

CASE STUDY

Kelair's Corro cantilever pumps outperform and outlast competition

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As discussed in a recent newsletter (Issue 29), vertical sump pumps are still widely used throughout many industries. When pumping wastewater from a pit there are several options you may use, including verticals, and also self-priming pumps, centrifugals with foot valves, air-operated diaphragm pumps, and submersible pumps.

Typically Kelair's customers rule out some of those options in preference for a best-fit option that's the most cost-effective, and in this particular application there were several considerations:

- Compressed air was not available, so diaphragm pumps were ruled out.
- It would be an unattended pump, operated automatically by high and low level sensors, ruling out the self-priming centrifugal pump due to the possibility of evaporation when faced with a lengthy, hot summer. This type of pump always needs at least some water (process fluid) within the casing to assist with creating a vacuum (by creating a seal around the impeller) when the pump is turned on.
- There was a possibility of solids entering the pit, such as small sticks or even pieces of waste plastic bags, ruling out the centrifugal pump with foot valve option. Once the foot valve jams in the open position, the pump will lose its prime. It will not pump water again until someone physically attends the pump to clear the valve.
- A submersible pump may have been an option, but the customer had a preference for the vertical sump pump.

Issue 29 also discussed the vertical column pump with support bearings along the length of the vertical shaft (joins the pump wet-end in the pit, to the motor mounted above the pit). This type of pump would not suit due to the presence of salts in the fluid. Salts crystallise on the surface where the salt water has evaporated and are



abrasive. Vertical column pumps require lubrication of the column support bearings and that is typically done by the process fluid. It would not be long before the abrasive, crystallised salts wore away the pump's column bearings.

For Kelair's customer, the best option was to go with a cantilever pump. The design has a one-only, sealed-for-life, robust bearing sitting above the pump's mounting plate, out of reach of the process fluid.

The cantilever pump is a sealless design, and in this case was made from synthetic, thermosetting, corrosion and wear-resistant materials. The pumps are capable of dry-running indefinitely and require minimum maintenance and inspection, handling temperatures between -200°C to +120°C. They will outperform and outlast many, if not all, competitors supplying lined or unlined pumps made from engineering plastics (eg PVC, PVDF, PTFE, etc).

- For further product information visit our website www.kelairpumps.com.au