



ISC Series

Innovative Standard Cartridge Seals

Sealing innovation in general process pump applications



Experience In Motion

The economical, innovative standard cartridge seal family features interchangeable pusher, metal bellows, and elastomer bellows configurations on a common gland and sleeve platform.

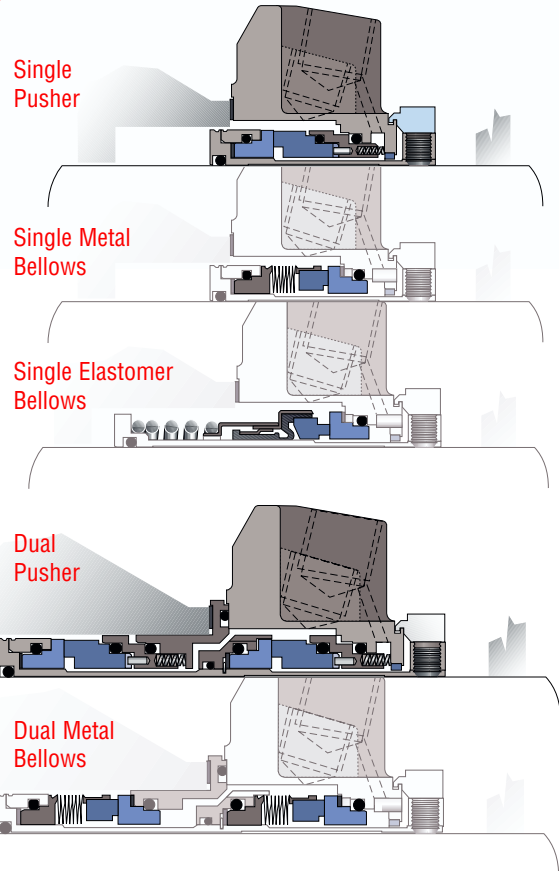


Maximum versatility in a cartridge design for a variety of applications

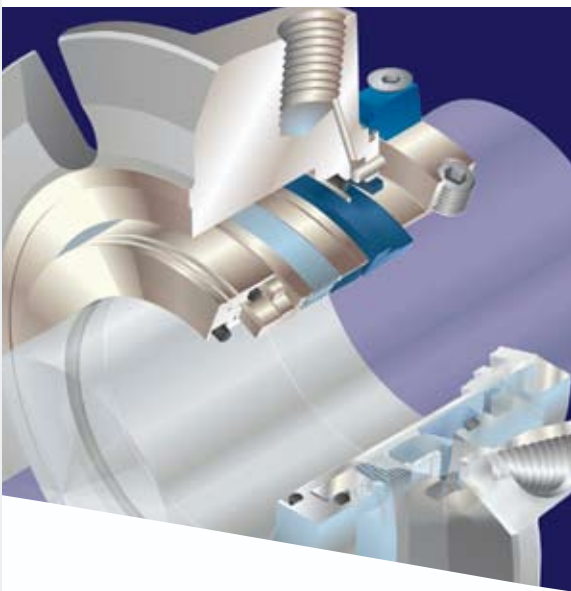
ISC seals are designed for general purpose applications on ANSI and DIN process pumps serving chemical processing, pulp and paper, oil and refining, food and beverage, water and wastewater, and other industries. Single, dual pressurized, or dual non-pressurized arrangements provide versatility to help meet a full range of general purpose application conditions, performance reliability, and environmental requirements.

Innovative features to succeed in general process pump applications

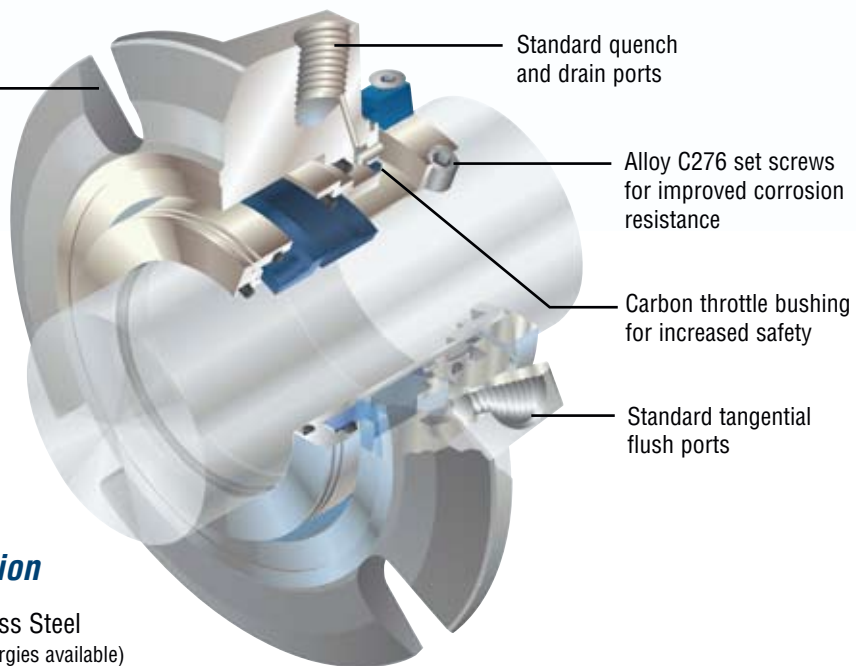
- Robust silicon carbide and carbon face cross sections for increased reliability
- Silicon carbide mating rings are held in compression and are protected for reliable equipment start-up
- Homogenous carbon designs for the pusher configuration results in stable performance
- Bellows units constructed of all Alloy C-276 enhances chemical compatibility resulting in longer seal life
- The robust ISC drive flat mechanism enhances reliability by eliminating the need for drive pins and drive notches with resulting stress risers.
- Springs are isolated from the process fluid reducing stress corrosion



- Dual seals are double balanced to provide both pressurized and non-pressurized dual seal options increasing equipment dependability.
- A unique pumping feature, standard on all dual seals, is more effective than conventional dual seal pumping features resulting in cooler seal operation and enhanced seal MTBF.



