



EXPERIENCE THE EXCEPTIONAL

BSFG™

Bellows Single Full Graphite Cartridge Seal



- Full cartridge graphite single seal
- No elastomers
- Fits pumps with thin radial cross sectional spaces
- Integral disaster bush
- Quench, Flush and Drain environmental ports



BSFG™ — Design Features

The BSFG™ is specifically designed to eliminate the costly and often long lead-time issues of exotic elastomer compounds.

This single cartridge mechanical seal has graphite rings at every secondary sealing surface, eliminating the need for elastomers. The design will fit inside radial cross sectional spaces as small as 0.312" (8mm), making the BSFG™ a truly advantageous sealing solution.

Inboard Bellows

The bellows unit is ideal for replacing the semi-dynamic sliding elastomer of a conventional pusher seal. This allows the bellows design to be more readily applied to thermal applications. The BSFG™ is available in any AESSEAL® standard metal bellows material and seal face combination including SHS, HHH and SAC with Carbon, Antimony Carbon, TC or SiC seal faces.

Fits in Thin Radial Cross Sectional Spaces

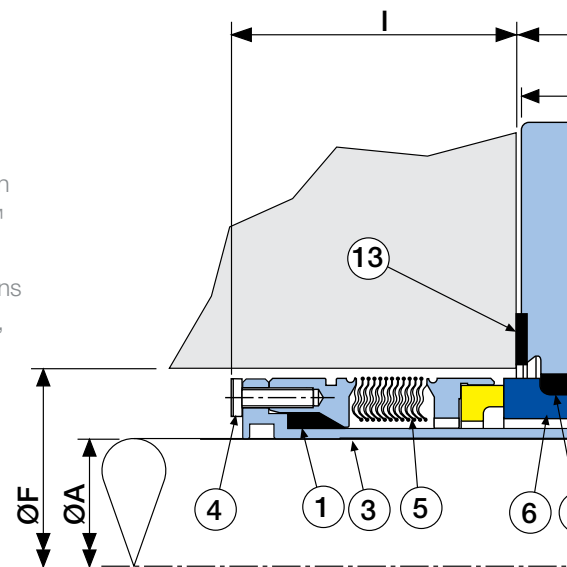
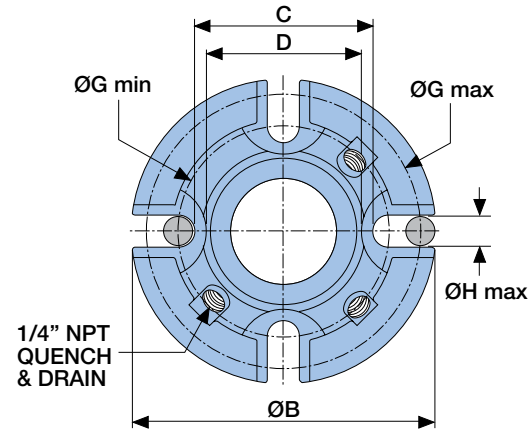
Unlike conventional full graphite cartridge seals, the BSFG™ can be installed on equipment with radial cross sectional spaces as small as 0.312" (8mm). This is typical on some smaller sized process pumps. This thin cross sectional design makes the BSFG™ ideally suited to the solid shaft version of the Dean Brothers R434 pump. This pump, along with others in its product class, is particularly popular in heat transfer oil applications in the USA. Such pumps are conventionally sealed with metal bellows component seals, with graphite. These component seals can be prone to installation problems resulting in premature seal failure.

True Cartridge Design

The BSFG™ is supplied as a true cartridge seal. This means that the seal is factory assembled and tested prior to dispatch. This ensures that the seal faces are flat and statically sealed — an issue particularly important when using graphite technology.

