AESSEAL®
ENVIRONMENTAL TECHNOLOGY

Mixer Seals

Seal range designed for mixers, agitators and reactors




the AESSEAL® group of companies

designers and manufacturers of mechanical seals,
bearing protectors and seal support systems
which maximize rotating equipment up-time.

www.aesseal.com

ENVIRONMENTAL TECHNOLOGY

Specialty Chemical Company achieves improved reliability

A specialty chemicals manufacturer in the USA was experiencing ongoing reliability issues with the top mounted dual mixer seal on a vessel mixing silicone oil.

The viscosity of the oil in the vessel was variable and the vessel operated at full vacuum. The seal had a mean time between failure (MTBF) of just 3 weeks and when the seal failed barrier fluid leaked into the process fluid reducing the quality of the batch. When this happened the contents of the vessel had to be pumped into another vessel for finishing which caused production delays. The cost of removing, repairing and reinstalling the seal on an emergency basis was estimated to be in excess of $12,000. An alternative solution needed to be found and AESSEAL® were approached for a recommendation.

AESSEAL® recommended replacing the competitors seal with the SCMS™ single mixer seal with the optional bearing module. The alternative solution was installed on the vessel in February 2021 and has be working flawlessly 14 months after installation. The customer is particularly satisfied with this solution as it does not require a barrier fluid therefore eliminating the potential for contamination of the product. The customer's upfront investment in the AESSEAL® solution was recovered in just 28 days.

'MTBF increase from 3 weeks to over 60 weeks'

Industry:	Chemical
Product:	SCMS™
Application:	Silicon oil mixer
MTBF Increase:	1900% (and counting)
Savings:	$240,000 (and counting)
Reference N.O:	CS0034

www.aesseal.com/en/resources/case-studies

Company Overview

AESSEAL® is a leading global specialist in the design and manufacture of mechanical seals, bearing protectors and seal support systems.

The company sets new standards in reliability, performance, service and cost. Service has been the key to the success of AESSEAL® and is at the core of the company purpose statement — **'to give our customers such exceptional service that they need never consider alternative sources of supply.**' Through continuous investment, unique modular technology and an unparalleled dedication to customer service we aim to constantly exceed expectation.

Customer Focus

"We aim to deliver a customer experience that surpasses expectation and truly redefines what the world expects from their sealing specialist."

Simplicity. Our modular technology means a streamlined ordering process.

Customer-centric. Our people are encouraged to champion the customers' cause.

Ethical and responsible. AESSEAL® has been recognized as a Climate Change Champion and has won awards for corporate social responsibility and sustainability.

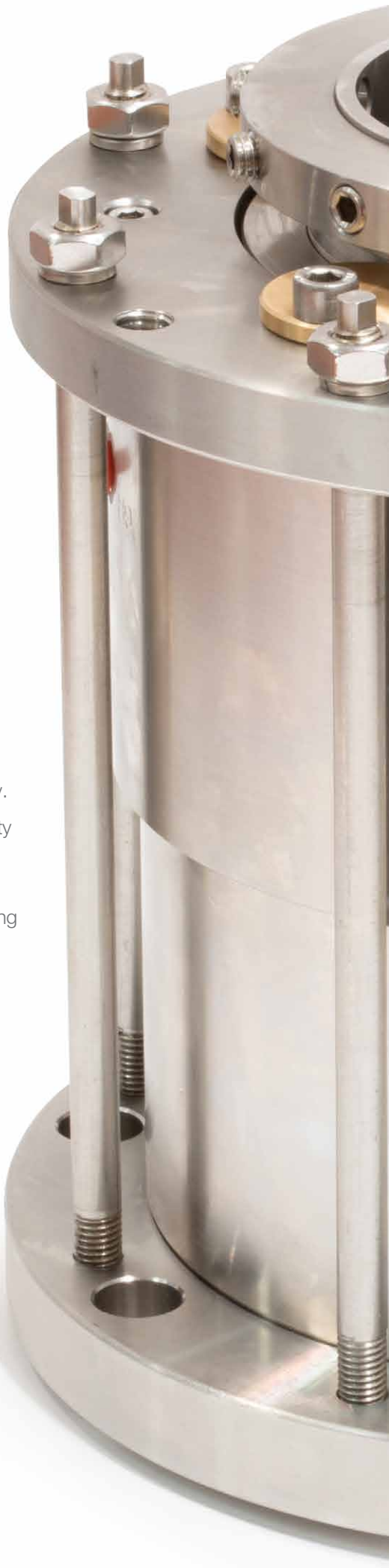
Partnership. We work with customers to deliver added value and long-term reliability solutions.

Investment. Over 7% of annual sales revenue has been reinvested in R&D over several decades. This has almost certainly led to the most advanced range of sealing technology available globally.

Engineered Excellence

AESSEAL® offers a complete product range to seal Mixers, Agitators and Reactors.

- Hydraulically balanced for reduced seal-face loading which maximizes seal life and allows for vacuum service capability
- Unitized design for ease of installation
- Non-fretting design to reduce cost in equipment overhaul
- Modular designs for improved versatility



The range of AESSEAL® Mixer mechanical seals are designed for mixers, agitators, reactors and dryers.

Mixing applications vary from simple blending or solid dissolution to the more exacting standards of solids suspension, gas dispersion or containing / promoting chemical reactions.

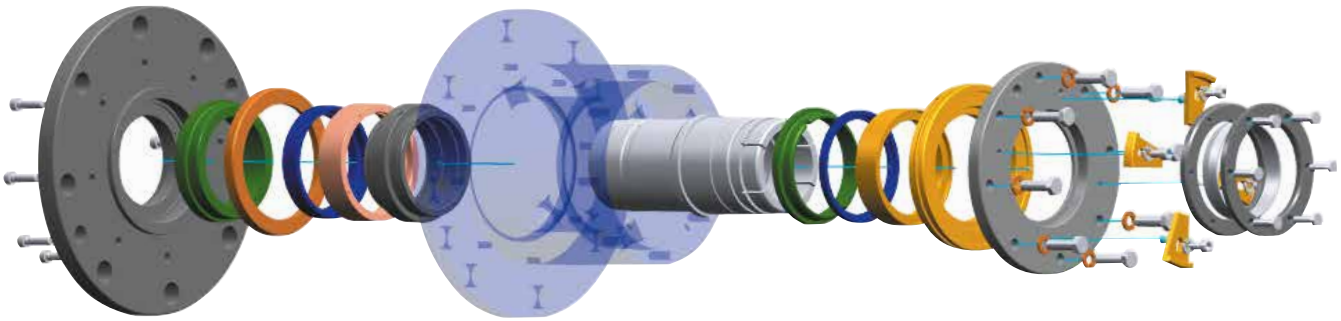
Mixers are used in the food, beverage and pharmaceutical industries, yet generally the chemical and process industries have the most varied and difficult mixer problems and therefore require precise sealing technology. The AESSEAL® Mixer seal range ensures that the most demanding applications can be accommodated. For more information this brochure can be downloaded from the AESSEAL® website at **www.aesseal.com**.

Development Background

The AESSEAL® Mixer range was developed only after extensive performance and field evaluation tests, conducted over many years.

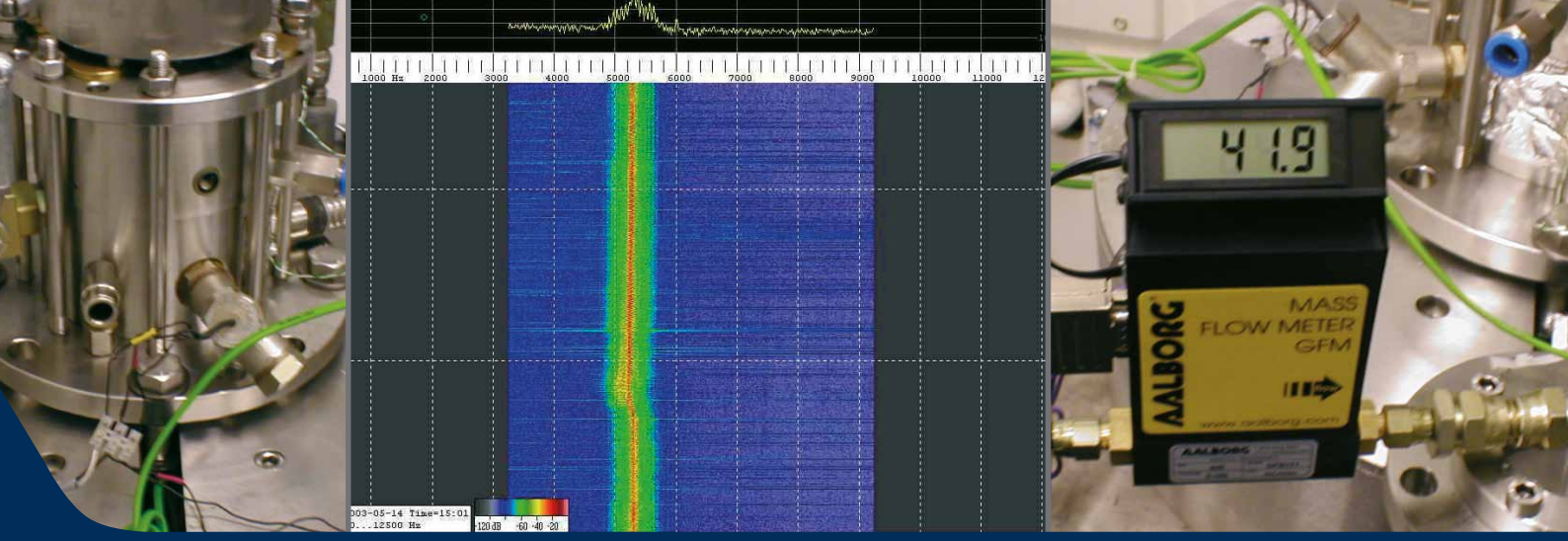
The range has been created using the latest Computer Aided Design and manufacture programs including Finite Element Analysis.

