

Michael Smith Engineers Ltd

Michael Smith Engineers Ltd was formed in 1971 as a specialist pump distributor. We have our head office in Woking and a satellite office in Wetherby, allowing us to provide service and support to customers throughout the United Kingdom.

Our workshops are fully equipped for assembly, repair and testing of our pump ranges and we also offer on-site consultancy, trouble-shooting, commissioning and service. With an average length of service of over 15 years, we can call on broad experience to solve difficult pumping problems. We have been accredited to ISO 9001 by NQA Ltd since 1994.

The main markets we service with our ranges of pumps are the chemical, petrochemical, pharmaceutical and process sectors with our larger pumps as well as laboratories, research and development institutions and OEMs with our smaller pumps. We only promote products for which we have been appointed as distributors and

currently hold an extensive stock of pumps and parts.

Our range includes gear pumps, centrifugal pumps, diaphragm pumps and piston pumps, many of which can be supplied in leak-free sealless designs. Corrosion resistant materials are available for many of our products including metallic options of stainless steel and high nickel alloys or plastic options of PVC, polypropylene, PVDF and ETFE.

We can supply pumps for liquids between 0.2 cP and 500,000 cP, temperatures between -50°C and +400°C, capacities from nanolitres per hour to over 15m³ per minute and for discharge pressures up to 500 bar.

Michael Smith Engineers have experience of pumping many hard to handle liquids including acids, bases, organic liquids, solvents, inorganic liquids, slurries, volatile liquids, corrosives, abrasive liquids, non-lubricating liquids, liquids with entrained gases and flammable liquids.



Contact:

Jason Downing, Sales Director

E: j.downing@michael-smith-engineers.co.uk

Woking/head office:-

Unit E, Scotswood Park, Forsyth Road, Sheerwater, Woking, Surrey GU21 5SU

Tel: 01483 771871

Wetherby office:-

Unit G5, Croft Business Park, Scraftain Lane, Wetherby, West Yorkshire, LS22 5HG

Tel: 01937 587 045

W: <https://www.michael-smith-engineers.co.uk/>

www.linkedin.com/company/michael-smith-engineers-ltd

Innovative sealing technology enhances pump performance

New developments of an innovative sealing technology have been added to the range of Viking Universal Seal Series of Internal Gear Pumps. The result is a more cost-effective sealing option compared to traditional mechanical seals whilst also reducing leakage rates compared to using pumps with packing. The new option is also designed for back pull-out which helps to reduce downtime and simplify maintenance.

Available from the UK's leading pump specialist Michael Smith Engineers the new O-Pro seal uses a series of O-rings to create a robust seal and lubrication chamber in a single piece seal. This new feature can be fitted throughout the Viking Universal Seal Series pumps which cover flows to 295 m³/hr, discharge pressures to 14 bar and liquid viscosities between 20 - 1700 cSt at temperatures between -15°C to +175°C.

Originally designed for use on Viking Universal Seal pumps on sugar and confectionery process applications, this latest version can be retro-fitted to the majority of the Universal Seal packed pumps without the need for modifications. This means there is now an option for a wider range of applications such as pumping isocyanate, paints, adhesives and inks as the barrier fluid stops air bound moisture contacting the pumped fluid.

This new sealing technology is available in three options. Firstly, the O-Pro Barrier seal which replaces both bushing and sealing elements, packing or mechanical seal with a machined seal gland. This innovative design combines a bracket bushing and seal gland made of hardened cast iron with two sets of double O ring seals for reliable sealing and easy maintenance. The pair of static O-rings seal externally on the bracket and the pair of dynamic O-rings seal internally on the shaft preventing process fluid from leaking out of the pump and reducing wear between the shaft and the bushing. The area between each set of inner and outer O-rings is filled with lubricating liquid, providing lubrication whilst also acting as a double seal barrier fluid to prevent leakage along the shaft.

The O-Pro Barrier Seal can be used on any of the metallurgies available across the Viking Pump range to replace either mechanical seals or packing as long as the process fluid is compatible with hardened cast iron. It has a bushing clearance at the inboard end and wider clearance as you move outwards to allow for the barrier fluid to lubricate and cool the bush and O-rings.

The second and third options are the O-Pro Guard and O-Pro Cartridge which are suitable

case study



for replacing mechanical seals and packing in applications where a hardened cast iron bushing isn't suitable.

Available in stainless steel, these options replace both packing, or a mechanical seal by using a series of O-rings to seal between the bracket and shaft surfaces giving a compact design for easy retrofit and simple ongoing future maintenance. Like the O-Pro Barrier seal, these form a chamber between the O-rings which is filled with clean lubricating fluid creating a barrier fluid system which prevents leakage of the process fluid along the shaft.

With the O-Pro Cartridge the dynamic O-rings runs directly onto the pump shaft and so are best used on pumps with a hardened shaft, while the O-Pro Guard incorporates a hardened sleeve which is fixed to the shaft and so can be used on any shaft material. Both of these options are made in stainless steel and can be used with any of the Viking Universal Seal metallurgies as a direct replacement for mechanical seals or packing. However, unlike the O-Pro Barrier Seal, they do not replace the pump bushing.

More details at: <https://www.michael-smith-engineers.co.uk/resources/useful-info/viking-pump-o-pro-seal-technology>
Email: Info@michael-smith-engineers.co.uk