



KelairPumps

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CASE STUDY

Viking pumps take the heat out of polymer pumping

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Pumping polymers is not a straightforward exercise. So what is a polymer? It is a proprietary material mixed with an agent such as TDI (Isocyanate) to perhaps create different grades of foam. Bear in mind there are soft foams and hard foams; some foams are spongy and bend, other foams are rigid and break. So there is no "universal" polymer. It's not like a chemical that is exactly the same no matter who makes it. The only thing that varies is the quality.

Some polymers may have a viscosity of 100 cSt, others 2,000 cSt (or anywhere in between), yet they are all classed as polymers. Some may be heat-sensitive, others shear-sensitive. Each case has to be dealt with on an individual basis.

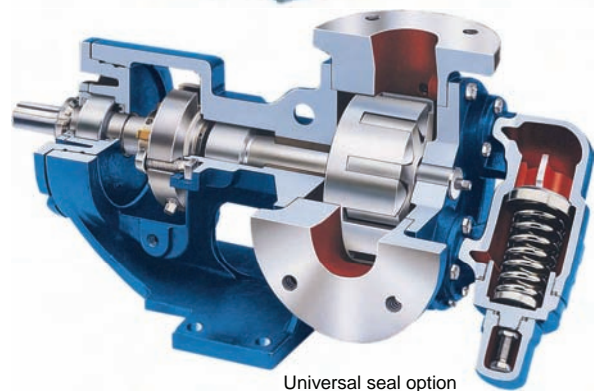
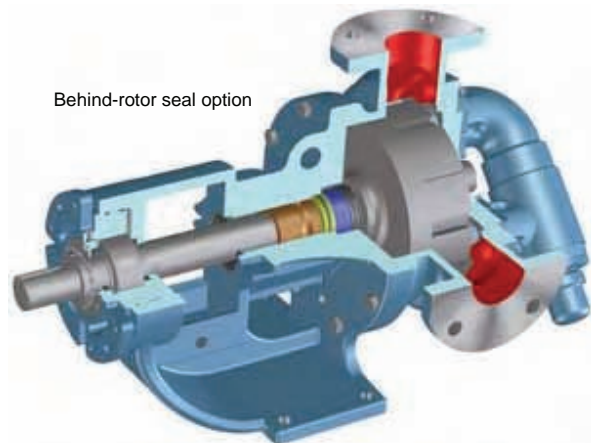
Kelair recently had an interesting problem to solve concerning a Viking Internal Gear pump 4195 that had been operating successfully for several years, with the mechanical seal option. The pump ran at 6-pole speed (around 960rpm) and the customer was pleased with its performance.

However, when it was time to be replaced with an identical unit, the new pump failed because the particular polymer was heat-sensitive and the product had turned rock-hard behind the mechanical seal.

Kelair's engineers analysed what would happen if this pump was replaced with the Heavy-duty Universal Seal option, realising that although the bearing would be well lubricated by the polymer fluid, the heat would be trapped between the mechanical seal and the bearing.

So it was decided to dispense with that chamber altogether, and the Viking 4124B was introduced. It has the mechanical seal situated directly behind the rotor.

Behind-rotor seal option



Universal seal option

The pump was set to run a little slower, at around 450rpm to generate even less heat at the mechanical seal faces, and a suck-back hole was drilled from behind the mechanical seal back to suction. The suck-back hole helped to increase the circulation of fluid behind the seal, thereby keeping the temperature down even further.

The Viking 4124B pump has been running for a number of months now, and the customer is delighted with its performance.

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