These programs help to predict how the seals can be produced and also how they will perform under various application conditions. This technology has vastly reduced the lead time for product development and thus reduced the overall cost of the seal range.



Massive investment in Computer Aided Design, manufacture and PDM (Product Data Management) helps to ensure that the seal is fit for the purpose.

Computer simulation is very effective for evaluating seal performance, however, all AESSEAL® mechanical seals still have to undergo physical testing in various hazardous conditions.



Sound level metering, spectrum analysis, gas flow and temperature instrumentation and continuous data logging software

The AESSEAL® Mixer range has been developed following an extensive performance evaluation test program over an 18 month period.

The dry running seal technology, specifically the seal face geometry, damper and close coupled devices, have been created using the latest Computer Aided Design, Manufacture and simulation software.

The product range has been verified and performance optimized using sound level metering, spectrum analysis, gas flow and temperature instrumentation and continuous data logging software. The result is a range of inventoried, patent pending mechanical seals, which extend the boundaries of conventional products, allowing wider application of the technology and benefits.

Various applications, such as horizontal drying, preclude the use of a liquid barrier fluid due to process contamination possibilities.

In such applications, the attraction of an inert non-contaminating barrier fluid is clearly advantageous. By far, the largest demand for gas barrier systems is in the food and pharmaceutical industries. As such, AESSEAL® has developed a range of dry running mechanical seals and seal support systems for such applications and industries.

ATEX certification available, contact AESSEAL®

ESM™ - External Seal for Mixers

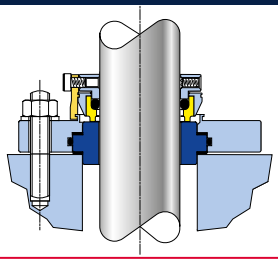
The AESSEAL® ESM™ is a unit external seal designed for ease of installation as the faces are clipped together and despatched assembled in a leak free state.

The standard ESM™ seal is driven through socket set screw clamping, with a Carbon / Ceramic seal face combination and a gland which is designed to suit the customer's equipment. All wetted parts are non-metallic, therefore, the seal is ideally suited for corrosive vapour applications commonly found in Top Entry Mixers.

- Balanced seal face design
- Modular design
- Unit designed for ease of installation
- ESM™, ESCM™, ESTM™, ESCTM™ non-metallic wetted design
- NCM™ non-chemical design
- Springs out of product
- Seal flange manufactured to suit equipment

NCM-DW External Seals for Mixers.
The seal can be used in sterile application particularly suited in the food & Beverage along with the Pharmaceutical sectors.

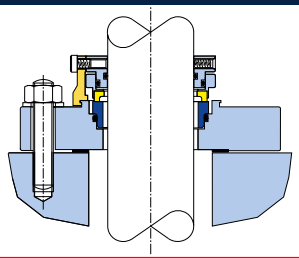
ESM™ External Seal for Mixers



Sizes Available	1.000"	to	2.500"
	25mm	to	63mm

Designed for ease of installation the ESM™ has non-metallic wetted parts and is therefore ideally suited for corrosive vapour applications commonly found in Top Entry Mixers.

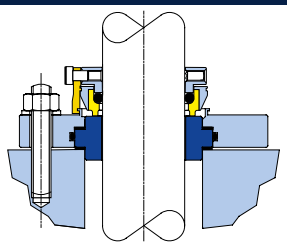
NCM™ Non-Chemical for Mixers



Sizes Available	1.000"	to	5.000"
	24mm	to	125mm

The NCM™ is an external seal unit designed for ease of installation, as the faces are clipped together and dispatched assembled in a leak free state. Some wetted parts are metallic, therefore the seal is unsuited for some severe corrosive applications.

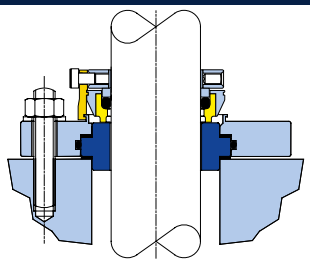
ESTM™ External Seal Teflon for Mixers



Sizes Available	1.000"	to	2.500"
	25mm	to	63mm

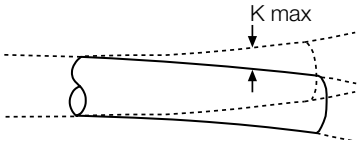
A sister variant on the ESM™, the ESTM™ replaces the Carbon / Ceramic face combination with Teflon (P.T.F.E.) / Ceramic, for applications where Carbon is not compatible with the process fluid.

ESCM™ External Seal Colleted for Mixers



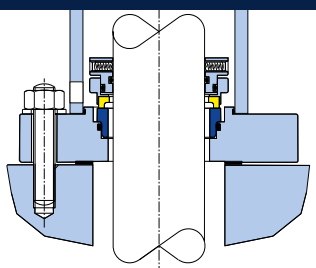
Sizes Available	1.000"	to	2.500"
	25mm	to	63mm

The ESCM™ employs the same seal principles as the ESM™ except for the clamping device. The ESCM™ utilizes a collet clamp ring making the unit particularly applicable to hard and soft shafts.



ESM™ - ESCM™ - ESTM™ - ESCTM™	
Seal Size	**T.I.R. (K max)**
1.000" to 1.500"	0.030"
25mm to 38mm	0.8mm
1.625" to 2.500"	0.040"
40mm to 63mm	1.0mm

Buffer Canister™ Option

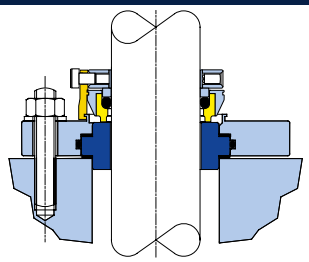


Buffer Canister™ option available on ESM™ - NCM™ - ESTM™ - ESCM™ - ESCTM™

The buffer canister option is available on both the ESM™ and NCM™ range of unit seals. The simple design can be of an open or closed top construction and slides over the external seal. An O'ring is then placed in the clip groove to prevent leakage. The fluid in the canister "bathes" the seal faces and therefore is applicable for the dry running applications which are commonly found in top entry mixers.

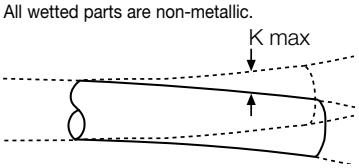
Seal Type	Face Availability	Drive
ESM™	CAR - CER	Standard
ESCM™	CAR - CER	Collet
ESTM™	PTFE - CER	Standard
ESCTM™	PTFE - CER	Collet
NCM™	**Rotary Face** Car - SiC - TC **Stationary Face** CROX-CER-SiC-TC	Standard

ESCTM™ - External Seal Colleted Teflon for Mixers



Sizes Available	1.000"	to	2.500"
	25mm	to	63mm

A hybrid unit seal of the previous options. The ESCTM™ offers a Teflon / Ceramic face combination, collet clamping and gland designed to suit the customer's equipment. All wetted parts are non-metallic.



NCM™	
Seal Size	**T.I.R. (K max)**
1.000" to 2.375"	0.040"
24mm to 60mm	1.0mm
2.500" to 5.000"	0.060"
40mm to 63mm	1.5mm

CSWIB™

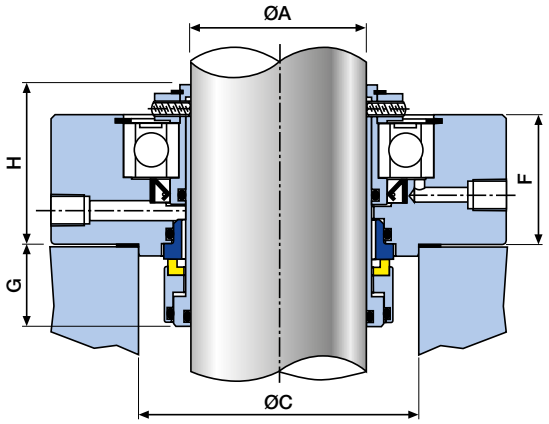
The AESSEAL® CSWIB™ is a single cartridge mechanical seal, with balanced seal faces and an integral (steady) bearing.

The CSWIB™ can be ordered in types B, C & D in a variety of gland combinations concerning flush, quench, drain and grease connections and also different face combinations. The gland plate is machined to meet the customer's requirements with respect to outside diameter, bolt circle diameter and stuffing box location.

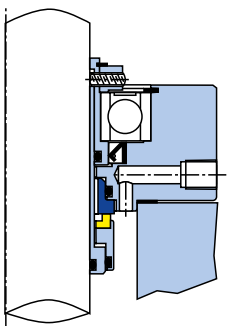
CSWIB™ - Dimensional Information (inches)

ØA	ØB	ØC Min	ØC Max	ØD Min	ØD Max	ØE	F	G	H
1.000	Dependent upon application	1.663	Dependent upon application	3.000	Dependent upon application	3/8	1.750	1.150	2.312
1.125		1.780		3.250		3/8	1.750	1.150	2.312
1.250		1.931		3.500		3/8	1.750	1.150	2.312
1.375		2.056		3.500		3/8	1.750	1.150	2.312
1.500		2.303		3.875		1/2	1.812	1.187	2.375
1.625		2.428		4.500		1/2	1.812	1.187	2.375
1.750		2.553		4.500		1/2	1.812	1.187	2.375
1.875		2.678		4.625		1/2	1.812	1.312	2.375
2.000		2.803		4.625		1/2	1.812	1.312	2.375
2.125		2.928		4.937		1/2	1.812	1.312	2.375
2.250		3.053		5.000		5/8	1.812	1.312	2.375
2.375		3.178		5.375		5/8	1.812	1.312	2.375
2.500		3.428		5.500		5/8	2.000	1.312	2.625
2.625		3.553		5.500		5/8	2.000	1.312	2.625
2.750		3.678		5.875		5/8	2.062	1.312	2.625
2.875		3.803		6.125		5/8	2.062	1.312	2.625
3.000		3.928		6.125		5/8	2.062	1.312	2.625
3.125		4.053		6.500		5/8	2.062	1.312	2.625
3.250		4.178		6.625		3/4	2.062	1.312	2.625
3.375		4.303		6.875		3/4	2.062	1.312	2.625
3.500		4.428		6.875		3/4	2.062	1.312	2.625
3.625		4.553		7.375		3/4	2.062	1.312	2.625
3.750		4.678		7.375		3/4	2.062	1.312	2.625
3.875		4.803		7.875		3/4	2.125	1.312	2.625
4.000		4.928		7.875		3/4	2.125	1.312	2.625

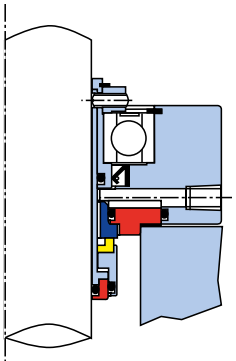
Note: ØE, F, G, H are typical sizes only. This seal design is made to suit customer requirements and these sizes can be changed.



