ISC2-682 Series

Innovative Standard Cartridge Seals

The ISC2-682 Series is a family of balanced pusher and metal bellows seals designed to fully comply with the design and qualification requirements of API 682. Platform flexibility allows application in a range of services throughout refineries, petrochemical plants and other industries where the API 682 specification is invoked.

Features and Benefits

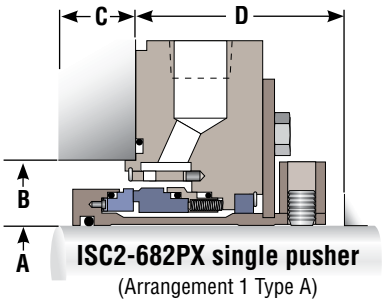
- Qualified for Category 1 ASME B73.1 and Category 2 API 610 pumps per API 682 design and test criteria.
- Multiple coil springs in Type A pusher seals are non-wetted and non-rotating for excellent clogging resistance under imperfect equipment alignment conditions.
- Edge-welded metal bellows in Type B seals rotate with the shaft for a self-cleaning effect that helps prevent accumulation of debris.
- Thermal management technology enhances seal face heat transfer, reduces seal face temperatures and increases tolerance to dry running events.
- Hydraulically retained and double balanced seal faces in all versions allow continued operation during unintended reverse pressurization.
- Circulating device integrated into the dual seal cartridge circulates barrier fluid to keep the seal faces cool. A circulating device is also available on single seals for fluids over 75°C (167°F).
- Available multiport flush distributes flush fluid evenly around the seal faces to eliminate temperature gradients and improve seal face flatness.
- Gland throttle bushings are available in fixed, floating, and segmented varieties to provide secondary containment in single seal arrangements.

Operating Parameters

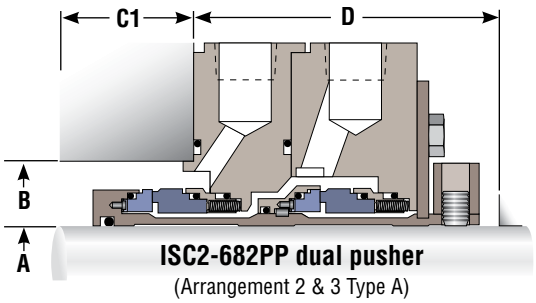
Pressure	
Pusher:	Up to 21 bar (300 psig)
Bellows:	Up to 14 bar (200 psig)
Temperature	-40 to 204°C (-40 to 400°F)
Speed	Up to 23 m/s (75 fps)
Specific Gravity	>0.6
Shaft Size	
Pusher:	25.40 to 203.2 mm (1.000 to 8.000 inch)
Bellows:	25.40 to 95.25 mm (1.000 to 3.750 inch)

Materials of Construction

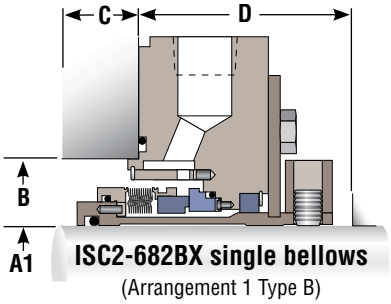
Metal Parts	316 Stainless Steel, Alloy C-276
Mating Ring	Direct Sintered Silicon Carbide
Primary Ring	Resin Grade Carbon, Direct Sintered Silicon Carbide
Metal Bellows	Alloy C-276
Springs	Alloy C-276
Elastomers	Fluoroelastomer, Perfluoroelastomer



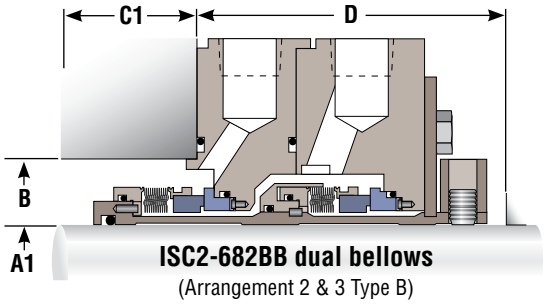
ISC2-682PX single pusher
(Arrangement 1 Type A)



ISC2-682PP dual pusher
(Arrangement 2 & 3 Type A)



ISC2-682BX single bellows
(Arrangement 1 Type B)



ISC2-682BB dual bellows
(Arrangement 2 & 3 Type B)

Dimensional Data in millimeters

API 610 Chamber	A Max	A1 Max	B Min	C Min	C1 Min	D Min
1	20.00	20.00	48.00	18.00	48.00	65.00
2	30.00	30.00	57.00	18.00	48.00	65.00
3	40.00	40.00	70.00	18.00	52.00	65.00
4	50.00	50.00	79.00	18.00	52.00	65.00
5	60.00	60.00	92.00	18.00	52.00	65.00
6	70.00	70.00	117.0	25.00	64.00	78.00
7	80.00	80.00	133.0	25.00	79.00	78.00
8	90.00	90.00	140.0	25.00	79.00	78.00
9	100.0	95.25	152.0	25.00	79.00	78.00
10	110.0		164.0	25.00	79.00	78.00
	120.0		170.0	25.00	79.00	78.00
	130.0		182.0	25.00	79.00	78.00
	140.0		196.0	25.00	79.00	78.00
	150.0		207.0	25.00	79.00	78.00
	160.0		220.0	25.00	79.00	85.00
	170.0		226.0	25.00	79.00	85.00
	180.0		234.0	25.00	79.00	85.00
	190.0		245.0	25.00	79.00	85.00
	203.2		258.0	25.00	79.00	85.00

in inches

A Max	A1 Max	B Min	C Min	C1 Min	D Min
0.787	0.787	1.890	0.709	1.890	2.559
1.181	1.181	2.244	0.709	1.890	2.559
1.575	1.575	2.756	0.709	2.047	2.559
1.968	1.968	3.150	0.709	2.047	2.559
2.362	2.362	3.622	0.709	2.047	2.559
2.756	2.756	4.646	0.984	2.520	3.071
3.150	3.150	5.236	0.984	3.110	3.071
3.543	3.543	5.512	0.984	3.110	3.071
3.937	3.750	5.984	0.984	3.110	3.071
4.331		6.457	0.984	3.110	3.071
4.724		6.693	0.984	3.110	3.071
5.118		7.165	0.984	3.110	3.071
5.512		7.717	0.984	3.110	3.071
5.906		8.150	0.984	3.110	3.071
6.299		8.661	0.984	3.110	3.346
6.693		8.898	0.984	3.110	3.346
7.087		9.213	0.984	3.110	3.346
7.480		9.646	0.984	3.110	3.346
8.000		10.157	0.984	3.110	3.346

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