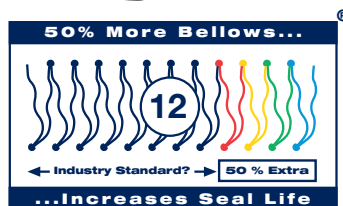
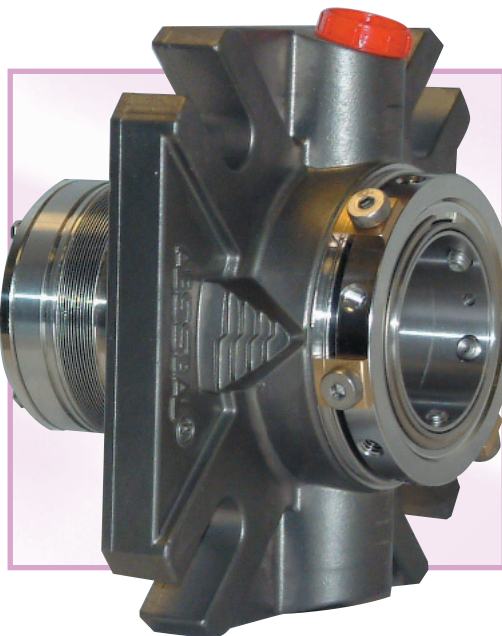




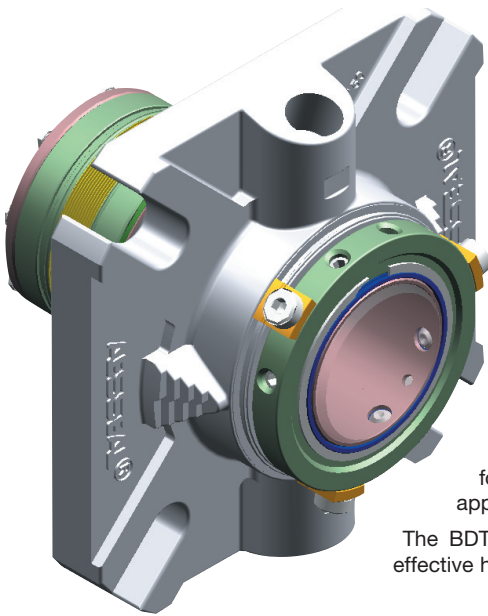
## **BDTP™** **Bellows Double Tandem Pumping**



- **PATENT PENDING DESIGN**
- **TANDEM BELLOWS  
CARTRIDGE SEAL**
- **INTEGRAL BI-DIRECTIONAL  
FLOW INDUCER**
- **DIRECTED BARRIER FLUID  
CIRCULATION**
- **FITS ON PUMPS WITH THIN  
RADIAL CROSS SECTIONAL  
SPACES (8mm / 0.312")**

# BDTP™ - better by design

The **BDTP™** is an innovative hybrid design, modular to the highly successful **BDFI™**.



### Inboard Bellows

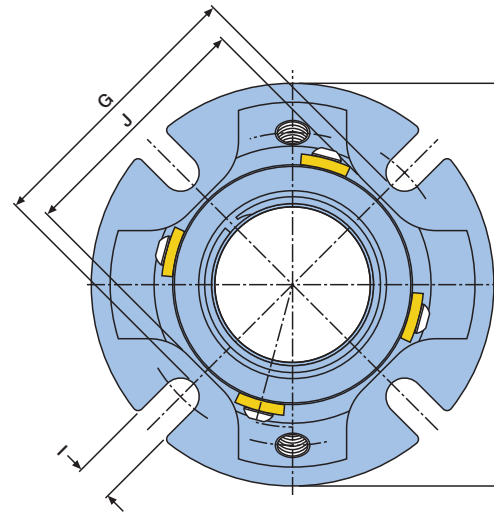
The bellows unit (Patent Pending) is ideally suited to replace the semi-dynamic sliding elastomer of a conventional pusher seal. This allows the bellows design to be more readily applied to thermal applications.

The BDTP™ 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.

