



mechanical seals for the
chemical processing &
pharmaceutical
industries





Mechanical Seals for the Chemical Processing & Pharmaceutical Industries

AESSEAL® offer a wide and diverse range of seals to suit chemical and pharmaceutical applications. These vary in their complexity depending on the medium being sealed. This brochure covers a broad range of seals which are most commonly used in this industry.



The chemical and pharmaceutical industry has traditionally been very difficult to seal. Most liquids and mediums that require sealing are very corrosive and the seals themselves are used in very arduous situations. AESSEAL® has continuously focussed resources on creating new sealing solutions to solve problems encountered in this industry. Research and development has produced innovative, patented, products with superior performance which incorporate exotic alloy technology and non-metallic parts. These products have been launched only after extensive performance and field evaluation tests and are continually improving as a result of customer feedback.

Most seals in this brochure also have their own individual brochure with more detailed information including sizes. All these can be downloaded from our web site at <http://www.aesseal.com> or requested from the Global Technology Centre headquarters in Rotherham, U.K.



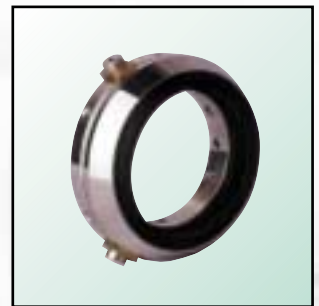
'M' Series Range

Multi-spring PTFE wedge seal designed to prevent loading of the PTFE in the free state. No setting clips are required.



SAI™

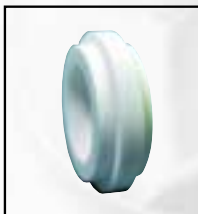
An Internal short component seal designed with a balanced seal face, available with optional Kalrez® elastomers, for reduced shaft fretting and general purpose duties.



CS™ / CSC™ / CZ™

A 'chemical' external component seal with non-metallic wetted components, also available with a Zalak® or Kalrez® elastomer, for use in general purpose duties.

T-SEAT™



L-SEAT™



O-SEAT™



DIN-SEAT™



A selection of the stationary seats available in a wide variety of material face combinations.

Industry leading products combined with exceptional SERVICE has been the key to our success. We aim to give our customers such exceptional service that they need never consider alternative sources of supply. AESSEAL® now has over 30 branches and over 150 distributors worldwide to provide this service to over 50 countries.

AESSEAL® now has the best service, delivery and cost effective sealing solutions in the industry. To demonstrate our confidence in that statement we offer a Seal Management Program where we can make the following unconditional guarantees for contract customers.

- We guarantee to mechanically seal your plant at a total price 25% lower than the incumbent supplier or suppliers.
- 48 hour shipment of standard products or they will be provided free of charge.
- The standard warranty is "no work no pay" (exactly what you would expect of your personal retail suppliers).



Converter II™

A short cartridge mechanical seal with Kalrez® wetted elastomers available as an option. The two bolt gland design allows easy conversion from a packed pump.



SCUSI™

A short cartridge mechanical seal with patented self aligning faces and integral flush port. Available with optional Kalrez® wetted elastomers. Short overall length allows use on equipment with limited outboard space.



CURC™ / CURE™

Cartridge single mechanical seals available with optional Kalrez® wetted elastomers and exotic alloy wetted components. Patented self-aligning faces are incorporated. The CURC™ is a general purpose single cartridge seal with integral flush, quench & drain ports and has an integral leakage restriction bushing. The CURE™ has a unique low-pressure secondary seal for the containment of quench fluid.





Mechanical Seals for the Chemical Processing & Pharmaceutical Industries

Chemical Database Software

AESSEAL® has over twenty years of knowledge and experience in the chemical and pharmaceutical industry and for twenty years has been recording that knowledge. In an industry first, the company has developed world leading knowledge based software. This includes the chemical database which helps to choose the correct seal for the medium being sealed and also the pump database which determines whether a seal will fit without modification.



The databases are used to enhance our technical department's capability and response time. Global technical support in all areas of environmental sealing is now available on site or over the phone, 24 hours a day.



CDSA™ / Exotic CDSA™

A cartridge double mechanical seal available with optional Kalrez® wetted elastomers and/or 'exotic' alloy wetted components with patented self-aligning inboard and outboard faces. It is a general purpose double seal suited to a wide variety of pump applications. Compact integrated design allows easy conversion on pumps currently fitted with a single seal, without the need for expensive pump modifications.



CMSESAI™

A 'chemical' cartridge double mechanical seal with double balanced face technology and optional Kalrez® wetted elastomers. All product wetted components are non-metallic, allowing use on highly corrosive applications.



