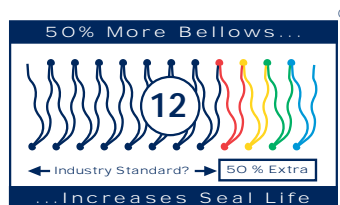




# BSFG™

## 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, DRAIN AND FLUSH ENVIRONMENTAL PORTS
- PATENT PENDING

## BSFG™ - design features

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

This unique patent pending single cartridge mechanical seal has graphite rings at every primary 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

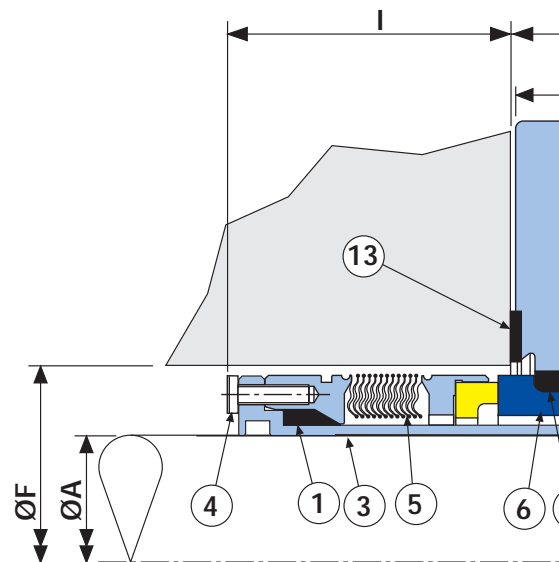
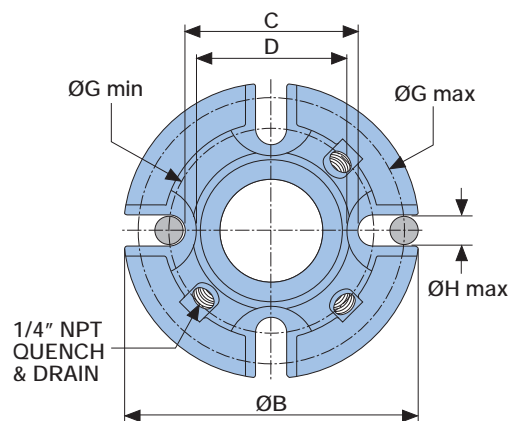
The BSFG™ is supplied as a true cartridge seal. This means that the seal is factory assembled and tested prior to dispatch.

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
1	Rotary Sealing Ring
2	Shaft Sealing Ring
3	Sleeve
4	Rotary Drive Screws
5	Rotary Bellows Face - SHS
5	Rotary Bellows Face - SAC
5	Rotary Bellows Face - HHH
6	Stationary Face
7	Stationary Seal Ring
8	Gland
9	Clamp Ring
10	Seal Drive Screws
11	Setting Clip Screws
12	Setting Clips
13	Gasket
14	Washer
15	Draw Ring
16	External Drive Ring
17	Outboard Drive Screws
18	External Drive Screws
19	Circlip
20	Rotary Sealing Ring

Patent Per

# BSFG™ - dimensional information

## BSFG™ - Imperial Dimensional Information (inches)

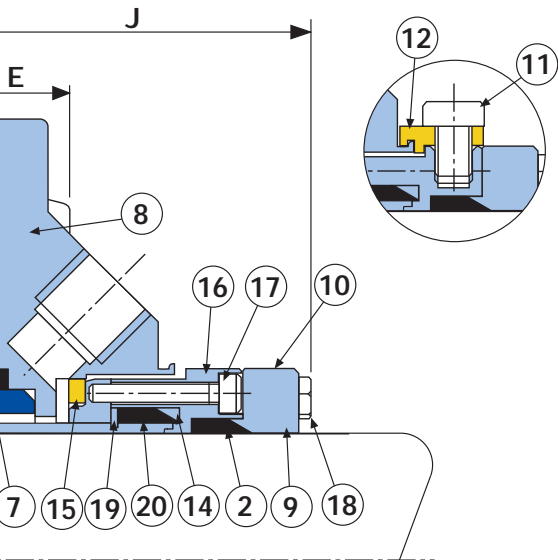
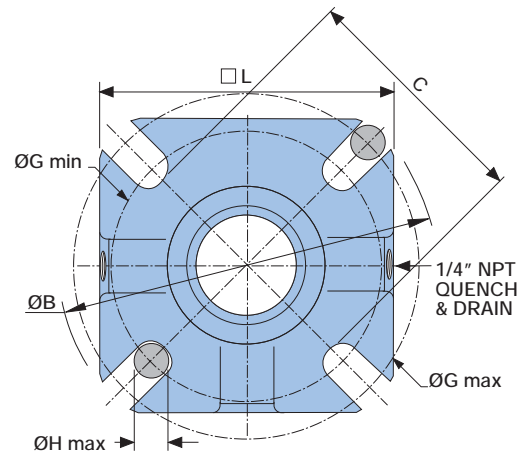
A	B	C	D	E	Fmin	Fmax	Gmin	Gmax	Hmax	I	J
1.000	4.125	2.125	1.937	0.519	1.625	1.937	2.687	3.562	1/2	1.500	2.062
1.125	4.250	2.250	2.063	0.519	1.750	2.062	2.812	3.687	1/2	1.500	2.062
1.250	4.375	2.375	2.187	0.519	1.875	2.187	2.937	3.812	1/2	1.500	2.062
1.375	4.375	2.500	2.312	0.519	2.000	2.250	3.062	3.812	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	Fmin	Fmax	Gmin	Gmax	Hmax	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	48.0	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