### Directed Barrier Fluid Circulation

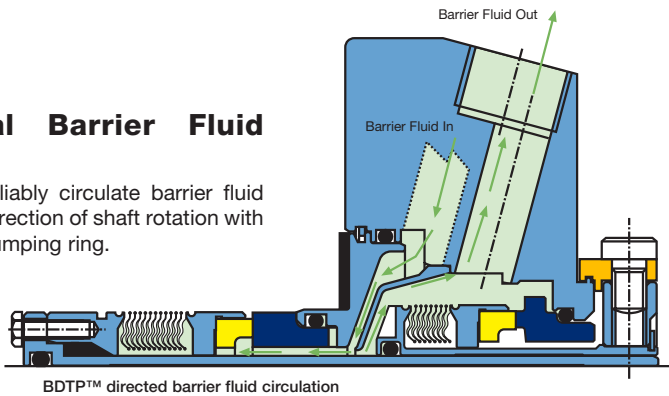
Removing the heat at the inboard faces is critical for any double mechanical seal, more so for a seal which may be applied to thermal applications.

The BDTP™ directed barrier fluid flow path achieves effective heat removal at both sets of seal faces.

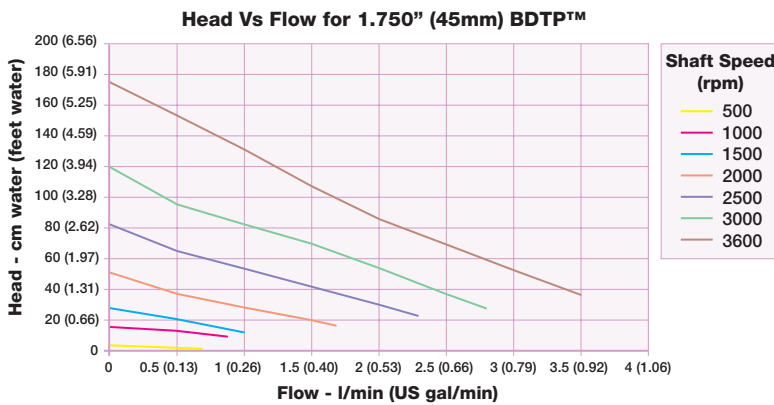


### Bi-directional Barrier Fluid Circulation

The BDTP™ will reliably circulate barrier fluid irrespective of the direction of shaft rotation with a Patent Pending pumping ring.



BDTP™ directed barrier fluid circulation



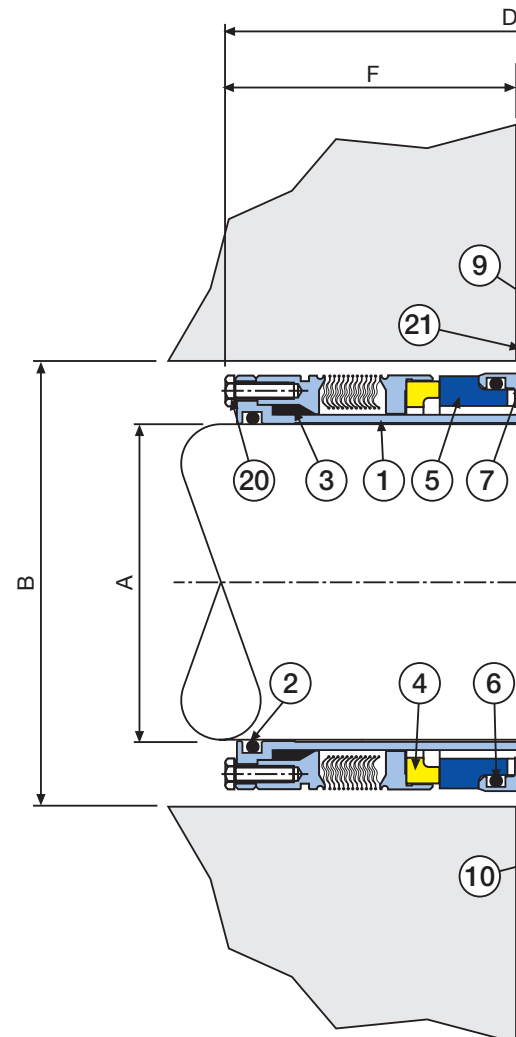
### Fits in Thin Radial Cross Sectional Spaces

The BDTP™ 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.