Type B
Quench, Drain & Grease Connections



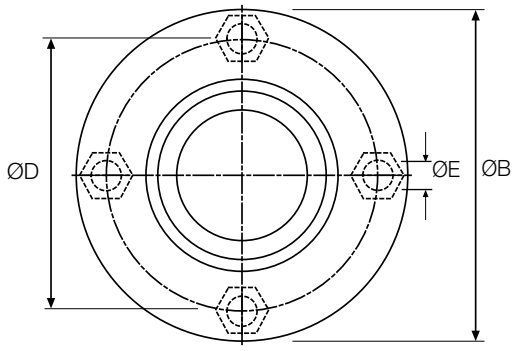
Type C
Type B Design with Flush



Type D
Exotic Alloy Option with Quench, Drain & Grease Connections

CSWIB™ - Dimensional Information (mm)

ØA	ØB	ØC Min	ØC Max	ØD Min	ØD Max	ØE	F	G	H
24	Dependent upon application	41.2	Dependent upon application	76.2	Dependent upon application	10	44.5	29.2	58.7
25		42.2		76.2		10	44.5	29.2	58.7
28		45.2		82.6		10	44.5	29.2	58.7
30		47.2		82.6		10	44.5	29.2	58.7
32		49.0		88.9		10	44.5	29.2	58.7
33		49.0		88.9		10	44.5	29.2	58.7
35		52.2		88.9		10	44.5	29.2	58.7
38		58.5		98.4		12	46.0	30.1	60.3
40		58.5		98.4		12	46.0	30.1	60.3
43		61.7		114.3		12	46.0	30.1	60.3
45		64.8		114.3		12	46.0	30.1	60.3
48		68.0		117.5		12	46.0	33.3	60.3
50		68.0		117.5		12	46.0	33.3	60.3
53		71.2		117.5		12	46.0	33.3	60.3
55		74.4		125.4		12	46.0	33.3	60.3
58		77.5		136.5		16	46.0	33.3	60.3
60		80.7		136.5		16	46.0	33.3	60.3
63		87.1		139.7		16	50.8	33.3	66.7
65		90.2		139.7		16	50.8	33.3	66.7
68		93.4		149.2		16	52.4	33.3	66.7
70		93.4		149.2		16	52.4	33.3	66.7
75		99.8		155.6		16	52.4	33.3	66.7
80		102.9		165.1		16	52.4	33.3	66.7
85		109.3		174.6		20	52.4	33.3	66.7
90		115.6		187.3		20	52.4	33.3	66.7
95		118.8		187.3		20	52.4	33.3	66.7
100		125.2		200.0		20	54.0	33.3	66.7



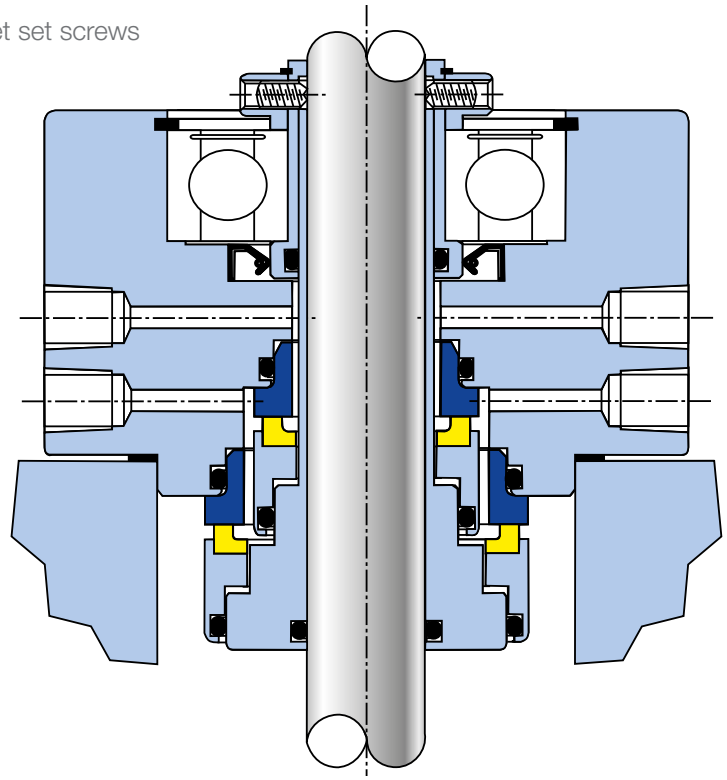
Minimum bolt circle based on bolt size shown.

DSWIB™

The AESSEAL® DSWIB™ is a double cartridge seal with integral bearing design with concentric faces so that the seals overall length is reduced.

The CSWIB™ & DSWIB™ are offered with the following features:

- The integral bearing (pre-installed) is designed as a steady bearing and may not take the full radial load applied to a mixer
- Quench drain & grease connections as standard
- Available with flush connection (type 'C' only)
- No shaft fretting
- Balanced seal faces
- Non-clogging rotaries
- Most suitable for low shaft speeds
- Supplied with high tensile, corrosion resistant socket set screws



The DSWIB™ can be ordered in types B, C & D.

Like the CSWIB™, the DSWIB™ seal is manufactured from a fully machined gland, to the customer's specification.

Note: All face combinations up to 3.250" are standard AESSEAL® face materials. Contact the AESSEAL® technical department for hard face options above this size.

DSWIB™ - (inches)

ØA	ØB	ØC Min	ØC Max
1.000	Dependent upon application	2.303	Dependent upon application
1.125		2.428	
1.250		2.553	
1.375		2.678	
1.500		2.928	
1.625		3.053	
1.750		3.178	
1.875		3.428	
2.000		3.553	
2.125		3.678	
2.250		3.803	
2.375		3.928	
2.500		4.178	
2.625		4.303	
2.750		4.428	
2.875		4.553	
3.000		4.678	
3.125		4.803	
3.250		4.928	
3.375		5.178	
3.500		5.178	
3.625		5.428	
3.750		5.428	
3.875		5.678	
4.000		5.678	

DSWIB™ - (mm)

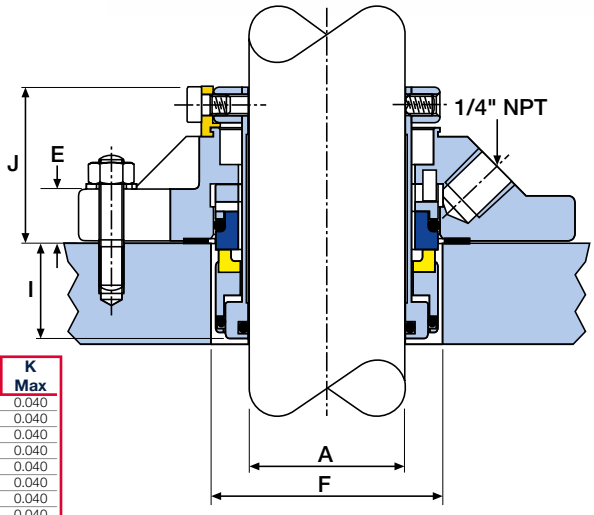
ØA	ØB	ØC Min	ØC Max
24	Dependent upon application	58.5	Dependent upon application
25		58.5	
28		61.7	
30		61.7	
32		64.8	
33		64.8	
35		68.0	
38		74.4	
40		74.4	
43		77.5	
45		80.7	
48		87.1	
50		87.1	
53		90.2	
55		93.4	
58		96.6	
60		99.8	
63		106.1	
65		109.3	
68		112.5	
70		112.5	
75		118.8	
80		122.0	
85		131.5	
90		137.9	
95		137.9	
100		144.2	

CSM™ - Cartridge Single for Mixers

The AESSEAL® CSM™ is available in a wide range of seal face, elastomer and alloy combinations, to suit individual applications.

Single cartridge seal for mixers / agitators.

Designed to run in vapour on vertical applications, with low emissions.



