

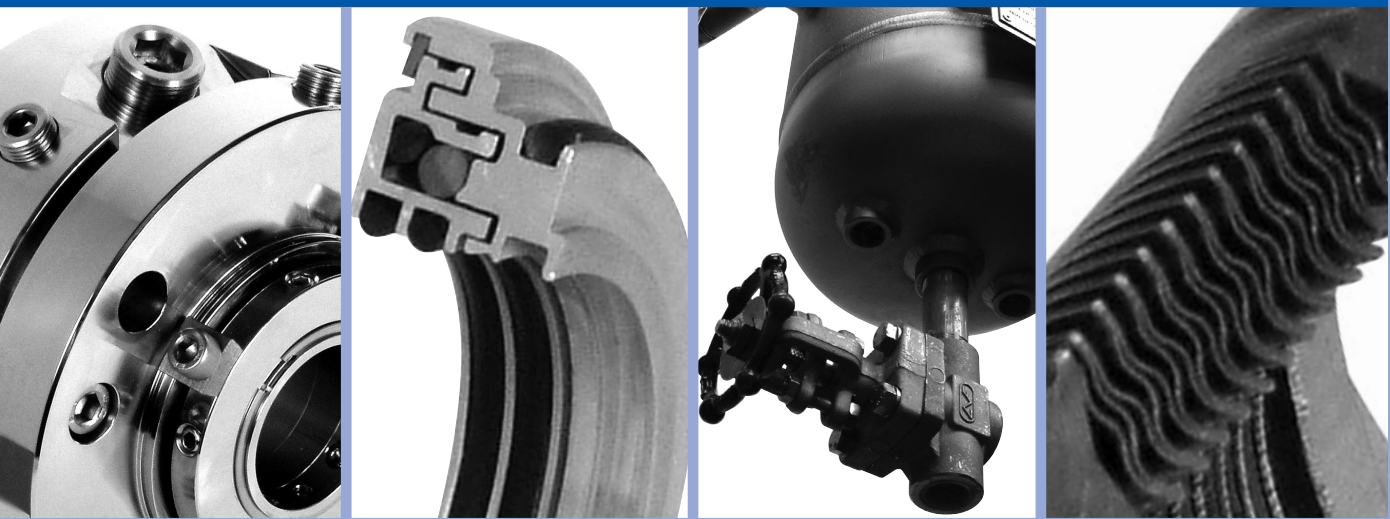
INCORPORATING
PRODUCTS AWARDED
THE QUEEN'S AWARD
FOR ENTERPRIZE;
INNOVATION
2006 & 2009



THE QUEEN'S AWARDS
FOR ENTERPRIZE;
INNOVATION
2006 • 2009



Oil & Gas Industry Products



- QUALIFICATION TESTED**
- API 682 / ISO 21049
- MECHANICAL SEALS**
- ARRANGEMENT 1, 2 & 3 TYPE A, B & C
 - CATEGORY 1, 2 & 3
- SEAL SUPPORT SYSTEMS**
- ASME VIII DIV.1 2007, 2008a
 - PED 97/23/EC MODULE B1+D
 - CERTIFIED BY TÜV
- BEARING SEALS & ISOLATORS**
- NON-CONTACTING LABYRINTH SEALS
 - CONTACTING FACE SEALS

On-line detailed case references of installed seals, systems and bearing protectors for the Hydrocarbon Processing and Associated Industries are available in the Applications section of www.aesseal.com. Recent examples include:



Shell U.K. Ltd.
(Oct. 2006)

AESSEAL® produced a bespoke 85mm CAPI Type A dual seal in exotic materials during Sunday. The machinists completed all machining operations late into the night going beyond the “call of duty”. The seal was built and tested early Monday morning and dispatched on a same day courier service to reach Aberdeen for the afternoon. It was then transferred to a “chopper” and sent offshore ready for an AESSEAL® representative to carry out the seal change on the offshore platform.

Mark Gray (Tern – Reliability Engineer for Shell U.K. Limited) commented “We were delighted with the service from AESSEAL®, which came to our aid at short notice with the right equipment.”



Pemex Refinacion
(Oct. 2006)

Since 2004, AESSEAL® has supplied seals to the Mexican State Oil Company, Pemex - Ing. Antonio Dovali Jaime Refinery, helping to identify and solve issues with equipment and seals.

Jose Acosta, Maintenance Manager and Jorge Roman of BOYAL said, “The installation of AESSEAL® seals has significantly reduced the incidences of failures in mechanical seals.

“The characteristics of the design, with the flexible stationary springs not in contact with the product and the hydraulic and pressure balance in both directions of the internal seal, allowed us to deal with the requirements that the process and pump demand.”



BOTAS International Limited
(Oct. 2006)

AESSEAL Turkiye won the mechanical seal contract and has been selected as a preferred supplier for BOTAS International Ltd (BIL) which runs the Turkish side of the Baku-Tbilisi-Ceyhan pipeline.

This contract covers the maintenance and technical support service for all mechanical seals for the pipeline as well as the supply of new mechanical seals and additional manpower services on an “On Call” basis.

The contract includes a site survey and a database set-up, technical advice, repair of existing seals and supply of new seals. The main seals of choice are CAPI Type A single and dual seals.

Hydrocarbon Processing Industry & References



The American Petroleum Institute is the standards institute representing the oil and natural gas industry. API specifications set strict standards for the design and supply of mechanical seals, as adopted by most refinery, petrochemical and offshore platforms around the world.

The AESSEAL® Oil & Gas product range provides technical and highly innovative sealing solutions for mature and new plant assets, conforming to any edition of API 610 and API 682.



Calumet Lubricants Company (July 2004)

John Swanson confirmed that Advanced Fluid Technology and AESSEAL® were responsible for savings, in his Refinery, of between \$/€70k to \$/€100k (£70k) in the last 24 months... the pre-Calumet MTBF of 20 months has improved, on rotating pumps, to a current 62 months.

Unocal Oil and Gas (July 2004)

The CAPI seals have been a terrific success and have operated without leakage for over a year... AES has made its entry into the API market in Alaska and the results are extremely positive. Unocal is pleased with the cost savings and performance of this latest development from AES... Over the last 12 months the plant has lost four competitor seals while the AESSEAL® CAPI seals are still running.



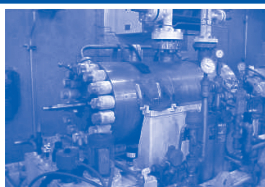
Petrobras Ricardo Elicalde (Oct. 2006)

AESSEAL® has been extending rotating equipment MTBF at Petrobras Ricardo Elicalde in Argentina for a number of years.

