



APPLICATION STORIES

APPLICATION: PUMP DIAPHRAM LIFE 2

A nationally recognized manufacturer of quality paints uses air operated double diaphragm (AODD) pumps in process and transfer applications. In this application, the AODD pumps are used in a tank storage area to transfer Texanol, a solvent-based paint additive, to the production facilities within the plant. The AODD pump sits at the bottom of a 20' high Texanol storage tank.

PROBLEM:

The inlet ball valves of the pump open and close several times per second. Each time the ball valve is closed or "seated", the fluid velocity is abruptly stopped. This creates high pressure spikes, or "water hammer". The force of the spike severely weakens the integrity of the PTFE diaphragms by distorting their shape with unbalanced pressure loads and concentrating stress onto one area of the diaphragm, causing cold flow. The diaphragms were lasting only three weeks before failure. Every time a diaphragm failed, production halted and solvent was spilled into the containment dike and lost.

SOLUTION:

A BLACOH SENTRY inlet stabilizer was installed on the inlet side of the pump. The Inlet Stabilizer cushions and absorbs the water hammer spikes created when the pump's inlet ball valves close. When the pressure spikes are cushioned, the effect of high acceleration head is diminished and the stress is removed, resulting in increased diaphragm life.

RESULT:

The BLACOH Inlet Stabilizer has been installed for over one year. In that time, the pump has not had a diaphragm failure and additional units have been installed on other AODD pumps in the tank storage area.

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