Exotic Alloy Wetted Options

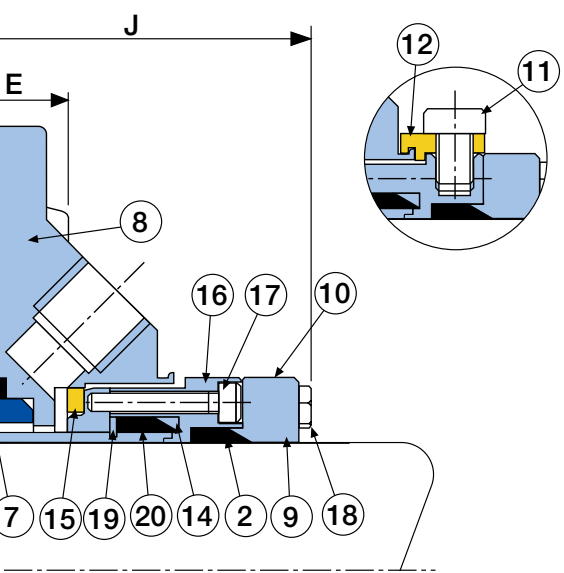
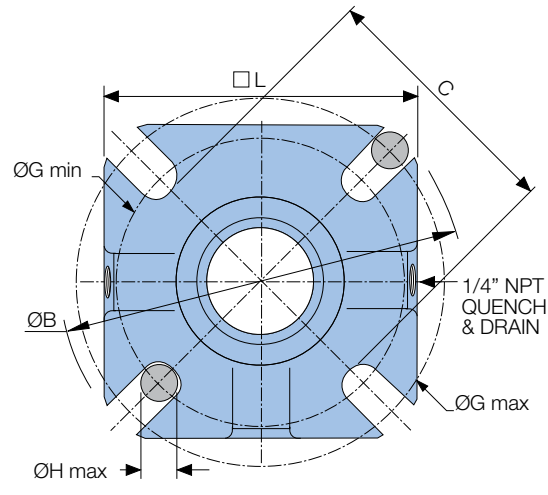
The BSFG™ is available with wetted components offered in Alloy 276. This is particularly advantageous when sealing thermal applications, which incorporate chemical elements.



Item	Description	Material
1	Rotary Sealing Ring	Graphite
2	Shaft Sealing Ring	Graphite
3	Sleeve	316L Stainless Steel
4	Rotary Drive Screws	Stainless Steel / Alloy 276
5	Rotary Bellows Face - SHS	316L SS - Alloy 276 - 316L SS - Carbon / TC / SiC / Ant Car
5	Rotary Bellows Face - SAC	316L SS - AM350 - Alloy 42 - Carbon / TC / SiC / Ant Car
5	Rotary Bellows Face - HHH	Alloy 276 - Alloy 276 - Alloy 276 - Carbon / TC / SiC / Ant Car
6	Stationary Face	SiC / TC
7	Stationary Seal Ring	Graphite
8	Gland	316 Stainless Steel
9	Clamp Ring	316L Stainless Steel
10	Seal Drive Screws	Stainless Steel
11	Setting Clip Screws	Stainless Steel
12	Setting Clips	Metal / Brass
13	Gasket	AF1 / GFT / Graphite
14	Washer	316L Stainless Steel
15	Draw Ring	316L Stainless Steel - Phosphor Bronze
16	External Drive Ring	316L Stainless Steel
17	Outboard Drive Screws	Stainless Steel
18	External Drive Screws	Stainless Steel
19	Circlip	Stainless Steel
20	Rotary Sealing Ring	Graphite



BSFG™ — Dimensional Information



BSFG™ — Imperial Dimensional Information (inches)

A	B	C	D	E	F min	F max	G min	G max	H max	I	J
1.000	4.125	2.125	1.937	0.519	1.625	1.937	2.687	3.562	1/2	1.500	2.062
1.125	4.250	2.250	2.063	0.519	1.750	2.062	2.812	3.687	1/2	1.500	2.062
1.250	4.375	2.375	2.187	0.519	1.875	2.187	2.937	3.812	1/2	1.500	2.062
1.375	4.375	2.500	2.312	0.519	2.000	2.250	3.062	3.812	1/2	1.500	2.062
1.500	5.000	2.812	2.562	0.644	2.250	2.375	3.375	4.437	1/2	1.625	2.062
1.625	5.000	2.812	2.562	0.644	2.375	2.500	3.375	4.437	1/2	1.625	2.062
1.750	5.500	3.187	2.812	0.644	2.500	2.750	3.750	4.937	1/2	1.625	2.062
1.875	5.500	3.187	2.812	0.644	2.625	2.875	3.750	4.937	1/2	1.625	2.062
2.000	6.000	3.562	3.063	0.644	2.750	3.000	4.125	5.437	1/2	1.750	2.062
2.000-AC	5.250	3.450	3.035	0.644	2.750	3.000	4.000	4.750	1/2	1.750	2.062
2.125	6.000	3.562	3.063	0.644	2.875	3.125	4.125	5.437	1/2	1.750	2.062
2.250	6.500	3.812	3.312	0.644	3.000	3.250	4.500	5.812	5/8	1.750	2.062
2.375	6.500	3.812	3.312	0.644	3.125	3.375	4.500	5.812	5/8	1.750	2.062
2.500	7.000	4.312	3.812	0.769	3.375	3.625	5.000	6.312	5/8	1.937	2.437
2.625	7.000	4.312	3.812	0.769	3.500	3.750	5.000	6.312	5/8	1.937	2.437
2.750	7.000	4.312	3.812	0.769	3.625	3.875	5.000	6.312	5/8	1.937	2.437
2.875	7.500	4.937	4.250	0.769	3.750	4.125	5.625	6.812	5/8	1.937	2.437
3.000	7.500	4.937	4.250	0.769	3.875	4.250	5.625	6.812	5/8	2.000	2.437
3.125	7.500	4.937	4.250	0.769	4.000	4.375	5.625	6.812	5/8	2.000	2.437
3.250	8.000	5.312	4.625	0.769	4.125	4.500	6.125	7.187	3/4	2.000	2.437
3.375	8.000	5.312	4.625	0.769	4.250	4.625	6.125	7.187	3/4	2.000	2.437
3.500	8.000	5.312	4.625	0.769	4.375	4.750	6.125	7.187	3/4	2.000	2.437
3.625	8.500	5.937	5.000	0.769	4.500	5.000	6.750	7.687	3/4	2.000	2.437
3.750	8.500	5.937	5.000	0.769	4.625	5.125	6.750	7.687	3/4	2.000	2.437
3.875	9.000	6.625	5.375	0.769	4.875	5.500	7.437	8.187	3/4	2.000	2.437
4.000	9.000	6.625	5.375	0.769	4.875	5.500	7.437	8.187	3/4	2.000	2.437

