

Case Study

Sandpiper bolts it in

Sales Engineer Mark Lewis (QLD)

Sandpiper air operated double diaphragm (AODD) pumps are robust units that feature a fully-bolted design that promotes sealing capability. The short-comings of clamp-band design are typically highlighted when pumping liquids with a low specific gravity and low viscosity as they have a tendency to seep through the slightest breach in a sealing area.

An oil processing facility in Brisbane recently discovered that things can come unstuck when pumping thicker, viscous materials.



Like most large processing plants, the customer has a multitude of pumps of differing designs from different manufacturers employed in its many process and ancillary applications on site.

A clamp-band AODD pump was being used to transfer the oily sludge that collects under the floating roofs of its storm-water collection

tanks to a reprocessing facility some 200-300 metres away. As much as 1.5 metres of sludge can collect at the top of the retained stormwater that is salvaged from around the facility

Over a period of operation one of the transfer pump's clamp bands had vibrated loose causing a failure that could have proved very serious had it not been caught in time. Unfortunately, when clamp-bands come loose there is not much to prevent the whole unit from coming apart. The potential for disaster cannot be ignored.

At the customer's request Kelair came to the rescue with a Sandpiper 3" metallic ball valve pump. Not only does its fully-bolted design make certain that the risk of a catastrophic leak is minimised, it also ensures that component parts correctly align during assembly after maintenance. Even if one of the bolts works its way loose during service, any leak will be minimal because the other bolts maintain the pump's integrity.

An additional inclusion in this particular pump's construction is the use of Teflon diaphragms. Teflon is a particularly robust material that is resistant to the abrasive, foreign matter that can find its way into the thick and viscous sludge as it collects in the various sumps around the site. The abrasive resistance of the Teflon diaphragms further reduces the risk of spillage due to diaphragm failure.

The Sandpiper's fully-bolted design and the use in this pump of Teflon diaphragms are just two of the many features that set Sandpiper apart.

The customer now rests easy in the knowledge that its sludge transfer pumping application is being handled safely and efficiently.

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Sandpiper Features and Benefits

- Non-stalling guarantee
- Cross-drilled technology, to eliminate stalling
- ESADS (Externally Serviceable Air Distribution System), allowing repair of pump without removing from pipeline
- Fully-bolted design provides a positive seal and reduces the incidence of leaks
- Lubrication-free, eliminates requirement for lubricators, reducing initial cost and maintenance cost

Case Study

Trolley-mounted Sandpipers

Applications Engineer Tafazzul Shamsi (NSW)

Kelair Pumps was recently presented with a specification to offer air-operated diaphragm pumps on trolleys, with specific fittings and hoses.

Trolley-mounted Sandpiper pumps are not new for Kelair, and yet this particular job was unique in its own way.



Originally specified type of hose, its diameter and length on suction as well as discharge ports presented engineering challenges pertaining to its mounting and operational considerations. Due to the

exposure of the trolleys being in sumps containing acids, attention was given to the material of the wheel used, something which is often neglected.



Kelair's engineers had a series of discussions with the customer to arrive at a practical design, without compromising the intent of the customer's original specification, and were successful in supplying fifteen trolley-mounted pumps.

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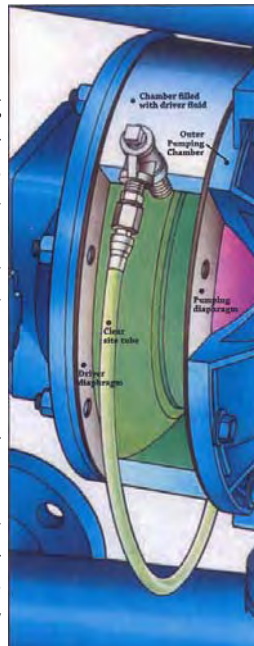
Spill-containment supports safety

Sales Engineer Frank Molinaro (VIC)

A major Victorian Hydrocarbon processing company was using a conventional diaphragm pump for tanker unloading. This was always a concern to the company because if one of the diaphragms ruptured, methanol would be released into the atmosphere and this would create two major problems:

1. Potential for the product to come into contact with the operators. (Methanol is highly toxic and when inhaled is a major health hazard).
2. Highly Flammable. The release of methanol into the atmosphere may cause an immediate fire explosion. The other complexity is that when methanol is on fire it may not be readily visible.

In overcoming these two hazards the client was sold on the Sandpiper spill-containment pump.



Cross-section

This pump design consists of a pair of diaphragms located at the side of the air distribution valve. Between each diaphragm pair there is a barrier fluid. The advantage of this design is that should the inner diaphragm rupture the product would leak into the barrier fluid and not the outside atmosphere. Conventional diaphragm pumps only have a single diaphragm and no barrier fluid.

In the case of this customer, the barrier fluid is glycol which is green in colour and if there was a rupture, it would be picked up by a colour change in the clear visual indicator tube.

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