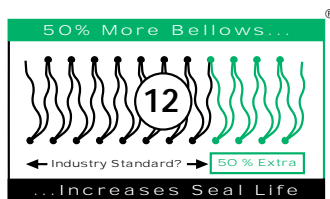
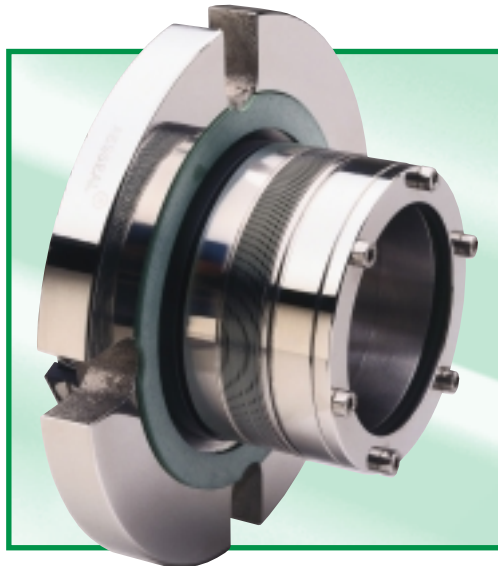




# BSIV™ Metal Bellows Single Cartridge Seal



- 12 BELLOWS CONVOLUTIONS AS STANDARD
- ALLOY 276 STANDARD BELLOWS MATERIAL
- CARTRIDGE DESIGN FOR RELIABLE INSTALLATION
- HYDRAULICALLY BALANCED SEAL FACE DESIGN
- MODULAR CONSTRUCTION FOR MAXIMUM FLEXIBILITY
- FLUSH PORT OPTION AS STANDARD

# BSIV™ Metal Bellows Single Cartridge Seal

The AESSEAL® BSIV™ range of single cartridge mechanical seals has been designed as a value for money, high performance sealing solution for general applications.

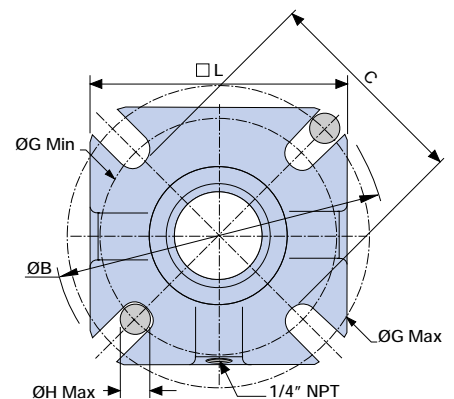
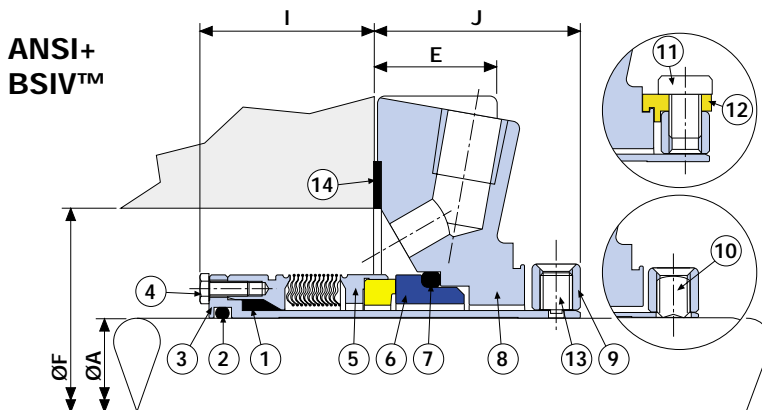
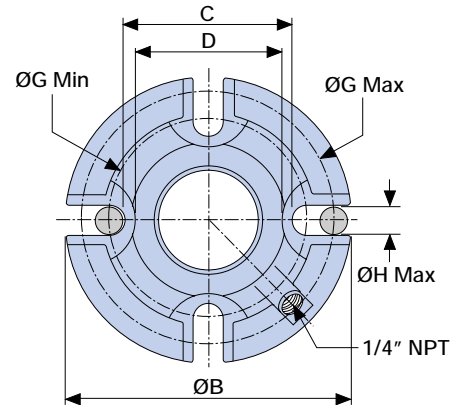
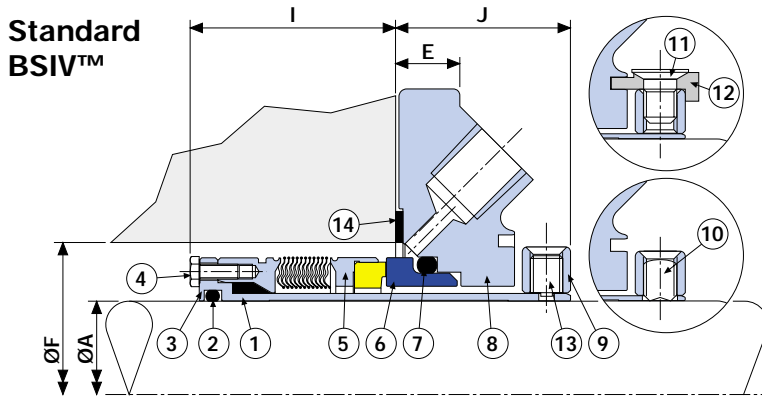
## Major advantages of using AESSEAL® Metal Bellows Seals