CSM™ - Dimensional Information (inches)

A	B	C	D	E	F			G		H	I	J	K
					Min	Min†	Max	Min	Max	Max			Max
1.000	4.125	2.125	1.937	0.519	1.625	1.665	1.937	2.687	3.562	1/2	1.125	1.590	0.040
1.125	4.250	2.250	2.063	0.519	1.750	1.790	2.062	2.812	3.687	1/2	1.125	1.590	0.040
1.250	4.375	2.375	2.187	0.519	1.875	1.915	2.187	2.937	3.812	1/2	1.125	1.590	0.040
1.375	4.375	2.500	2.312	0.519	2.000	2.040	2.250	3.062	3.812	1/2	1.125	1.590	0.040
1.500	5.000	2.812	2.562	0.644	2.250	2.290	2.375	3.375	4.437	1/2	1.125	1.752	0.040
1.625	5.000	2.812	2.562	0.644	2.375	2.415	2.500	3.375	4.437	1/2	1.125	1.752	0.040
1.750	5.500	3.187	2.812	0.644	2.500	2.540	2.750	3.750	4.937	1/2	1.125	1.752	0.040
1.875	5.500	3.187	2.812	0.644	2.625	2.665	2.875	3.750	4.937	1/2	1.125	1.752	0.040
2.000	6.000	3.562	3.063	0.644	2.750	2.790	3.000	4.125	5.437	1/2	1.125	1.752	0.040
2.000-AC	5.250	3.450	3.035	0.644	2.750	2.790	3.000	4.000	4.750	1/2	1.125	1.752	0.040
2.125	6.000	3.562	3.063	0.644	2.875	2.915	3.125	4.125	5.437	1/2	1.125	1.752	0.040
2.250	6.500	3.812	3.312	0.644	3.000	3.040	3.250	4.500	5.812	5/8	1.125	1.752	0.040
2.375	6.500	3.812	3.312	0.644	3.125	3.165	3.375	4.500	5.812	5/8	1.125	1.752	0.040
2.500	7.000	4.312	3.812	0.769	3.375	3.435	3.625	5.000	6.312	5/8	1.250	1.877	0.060
2.625	7.000	4.312	3.812	0.769	3.500	3.560	3.750	5.000	6.312	5/8	1.250	1.877	0.060
2.750	7.000	4.312	3.812	0.769	3.625	3.685	3.875	5.000	6.312	5/8	1.250	1.877	0.060
2.875	7.500	4.937	4.250	0.769	3.750	3.810	4.125	5.625	6.812	5/8	1.250	1.877	0.060
3.000	7.500	4.937	4.250	0.769	3.875	3.935	4.250	5.625	6.812	5/8	1.250	1.877	0.060
3.125	7.500	4.937	4.250	0.769	4.000	4.060	4.375	5.625	6.812	5/8	1.250	1.877	0.060
3.250	8.000	5.312	4.625	0.769	4.125	4.185	4.500	6.125	7.187	3/4	1.250	1.877	0.060
3.375	8.000	5.312	4.625	0.769	4.250	4.310	4.625	6.125	7.187	3/4	1.250	1.877	0.060
3.500	8.000	5.312	4.625	0.769	4.375	4.435	4.750	6.125	7.187	3/4	1.250	1.877	0.060
3.625	8.500	5.937	5.000	0.769	4.500	4.560	5.000	6.750	7.687	3/4	1.250	1.877	0.060
3.750	8.500	5.937	5.000	0.769	4.625	4.685	5.125	6.750	7.687	3/4	1.250	1.877	0.060
3.875	8.500	5.937	5.000	0.769	4.750	4.810	5.250	6.750	7.687	3/4	1.250	1.877	0.060
4.000	9.000	6.625	5.375	0.769	4.875	4.935	5.500	7.437	8.187	3/4	1.250	1.877	0.060
4.125	9.000	6.625	5.375	0.769	5.125	5.185	5.875	7.437	8.187	3/4	1.250	1.877	0.060
4.250	9.000	6.625	5.375	0.769	5.125	5.185	5.875	7.437	8.187	3/4	1.250	1.877	0.060
4.375	9.500	7.000	5.750	0.769	5.375	5.435	6.250	7.812	8.687	3/4	1.250	1.877	0.060
4.500	9.500	7.000	5.750	0.769	5.375	5.435	6.250	7.812	8.687	3/4	1.250	1.877	0.060
4.625	10.000	7.345	6.125	0.769	5.625	5.685	6.625	8.312	9.062	7/8	1.250	1.877	0.060
4.750	10.000	7.345	6.125	0.769	5.625	5.685	6.625	8.312	9.062	7/8	1.250	1.877	0.060
4.875	10.000	7.345	6.125	0.769	5.875	5.935	6.625	8.312	9.062	7/8	1.250	1.877	0.060
5.000	10.000	7.345	6.125	0.769	5.875	5.935	6.625	8.312	9.062	7/8	1.250	1.877	0.060

Seal sizes from 5.125" to 12.000" are designed to suit specific equipment using modular components. Contact AESSEAL® technical department for dimensional information and availability.

† = F Min + K Max

CSM™ - Dimensional Information (mm)

A	B	C	D	E	F			G		H	I	J	K
					Min	Min†	Max	Min	Max	Max			Max
24	104.8	54.0	49.2	13.2	40.0	41.0	46.0	67.0	90.5	12	28.6	40.5	1.0
25	104.8	54.0	49.2	13.2	41.0	42.0	49.0	67.0	90.5	12	28.6	40.5	1.0
28	108.0	57.2	52.4	13.2	44.0	45.0	52.3	70.3	93.6	12	28.6	40.5	1.0
30	111.0	60.4	55.6	13.2	46.0	47.0	55.5	73.5	96.8	12	28.6	40.5	1.0
32	111.0	60.4	55.6	13.2	48.0	49.0	55.5	73.5	96.8	12	28.6	40.5	1.0
33	111.0	60.4	55.6	13.2	49.0	50.0	55.5	73.5	96.8	12	28.6	40.5	1.0
35	111.0	63.5	58.8	13.2	51.0	52.0	57.5	76.6	96.8	12	28.6	40.5	1.0
38	127.0	71.5	65.0	16.4	57.2	58.2	60.4	85.7	114.3	12	28.6	44.5	1.0
40	127.0	71.5	65.0	16.4	58.0	59.0	60.4	85.7	114.3	12	28.6	44.5	1.0
43	139.7	81.0	71.4	16.4	61.0	62.0	69.9	95.3	127.0	12	28.6	44.5	1.0
45	139.7	81.0	71.4	16.4	63.5	64.5	69.9	95.3	127.0	12	28.6	44.5	1.0
48	139.7	81.0	71.4	16.4	66.7	67.7	73.0	95.3	127.0	12	28.6	44.5	1.0
50	152.4	90.5	77.8	16.4	68.0	69.0	76.2	104.8	139.7	12	28.6	44.5	1.0
53	152.4	90.5	77.8	16.4	71.0	72.0	76.2	104.8	139.7	12	28.6	44.5	1.0
55	165.1	96.8	84.1	16.4	74.0	75.0	82.5	114.3	149.2	16	28.6	44.5	1.0
58	165.1	96.8	84.1	16.4	76.2	77.2	82.5	114.3	149.2	16	28.6	44.5	1.0
60	165.1	96.8	84.1	16.4	79.4	80.4	85.7	114.3	149.2	16	28.6	44.5	1.0
63	177.8	109.5	96.8	19.6	85.8	87.3	92.1	127.0	160.3	16	31.8	47.7	1.5
65	177.8	109.5	96.8	19.6	88.9	90.4	95.3	127.0	160.3	16	31.8	47.7	1.5
68	177.8	109.5	96.8	19.6	92.1	93.6	98.4	127.0	160.3	16	31.8	47.7	1.5
70	177.8	109.5	96.8	19.6	92.1	93.6	98.4	127.0	160.3	16	31.8	47.7	1.5
75	190.5	125.4	108.0	19.6	98.5	100.0	108.0	142.9	173.0	16	31.8	47.7	1.5
80	190.5	125.4	108.0	19.6	101.6	103.1	111.1	142.9	173.0	16	31.8	47.7	1.5
85	203.2	135.0	117.5	19.6	108.0	109.5	117.5	155.6	182.5	20	31.8	47.7	1.5
90	215.9	150.8	127.0	19.6	114.3	115.8	127.0	171.5	195.2	20	31.8	47.7	1.5
95	215.9	150.8	127.0	19.6	117.5	119.0	130.2	171.5	195.2	20	31.8	47.7	1.5
100	228.6	168.3	136.5	19.6	123.9	125.4	139.7	188.9	208.0	20	31.8	47.7	1.5
105	228.6	168.3	136.5	19.6	130.1	131.6	149.2	188.9	208.0	20	31.8	47.7	1.5
110	241.3	177.8	146.1	19.6	136.5	138.0	158.8	198.4	220.6	20	31.8	47.7	1.5
115	254.0	186.6	155.8	19.6	142.9	144.4	168.3	211.1	230.2	22	31.8	47.7	1.5
120	254.0	186.6	155.8	19.6	142.9	144.4	168.3	211.1	230.2	22	31.8	47.7	1.5
125	254.0	186.6	155.8	19.6	149.2	150.7	168.3	211.1	230.2	22	31.8	47.7	1.5

Seal sizes from 130mm to 300mm are designed to suit specific equipment using modular components. Contact AESSEAL® technical department for dimensional information and availability.

† = F Min + K Max

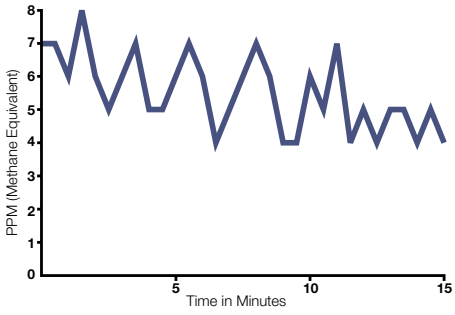
CSM™ - Vapour Space Operation

D1		D2	D3		D4		D5
mm	inch		barg	psig	bar m/s	psi ft/min	
25	1.0	300	2	29.4	1.2	3370	70000
25	1.0	600	2	29.4	2.4	6740	40000
25	1.0	900	2	29.4	3.5	10100	14000
25	1.0	300	4	58.7	2.0	5600	50000
25	1.0	600	4	58.7	3.9	11130	9000
25	1.0	300	6	88.1	2.8	7850	21000
50	2.0	300	2	29.4	2.4	6740	40000
50	2.0	600	2	29.4	4.7	13480	6800
50	2.0	300	4	58.7	3.9	11130	9000
50	2.0	100	6	88.1	1.8	5220	50000
50	2.0	200	6	88.1	2.7	7590	21000
75	3.0	100	2	29.4	1.2	3430	70000
75	3.0	300	2	29.4	3.0	8570	16000
75	3.0	100	4	58.7	2.0	5600	40000
75	3.0	100	6	88.1	2.8	7850	21000
100	4.0	100	2	29.4	1.6	4570	60000
100	4.0	200	2	29.4	3.2	9140	21000
100	4.0	100	4	58.7	2.6	7420	30000
100	4.0	50	6	88.1	1.8	5140	70000
100	4.0	100	6	88.1	3.6	10280	13000

The above chart shows a summary of the estimated life time for standard Carbon/Silicon Carbide faces in when operated in the absence of a lubricating liquid e.g. when situated in a mixer vessel vapour space.