A Byron Jackson SJA pump, which operates in a hot light gas oil application at 300°C (572°F) was successfully sealed with a 1.750" AntCarb/SIC SAC BSFG™ in September 2002, extending the equipment MTBF to 1034 days from less than 365 days, when the plant used other branded designs... In January 2003, AESSEAL® installed a 2.250" TXS MagTecta™ to seal the bearing chamber of a Coppus RLH 19 steam turbine which failed every 6 to 12 months. The MagTecta™ has been running problem-free ever since.



AESSEAL® has over a **decade** of experience sealing Hydrocarbon Processing applications.



Such products have been successfully applied to the wide range of API application needs, from flashing and non-flashing hydrocarbon seals in wet, dry and containment seal configurations.

In addition to the extensive mechanical seal range, AESSEAL® provides API bearing seals/isolators and seal support systems in a range of configurations to support all API piping plans.

- **API Type A, Cartridge Pusher Single & Dual Seals Using Qualification Tested API 682 Technology.**
- Thin cross section (TXS) seal designs for mature asset installation designed to fit early Edition API Pumps. Typically this includes equipment with a limited radial cross sectional space between the shaft and seal chamber and restricted axial space.
- Robust and reliable seal face drive (Patented Floating Drive Technology) reduces high stress points at equipment start-up.
- Probably the most compact single and dual API cartridge seals on the market which employ API 682 qualified technology.
- Includes integrated bi-directional pumping device.

Mechanical seal pumping rings have as mission in life to induce the flow of coolant fluid past the body of a seal ring. This will always be an arduous task because the space available is exiguous at best and the necessary blade to casing clearances, unavoidably large. This task is further complicated where a bidirectionality requirement exists.

The solution proposed by AESSEAL, with blades set into opposing directions, is in classic turbomachinery terms, perplexing to say the least. And yet this disconcerting looking device not only works but, as noted in research performed at Cranfield University, does its duty in a surprisingly productive manner.

That AESSEAL managed to develop an elegant and highly performing solution to its seal pumping needs is a testimony to the inventiveness spirit that permeates this company.

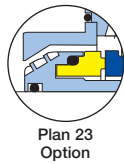
*Dr Joao Amaral Teixeira, Lecturer
Turbomachinery and Icing Group
School of Engineering, Cranfield University*



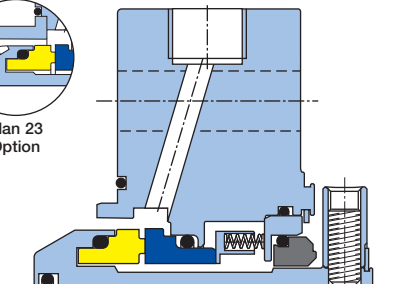
AESSEAL® taper vane bi-directional pumping ring.

Modern qualification tested sealing technology that fits **mature** assets **without** equipment **modification**

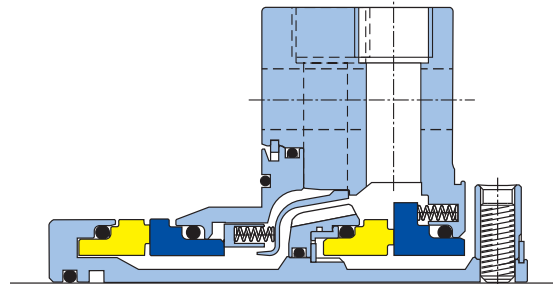
Type A To Suit API 610 5th, 6th & 7th Edition Pumps



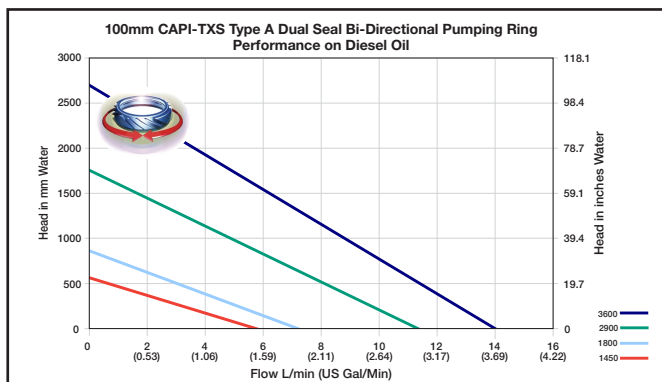
Plan 23 Option



Typical Single CAPI-TXS Type A (Arrangement 1)

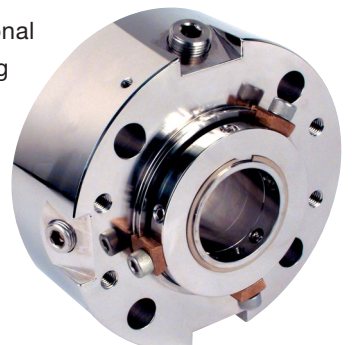


Typical Dual CAPI-TXS Type A (Arrangement 2 & 3)



Generated Head for CAPI-TXS single plan 53/23 on oil (30 centistokes at 30°C/86°F).

The AESSEAL® Bi-Directional Plan 53 and Plan 23 pumping ring design effectively replenishes fluid at both sets of seal faces, irrespective of shaft rotational direction.



⚠ The operating pressure of a seal depends upon various factors like seal size, media, face combination, temperature and speed. For safe operating limits for any given application contact your nearest AESSEAL® technical service provider.

- **API Type B, Category I, Cartridge Rotary Bellows Single & Dual Seals Using Qualification Tested API 682 Technology.**
- Thin cross section (TXS) seal designs for mature asset installation designed to fit early Edition API Pumps. Typically this includes equipment with a limited radial cross sectional space between the shaft and seal chamber and restricted axial spaces.
- 12 edge welded bellows convolutions as standard.
- Secondary seal option available in flexible graphite.
- The bi-directional pumping ring and deflector arrangement provide directed barrier fluid flow in the dual seal. This ensures that heat generated at the inboard seal faces is effectively removed.
- Segmented floating bush option available (single seal).



Full destructive test inspection and batch traceability.