BSFG™ — Metric Dimensional Information (millimetres)

A	B	C	D	E	F min	F max	G min	G max	H max	I	J
24	104.8	54.0	49.2	13.2	41.0	49.0	67.0	90.5	12	38.1	52.3
25	104.8	54.0	49.2	13.2	41.0	49.0	67.0	90.5	12	38.1	52.3
28	108.0	57.2	52.4	13.2	44.0	52.3	70.3	93.6	12	38.1	52.3
30	111.0	60.4	55.6	13.2	46.0	55.5	73.5	96.8	12	38.1	52.3
32	111.0	60.4	55.6	13.2	49.0	55.5	73.5	96.8	12	38.1	52.3
33	111.0	60.4	55.6	13.2	49.0	55.5	73.5	96.8	12	38.1	52.3
35	111.0	63.5	58.8	13.2	51.0	57.5	76.6	96.8	12	38.1	52.3
38	127.0	71.5	65.0	16.4	57.2	60.3	85.7	114.3	12	41.3	52.3
40	127.0	71.5	65.0	16.4	58.0	60.4	85.7	114.3	12	41.3	52.3
43	127.0	71.5	65.0	16.4	61.0	63.5	85.7	114.3	12	41.3	52.3
45	139.7	81.0	71.4	16.4	63.5	69.9	95.3	127.0	12	41.3	52.3
48	139.7	81.0	71.4	16.4	66.7	73.0	95.3	127.0	12	41.3	52.3
50	139.7	81.0	71.4	16.4	68.0	73.0	95.3	127.0	12	41.3	52.3
53	152.4	90.5	77.8	16.4	71.0	76.2	104.8	139.7	12	44.5	52.3
55	152.4	90.5	77.8	16.4	74.0	79.4	104.8	139.7	12	44.5	52.3
58	165.1	96.8	84.1	16.4	76.2	82.5	114.3	149.2	16	44.5	52.3
60	165.1	96.8	84.1	16.4	79.4	85.7	114.3	149.2	16	44.5	52.3
63	177.8	109.5	96.8	19.6	85.8	92.1	127.0	160.3	16	49.2	62.0
65	177.8	109.5	96.8	19.6	88.9	95.3	127.0	160.3	16	49.2	62.0
68	177.8	109.5	96.8	19.6	92.1	98.4	127.0	160.3	16	49.2	62.0
70	177.8	109.5	96.8	19.6	92.1	98.4	127.0	160.3	16	50.8	62.0
75	190.5	125.4	108.0	19.6	98.5	108.0	142.9	173.0	16	50.8	62.0
80	190.5	125.4	108.0	19.6	101.6	111.1	142.9	173.0	16	50.8	62.0
85	203.2	135.0	117.5	19.6	108.0	117.5	155.6	182.5	20	50.8	62.0
90	215.9	150.8	127.0	19.6	114.3	127.0	171.5	195.2	20	50.8	62.0
95	215.9	150.8	127.0	19.6	117.5	130.2	171.5	195.2	20	50.8	62.0
100	228.6	168.3	136.5	19.6	123.9	139.7	188.9	207.9	20	50.8	62.0

BSFG™ — ANSI+ Gland format Dimensional Information (inches)