- 50% more bellows than the industry standard means there is less stress on each convolution in the bellows stack which helps increase seal life. It is for this reason that this seal is more able to accommodate installation tolerances and will maintain a more consistent face pressure as the seal wears in use.
- Finite Element Analysis was used to optimise the bellows convolution profile on its inside diameter at 45° which means minimal stress on the weld beads.
- The standard bellows material, Alloy 276, has superior mechanical and corrosion resistance properties compared to other industry standard bellows materials such as 300 series Stainless Steel or Alloy 20. The seal face holder and drive end are inventoried as standard in 316L Stainless Steel.

The main benefit of using a metal bellows seal is the removal of the semi-dynamic sliding elastomer from a conventional pusher type seal. This means that bellows seals can be used where chemical attack on this elastomer is a problem.

## The seal is offered with the following features:

- Flush port option as standard
- Cartridge design for reliable installation
- Hydraulically balanced inboard seal faces
- Independent seal face design
- Modular construction for maximum adaptability
- Requires no pump modification
- Ideal replacement for 2 part seals or previously packed stuffing boxes.



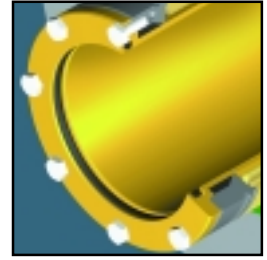
| ITEM | DESCRIPTION              | MATERIAL  |
|------|--------------------------|---|
| 1    | Rotary Face Sealing Ring | Graphite  |
| 2    | Sleeve O Ring            | Viton® / EPR / Kalrez® / Aflas®                 |
| 3    | Sleeve                   | 316L Stainless Steel                            |
| 4    | Rotary Drive Screws      | Stainless Steel                                 |
| 5    | Rotary Bellows Assembly  | 316L SS - Alloy 276 - 316L SS - Carbon /TC /SiC |
| 6    | Stationary Face          | TC / Ceramic / SiC                              |
| 7    | Stationary Sealing Ring  | Viton® / EPR / Kalrez® / Aflas® / Graphite      |
| 8    | Gland                    | 316 Stainless Steel                             |
| 9    | Clamp Ring               | 316L Stainless Steel                            |
| 10   | Drive Screws             | Stainless Steel                                 |
| 11   | Clip Screws              | Stainless Steel                                 |
| 12   | Setting Clips            | Metal/Plastic                                   |
| 13   | Anti-tamper Screws       | Stainless Steel                                 |
| 14   | Gasket                   | AF1 / GFT                                       |

