

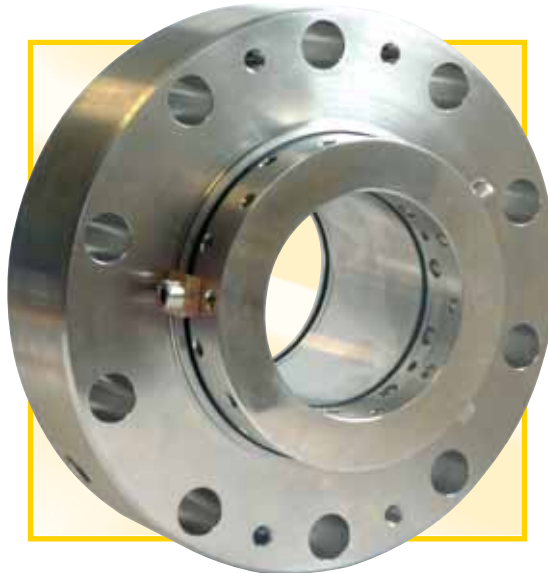


reliability-focused-solutions.com

Reliability
Focused
Solutions



EASASEAL™ Advanced High Pressure Sealing Technology



- **HIGH PRESSURE PIPELINE APPLICATIONS**
- **PRODUCED WATER RE-INJECTION APPLICATIONS**
- **INNOVATIVE TECHNOLOGY FOR EXTENDED SEAL LIFE**
- **CENTROIDALLY BALANCED DESIGN ENSURES SEAL FACE FLATNESS**

AESSEAL® - "Providing Exceptional Customer Service"



AESSEAL plc Group Headquarters, Rotherham, UK.

AESSEAL® is one of the leading global specialists in the design and manufacture of mechanical seals, support systems and bearing seals. With operations in six continents, AESSEAL® is the world's 4th largest supplier of mechanical seals, achieving growth through exceptional customer service and innovative products that provide real customer benefits.

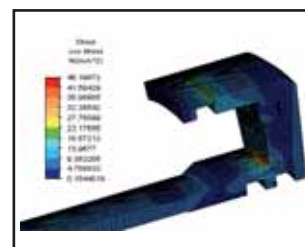
In 2007, AESSEAL was named "Company of the Year" by the Confederation of British Industry, building on the 2006 accolades of "Best UK Business" and "Best Engineering Plant".

In addition, AESSEAL® was also named as the winner of the Overall Award for UK Manufacturing Excellence in the prestigious Institution of Mechanical Engineers MX2006 Awards.

Innovation for Extreme Application Sealing

Developing solutions for extreme applications requires design innovation, technology and application engineering. Customers can be confident that all AESSEAL® solutions have been developed and tested to exceed the required performance envelope.

In recent years AESSEAL® has developed an enviable reputation for cutting edge technology and market leading performance. This has been achieved by massive capital investment in an advanced research program. This commitment to research runs through the entire product development process.

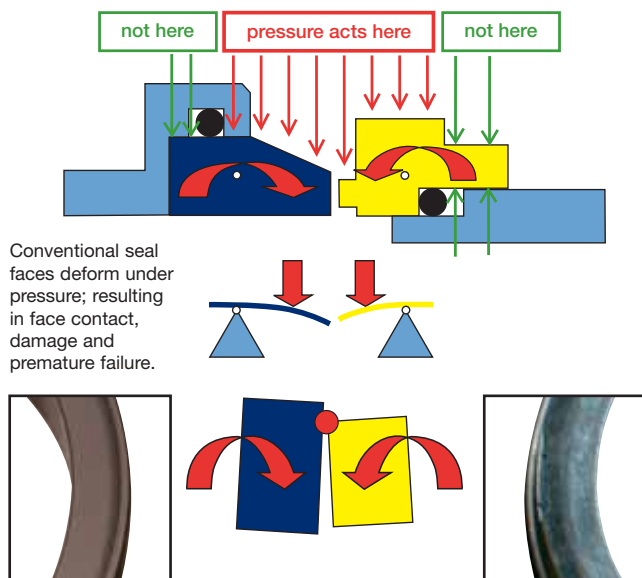


AESSEAL® currently invests over 7% of its turnover on Research and Development. This is believed to be the highest investment to turnover ratio in the sealing industry.