Bellows Convolution Materials:

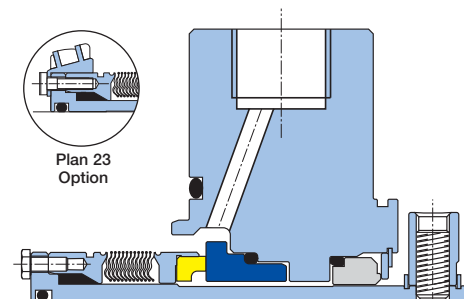
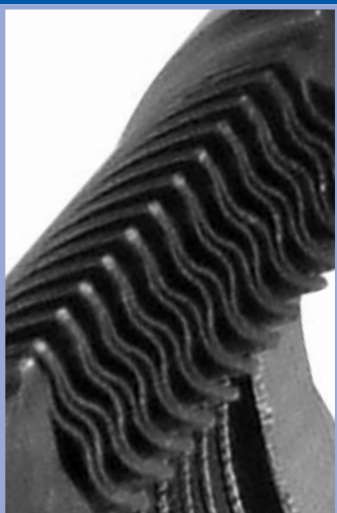
Alloy 718, AM350 and Alloy 276 as standard.

Seal Face Holder Materials:

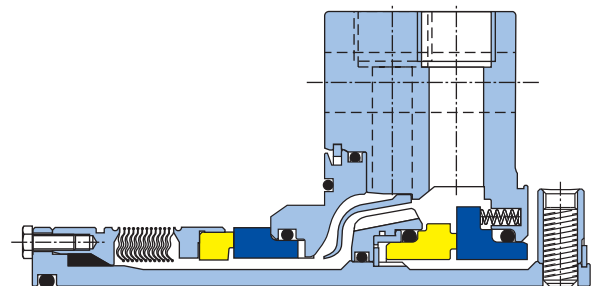
Alloy 42, Alloy 625, 316L S/S and Alloy 276 as standard.

Quality Guaranteed; AESSEAL® destructively tests one bellows component from **EVERY** batch produced

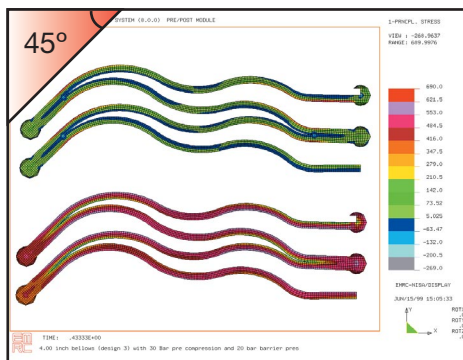
Type B To Suit API 610 5th, 6th & 7th Edition Pumps



Typical Single CAPI-TXS Type B (Arrangement 1)



Typical Dual CAPI-TXS Type ES (Arrangement 2 & 3)

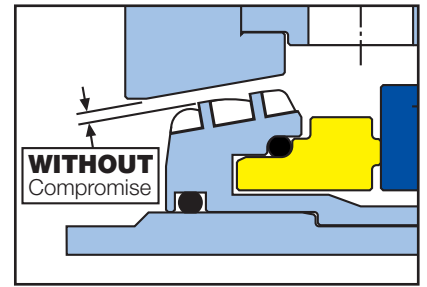


Optimized bellows convolution design.

Reduced Stress - 12 convolutions are amongst the highest number (of convolutions) to be found in a standard metal bellows seal in the mechanical seal industry. With more bellows convolutions, the less stress there is on each convolution in the bellows stack.

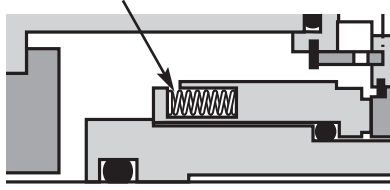


- **Qualification Tested API Type A, Cartridge Pusher Single & Dual Seals.**
- Stationary flexible element offered as standard for improved pusher design performance as outlined in API 682 Section 6.1.1.5.
- Multi-port flush design offered as standard for optimum seal face cooling.
- Market-leading bi-directional pumping ring performance with 0.060" (1.5mm) radial clearance between rotor and stator; conforming with API 682 Section 8.6.2.3 **WITHOUT COMPROMISE.**



Innovative bi-directional Plan 53 pumping ring technology produces high fluid head while maintaining large radial clearance.

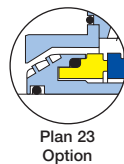
Why place multiple springs in contact with the process media, given that they can clog?



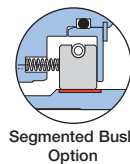
Competitor's typical API seal with multiple springs located in process fluid.

All AESSEAL® API seal designs have multiple springs **not in contact** with the process fluid

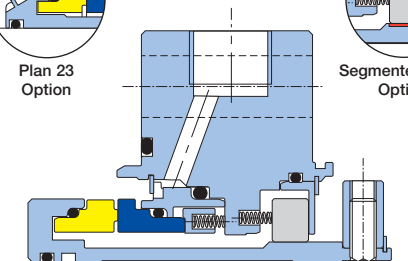
Type A To Suit Modern API 610 (ISO 13709) Edition Pumps



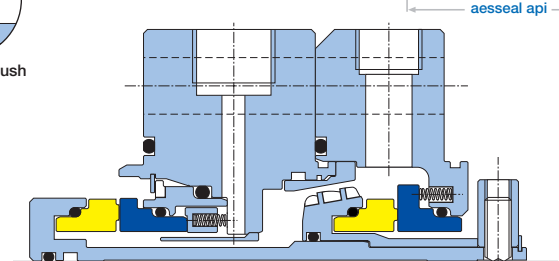
Plan 23 Option



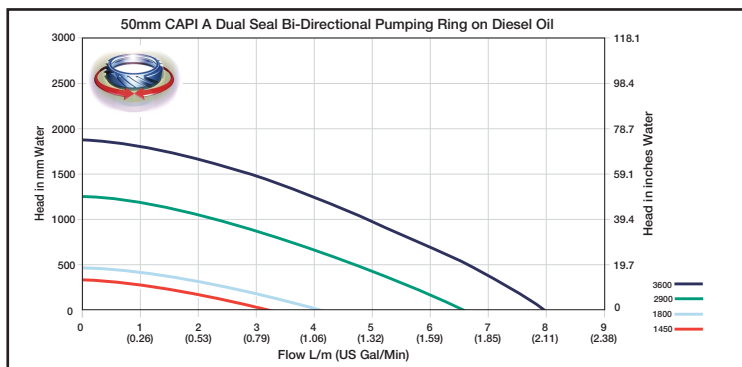
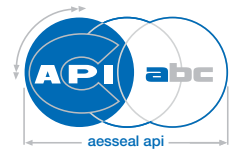
Segmented Bush Option



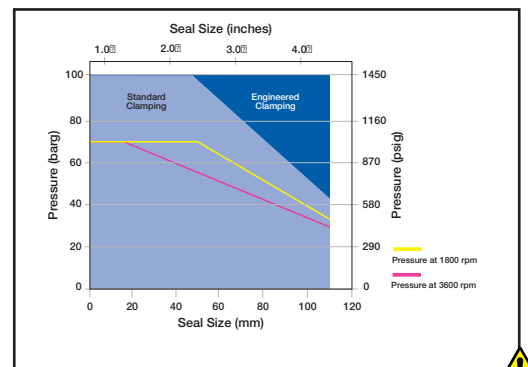
Typical Single CAPI Type A (Arrangement 1)



Typical Dual CAPI Type A (Arrangement 2 & 3)



100mm (4.000") CAPI Type A dual seal bi-directional pumping ring performance on diesel oil.