D1:	D2:	D3:	D4:	D5:
Shaft Diameter	Shaft Speed (rpm)	Product Pressure	'P.V.' Value	Expected Life (hours)

CSM™ - Emissions Graph



The graph above shows emissions (in PPM methane equivalent) on day 21, the final 15 minutes of testing for a CSM™ - 60mm - Carbon / Silicon Carbide faces.

Excessive radial shaft movement, combined with high rotation speeds and/or adverse fluid characteristics, may compromise the 'leak-free' sealing ability of any mechanical seal.

CDM™ - Cartridge Double for Mixers

The AESSEAL® CDM™ is available in a wide range of seal face, elastomer and alloy combinations, to suit individual applications.

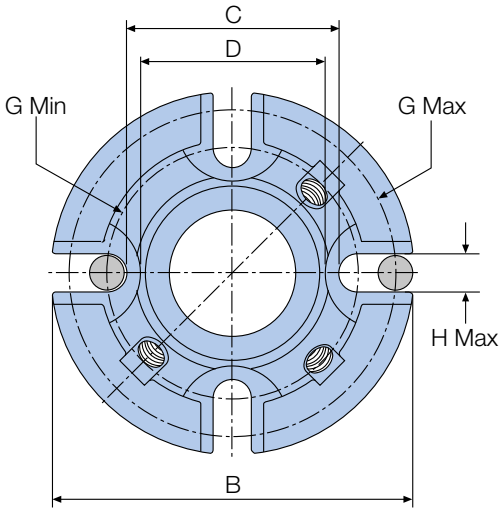
Double cartridge seal for mixers / agitators.

CDM™ - Dimensional Information (inches)

A	B	C	D	E	F			G		H	I	J	K
					Min	Min†	Max	Min	Max	Max			Max
1.000	4.125	2.125	1.937	0.519	1.625	1.665	1.937	2.687	3.562	1/2	1.281	2.062	0.040
1.125	4.250	2.250	2.063	0.519	1.750	1.790	2.062	2.812	3.687	1/2	1.281	2.062	0.040
1.250	4.375	2.375	2.187	0.519	1.875	1.915	2.187	2.937	3.812	1/2	1.281	2.062	0.040
1.375	4.375	2.500	2.312	0.519	2.000	2.040	2.250	3.062	3.812	1/2	1.281	2.062	0.040
1.500	5.000	2.812	2.562	0.644	2.250	2.290	2.375	3.375	4.437	1/2	1.312	2.125	0.040
1.625	5.000	2.812	2.562	0.644	2.375	2.415	2.500	3.375	4.437	1/2	1.312	2.125	0.040
1.750	5.500	3.187	2.812	0.644	2.500	2.540	2.750	3.750	4.937	1/2	1.312	2.125	0.040
1.875	5.500	3.187	2.812	0.644	2.625	2.665	2.875	3.750	4.937	1/2	1.312	2.125	0.040
2.000	6.000	3.562	3.063	0.644	2.750	2.790	3.000	4.125	5.437	1/2	1.380	2.125	0.040
2.000-AC	5.250	3.450	3.035	0.644	2.750	2.790	3.000	4.000	4.750	1/2	1.380	2.125	0.040
2.125	6.000	3.562	3.063	0.644	2.875	2.915	3.125	4.125	5.437	1/2	1.380	2.125	0.040
2.250	6.500	3.812	3.312	0.644	3.000	3.040	3.250	4.500	5.812	5/8	1.380	2.125	0.040
2.375	6.500	3.812	3.312	0.644	3.125	3.165	3.375	4.500	5.812	5/8	1.380	2.125	0.040
2.500	7.000	4.312	3.812	0.769	3.375	3.435	3.625	5.000	6.312	5/8	1.500	2.375	0.060
2.625	7.000	4.312	3.812	0.769	3.500	3.560	3.750	5.000	6.312	5/8	1.500	2.375	0.060
2.750	7.000	4.312	3.812	0.769	3.625	3.685	3.875	5.000	6.312	5/8	1.500	2.375	0.060
2.875	7.500	4.937	4.250	0.769	3.750	3.810	4.125	5.625	6.812	5/8	1.500	2.375	0.060
3.000	7.500	4.937	4.250	0.769	3.875	3.935	4.250	5.625	6.812	5/8	1.500	2.375	0.060
3.125	7.500	4.937	4.250	0.769	4.000	4.060	4.375	5.625	6.812	5/8	1.500	2.375	0.060
3.250	8.000	5.312	4.625	0.769	4.125	4.185	4.500	6.125	7.187	3/4	1.500	2.375	0.060
3.375	8.000	5.312	4.625	0.769	4.250	4.310	4.625	6.125	7.187	3/4	1.500	2.375	0.060
3.500	8.000	5.312	4.625	0.769	4.375	4.435	4.750	6.125	7.187	3/4	1.500	2.375	0.060
3.625	8.500	5.937	5.000	0.769	4.500	4.560	5.000	6.750	7.687	3/4	1.500	2.375	0.060
3.750	8.500	5.937	5.000	0.769	4.625	4.685	5.125	6.750	7.687	3/4	1.500	2.375	0.060
3.875	8.500	5.937	5.000	0.769	4.750	4.810	5.250	6.750	7.687	3/4	1.500	2.375	0.060
4.000	9.000	6.625	5.375	0.769	4.875	4.935	5.500	7.437	8.187	3/4	1.500	2.375	0.060
4.125	9.000	6.625	5.375	0.769	5.125	5.185	5.875	7.437	8.187	3/4	1.500	2.375	0.060
4.250	9.000	6.625	5.375	0.769	5.125	5.185	5.875	7.437	8.187	3/4	1.500	2.375	0.060
4.375	9.500	7.000	5.750	0.769	5.375	5.435	6.250	7.812	8.687	3/4	1.500	2.375	0.060
4.500	9.500	7.000	5.750	0.769	5.375	5.435	6.250	7.812	8.687	3/4	1.500	2.375	0.060
4.625	10.000	7.345	6.125	0.769	5.625	5.685	6.625	8.312	9.062	7/8	1.500	2.375	0.060
4.750	10.000	7.345	6.125	0.769	5.625	5.685	6.625	8.312	9.062	7/8	1.500	2.375	0.060
4.875	10.000	7.345	6.125	0.769	5.875	5.935	6.625	8.312	9.062	7/8	1.500	2.375	0.060
5.000	10.000	7.345	6.125	0.769	5.875	5.935	6.625	8.312	9.062	7/8	1.500	2.375	0.060

Seal sizes from 5.125" to 12.000" are designed to suit specific equipment using modular components. Contact AESSEAL® technical department for dimensional information and availability.

† = F Min + K Max



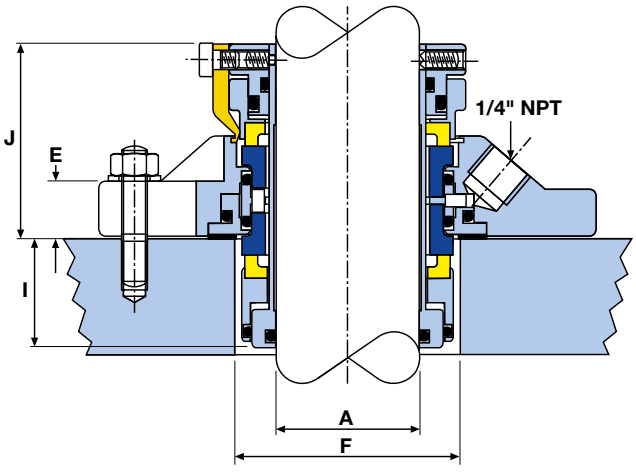
See back page for support systems available.

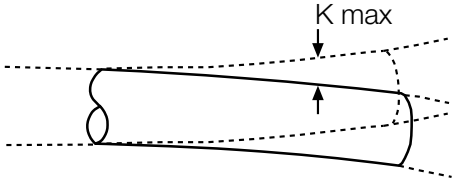
CDM™ - Dimensional Information (mm)

