psi)
- Dynamic Viscosity: 300 ... 440 cP
- Kinematic Viscosity: 240 ... 352 mm²/s
- Specific Gravity: 1,25

The Result:

The customer is very satisfied. The pump runs very quietly and almost silently. Commissioning went smoothly and the customer intends to use more pumps of this type in the future, as the magnet drive offers many advantages. There is no contamination of the barrier liquid or medium - in such a case, the operator would run the risk of rejecting a batch. Another advantage is that the pump can easily handle different (hazardous) liquids without having to check the liquid parameters in detail. The fact that the pump is leakage-free also makes it environmentally friendly. In terms of costs, the magnetic coupling is worthwhile for the operator, as it is practically maintenance-free.

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