# BSIV™ Metal Bellows Single Cartridge Seal

## BSIV™ - Imperial Dimensional Information (inches)

| A     | B     | C     | D     | E     | Fmin  | Fmax  | Gmin  | Gmax  | Hmax | I     | J     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| 1.000 | 4.125 | 2.187 | -     | 0.492 | 1.625 | 1.937 | 2.750 | 3.625 | 1/2  | 1.531 | 1.354 |
| 1.125 | 4.250 | 2.312 | -     | 0.492 | 1.750 | 2.062 | 2.875 | 3.750 | 1/2  | 1.531 | 1.354 |
| 1.250 | 4.375 | 2.437 | -     | 0.492 | 1.875 | 2.187 | 3.000 | 3.875 | 1/2  | 1.531 | 1.354 |
| 1.375 | 4.375 | 2.625 | -     | 0.492 | 2.000 | 2.312 | 3.187 | 3.875 | 1/2  | 1.531 | 1.354 |
| 1.500 | 5.000 | 2.875 | -     | 0.644 | 2.250 | 2.500 | 3.437 | 4.500 | 1/2  | 1.687 | 1.393 |
| 1.625 | 5.000 | 2.875 | -     | 0.644 | 2.375 | 2.500 | 3.437 | 4.500 | 1/2  | 1.687 | 1.393 |
| 1.750 | 5.250 | 3.000 | -     | 0.644 | 2.500 | 2.625 | 3.562 | 4.750 | 1/2  | 1.687 | 1.393 |
| 1.875 | 5.500 | 3.312 | -     | 0.644 | 2.625 | 3.000 | 3.875 | 5.000 | 1/2  | 1.687 | 1.393 |
| 2.000 | 5.500 | 3.312 | -     | 0.644 | 2.750 | 3.000 | 3.875 | 5.000 | 1/2  | 1.750 | 1.413 |
| 2.125 | 5.750 | 3.687 | -     | 0.644 | 2.875 | 3.312 | 4.375 | 5.125 | 5/8  | 1.750 | 1.413 |
| 2.250 | 5.750 | 3.687 | -     | 0.644 | 3.000 | 3.312 | 4.375 | 5.125 | 5/8  | 1.750 | 1.413 |
| 2.375 | 6.000 | 3.937 | -     | 0.644 | 3.125 | 3.562 | 4.625 | 5.375 | 5/8  | 1.750 | 1.413 |
| 2.500 | 6.250 | 4.187 | -     | 0.644 | 3.375 | 3.687 | 4.875 | 5.625 | 5/8  | 2.031 | 1.413 |
| 2.625 | 6.250 | 4.187 | -     | 0.644 | 3.500 | 3.750 | 4.875 | 5.625 | 5/8  | 2.031 | 1.413 |
| 2.750 | 6.250 | 4.187 | -     | 0.644 | 3.625 | 3.875 | 4.875 | 5.625 | 5/8  | 2.031 | 1.413 |
| 2.875 | 7.500 | 4.937 | 4.250 | 0.769 | 3.750 | 4.125 | 5.625 | 6.812 | 5/8  | 2.031 | 1.875 |
| 3.000 | 7.500 | 4.937 | 4.250 | 0.769 | 3.875 | 4.250 | 5.625 | 6.812 | 5/8  | 2.150 | 1.875 |
| 3.125 | 7.500 | 4.937 | 4.250 | 0.769 | 4.000 | 4.375 | 5.625 | 6.812 | 5/8  | 2.150 | 1.875 |
| 3.250 | 8.000 | 5.312 | 4.625 | 0.769 | 4.125 | 4.500 | 6.125 | 7.187 | 3/4  | 2.150 | 1.875 |
| 3.375 | 8.000 | 5.312 | 4.625 | 0.769 | 4.250 | 4.625 | 6.125 | 7.187 | 3/4  | 2.150 | 1.875 |
| 3.500 | 8.000 | 5.312 | 4.625 | 0.769 | 4.375 | 4.750 | 6.125 | 7.187 | 3/4  | 2.150 | 1.875 |
| 3.625 | 8.500 | 5.937 | 5.000 | 0.769 | 4.500 | 5.000 | 6.750 | 7.687 | 3/4  | 2.150 | 1.875 |
| 3.750 | 8.500 | 5.937 | 5.000 | 0.769 | 4.625 | 5.125 | 6.750 | 7.687 | 3/4  | 2.150 | 1.875 |
| 3.875 | 9.000 | 6.625 | 5.375 | 0.769 | 4.875 | 5.500 | 7.437 | 8.187 | 3/4  | 2.150 | 1.875 |
| 4.000 | 9.000 | 6.625 | 5.375 | 0.769 | 4.875 | 5.500 | 7.437 | 8.187 | 3/4  | 2.150 | 1.875 |

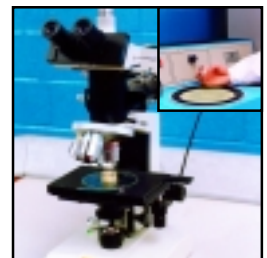
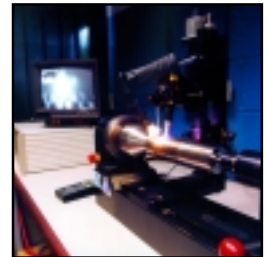
Minimum bolt circle based on bolt size shown.