A	B	C	D	E	F			G		H	I	J	K
					Min	Min†	Max	Min	Max	Max			Max
24	104.8	54.0	49.2	13.2	40.0	41.0	46.0	67.0	90.5	12	32.5	52.4	1.0
25	104.8	54.0	49.2	13.2	41.0	42.0	49.0	67.0	90.5	12	32.5	52.4	1.0
28	108.0	57.2	52.4	13.2	44.0	45.0	52.3	70.3	93.6	12	32.5	52.4	1.0
30	111.0	60.4	55.6	13.2	46.0	47.0	55.5	73.5	96.8	12	32.5	52.4	1.0
32	111.0	60.4	55.6	13.2	48.0	49.0	55.5	73.5	96.8	12	32.5	52.4	1.0
33	111.0	60.4	55.6	13.2	49.0	50.0	55.5	73.5	96.8	12	32.5	52.4	1.0
35	111.0	63.5	58.8	13.2	51.0	52.0	57.5	76.6	96.8	12	32.5	52.4	1.0
38	127.0	71.5	65.0	16.4	57.2	58.2	60.3	85.7	114.3	12	33.3	54.0	1.0
40	127.0	71.5	65.0	16.4	58.0	59.0	60.4	85.7	114.3	12	33.3	54.0	1.0
43	127.0	71.5	65.0	16.4	61.0	62.0	63.5	85.7	114.3	12	33.3	54.0	1.0
45	139.7	81.0	71.4	16.4	63.5	64.5	69.9	95.3	127.0	12	33.3	54.0	1.0
48	139.7	81.0	71.4	16.4	66.7	67.7	73.0	95.3	127.0	12	33.3	54.0	1.0
50	139.7	81.0	71.4	16.4	68.0	69.0	73.0	95.3	127.0	12	33.3	54.0	1.0
53	152.4	90.5	77.8	16.4	71.0	72.0	76.2	104.8	139.7	12	35.0	54.0	1.0
55	152.4	90.5	77.8	16.4	74.0	75.0	79.4	104.8	139.7	12	35.0	54.0	1.0
58	165.1	96.8	84.1	16.4	76.2	77.2	82.5	114.3	149.2	16	35.0	54.0	1.0
60	165.1	96.8	84.1	16.4	79.4	80.4	85.7	114.3	149.2	16	35.0	54.0	1.0
63	177.8	109.5	96.8	19.6	85.8	87.3	92.1	127.0	160.3	16	38.1	60.3	1.5
65	177.8	109.5	96.8	19.6	88.9	90.4	95.3	127.0	160.3	16	38.1	60.3	1.5
68	177.8	109.5	96.8	19.6	92.1	93.6	98.4	127.0	160.3	16	38.1	60.3	1.5
70	177.8	109.5	96.8	19.6	92.1	93.6	98.4	127.0	160.3	16	38.1	60.3	1.5
75	190.5	125.4	108.0	19.6	98.5	100.0	108.0	142.9	173.0	16	38.1	60.3	1.5
80	190.5	125.4	108.0	19.6	101.6	103.1	111.1	142.9	173.0	16	38.1	60.3	1.5
85	203.2	135.0	117.5	19.6	108.0	109.5	117.5	155.6	182.5	20	38.1	60.3	1.5
90	215.9	150.8	127.0	19.6	114.3	115.8	127.0	171.5	195.2	20	38.1	60.3	1.5
95	215.9	150.8	127.0	19.6	117.5	119.0	130.2	171.5	195.2	20	38.1	60.3	1.5
100	228.6	168.3	136.5	19.6	123.9	125.4	139.7	188.9	208.0	20	38.1	60.3	1.5
105	228.6	168.3	136.5	19.6	130.1	131.6	149.2	188.9	208.0	20	38.1	60.3	1.5
110	241.3	177.8	146.1	19.6	136.5	138.0	158.8	198.4	220.6	20	38.1	60.3	1.5
115	254.0	186.6	155.8	19.6	142.9	144.4	168.3	211.1	230.2	22	38.1	60.3	1.5
120	254.0	186.6	155.8	19.6	142.9	144.4	168.3	211.1	230.2	22	38.1	60.3	1.5
125	254.0	186.6	155.8	19.6	149.2	150.7	168.3	211.1	230.2	22	38.1	60.3	1.5

Seal sizes from 130mm to 300mm are designed to suit specific equipment using modular components. Contact AESSEAL® technical department for dimensional information and availability.

† = F Min + K Max





K Max = Maximum **TOTAL** Radial Movement

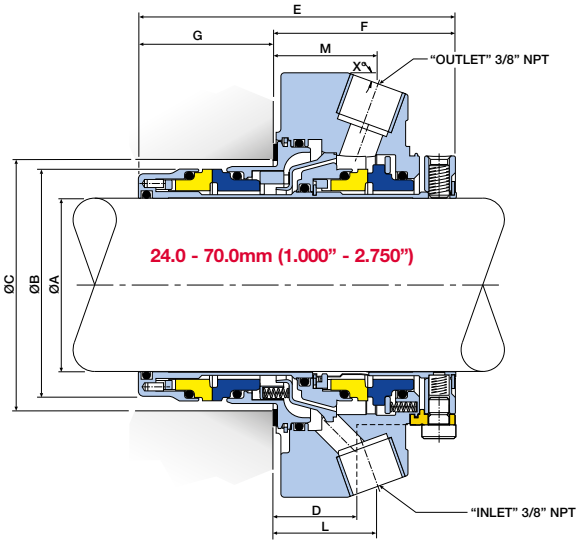
DMSC™ — Double Monolithic Stationary Convection

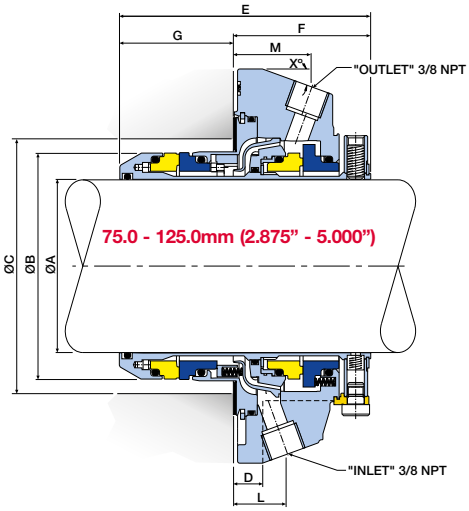
Double Cartridge seal for mixers used where a larger barrier differential pressure is required.

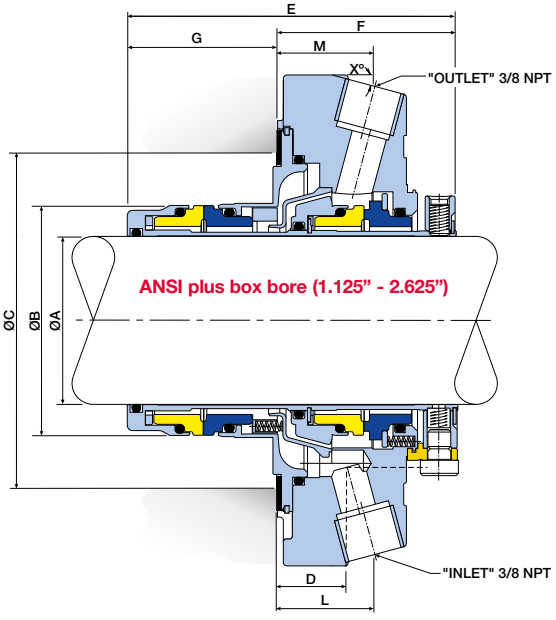
The DMSC™ seal design was created as a result of a request from a major AESSEAL® customer who required a seal design features which was not satisfied by one existing AESSEAL® product. New and novel patented features were developed, helping to ensure that the final product would excel in some of the most difficult and arduous applications found on-site

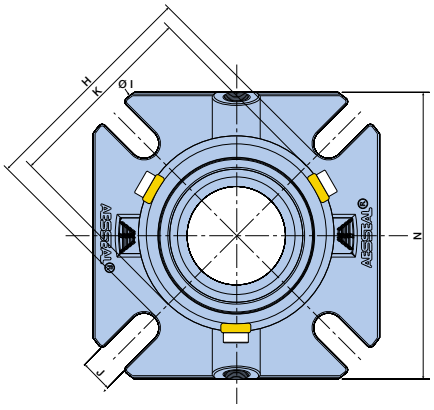
Features:

- Monolithic seal faces provide maximum face stability in high temperature applications.
- Seal face drive over large contact area prevents damage to faces in stop / start applications.
- Large 3/8” NPT seal gland ports maximize cooling potential and extend seal life
- Hydraulically balanced seal-face technology for reduced power consumption with the ability to withstand pressure fluctuations
- Stationary design is suitable for high speed applications
- Sizes available from 1.000” to 5.000” (24mm - 125mm)





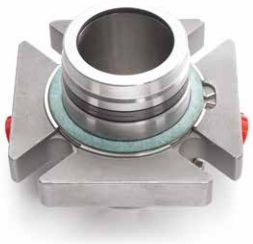




Standard ISO / ANSI box bore gland format

DMSC™ Standard ISO / ANSI Box Bore 24.0mm - 70mm (1.000" - 2.750")