Seal size vs. pressure rating for single CAPI Type A seal Antimony Carbon/SiC @ 80°C (146°F).



The operating pressure of a seal depends upon various factors like seal size, media, face combination, temperature and speed. For safe operating limits for any given application contact your nearest AESSEAL® technical service provider.

- **API Type B, Cartridge Bellows Single Seal.**
- Effective seal face heat dissipation achieved by a directed barrier fluid flow path, irrespective of shaft rotational direction.
- Multi-port flush design offered as standard for optimum seal face cooling.
- 12 edge welded bellows convolutions as standard.



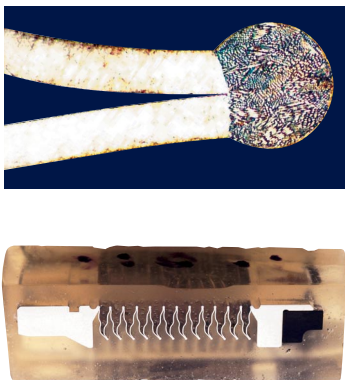
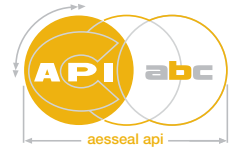
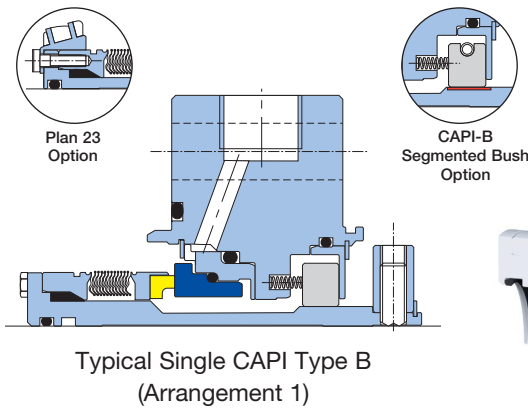
CNC inside diameter bellows welding operation.

Bellows Convolution Materials:
Alloy 718, AM350 and Alloy 276 as standard.

Seal Face Holder Materials:
Alloy 42, Alloy 625, 316L S/S and Alloy 276 as standard.

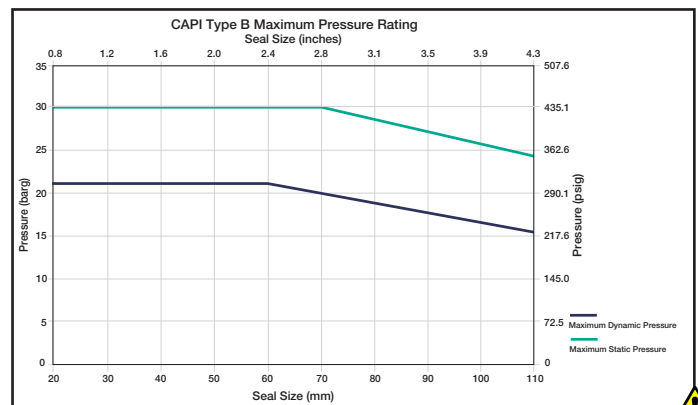
Quality Guaranteed;
All AESSEAL® bellows are welded using the latest **CNC** technology

Type B To Suit Modern API 610 (ISO 13709) Edition Pumps



Increased Durability

Axial and radial deflections impact less on each of the bellows convolutions in a stack of 12 compared to a stack of 8. A 12 convolution stack is more able to accommodate installation tolerances and will maintain a more consistent face pressure as the seal wears during use.

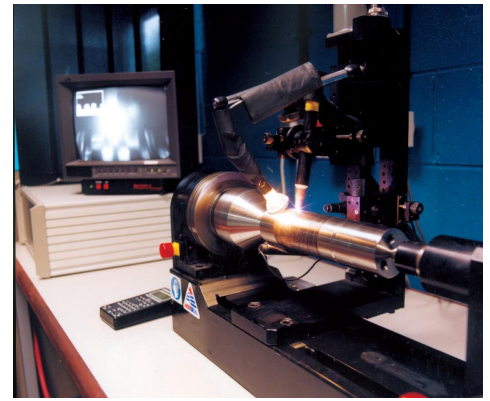


Seal size vs. pressure rating for single CAPI Type B (S7C) seal Antimony Carbon/SiC @ 176°C (349°F).



! The operating pressure of a seal depends upon various factors like seal size, media, face combination, temperature and speed. For safe operating limits for any given application contact your nearest AESSEAL® technical service provider.

- **Qualification Tested API Type C, Cartridge Bellows Single & Dual Seals.**
- Effective seal face heat dissipation achieved by directed barrier fluid flow path.
- Market-leading bi-directional pumping ring performance with 0.062” (1.5mm) clearance between rotor and stator, conforming with API 682 Section 8.6.2.3 **WITHOUT COMPROMISE.**
- Segmented floating containment bush operates on a hard plated cartridge sleeve as standard (single seal).



CNC outside diameter bellows welding operation.

