

## Case Study

### Sandpiper blends well in dry powder application

Sales Engineer Rudi Jahrig QLD

**Problem:** As many as 18 bags of fumed silica had to be added to a 2m tall blending tank where the contents would be unloaded through the open manhole. This material is being used as a thickening agent for certain resin products. Although the bags contain only 10lbs of powder, they have a volume of 5 cu ft and were difficult to manoeuvre up the vertical ladder. In addition, the dumping operation would take a long time before all the powder was added to the tank of resin and a lot of powder was wasted, blowing all over the factory floor.

**Solution:** A Sandpiper 2" Metallic air-operated double-diaphragm pump was tried to see if it could transfer the dry powder. A plastic hose was connected to the suction side of the pump with a length of plastic pipe on the

end that could be inserted through a small opening in the bag. Another length of 2" plastic hose was attached to the outlet of the pump in order to convey the powder to the top of the blending tank. The end of the discharge



hose was equipped with a quick-couple fitting so it could be readily connected to a pipe in the tank's manhole cover. Although the silica is not combustible, a grounding

conductor is wrapped around the hoses in order to avoid any build-up of static electricity that may ignite any flammable liquids or explosive gases present in the environment.

The fumed silica that is added to the resin has widespread applications for the control and increase of viscosity and thixotropy in all types of fluid and semi-solid systems. It is used as an additive in dry systems in order to impart free-flow, anti-caking and anti-plugging characteristics to powders, granules, and pellets. It can also be used as a reinforcing agent in elastomeric products, gloss reduction aid in coatings, and as a dry carrier that will convert many liquids into free-flowing powders for ease of handling and blending into dry formulations.

**Result:** The diaphragm pump has been in service for more than a year on the dry powder application, emptying a 10lb bag in less than 30 seconds.

This procedure for transferring powder has eased the work load for the operators and the Plant Engineer explained that the pump has been completely trouble-free.

## Products

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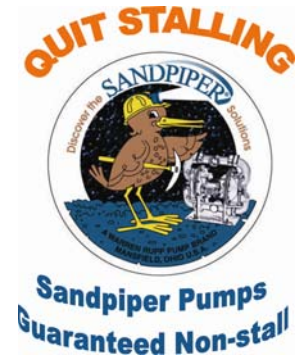
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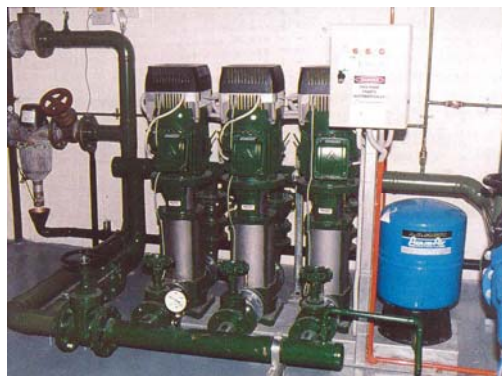
## Water Consumption Patterns

Every application, be it a high rise building or an industrial plant has a unique water consumption pattern.

The availability of water at the required flow and pressure can be critical for the comfort of individuals and for the efficiency of manufacturing processes.

This availability is achieved by selection of a Kelair-Hydrovar variable speed drive booster set. The units can be selected to handle the following consumption criteria, at the same time minimising operating costs by selecting the optimum speed to provide required performance at the minimum power cost:

- Supply at constant pressure independent of varying flow requirements
- Supply of constant flowrate independent of varying pressure
- Large variations between minimum and maximum conditions



- Sudden changes in demand
- Changes in supply conditions

The Kelair-Hydrovar booster set can utilise single, dual, triple or even higher multiples of pumps to achieve system characteristics.

The pumps, drives, valves and associated pipework are supplied in a single assembly with one suction and one discharge connection.

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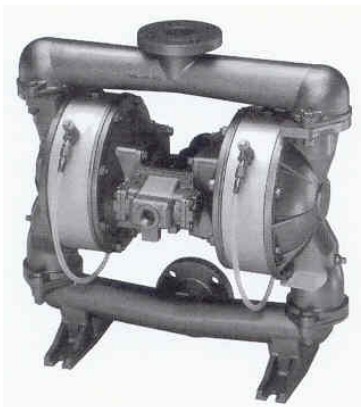
### Sandpiper's spill-containment successful with lime slurry

Sales Engineer Anthony Sidawi NSW

A major gas company in Sydney had some major problems with an existing pump.

The client was pumping lime slurry with a centrifugal pump.

When the centrifugal pump was purchased they thought there would be traces of lime



Sandpiper Spill-Containment Model ET2-M

in the water (1 to 2%). After commissioning of the plant, they found there was more than 40% lime slurry in the water which was causing regular regular mechanical seal failure.

After spending some time

working with the client, it was suggested to use a standard Sandpiper diaphragm pump. The problem here though, is that if the diaphragm ruptures, the compressed air will mix with the lime slurry, which is unacceptable.

It was therefore suggested to use a spill-containment duty pump, where the pump is supplied with a containment chamber with a hydraulically balanced pumping diaphragm and driver diaphragm assembly.

At the point when the pumping diaphragm fails, the pumped liquid enters the spill chamber, displacing the driver fluid. The exchange of pump fluid and driver fluid displays a colour change in the sight tube giving a visible signal.

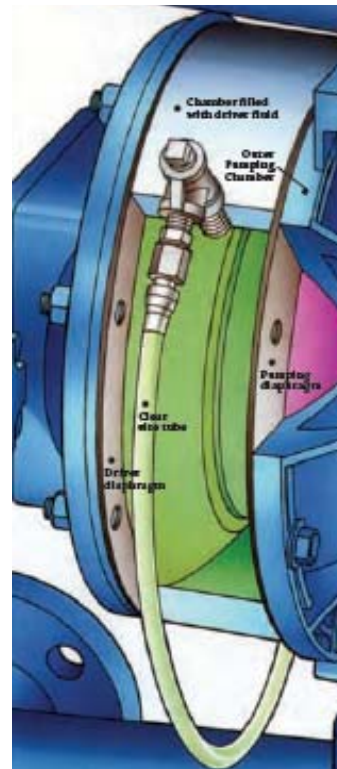
Even if the pumping diaphragm fails, the pump will be able to finish the batch/shift, until scheduled maintenance is organised. Also there will be no external leak if the diaphragms rupture, unlike the conventional diaphragm pump.

Sandpiper also offers all its standard benefits on the

containment duty pumps that it does with the rest of the Sandpiper range:

- Non stalling guarantee
- ESADS (externally serviceable air distribution system)
- Fully-bolted design.
- Lubrication-free

The client was very happy with the outcome, and purchased two pumps.



#### 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, minimising repair time and reducing maintenance cost
- Lubrication-free, eliminates requirement for lubricators, reducing initial cost and maintenance cost

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