Seal Size	ØA	ØB	ØC		D	E	F	G	H	ØI	J	K	L	M	N	X°
			Min	Max												
24.0	24.0	40.8	43.0	48.0	19.2	92.0	53.1	38.9	57.7	105.0	14.0	50.4	28.2	29.2	99.0	20°
25.0	25.0	41.8	44.0	51.0	19.2	92.0	53.1	38.9	62.0	105.0	14.0	51.0	27.8	29.2	99.0	20°
28.0	28.0	45.4	47.0	54.0	19.2	92.0	53.1	38.9	65.0	111.0	14.0	55.5	27.5	29.4	101.6	20°
30.0	30.0	46.8	49.0	54.0	19.2	92.0	53.1	38.9	64.6	105.0	14.0	56.4	27.4	29.7	97.8	20°
32.0	32.0	49.8	51.0	57.0	21.5	92.0	53.1	38.9	66.5	105.0	14.0	59.4	28.4	30.9	99.0	25°
33.0	33.0	49.8	51.0	57.0	21.5	92.0	53.1	38.9	66.5	105.0	14.0	59.4	28.4	30.9	99.0	25°
35.0	35.0	51.8	53.0	59.0	20.7	92.0	53.1	38.9	68.5	120.0	14.0	61.4	29.3	29.3	104.1	15°
38.0	38.0	55.7	57.0	69.9	21.3	92.0	53.1	38.9	80.7	135.0	14.0	70.8	30.1	30.1	114.3	20°
40.0	40.0	57.6	59.0	70.5	21.3	93.2	53.1	40.1	80.7	135.0	14.0	70.8	30.1	30.1	114.3	20°
43.0	43.0	58.6	61.0	70.5	21.3	93.2	53.1	40.1	80.7	135.0	14.0	70.8	26.7	29.8	114.3	15°
45.0	45.0	62.0	64.0	75.0	21.9	93.2	53.1	40.1	84.6	139.0	14.0	73.8	30.5	30.5	117.5	20°
48.0	48.0	65.2	66.6	74.6	21.3	93.2	53.1	40.1	83.7	139.0	14.0	75.7	29.3	29.9	117.5	20°
50.0	50.0	68.0	70.0	78.0	21.6	93.2	53.1	40.1	87.6	150.0	17.5	78.9	30.5	30.5	124.5	20°
53.0	53.0	71.6	73.0	87.0	21.3	93.2	53.1	40.1	97.0	150.0	17.5	85.0	25.7	29.5	136.5	15°
55.0	55.0	71.6	73.0	87.0	21.3	93.2	53.1	40.1	97.0	150.0	17.5	85.0	25.7	29.5	136.5	15°
58.0	58.0	74.7	76.2	92.0	21.3	93.2	53.1	40.1	102.4	150.0	17.5	88.0	30.1	30.1	139.7	20°
60.0	60.0	77.9	80.0	92.0	21.6	93.2	53.1	40.1	102.4	164.5	17.5	88.0	30.5	30.5	139.7	20°
63.0	63.0	81.1	83.0	98.5	21.6	93.2	53.1	40.1	108.7	171.0	17.5	94.4	29.8	29.8	147.3	15°
65.0	65.0	84.3	86.0	98.5	21.3	93.2	53.1	40.1	108.7	171.0	17.5	94.4	29.4	29.4	147.3	15°
70.0	70.0	87.4	89.0	100.0	21.3	93.2	53.1	40.1	112.0	180.5	17.5	98.3	29.7	29.7	152.4	20°
1.000	1.000	1.646	1.750	2.000	0.755	3.622	2.091	1.531	2.441	4.134	0.551	2.008	1.093	1.150	3.900	20°
1.125	1.125	1.786	1.875	2.125	0.755	3.622	2.091	1.531	2.559	4.375	0.551	2.183	1.084	1.159	4.000	20°
1.250	1.250	1.961	2.000	2.250	0.847	3.622	2.091	1.531	2.618	4.134	0.551	2.340	1.120	1.215	3.900	25°
1.375	1.375	2.040	2.125	2.312	0.815	3.622	2.091	1.531	2.697	4.725	0.551	2.418	1.154	1.154	4.100	15°
1.500	1.500	2.192	2.250	2.750	0.837	3.622	2.091	1.531	3.177	5.315	0.551	2.786	1.185	1.185	4.500	20°
1.625	1.625	2.317	2.375	2.750	0.841	3.671	2.091	1.580	3.177	5.315	0.551	2.786	1.052	1.173	4.500	15°
1.750	1.750	2.442	2.500	2.937	0.862	3.671	2.091	1.580	3.337	5.475	0.551	2.907	1.200	1.200	4.625	20°
1.875	1.875	2.567	2.625	2.937	0.837	3.671	2.091	1.580	3.297	5.475	0.551	2.982	1.152	1.175	4.625	20°
2.000	2.000	2.677	2.750	3.062	0.852	3.671	2.091	1.580	3.450	5.906	0.689	3.108	1.200	1.200	4.900	20°
2.125	2.125	2.817	2.875	3.437	0.840	3.671	2.091	1.580	3.819	5.906	0.689	3.346	1.013	1.163	5.375	15°
2.250	2.250	2.942	3.000	3.625	0.837	3.671	2.091	1.580	4.030	6.475	0.689	3.466	1.185	1.185	5.500	20°
2.375	2.375	3.067	3.125	3.625	0.852	3.671	2.091	1.580	4.030	6.475	0.689	3.466	1.200	1.200	5.500	20°
2.500	2.500	3.192	3.250	3.875	0.852	3.671	2.091	1.580	4.280	6.725	0.689	3.716	1.173	1.173	5.800	15°
2.625	2.625	3.317	3.375	3.875	0.837	3.671	2.091	1.580	4.280	6.725	0.689	3.716	1.158	1.158	5.800	15°
2.750	2.750	3.442	3.500	3.937	0.837	3.671	2.091	1.580	4.405	7.100	0.689	3.871	1.171	1.171	6.000	20°



DMSC™ Standard ISO / ANSI Box Bore 75.0mm - 125mm (2.875" - 5.000")

Seal Size	ØA	ØB	ØC		D	E	F	G	H	ØI	J	K	L	M	N	X°
			Min	Max												
75.0	75.0	98.0	101.6	117.5	25.8	115.9	63.5	52.4	131.4	189.3	17.5	116.5	25.0	36.3	169.4	20°
80.0	80.0	104.4	108.0	127.0	25.8	115.9	63.5	52.4	142.5	201.9	21.0	126.0	25.0	36.3	169.4	20°
85.0	85.0	107.6	111.1	127.0	25.8	115.9	63.5	52.4	142.5	201.9	21.0	126.0	25.0	36.3	182.1	20°
90.0	90.0	113.9	117.5	136.5	25.8	115.9	63.5	52.4	152.0	214.6	21.0	135.5	26.2	36.3	194.8	20°
95.0	95.0	117.1	120.0	136.5	25.8	115.9	63.5	52.4	152.0	214.6	21.0	135.5	26.2	36.3	194.8	20°
100.0	100.0	123.4	127.0	139.7	25.8	115.9	63.5	52.4	155.2	227.3	21.0	138.7	26.2	36.3	207.5	20°
105.0	105.0	129.8	133.4	152.4	23.8	115.9	63.5	52.4	167.9	240.0	21.0	151.4	36.0	40.1	-	45°
110.0	110.0	136.1	139.7	152.4	23.8	115.9	63.5	52.4	167.9	240.0	21.0	151.4	36.0	40.1	-	45°
115.0	115.0	142.5	146.1	165.1	23.8	115.9	63.5	52.4	180.6	252.7	24.0	164.1	36.0	40.1	-	45°
120.0	120.0	142.5	146.1	165.1	23.8	115.9	63.5	52.4	180.6	252.7	24.0	164.1	36.0	40.1	-	45°
125.0	125.0	148.8	152.4	165.1	23.8	115.9	63.5	52.4	180.6	252.7	24.0	164.1	36.0	40.1	-	45°
2.875	2.875	3.735	3.875	4.625	1.014	4.562	2.500	2.062	5.173	7.450	0.689	4.585	0.986	1.429	6.670	20°
3.000	3.000	3.860	4.000	4.625	1.014	4.562	2.500	2.062	5.173	7.450	0.689	4.585	0.986	1.429	6.670	20°
3.125	3.125	3.985	4.125	4.625	1.014	4.562	2.500	2.062	5.173	7.450	0.689	4.585	0.986	1.429	6.670	20°
3.250	3.250	4.110	4.250	5.000	1.014	4.562	2.500	2.062	5.610	7.950	0.827	4.960	0.986	1.429	7.170	20°
3.375	3.375	4.235	4.375	5.000	1.014	4.562	2.500	2.062	5.610	7.950	0.827	4.960	0.986	1.429	7.170	20°
3.500	3.500	4.360	4.500	5.000	1.014	4.562	2.500	2.062	5.610	7.950	0.827	4.960	0.986	1.429	7.170	20°
3.625	3.625	4.485	4.625	5.375	1.014	4.562	2.500	2.062	5.985	8.450	0.827	5.335	1.033	1.429	7.670	20°
3.750	3.750	4.610	4.750	5.375	1.014	4.562	2.500	2.062	5.985	8.450	0.827	5.335	1.033	1.429	7.670	20°
3.875	3.875	4.860	5.000	5.500	1.014	4.562	2.500	2.062	6.110	8.950	0.827	5.460	1.033	1.429	8.170	20°
4.000	4.000	4.860	5.000	5.500	1.014	4.562	2.500	2.062	6.110	8.950	0.827	5.460	1.033	1.429	8.170	20°
4.125	4.125	5.110	5.250	6.000	0.937	4.562	2.500	2.062	6.610	9.450	0.827	5.960	1.418	1.578	-	45°
4.250	4.250	5.110	5.250	6.000	0.937	4.562	2.500	2.062	6.610	9.450	0.827	5.960	1.418	1.578	-	45°
4.375	4.375	5.360	5.500	6.000	0.937	4.562	2.500	2.062	6.610	9.450	0.827	5.960	1.418	1.578	-	45°
4.500	4.500	5.360	5.500	6.000	0.937	4.562	2.500	2.062	6.610	9.450	0.827	5.960	1.418	1.578	-	45°
4.625	4.625	5.610	5.750	6.500	0.937	4.562	2.500	2.062	7.110	9.950	0.945	6.460	1.418	1.578	-	45°
4.750	4.750	5.610	5.750	6.500	0.937	4.562	2.500	2.062	7.110	9.950	0.945	6.460	1.418	1.578	-	45°
4.875	4.875	5.860	6.000	6.500	0.937	4.562	2.500	2.062	7.110	9.950	0.945	6.460	1.418	1.578	-	45°
5.000	5.000	5.860	6.000	6.500	0.937	4.562	2.500	2.062	7.110	9.950	0.945	6.460	1.418	1.578	-	45°

With the exception of 5.500", seal sizes from 130mm - 150mm (5.125" - 6.000") are designed to suit specific equipment using modular components. Contact AESSEAL® technical department for dimensional information and availability.

For sizes above 5.000" / 125mm please contact the AESSEAL® technical department.