### Bellows Outboard Rotary Seal face

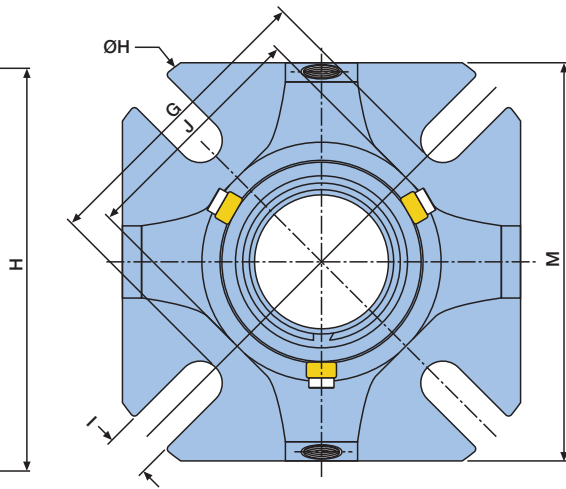
Any seal design applied to thermal applications must have the ability to seal relatively hot barrier fluids without leaking externally.

The Patent Pending outboard rotary seal face is offered as standard with an Alloy C276 Bellows stack and 316L Stainless Steel face holder. As the face holder is a modular component to many other AESSEAL® product ranges it can be offered in Alloy C276 if required.



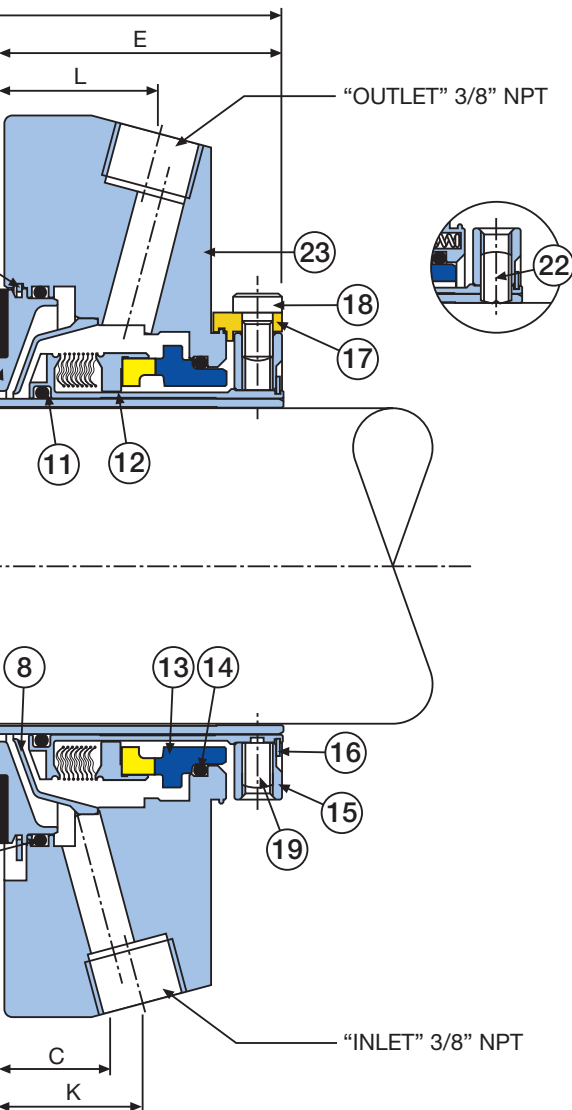
Standard ISO / ANSI Box Bore 28.0mm - 65mm (1.125" - 2.625")