**Material**

- Graphite
- Graphite
- 316L Stainless Steel
- Stainless Steel / Alloy 276
- 316L SS - Alloy 276 - 316L SS - Carbon / TC / SiC / Ant Car
- 316L SS - AM350 - Alloy 42 - Carbon / TC / SiC / Ant Car
- Alloy 276 - Alloy 276 - Alloy 276 - Carbon / TC / SiC / Ant Car
- SiC / TC
- Graphite
- 316 Stainless Steel
- 316L Stainless Steel
- Stainless Steel
- Stainless Steel
- Metal / Brass
- AF1 / GFT / Graphite
- 316L Stainless Steel
- 316L Stainless Steel - Phosphor Bronze
- 316L Stainless Steel
- Stainless Steel
- Stainless Steel
- Stainless Steel
- Graphite

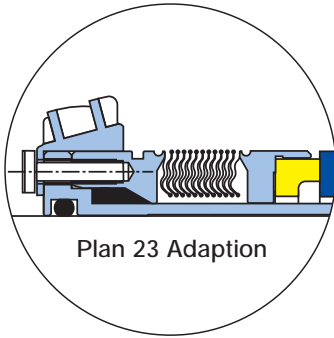
## Ordering Design

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.

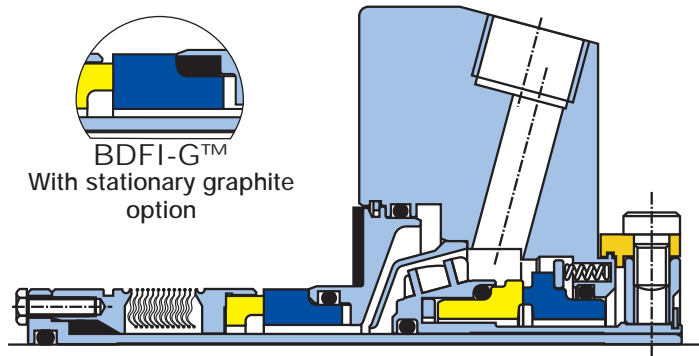
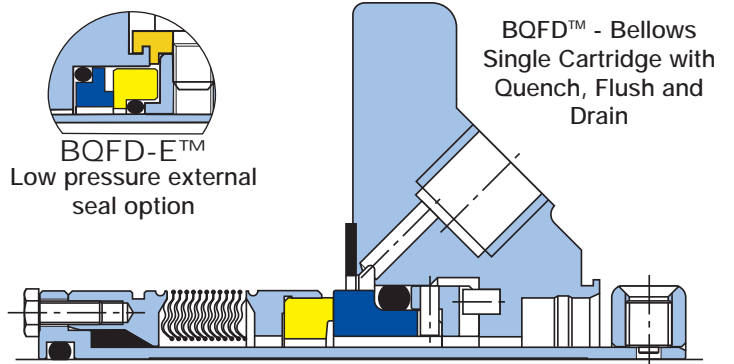
The BSFG23™ is a simple and cost-effective solution, which effectively changes the seal environment when used in conjunction with an appropriate adapter plate.

You can download this piece of literature from [www.aesseal.com](http://www.aesseal.com) or request it from [Marketing@aes seal.com](mailto:Marketing@aes seal.com)

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

The BQFD™ is a single cartridge design with Flush, Quench 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 patent pending 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.

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.



INVESTOR IN PEOPLE

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

- GUARD YOUR EQUIPMENT
- WEAR PROTECTIVE CLOTHING



WARNING

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