DMSC™ Medium Box Bore

Seal Size	ØA	ØB	ØC		D	E	F	G	H	ØI	J	K	L	M	N	X°
			Min	Max												
35.0-M	35.0	51.8	53.0	65.0	20.6	92.0	53.1	38.9	87.6	136.5	14.0	64.7	18.9	27.3	108.0	15°
1.125-M	1.125	1.786	1.875	2.250	0.800	3.622	2.091	1.531	3.199	5.000	0.551	2.323	0.926	1.141	3.990	15°
1.375-M	1.375	2.040	2.125	2.500	0.750	3.622	2.091	1.531	3.449	5.375	0.551	2.549	0.950	1.141	4.250	15°
1.750-M	1.750	2.567	2.625	3.125	0.900	3.671	2.091	1.580	4.449	6.750	0.551	3.500	1.178	1.178	5.480	15°
1.875-M	1.875	2.567	2.625	3.125	0.900	3.671	2.091	1.580	4.449	6.750	0.551	3.500	1.178	1.178	5.480	15°
2.125-M	2.125	2.817	2.875	3.500	1.000	3.671	2.091	1.580	4.661	7.600	0.689	3.715	1.117	1.166	6.200	20°
2.500-M	2.500	3.317	3.375	3.875	0.950	3.671	2.125	1.546	5.411	8.225	0.689	4.525	1.181	1.181	6.700	20°
2.625-M	2.625	3.317	3.375	3.875	0.950	3.671	2.125	1.546	5.411	8.225	0.689	4.525	1.181	1.181	6.700	20°

DMSC™ Large ISO / ANSI Plus Box Bore

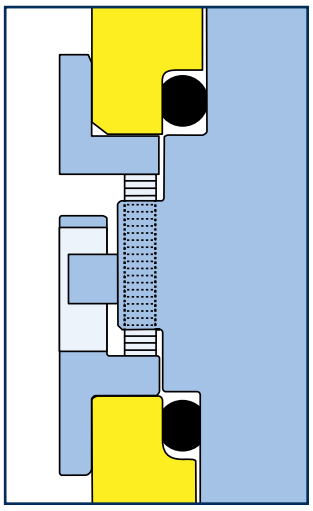
35.0	35.0	51.8	73.0	77.8	18.0	92.0	50.8	41.2	87.6	136.5	14.0	64.7	26.7	29.3	108.0	15°
1.125	1.125	1.786	2.625	2.750	0.730	3.622	2.000	1.622	3.199	5.000	0.551	2.323	0.835	1.050	3.990	15°
1.375	1.375	2.040	2.875	3.062	0.670	3.622	2.000	1.622	3.449	5.375	0.551	2.549	0.860	1.050	4.250	15°
1.750	1.750	2.567	3.500	4.000	0.800	3.671	2.000	1.671	4.449	6.750	0.551	3.500	1.087	1.087	5.480	15°
1.875	1.875	2.567	3.500	4.000	0.800	3.671	2.000	1.671	4.449	6.750	0.551	3.500	1.087	1.087	5.480	15°
2.125	2.125	2.817	3.875	4.187	0.900	3.671	2.000	1.671	4.661	7.600	0.689	3.715	1.026	1.075	6.200	20°
2.500	2.500	3.317	4.500	4.812	0.900	3.671	2.091	1.580	5.411	8.225	0.689	4.525	1.141	1.141	6.700	20°
2.625	2.625	3.317	4.500	4.812	0.900	3.671	2.091	1.580	5.411	8.225	0.689	4.525	1.141	1.141	6.700	20°

SCMS™ Short Canister Mixer Seal

Designed specifically for Mixer, Agitator and Reactor applications.

Available from 30mm to 220mm (1.250” to 8.625”)

- Double and single seal for both modern and mature mixer designs
- Suitable for both top or side entry applications
- Reduced height - ideal in situations where space is limited
- Dual balanced design - maintains containment through a range of process fluctuations
- Fail safe protection - independent seal face loading using unique common multi-spring design (patent pending)
- Accommodates up to 4mm of radial (t.I.R.) movement (size dependant)
- Self adjusting axial movement compensation - common multi-spring design maintains precise face loading to both sets of seal faces (double seal only)
- Monolithic seal faces (double seal only)
- Available with integral bearing
- Optional water cooled mounting flange to extend atex limits
- Engineered solutions available
- Certifications available:
  ATEX / IECEx Zone 0/20, 1/21 & 2/22
  FDA compliant materials



Independent seal face loading using common multi-spring design

SCMS™ – Short Canister Mixer Seal wet or dry contacting version

The SCMS™ mixer seal is specifically designed for use on a broad range of mixers, agitators and reactor applications. It is suitable for side entry (flooded) or top entry (running in vapour) mounting. The modular SCMS™ design facilitates both wet and dry running versions.

SCMS-DW™ Double Wet (liquid barrier) seal arrangement intended for use with a API Plan 53 or 54 seal support system

SCMS-DD™ Double Dry running contacting configuration intended for use with a API Plan 74 seal support system

SCMS-DWB™ Double seal Wet (liquid barrier) and integral load carrying Bearing

SCMS-DDB™ Double seal Dry (contacting - gas barrier) and integral load carrying Bearing

SCMS-DWBG™ Double seal Wet (liquid barrier) and integral load carrying Bearing and Glass lined flange

SCMS-DDBG™ Double seal Dry (contacting - gas barrier) and integral load carrying Bearing and Glass lined flange

SCMS-SW™ Single seal Wet (liquid lubricated)

SCMS-DG™ Dry Gas seal full non-contacting

SCMS-DGG™ Dry Gas seal full non-contacting w/ Glass lined flange

SCMS-DGO™ Dry Gas seal non-contacting inboard contacting Outboard

SCMS-DGOG™ Dry Gas seal non-contacting inboard contacting Outboard w/ Glass lined flange

Engineered Specials for Filter Dryer

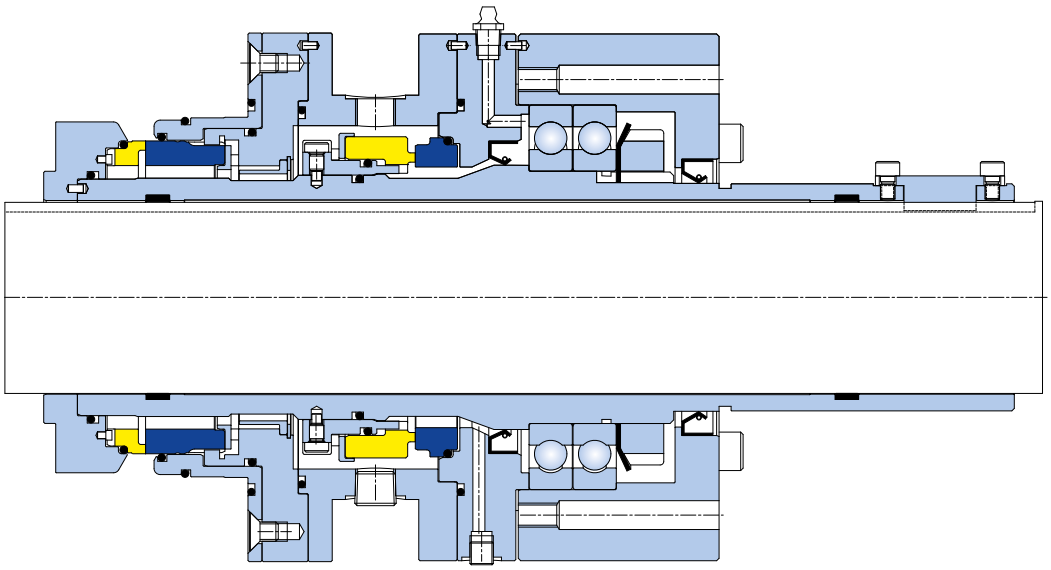
Cartridge mounted dual rotary design seals with multi-spring pusher type sealing elements. The seal is of a non shaft-fretting design, fully hydraulically balanced, with the springs (constructed in Alloy 276) out of the product.

The seal comes complete with a unique fully machined gland and a sleeve end cap designed to accommodate the filter dryer shaft bellows and the axial movement of the filter dryer shaft.

The seal elements are designed to allow a CIP process and as part of the design an integral steady bearing is included to allow maximum seal face support. As standard, the seal is supplied with NPT barrier in and barrier out connections to allow the use of the gas barrier system.

Features and Advantages

- Elastomer groove design enables effective CIP cleaning with minimal / no debris entrapment
- Springs are removed from the process fluid ensuring that the process cannot clog or cause hang up of the dynamic O'rings
- Face design is optimized using FEA techniques. Faces are designed to run in compression under normal operating conditions and remain parallel at all times
- The design is repair friendly as all seal faces are monolithic and can be removed with simple hand tools, a full spares kit can be fitted in a short space of time unlike, shrink fit designs
- Designed specifically for pharmaceutical duties with CIP requirements
- Optional bi-metal wetted parts construction. The internal stationary face holder incorporated large anti rotation mechanism for robust face drive integrity
- Seal drive is provided by a key drive mechanism to provide positive radial drive whilst still allowing the axial movement of the shaft during the drying cycle
- Fully integrated bearing arrangement to provide support to the sleeve mechanism, thereby improving face integrity



Environmental Control Systems For Mixer Seals

In addition to a vast range of mechanical seals, AESSEAL® also has a comprehensive range of seal support systems and bearing protection devices for all your sealing needs.

The systems below are compatible with a wide selection of barrier and buffer fluid media. They are supplied pre-assembled with all necessary components and fittings. On site inventory costs are reduced by modular system construction.

For more information go to www.aesseal.com/systems

Gas Panel Enclosure

SP System

Stainless Steel Gas Panel

EasyClean™

AES-15™

"AESSEAL® water management systems contribute to water savings of over 95 Billion litres / 25 Billion Gallons per year!"

AESSEAL®

ENVIRONMENTAL TECHNOLOGY

To experience the exceptional, please contact your local representative. Discover full details on our website:

www.aesseal.com

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For further information and safe operating limits contact our technical specialists at the locations below.

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2021

THE QUEEN'S AWARDS FOR ENTERPRISE: SUSTAINABLE DEVELOPMENT 2022

AESSEAL plc is certified to:

ISO 9001, ISO 14001, ISO/IEC 20000, ISO/IEC 27001, ISO/TS 29001, ISO 37001, ISO 45001 & ISO 50001

Use double mechanical seals with hazardous products.

Always take safety precautions:

WARNING

- **Guard your equipment**
- **Wear protective clothing**

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