Bellows Convolution Materials:

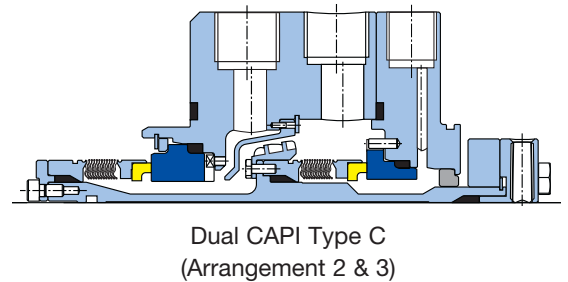
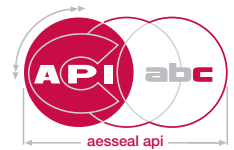
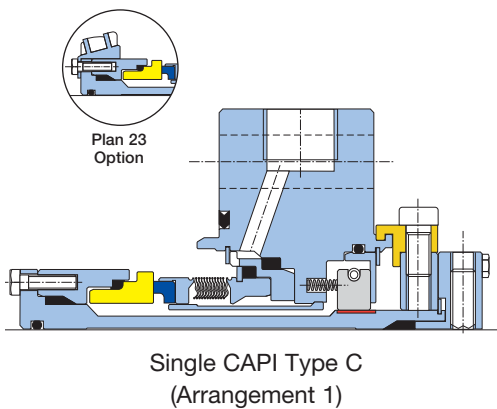
Alloy 718, AM350 and Alloy 276 as standard.

Seal Face Holder Materials:

Alloy 42, Alloy 625, 316L S/S and Alloy 276 as standard.

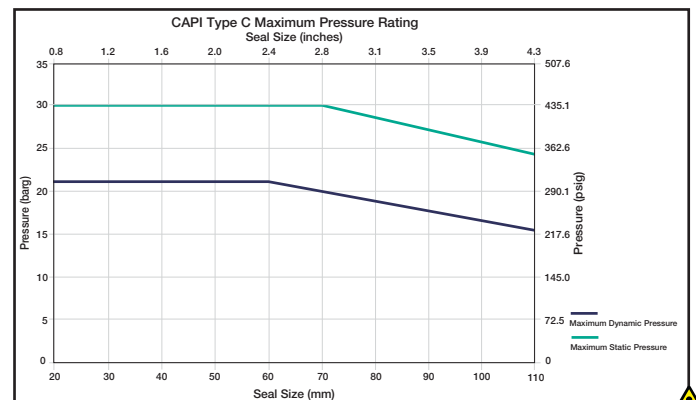
AESSEAL® uses modular technology to provide **exceptional** customer service levels

Type C To Suit Modern API 610 (ISO 13709) Edition Pumps



Part Name	Material of Construction	Sulphur Content					
		<0°C (<32°F)		<=200°C (392°F)		>200°C (392°F)	
		<2%	>2%	<2%	>2%	<2%	>2%
Bellows	AM350	√		√		√	
	Alloy C-276	√	√	√	√		
	Alloy 718	√	√	√	√	√	√
Ends	316L	√	√	√	√		
	Alloy 42	√		√		√	
	Alloy C-276	√	√	√	√		
	Alloy 625	√	√	√	√		
Sec. Seal	Graphite	√	√	√	√	√	√

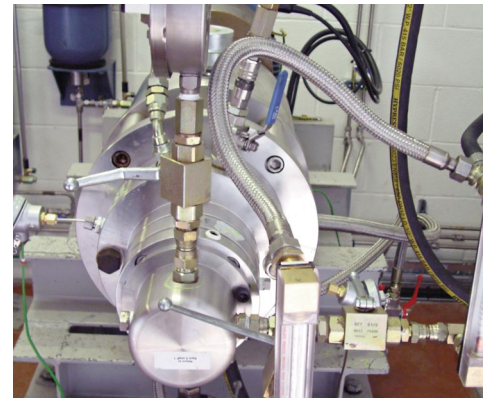
Bellows material selection for hydrocarbon duties containing sulphur.



Seal size vs. pressure rating for single CAPI Type C (S7C) seal Antimony Carbon/SiC @ 176°C (349°F).

! The operating pressure of a seal depends upon various factors like seal size, media, face combination, temperature and speed. For safe operating limits for any given application contact your nearest AESSEAL® technical service provider.

- **Qualification Tested Secondary Containment Seal Technology for use with Type A Pusher designs.**
- Eliminates the need for liquid barrier systems.
- High heat dissipation properties due to the AESSEAL® close-coupled technology supplied in a robust, short working length pusher design.
- Both contacting & non-contacting version available.



CAPI-CS™ qualification testing.



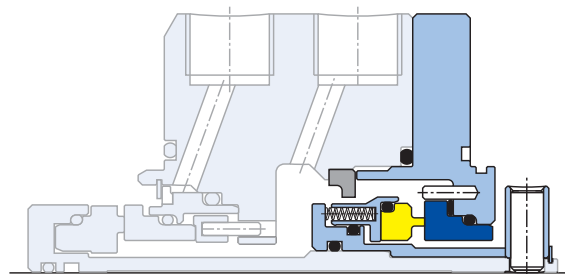
AESSEAL® silicon carbide rotary gas lift face.

Containment seal technology that **exceeds** the requirements of API 682 Edition 3, Section 4.2 and ISO 21049

Secondary Containment Seals

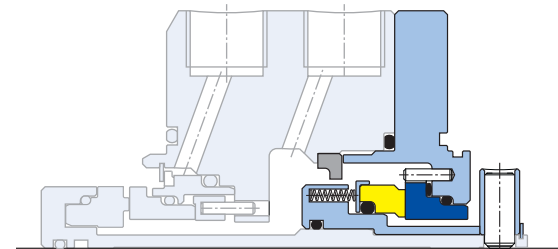


Contacting



Dual CAPI Type A-CS™ (Arrangement 2)

Non-Contacting



Dual CAPI Type A-NCCS™ (Arrangement 2)

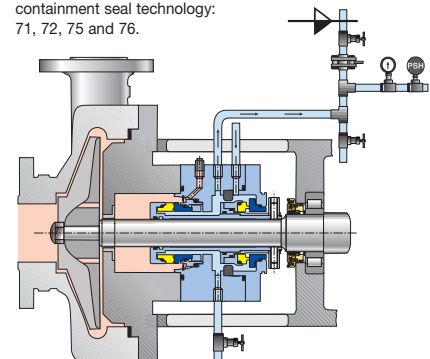
Tests carried out in line with API 682 Third Edition containment seal test criteria demonstrate that the AESSEAL® containment seal **far exceeds** the API 682 Third Edition test requirements with emissions typically **less than 10% of the maximum permissible level**.

Predictive life (face wear) testing demonstrates that the AESSEAL® Containment Seal design will **exceed the 25,000 hour** API 682 Third Edition uninterrupted normal service objective (sealing VOCs).