A	B Min	B Max	C	D	E	F	G	H	I	J	K	L
28.0	44.0	52.0	19.1	100.8	52.4	48.4	62.2	111.1	14.0	57.2	20.6	28.6
35.0	51.0	60.3	19.1	100.8	52.4	48.4	71.8	104.1	11.0	67.0	20.6	28.6
45.0	63.5	73.0	19.1	106.7	53.1	53.6	83.8	139.1	14.0	75.7	31.5	33.0
55.0	74.0	90.5	22.2	108.7	53.1	55.6	100.3	150.0	17.5	86.6	25.3	29.0
60.0	79.4	95.0	19.1	108.7	53.1	55.6	108.7	170.8	17.5	94.4	26.5	29.7
63.0	85.8	95.0	19.1	114.9	53.1	61.8	108.7	170.8	17.5	94.4	31.5	33.0
65.0	88.9	98.0	19.1	114.9	53.1	61.8	111.9	180.3	17.5	98.3	31.5	33.0
1.125	1.750	2.062	0.750	3.970	2.062	1.908	2.449	4.375	0.551	2.250	0.812	1.125
1.375	2.000	2.375	0.750	3.970	2.062	1.908	2.827	4.100	0.433	2.638	0.812	1.125
1.750	2.500	2.875	0.750	4.200	2.091	2.109	3.297	5.475	0.551	2.982	1.240	1.299
1.875	2.625	3.000	0.750	4.200	2.091	2.109	3.450	5.906	0.689	3.108	1.240	1.299
1.875-D	2.625	2.875	0.800	4.200	2.091	2.109	3.325	4.875	0.472	3.025	1.150	1.150
2.125	2.875	3.562	0.875	4.280	2.091	2.189	3.950	5.906	0.689	3.408	0.995	1.140
2.375	3.125	3.750	0.750	4.280	2.091	2.189	4.280	6.725	0.689	3.716	1.043	1.170
2.500	3.375	3.750	0.750	4.525	2.091	2.437	4.280	6.725	0.689	3.716	1.240	1.299
2.625	3.500	3.875	0.750	4.525	2.091	2.437	4.405	7.100	0.689	3.871	1.240	1.299



Large ISO / ANSI Plus Box Bore

A	B Min	B Max	C	D	E	F	G	H	I	J	K	L	M
1.125	1.750	2.750	0.750	3.970	2.062	1.908	3.199	5.000	0.551	2.323	1.125	1.125	3.990
1.375	2.000	3.062	0.750	3.970	2.062	1.908	3.449	5.375	0.551	2.638	1.125	1.125	4.250
1.750	3.500	4.000	0.790	4.200	2.000	2.200	4.449	6.750	0.551	3.100	1.087	1.087	5.480
1.875	3.500	4.000	0.619	4.200	2.000	2.200	4.449	6.750	0.551	3.500	1.087	1.087	5.480
2.125	3.875	4.187	0.669	4.280	2.000	2.280	4.661	7.600	0.689	3.715	1.125	1.125	6.205
2.500	4.500	4.812	0.760	4.525	2.091	2.437	5.411	8.225	0.689	4.525	1.231	1.231	6.705
2.625	4.500	4.812	0.760	4.525	2.091	2.437	5.411	8.225	0.689	4.525	1.093	1.093	6.705