SMSS™

The SMSS™ seal is a cartridge single mechanical seal, with monolithic seal faces offered as standard with two tangential flush ports and hydraulically balanced seal face design. It is a high performance single cartridge seal for use on high temperature, cryogenic and slurry applications.

Product Development

Massive investment in all areas of our business from product development through to manufacturing has ensured that we have competitive products. These are developed with the latest Computer Aided Design and manufactured with the latest Computer Numerically Controlled machines. All seals are inspected on critical diameters with a CNC Co-ordinate Measuring Machine and thoroughly tested before despatch to an environment where failure is not accepted.

Reduced Costs

This investment together with a completely modular seal range has greatly reduced production costs. These savings have been passed onto the customer so that AESSEAL® seals are less expensive today than they were when the company first started.



DMSF™

A cartridge double mechanical seal with monolithic seal faces. The seal incorporates a highly efficient pumping scroll (Patent Pending) and is also available with Kalrez® elastomers and 'exotic' alloy wetted parts. It is a high performance double cartridge seal for use on high temperature, corrosive, volatile or slurry applications.



FI-DSNM-R™

The FI-DSNM-R™ seal fits directly on to the bare shaft of Richter pumps, eliminating the OEM ceramic shaft sleeve. The seal is offered with non-metallic wetted components and installs as a TRUE CARTRIDGE seal. (Patent Pending)



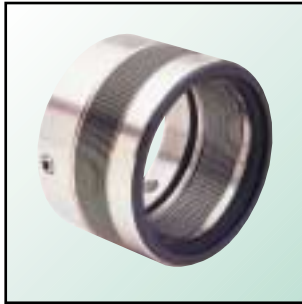
SEA2™ / SEH1™

The SEA2™ / SEH1™ seal is offered with Solid Alloy 20 or Alloy 276 parts. It includes a flush port, a hydraulically balanced seal face design and has springs out of the product. It is also offered in standard box and large box (ANSI+) gland configurations. It is designed for use on highly corrosive applications.



Mechanical Seals for the Chemical Processing & Pharmaceutical Industries

Bellows Range



BSAI™/BSAIG™



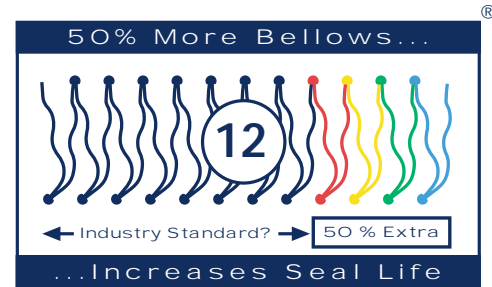
BSIV™



BQFD™

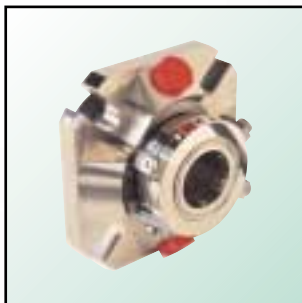


BDQD™



50% more bellows than the industry standard (12 instead of 8) means there is less stress on each convolution in the bellows stack which helps increase seal life. Our standard bellows material, Alloy C276, also has superior mechanical and corrosion resistance properties compared to other industry standard bellows materials such as 300 series Stainless Steel or Alloy 20.

The bellows unit is available in a variety of different material options with either elastomer or graphite packing sealing rings.



DSNM™ / SSNM™

The cartridge double (DSNM™) and single (SSNM™) mechanical seals with non-metallic wetted components are available with optional wetted elastomers in Kalrez® (Patent Pending).



LSEAL™

The cartridge double and single mechanical seal designed specifically to suit the Flowserve™ L-series range of plastic lined process pumps. It is designed with non-metallic wetted components and is available with optional wetted elastomers in Kalrez® (Patent Pending).



Mixmaster™ Range

The cartridge double seal with integral load carrying bearing designed to DIN 28138, 28141, 28154 and 28159. Optional wetted components in non-metallic materials to DIN 28137 part 2 are also available in a wide range of 'exotic' Alloys. Glass lined mounting flanges are available. A full range of imperial and metric seal sizes are offered.

Environmental Control Systems

In addition to a vast range of mechanical seals, AESSEAL® has a specialized systems division, dedicated to the design and manufacture of a comprehensive range of seal support packages for double mechanical seals. These range from the SSE10™ vessel to the fully featured SD™ and PUMPPAC™ forced circulation systems.

SSE10™



AS15™



SD™



PUMPPAC™



Environmental Control System Range

The systems above are compatible with a wide selection of Barrier and Buffer fluid mediums. They are supplied pre-assembled with all necessary components and fittings. On site inventory costs are reduced by modular system construction.



CDM™

The cartridge double mechanical seal specifically designed for mixer applications. The seals can be supplied with Kalrez® wetted elastomers and exotic alloy wetted components. For use on top, side and bottom entry equipment.