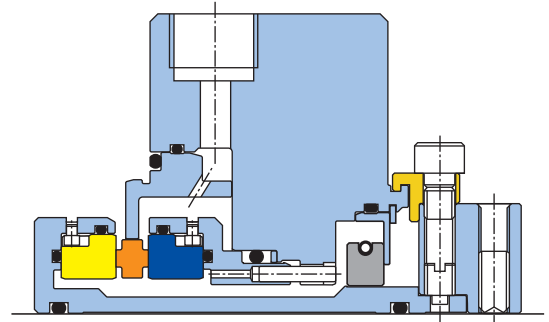
Life testing at full stuffing box conditions demonstrate that the AESSEAL® Containment Seal design will **far exceed** the 8 hour API 682 Third Edition uninterrupted service objective **by at least 100 times**.

API Plan 76

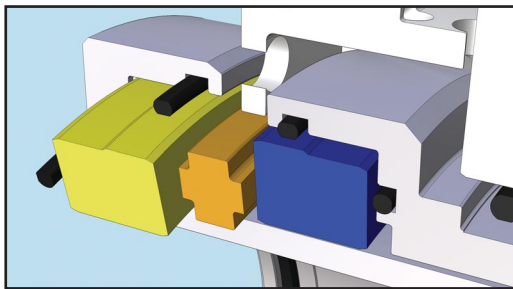
Further applicable API Plans for containment seal technology: 71, 72, 75 and 76.



- **Verification Tested High Pressure Seal Technology, applicable for pipeline duties.**
- Low leakage rates in high shaft speed applications.
- Ideal for produced water re-injection applications.
- Centroidally balanced design ensures seal longevity.
- Available in soft/hard and hard/hard seal face combinations, which have been tested at over twice the PV limit of conventional technology.



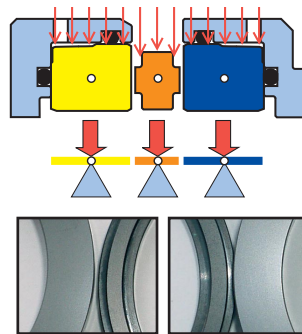
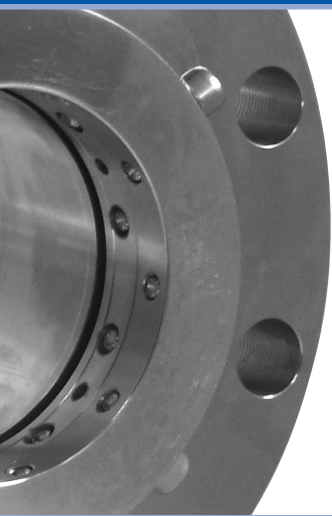
Single EASASEAL™
(Arrangement 1)



EASASEAL™ - Patent pending innovation for extreme application sealing.

Exceptional seal **performance** is achieved by **challenging** convention

High Pressure Pipeline Seals



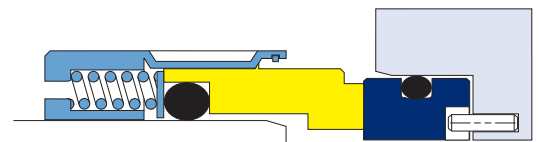
100mm (4.000") EASASEAL™ faces after 500 hours testing at 100 bar (1450 psi).

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.

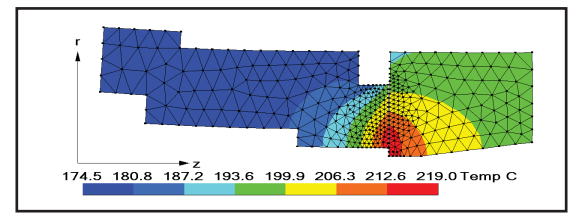
Unlike conventional seal face technology, the floating face is centroidally balanced and will not twist or deform under pressure. This ensures the seal faces remain flat and damage-free, providing a high integrity seal.

Interchangeable Component Seal Ranges

- Direct replacements for traditional 'non cartridge' seals
- Dimensionally interchangeable
- Large numbers of seal and mating ring types available 'off the shelf'



M02S™ component seal



2D-Axisymmetric Finite Element Analysis review showing temperature distribution.

6.1.1.11 - For vacuum services, all seal components shall be designed with a positive means of retaining the sealing components to prevent them from being dislodged.

7.2.1.1 - "The inner seal shall have an internal (reverse) balance feature designed and constructed to withstand reverse pressure differentials up to 0.275 Mpa (2.75 bar) (40 psi) without opening or dislodging"

AESSEAL® Type A standard seal designs is a true fully integrated cartridge design. The seal rotary face is directly mounted into the sleeve the stationary seal face and flexible element is carried with in the gland plate. Traditional API 682 designs are component seals mounted on to the cartridge sleeve with drive set screws in contact with the process media, as depicted in 3.10

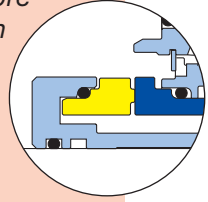
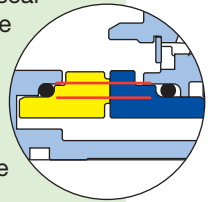
6.1.1.5 - a stationary flexible element should be provided if... surface speed exceeds 23m/s (4500 ft/min)...if pump case or gland plate distortion and mis-alignment exist due to pipe loads, thermal distortion, pressure distortion... if perpendicularity of the seal chamber mounting surface to the shaft is a problem.

AESSEAL® designs have pressure balanced seal faces which perform excellently in both positive and negative pressure applications. This feature prevents seal face distortion and damage that can result with positive restraining means.

Inboard seal faces are also reverse pressure balanced as standard.

below. True cartridge designs are more compact providing greater liquid volume in the seal chamber and more readily adapted to older machinery.

AESSEAL® Type A seal designs have, as standard, a Stationary flexible element. This configuration is deemed to provide added user value, as described by the specification, over a rotary configuration. Rotary designs are available on request.

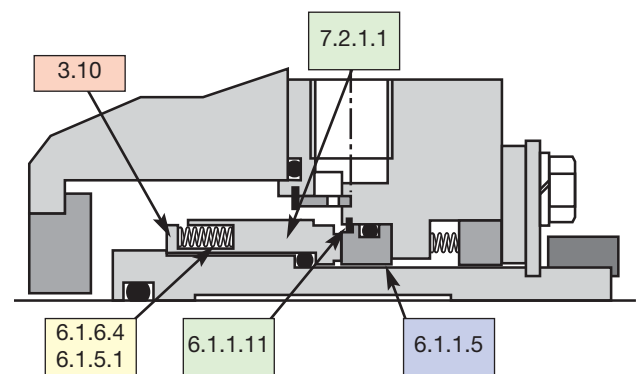


Lessons from the API 682 Specification



AESSEAL® is believed to be the only major mechanical seal and system supplier to the global Hydrocarbon Processing Industry, which has applied 21st century best seal design practice to create a range of API qualified products, in the literal and non-literal manner of the specification.