## BSIV™ - Metric Dimensional Information (millimetres)

| A   | B     | C     | D     | E    | Fmin  | Fmax  | Gmin  | Gmax  | Hmax | I    | J    |
|-----|-------|-------|-------|------|-------|-------|-------|-------|------|------|------|
| 24  | 104.8 | 55.6  | -     | 12.5 | 41.0  | 49.2  | 69.9  | 92.0  | 12   | 38.9 | 34.4 |
| 25  | 104.8 | 55.6  | -     | 12.5 | 41.0  | 49.2  | 69.9  | 92.0  | 12   | 38.9 | 34.4 |
| 28  | 108.0 | 58.7  | -     | 12.5 | 44.0  | 52.4  | 73.0  | 95.3  | 12   | 38.9 | 34.4 |
| 30  | 111.0 | 61.9  | -     | 12.5 | 46.0  | 55.6  | 76.2  | 98.4  | 12   | 38.9 | 34.4 |
| 32  | 111.0 | 61.9  | -     | 12.5 | 48.0  | 55.6  | 76.2  | 98.4  | 12   | 38.9 | 34.4 |
| 33  | 111.0 | 61.9  | -     | 12.5 | 49.0  | 55.6  | 76.2  | 98.4  | 12   | 38.9 | 34.4 |
| 35  | 111.0 | 66.7  | -     | 12.5 | 50.8  | 58.7  | 79.4  | 98.4  | 12   | 38.9 | 34.4 |
| 38  | 127.0 | 73.0  | -     | 16.4 | 57.2  | 63.5  | 87.3  | 114.3 | 12   | 42.9 | 35.4 |
| 40  | 127.0 | 73.0  | -     | 16.4 | 57.2  | 63.5  | 87.3  | 114.3 | 12   | 42.9 | 35.4 |
| 43  | 127.0 | 73.0  | -     | 16.4 | 60.3  | 63.5  | 87.3  | 114.3 | 12   | 42.9 | 35.4 |
| 45  | 133.4 | 76.2  | -     | 16.4 | 63.5  | 66.7  | 90.5  | 120.7 | 12   | 42.9 | 35.4 |
| 48  | 139.7 | 84.1  | -     | 16.4 | 66.7  | 76.2  | 98.4  | 127.0 | 12   | 42.9 | 35.4 |
| 50  | 139.7 | 84.1  | -     | 16.4 | 66.7  | 76.2  | 98.4  | 127.0 | 12   | 42.9 | 35.4 |
| 53  | 139.7 | 84.1  | -     | 16.4 | 69.9  | 76.2  | 98.4  | 127.0 | 12   | 44.5 | 35.9 |
| 55  | 146.0 | 93.7  | -     | 16.4 | 73.0  | 84.1  | 111.1 | 130.2 | 16   | 44.5 | 35.9 |
| 58  | 146.0 | 93.7  | -     | 16.4 | 76.2  | 84.1  | 111.1 | 130.2 | 16   | 44.5 | 35.9 |
| 60  | 152.4 | 100.0 | -     | 16.4 | 79.4  | 90.5  | 117.5 | 136.5 | 16   | 44.5 | 35.9 |
| 63  | 158.8 | 106.4 | -     | 16.4 | 85.7  | 93.7  | 123.8 | 142.9 | 16   | 51.6 | 35.9 |
| 65  | 158.8 | 106.4 | -     | 16.4 | 88.9  | 95.3  | 123.8 | 142.9 | 16   | 51.6 | 35.9 |
| 70  | 158.8 | 106.4 | -     | 16.4 | 92.1  | 98.4  | 123.8 | 142.9 | 16   | 51.6 | 35.9 |
| 75  | 190.5 | 125.4 | 108.0 | 19.6 | 98.5  | 108.0 | 142.9 | 173.0 | 16   | 54.6 | 47.6 |
| 80  | 190.5 | 125.4 | 108.0 | 19.6 | 101.6 | 111.1 | 142.9 | 173.0 | 16   | 54.6 | 47.6 |
| 85  | 203.2 | 135.0 | 117.5 | 19.6 | 108.0 | 117.5 | 155.6 | 182.5 | 20   | 54.6 | 47.6 |
| 90  | 215.9 | 150.8 | 127.0 | 19.6 | 114.3 | 127.0 | 171.5 | 195.2 | 20   | 54.6 | 47.6 |
| 95  | 215.9 | 150.8 | 127.0 | 19.6 | 117.5 | 130.2 | 171.5 | 195.2 | 20   | 54.6 | 47.6 |
| 100 | 228.6 | 168.3 | 136.5 | 19.6 | 123.9 | 139.7 | 188.9 | 207.9 | 20   | 54.6 | 47.6 |