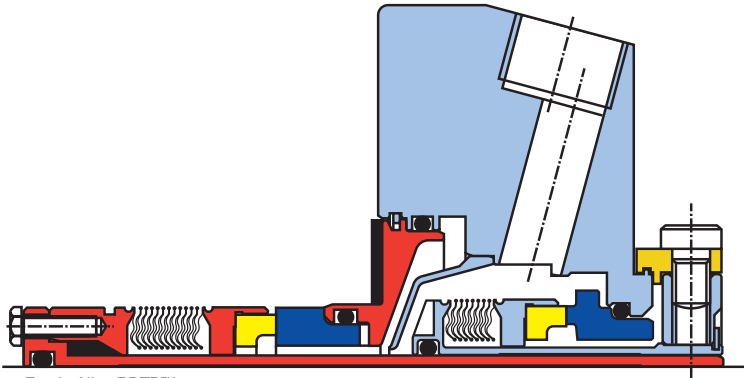


Item Description	Material
1 Sleeve	316L Stainless Steel
2 Sleeve 'O' Ring	Viton® / EPR / Kalrez® / Alfas®
3 Rotary Wedge	Graphite
4 Rotary Bellows Face - SHS	316L SS - Alloy C276 - 316L SS - Carbon / TC / SiC / Antimony Carbon
4 Rotary Bellows Face - SAC	316L SS - AM350 - Alloy 42 - Carbon / TC / SiC / Antimony Carbon
4 Rotary Bellows Face - HHH	Alloy C276 - Alloy C276 - Alloy C276 - Carbon / TC / SiC / Antimony Carbon
5 Stationary Face	SiC / TC
6 Stationary 'O' Ring	Viton® / EPR / Kalrez® / Alfas®
7 Gland Insert	316L Stainless Steel
8 Deflector	316L Stainless Steel
9 Snap Ring	Stainless Steel
10 Gland Insert 'O' Ring	Viton® / EPR / Kalrez® / Alfas®
11 Rotary Holder 'O' Ring	Viton® / EPR / Kalrez® / Alfas®
12 Rotary Face - SHS	316L SS - Alloy C276 - 316L SS - Carbon / TC / SiC / Antimony Carbon
12 Rotary Face - SHH	316L SS - Alloy C276 - Alloy C276 - Carbon / SiC / TC / Antimony Carbon
13 Stationary Face	SiC / TC
14 Stationary 'O' Ring	Viton® / EPR / Kalrez® / Alfas®
15 Clamp Ring	316L Stainless Steel
16 Circlip	Stainless Steel
17 Settings Clips	Brass
18 Setting Clip Screws	Stainless Steel
19 Anti Tamper Screws	Stainless Steel
20 Screws	Stainless Steel / Alloy C276
21 Gasket	AF1 / GFT / Graphite
22 Drive Screws	Stainless Steel
23 Gland	316 Stainless Steel

Contact AESSEAL® Technical Department for dimensional information of seal sizes not shown.

**Check availability as only a limited size range is inventoried.**

# BDTP™ / BDFI™ - modularity at it's best



Exotic Alloy BDTP™

## Exotic Alloy Wetted Options.

The BDTP™ is available with wetted components offered in Alloy 276.

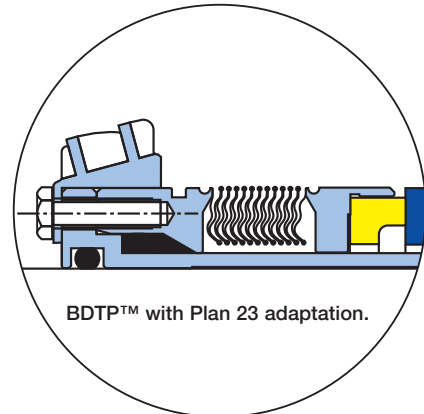
**EXOTIC ALLOY SEALS**  
Contact AESSEAL® for availability of Exotic Alloy options.

## Changing the Environment

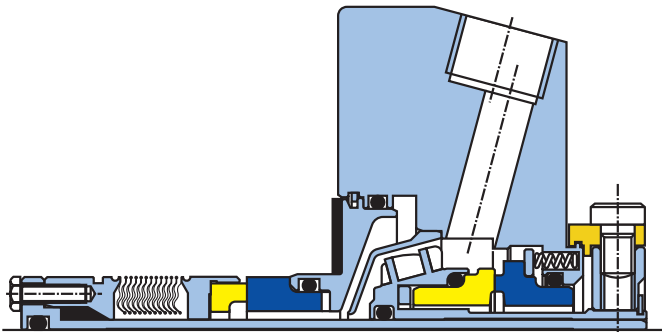
Often the most successful solution when sealing difficult applications is to change the seal environment.

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

The BDTP23™ is a simple and cost-effective solution which also effectively changes the seal environment when used in conjunction with an appropriate adapter plate.



BDTP™ with Plan 23 adaptation.



BDFI™ - Bellows Double Flow Induced

## BDFI™ & BDFC™ Range

Like all AESSEAL® products, modularity is the key to providing service at an affordable price.

The BDFI™ and BDFC™ are sister products to the BDTP™.

The BDFI™ / BDFC™ offer the advantage of an inboard metal bellows unit available in any AESSEAL® standard metal bellows material and seal face combinations including SHS, HHH and SAC with Carbon, Antimony Carbon, TC or SiC seal faces.

This inboard bellows design is ideal to replace the semi-dynamic rotary elastomer in some chemical or thermal applications

See the BDFI™ / BDFC™ literature for further information. You can download this and other information from [www.aesseal.com](http://www.aesseal.com) or request it 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



THE QUEEN'S AWARDS  
FOR ENTERPRISE  
INNOVATION  
2006

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

- GUARD YOUR EQUIPMENT
- WEAR PROTECTIVE CLOTHING



**WARNING**

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