The clues, which help to illustrate this fact, are given in the API 682 specification. Clear similarities should be apparent between these points and the designs of non-AESSEAL® supply.

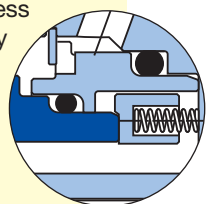


Non-AESSEAL® design showing typical API 682 seal configuration.

6.1.6.4 - Unless otherwise specified, seals with multiple coil-springs shall be Alloy C-276

6.1.5.1 - The single spring has advantages and disadvantages. For corrosive services, the wire in single springs is significantly greater in cross-section providing a greater corrosion allowance.....Multiple coil-spring seals tend to be more axially compact than single coil-spring seals. Multiple springs also tend to provide a more even loading.

All AESSEAL® API designs have multiple Alloy C-276 springs, which are not in contact with the process media. This standardised approach is clearly more suitable for all applications, specifically those for sealing corrosive media.

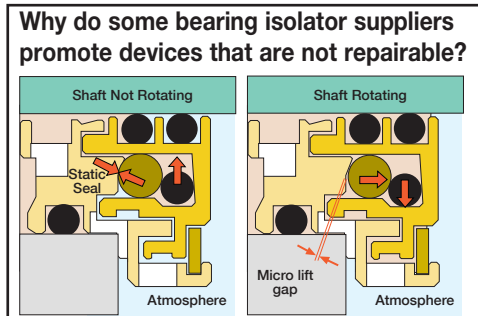


- **Verification Tested contacting & non-contacting bearing seal designs.**
- Proven to increase equipment reliability in pumps, electric motors, fans, pillow blocks, steam turbines and gearboxes.
- Designs which conform to IEEE Std. 841-2001.
- No shaft wear. Retro-fittable on shafts previously worn by lip seals.
- Easily rebuildable with no special tools, chemicals or equipment.

“With bearing protection truly essential in a reliability-focused plant, I have carefully analyzed both the new LabTecta design and the results of thorough testing. I firmly conclude this ingenious field-repairable isolator will prove highly cost effective and lead to demonstrable equipment failure reductions”.



Heinz P. Bloch P.E.
Independent
Professional
Engineer

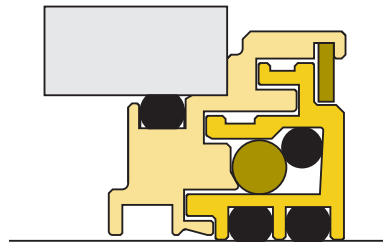
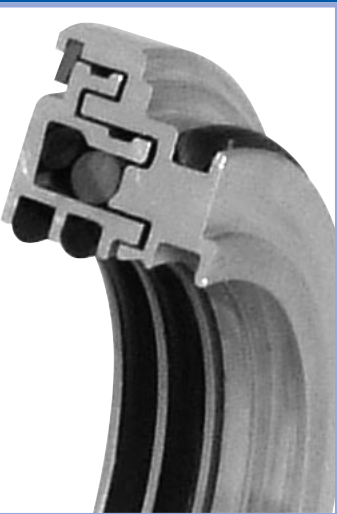


LabTecta™ with integral shut-off device which resembles a valve seat.

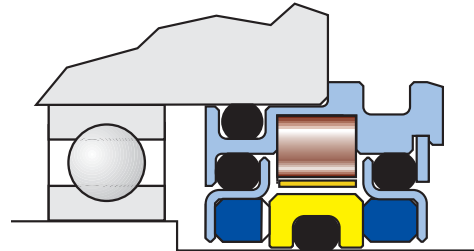
- Splash and flooded lubrication ✓
- Oil mist lubrication ✓
- Grease packed ✓
- Field repairable ✓

A **true** non-contacting labyrinth design with a shut-off design that **really works**

Bearing Seals, Protectors & Isolators



LabTecta™

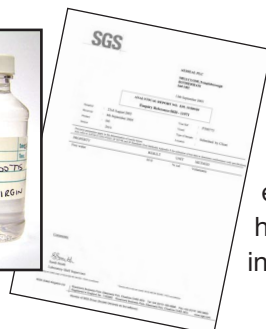


MagTecta™ OM

AESSEAL® bearing seals have been rigorously benchmark tested against other so-called sealing devices with results independently analysed by third party laboratories.

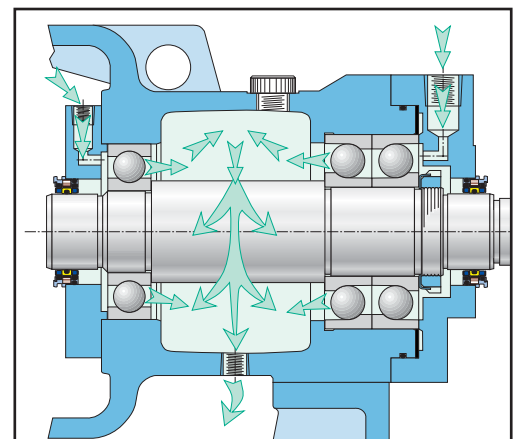


Lip Seal test: Oil sample bottles for laboratory analysis.



Lip seal test certificate.

The MagTecta-OM™ is a face seal that prevents oil mist pollution, and has been applied to thousands of pieces of equipment in the hydrocarbon processing industry.



API preferred oil mist lubrication arrangement.



The AES-28™ is available in a choice of three inventoried vessels. This range includes a screwed connection vessel, the socket welded vessel and the butt welded vessel. A variety of component options are available to adapt the vessel to specific pump applications. These options include electrical equipment which is supplied as intrinsically safe or explosion proof.



For additional piping plans refer to the API Piping Plan Booklet.

- ✓ ASME VIII Div.1 2007, 2008a
- ✓ Coded Welders to ASME IX
- ✓ PED 97/23/EC Module B1+D
- ✓ Certified by TÜV



API Plan 53A seal support system.