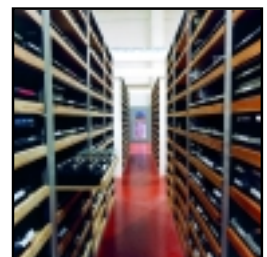
Minimum bolt circle based on bolt size shown.



## BSIV™ - 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 | 1.250 | 1.664 | 3.990 |
| 1.375 | 5.375 | 3.438 | 1.000 | 2.875 | 3.100 | 4.000 | 4.625 | 0.500 | 1.437 | 1.489 | 4.240 |
| 1.750 | 6.750 | 4.438 | 0.644 | 3.500 | 4.100 | 5.000 | 6.000 | 0.500 | 1.437 | 1.700 | 5.480 |
| 1.875 | 6.750 | 4.438 | 0.644 | 3.625 | 4.100 | 5.000 | 6.000 | 0.500 | 1.437 | 1.700 | 5.480 |
| 2.125 | 7.625 | 4.688 | 0.644 | 3.875 | 4.225 | 5.375 | 6.687 | 0.625 | 1.531 | 1.700 | 6.230 |
| 2.500 | 8.250 | 5.438 | 0.644 | 4.500 | 5.100 | 6.125 | 7.312 | 0.625 | 1.600 | 1.917 | 6.730 |
| 2.625 | 8.250 | 5.438 | 0.644 | 4.625 | 5.100 | 6.125 | 7.312 | 0.625 | 1.600 | 1.917 | 6.730 |
| 2.750 | 8.250 | 5.438 | 0.644 | 4.625 | 5.100 | 6.125 | 7.312 | 0.625 | 1.600 | 1.917 | 6.730 |

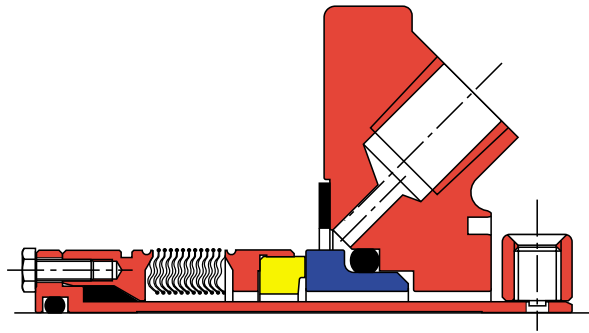
Minimum bolt circle based on bolt size shown.



# BSIV™ Metal Bellows Single Cartridge Seal

## Exotic BSIV™

The BSIV™ range is complemented with an exotic alloy option. It is available with alloy 276 wetted parts including a full solid alloy 276 bellows and gland arrangement in standard ANSI and ANSI+ gland formats. Sizes available: Ø1.125", Ø1.375", Ø1.750", Ø1.875", Ø2.125", Ø2.500", Ø2.625" and Ø2.750".



AESSEAL® also produce a further range of single and double cartridge mechanical seals using the same modular Metal Bellows technology. The main products in this range are the BSAI™, BQFD™, BDFI™ and BSFG™ which all have their own brochure which can be requested from AESSEAL®.



These brochures can be downloaded from the AESSEAL® website at [www.aesseal.com](http://www.aesseal.com) or copies can be requested by email from [marketing@aes seal.com](mailto:marketing@aes seal.com).

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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