The company's multi-million dollar test facility in Rotherham, England, is testament to this investment program. The high-pressure test bay cost in the region of £250,000 (\$450,000 / □375,000) and has been used to qualify the EASASEAL™ product range to 100barg (1,500 psig).



Limitations of Conventional Sealing Technology at High Pressures



Understanding the limitations of conventional mechanical seal faces was a fundamental and important first step in the EASASEAL™ development program.

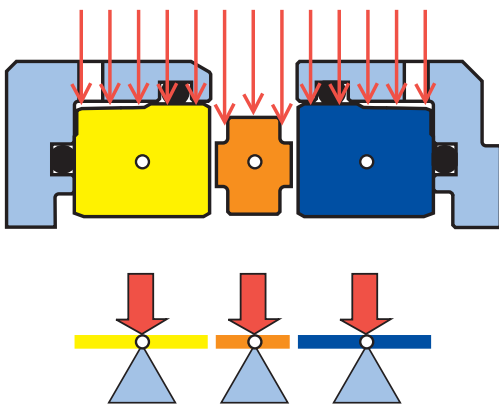
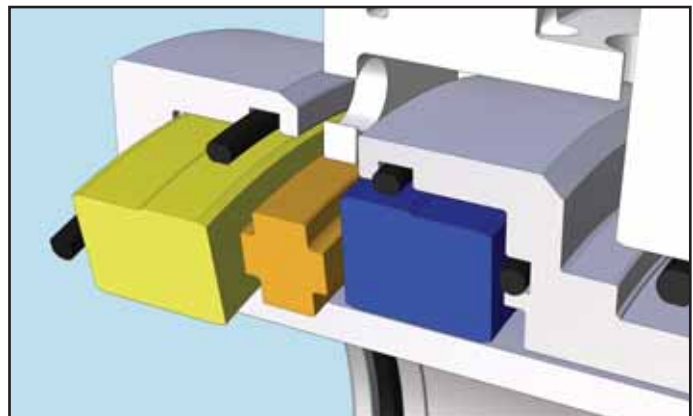
Seal faces deform as a result of forces applied to them relative to their centroid (centre of mass). These seal face deformations can be predicted by finite element analysis (FEA) and verified by post service seal face condition analysis.

By analysing the forces applied to seal faces in relation to their centroid AESSEAL® has produced a design that does not deform under pressure. This eliminates failure modes associated with seal face deformation.



This unconventional yet innovative design employs a robust, uniformly shaped floating face, which acts as an interface between the rotary and the stationary seal faces.

In single seal format, process pressure acts on the outside circumference of the floating face. This creates a force that is uniformly distributed through the centroid of the seal face. Unlike conventional seal face technology, the floating face is centroidally balanced and will not twist or deform under pressure. This ensures the seal faces remain flat and damage free.

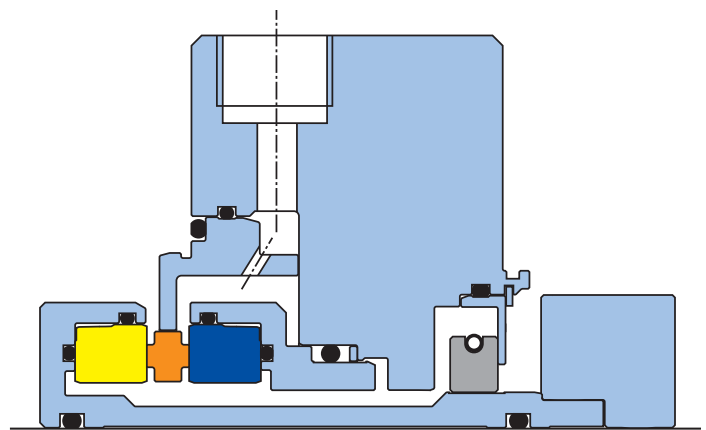


100mm (4.000") EASASEAL™ faces after 500 hours testing at 100 bar (1500 psi).