ESM™

The external unit mechanical seal for mixer applications, available with non-metallic wetted components and optional Kalrez® wetted elastomers. These are available with a collet drive for hard, soft or glass-coated shafts. We offer an optional Buffer Canister™ to bathe the seal faces in a buffer fluid. This helps facilitate seal operation.



CDMSC™


























The CDMSC™ is an externally mounted cartridge double mechanical seal with monolithic seal faces and an integral cooling jacket or multi-port flush arrangement. This seal is available with all product wetted components in 'exotic' Alloys including Alloy 20, Alloy 276, Titanium and others.





ENVIRONMENTAL TECHNOLOGY

The AESSEAL® Group of Companies

 AESSEAL plc, Rotherham, U.K.	Telephone: +44 (0) 1709 369966
 AESSEAL plc, Derby, U.K.	Telephone: +44 (0) 1332 366738
 AESSEAL plc, Peterborough, U.K.	Telephone: +44 (0) 1733 230787
 AESSEAL plc, Scotland, U.K.	Telephone: +44 (0) 1698 849808
 AESSEAL plc, Middlesbrough, U.K.	Telephone: +44 (0) 1642 245744
 AESSEAL plc, Essex, U.K.	Telephone: +44 (0) 1708 256600
 AESSEAL plc, Pontypridd, U.K.	Telephone: +44 (0) 1443 844330
 AESSEAL (MCK) Ltd., Lisburn, U.K.	Telephone: +44 (0) 28 9266 9966
 AESSEAL (MCK) Ltd., Co. Cork, Ireland.	Telephone: +353 (0) 214 633477
 AESSEAL Inc., Knoxville, Tennessee, USA.	Telephone: +1 865 531 0192
 AESSEAL Inc., Seneca Falls, New York, USA.	Telephone: +1 315 568 4706
 AESSEAL Inc., Kingsport, Tennessee, USA.	Telephone: +1 423 224 7573
 AESSEAL ESP LLC, Cedar Rapids, Iowa, USA.	Telephone: +1 319 393 4310
 AESSEAL Deutschland AG.	Telephone: +49 (0) 60 74 881293
 AESSEAL Italia SRL.	Telephone: +39 (0) 33 197 0556
 AESSEAL Pty Ltd., Gauteng, South Africa.	Telephone: +27 (0) 11 466 6500
 AESSEAL Pty Ltd., Confluid Branch, Amanzimtoti, South Africa.	Telephone: +27 (0) 31 903 5438
 AESSEAL Malaysia SDN. BHD.	Telephone: +603 8062 1233
 AESSEAL Nederland.	Telephone: +31 (0) 76 564 9292
 AESSEAL Ibérica S.L.	Telephone: +34 977 55 43 30
 AESSEAL Danmark, Greve, Denmark.	Telephone: +45 56 64 14 00
 AESSEAL France S.A.R.L.	Telephone: +33 (0) 3 2017 2850
 AESSEAL Turkiye, Istanbul, Turkey.	Telephone: +90 (0) 212 237 40 47
 AESSEAL Canada Inc.	Telephone: +1 807 624 2727
 AESSEAL China Ltd.	Telephone: +86 574 8770 1888

FOR FURTHER INFORMATION AND SAFE OPERATING LIMITS CONTACT OUR TECHNICAL SPECIALISTS AT THE LOCATIONS BELOW.



WINNER OF THE
NATWEST
SUNDAY TIMES
COMPANY OF
TOMORROW
AWARD

USE DOUBLE MECHANICAL SEALS
WITH HAZARDOUS PRODUCTS.
ALWAYS TAKE SAFETY PRECAUTIONS

- GUARD YOUR EQUIPMENT
- WEAR PROTECTIVE CLOTHING



AESSEAL plc
Mill Close
Templeborough
Rotherham
S60 1BZ
United Kingdom

Telephone: +44 (0) 1709 369966
Fax: +44 (0) 1709 720788
E-mail: seals@aes seal.com
Internet: <http://www.aes seal.com>

Distributed by:

USA Sales & Technical advice:
AESSEAL Inc.
10231 Cogdill Road
Suite 105
Knoxville, TN 37932
USA
Telephone: 865 531 0192
Fax: 865 531 0571

© Copyright AESSEAL plc 2002
All Rights Reserved

AES / DOC / IN 4201 01/2002

Registered Trademarks:
AESSEAL® - AESSEAL plc
Zalak®, Kalrez® - DuPont Dow Elastomers
Flowserve™ is a Trademark of Flowserve™ Corporation

ALL SIZES ARE SUBJECT TO MANUFACTURING TOLERANCES.
WE RESERVE THE RIGHT TO MODIFY SPECIFICATIONS AT ANY TIME.

Reference Issue • L - UK/US - CHEMPROC - 03