A	B	C	E	F min	F max	G min	G max	H max	I	J	□L
1.125	5.000	3.188	1.000	2.625	2.850	3.750	4.250	0.500	1.500	2.062	3.990
1.375	5.375	3.438	1.000	2.875	3.100	4.000	4.625	0.500	1.500	2.062	4.240
1.750	6.750	4.438	0.644	3.500	4.100	5.000	6.000	0.500	1.625	2.062	5.480
1.875	6.750	4.438	0.644	3.625	4.100	5.000	6.000	0.500	1.625	2.062	5.480
2.125	7.625	4.688	0.644	3.875	4.225	5.375	6.687	0.625	1.750	2.062	6.230
2.500	8.250	5.438	0.644	4.500	5.100	6.125	7.312	0.625	1.937	2.437	6.730
2.625	8.250	5.438	0.644	4.625	5.100	6.125	7.312	0.625	1.937	2.437	6.730
2.750	8.250	5.438	0.644	4.625	5.100	6.125	7.312	0.625	1.937	2.437	6.730

Check availability as only a limited size range is inventoried.

Exotic Alloy Seals
Contact AESSEAL® for availability of Exotic Alloy options.

BSFG23™ – Modularity at its Best

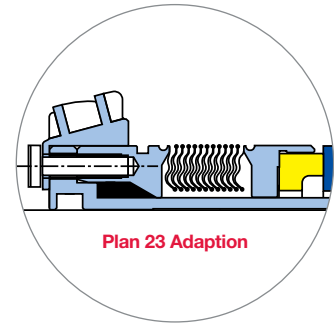
Changing the Environment

Often the most applicable solution to sealing difficult applications is to change the seal environment.

AESSEAL® widely promote the use of Plan 23 systems, using seals and systems like the SMSS23™ and AES Cooler range.

The BSFG23™ is a simple and cost-effective solution, which effectively changes the seal environment when used in conjunction with an appropriate adapter plate.

For more information please ask your sales engineer.



Plan 23 Adaption

AESSEAL® offer a wide range of single and double metal bellows seals.

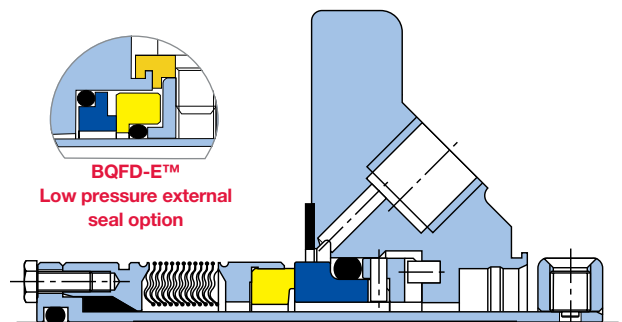
The BQFD™ is a single cartridge design with Quench, Flush and Drain environmental ports.

This design can be offered as standard, with an outboard restriction bush (BQFD-R™). However the AESSEAL® modular approach allows a sister product, the BQFD-E™ to be offered incorporating a low duty external seal.

The BDFI™ is a metal bellows double cartridge seal with an integral bi-directional flow inducer.

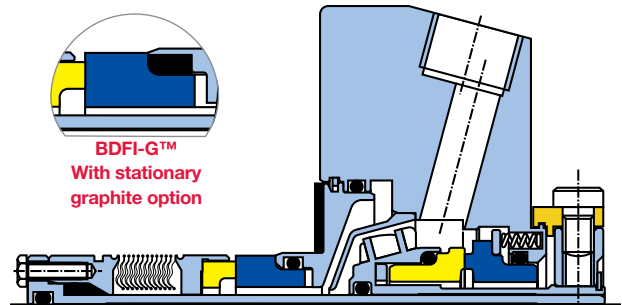
This design is supplied as standard with monolithic outboard seal faces and a directed barrier fluid flow path. Modular options include the BDFI23™ and BDFI-G™. These Plan 23 and Stationary graphite designs make the BDFI™ a truly exceptional standardized sealing solution for thermal applications.

Like all AESSEAL® seals the modular approach allows the rotary metal bellows unit to be offered in any standard AESSEAL® bellows and seal face combination. This includes full Alloy 276 and heat treated AM350. Furthermore the Exotic BDFI™ is offered in Alloy 276 wetted parts.



BQFD-E™
Low pressure external seal option

BQFD™ – Bellows Single Cartridge with Quench, Flush and Drain



BDFI-G™
With stationary graphite option

BDFI™ – Bellows Double Flow Inducer

This document is designed to provide dimensional information and an indication of availability. For further information and safe operating limits contact our technical specialists at the locations below.



Use double mechanical seals with hazardous products.

Always take safety precautions:

- Guard your equipment
- Wear protective clothing



WARNING

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