Type A Category II & III Contacting Wet Seals

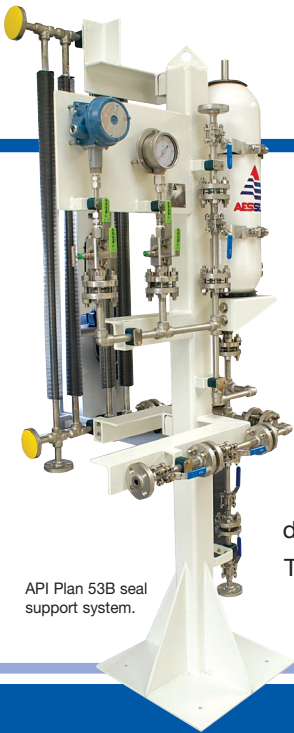


53B Quality

through Modularity and Standardisation

The innovative modular concept permits 12 modular options to be applied to create an API 53B System for any application. This modular process facilitates efficient stock control which in turn provides AESSEAL® API 53B Systems with rapid delivery times. Modularity eases the production of documentation for each Plan 53B product and also makes it easier to determine the correct solution for the application. AESSEAL® has dedicated over 5,000 man-hours to examining and deciphering the finer details of API 682, ASME VIII Div 1, 2007, 2008a and PED 97/23/EC.

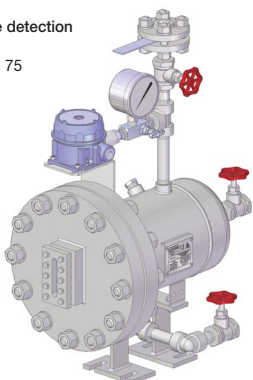
These man-hours have been invested to create a Plan 53B manufacturing process that will guarantee quality product and short lead times.



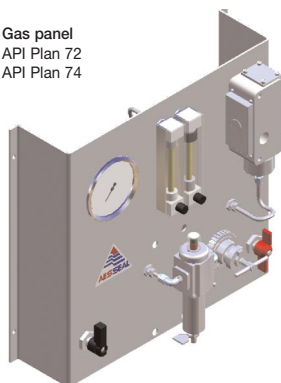
API Plan 53B seal support system.

Additional Systems

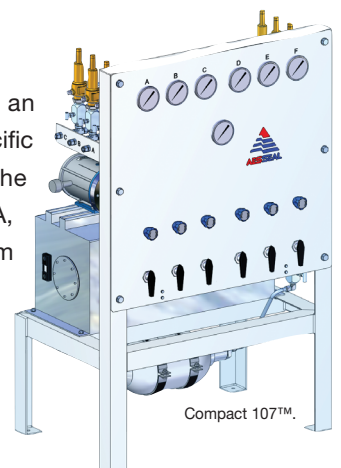
Leakage detection system
API Plan 75



Gas panel
API Plan 72
API Plan 74



The Compact 107™ is an innovative AESSEAL® specific design that combines the benefits of API Plans 53A, 53B and 54. The System can be used to supply pressurized barrier fluid to a number of seals.



Compact 107™.

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.

AESSEAL has an extensive hydrocarbon processing application reference database, demonstrating proven industry expertise.



AESSEAL plc Group Headquarters, Rotherham, UK.

Having supplied the Hydrocarbon processing and associated industry sectors since the early 1990's, AESSEAL has a proven track record of extending equipment life, reducing expenditure on seals and optimizing inventory levels for customers in over 80 countries.

AESSEAL® invests over **7%** of its annual sales in API **Research** and **Development** - probably the highest investment to sales ratio in the industry



Testing Excellence - API 682 Qualification Testing



Global R&D test facilities.

Research & Development Test Facilities

Pressure: 350 bar (5,000 psi) Gas Seals

200 bar (3,000 psi) Liquid Seals

Temperature: Up to 260°C (500°F)

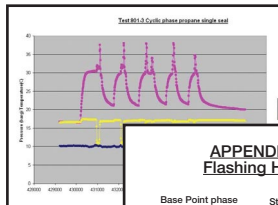
Shaft Speed: Up to 46,000 rpm

The AESSEAL® UK mechanical seal test facilities are probably the most technically advanced in Europe.

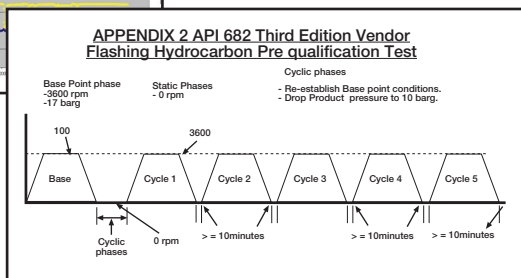
Computer controlled test bays can be programmed to validate seal designs to any pre-determined cyclic pressure, temperature and shaft speed configuration.



Hot Oil test bay.



API 682 Test Criteria.



Test Results.

- Flashing & Non-flashing Hydrocarbons ✓
- Caustics, Water and Hot Oil ✓
- Volatile Organic Compounds ✓

Take a virtual tour of these facilities by visiting www.aesseal.com

Type A Category II & III Contacting Wet Seals



Type A, B, and C single and dual mechanical seals are **qualification tested** to the API 682 criteria.

API 682 MECHANICAL SEAL TEST QUALIFICATION FORM									
Manufacturer: AESSEAL plc					Seal Model: Type:API/C3				
API 682 Seal Type: API/C3/ES A									
Material of construction: B.C. Carbon: Softening Metal: Inconel 600									
Secondary Seal: API Seal									
Seal Size: 2" Shaft Speed: 3600rpm									
Fluid Transfer: From table 1: variable V3									
Shaft Run Rate: 0-3600 rpm									
Fluid: PIP/PAGE									
Base Point Temp: 20 Deg C									
Base Point Pressure: 17 barg									
SIC: 0.001									
Pressure: 10.0 barg									
Particle Size: None									
DYNAMIC TEST									
Date	Start	Stop	Pressure (bar)	Temperature (°C)	Shaft Speed (rpm)	Seal Leakage (cc/day)	Seal Temperature (°C)	Seal Vibration (mm/s)	Seal Wear (mm)
15/02/2018	10:00	11:00	17.0	20.0	3600	0.0	20.0	0.0	0.0
15/02/2018	11:00	12:00	17.0	20.0	3600	0.0	20.0	0.0	0.0
15/02/2018	12:00	13:00	17.0	20.0	3600	0.0	20.0	0.0	0.0
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ENVIRONMENTAL TECHNOLOGY

Our Purpose 'To give our customers such exceptional service that they need never consider alternative sources of supply.'

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