



Ace Pump Corporation  
Hall 30  
Stand B2

# Seal the deal

SEAL FAILURES CAN LEAD TO COSTLY DOWNTIME AND INCONVENIENCE FOR OPERATORS. BUT A NEW KIND OF WET SEAL PUMP IS HELPING TO MAKE SUCH WORRIES A THING OF THE PAST

Even with the variety of centrifugal pumps and sealing options available for pumping applications in the industrial vehicle market, mechanical seal failures still account for over half the repair cost and critical downtime of pumps. Most mechanical seals rely on a thin layer of process fluid to cool and lubricate seal faces. This becomes a problem when the process tank is empty or the fluid causes bonding between the seal faces. In response to these issues, some pump manufacturers offer wet seal pumps for improved seal life. These wet seal pumps use a separate fluid for a dual mechanical seal to run in, but not all wet seal pumps offer the same level of protection for the mechanical seal.

The three most important aspects of a wet seal pump are a greater pressure in the seal chamber than pump cavity; the fluid selection in the seal chamber; and visibility, enabling inspection of the seal chamber's fluid level and condition.

Ace Pump's line of Oasis wet seal pumps, including the newest FMC-755FS-HYD, provide all of these important elements.

## Avoiding seal breakage

Other pump manufacturers offer a non-pressurized or even a self-regulating seal chamber. In both these designs there is opportunity for the film of seal fluid to break down or, even worse, allow the process fluid to contaminate the seal faces, causing premature failure. One self-regulating design even states in its instruction manual not to run the pump dry for more than 15 minutes. The reason for this is that while running dry there is no pressure in the seal chamber to maintain the seal fluid film across the seal faces. All of Ace's wet seal pumps have a continuously pressurized seal chamber to promote a thin layer of barrier fluid across seal faces and completely isolate the mechanical seal. Ace Pump's pressurized seal chamber designs are tested to last 3,000 hours while running dry.

In combination with keeping the barrier fluid on the seal faces with a positive pressure, barrier fluid selection is also critical. The majority of wet seal pumps currently use automotive antifreeze as their seal chamber fluid, which can dry up and crystallize between the seal faces and cause a failure. Ace only



ABOVE: Oasis wet seal pumps have a continuously pressurized chamber to minimize seal failures

uses Royal Purple Barrier Fluid GT 22 in its seal chambers. This premium oil was developed specifically for mechanical seals and is cleaned to a typical ISO 4406 14/13/11 Cleanliness Code, making it 250 times cleaner than other new oils. Keeping this premium barrier fluid between the seal faces prevents the seals from running dry, even when the pump is dry. This also forms a barrier to prevent the possibility of process fluids from contaminating the seal faces.

## Maintenance time built-in

Ace pumps include a seal chamber pressure and sight gauge to allow planned maintenance instead of critical downtime. Some other maintenance free wet seal pumps do not even offer a sight gauge to check the cleanliness or level of the seal chamber fluid. All mechanical seals currently available are still

considered a wear item, and even if you keep a pressurized chamber full of clean fluid there will be a seal failure at some point.

As the seal nears the end of its life, operators will notice that the seal chamber begins to require air and barrier fluid more frequently. If the seal chamber pressure drops too low while the pump is running, operators may notice the fluid in the sight gauge change color. These are signs that maintenance should be planned during the next available service opportunity to prevent downtime during a future critical operation. Ace is so confident in its Oasis wet seal pumps that they are all covered by an industry-first two-year warranty on all components, including the seal. **ivt**

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