Affordable Innovation through Modularity

AESSEAL® prides itself on applied innovation, through modularity, for maximized customer service.

The EASASEAL™ design has undergone a rigorous value engineering program. This ensures that AESSEAL® can offer 21st century technology that is not only affordable, but also available for delivery to meet customer expectations.



EASASEAL™ single design

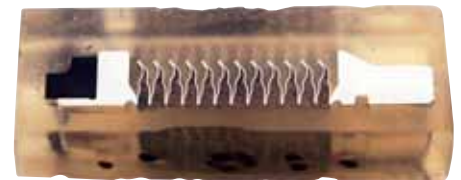
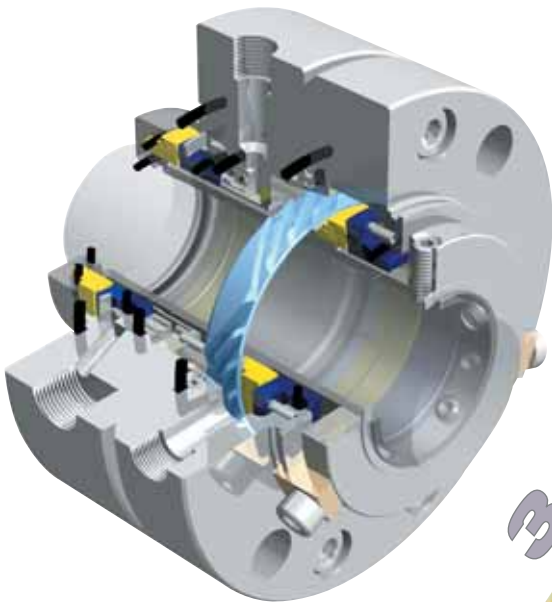
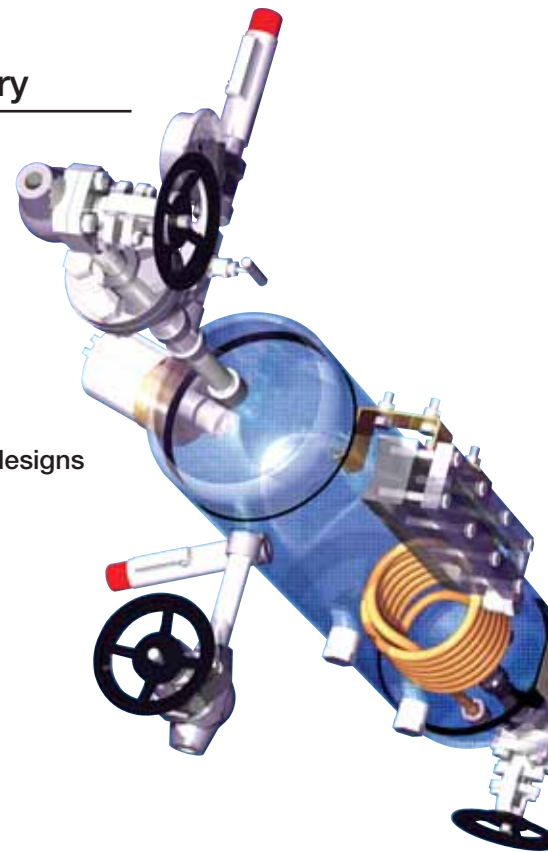
AESSEAL® Reliability Focused Solutions for Industry

AESSEAL® is an industry leader in many diverse and extreme sealing applications.

Its innovative patented and patent pending product profile covers a wide range of reliability focused solutions. These include:

- **Bearing Protection/Isolation** - Labyrinth & hermetic seals
- **Seal Support Systems** - Convection & forced circulation
- **High Temperature Metal Bellows** - Single & dual non-elastomer designs
- **Gas Compressor Seals** - Hydrostatic & hydrodynamic lift
- **Mixer & Dryer sealing** - Extended dry running performance
- **API682 edition 2 tested Single and Dual seals** - Low emission designs for new & mature assets

Visit www.aesseal.com for further details.



300 Bar 45,000 RPM

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