Universal slotted gland designed to fit most ANSI and DIN pumps without modification. The slotted gland allows the seal to be used on a variety of bolt circle diameters.



Standard quench and drain ports

Alloy C276 set screws for improved corrosion resistance

Carbon throttle bushing for increased safety

Standard tangential flush ports

Materials of Construction

Metal Parts 316 Stainless Steel
(other metallurgies available)

Mating Ring Direct Sintered Silicon Carbide

Primary Ring Premium Resin Grade Carbon (standard)
Direct Sintered Silicon Carbide (optional)
Tungsten Carbide (optional)

Elastomers Fluoroelastomer (standard)
EPR (optional)
Perfluoroelastomer (optional)
AFLAS¹ (optional)
PTFE Encapsulated O-rings (optional)

Bellows Capsules Alloy C-276 (standard)
and **Small Parts**

Standard Operating Limits

Pressure

Pusher seal 300 psig (20 bar)
Metal bellows seal 200 psig (14 bar)
Elastomer bellows seal 150 psig (10 bar)

Temperature

-40 to 400°F (-40 to 204°C)

Speed minimum

Dynamic designs 4500 fpm (23 m/s)
Stationary designs 6000 fpm (30 m/s)

Shaft size

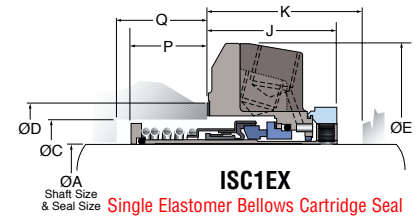
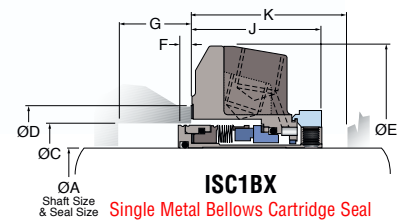
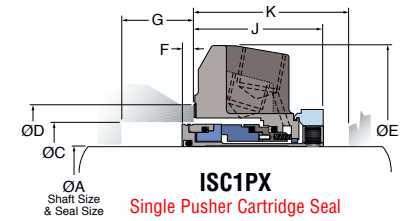
1.250" to 2.750"
(33 mm to 65 mm)

¹ Registered trademark of Asahi Glass Co., Ltd.

Single ISC Dimensional Data for Standard Bore Chambers in inches

A	C		D	E	F	G	J	K	L	M	P	Q
Shaft & Seal Size	Box Bore (Min)	Box Bore (Max)	Gasket OD	Gland OD		Box Depth (Min)	Dist. to Obst. (Min)		Bolt Circle	Bolt Slot Dia.		Box Depth (Min)
1.000	1.625	1.875	2.115	3.69 - 3.75	0.212	0.274	1.913	1.975	2.750	0.440	0.962	1.024
1.125	1.750	2.000	2.240	3.69 - 3.75	0.212	0.274	1.913	1.975	2.875	0.440	N/A	N/A
1.250	1.890	2.245	2.495	4.19 - 4.25	0.212	0.274	1.913	1.975	3.125	0.562	N/A	N/A
1.375	2.000	2.375	2.615	3.94 - 4.00	0.212	0.264	1.913	1.975	3.250	0.440	1.127	1.189
1.437	2.250	2.688	2.775	4.72 - 4.78	0.222	0.284	1.973	2.035	3.750	0.560	N/A	N/A
1.500	2.250	2.525	2.775	4.69 - 4.75	0.202	0.264	1.973	2.035	3.750	0.560	N/A	N/A
1.625	2.375	2.780	3.030	4.69 - 4.75	0.202	0.264	1.973	2.035	3.750	0.560	N/A	N/A
1.750	2.500	2.875	3.150	4.94 - 5.00	0.202	0.264	1.973	2.035	3.875	0.560	1.152	1.214
1.875	2.625	2.875	3.150	4.94 - 5.00	0.202	0.264	1.973	2.035	3.875	0.560	1.153	1.214
1.937	2.690	2.920	TBD	TBD	0.207	0.269	1.973	2.035	TBD	TBD	N/A	N/A
2.000	2.750	3.030	3.280	5.00 - 5.12	0.202	0.264	1.973	2.035	4.120	0.688	N/A	N/A
2.125	2.875	3.125	3.430	5.94 - 6.00	0.202	0.264	1.973	2.035	4.440	0.750	1.092	1.154
2.250	3.000	3.280	TBD	TBD	0.206	0.268	1.973	2.035	TBD	TBD	N/A	N/A
2.375	3.125	3.687	3.975	6.32 - 6.38	0.202	0.264	1.973	2.035	4.875	0.750	1.287	1.349
2.437	3.375	3.450	TBD	6.32 - 6.38	0.233	0.295	1.942	2.004	4.875	0.750	N/A	N/A
2.500	3.375	3.687	3.975	6.32 - 6.38	0.202	0.264	1.973	2.035	4.875	0.750	1.287	1.349
2.625	3.625	4.312	4.615	7.19 - 7.25	0.204	0.266	2.726	2.788	5.625	0.880	1.129	1.191
2.750	3.750	4.312	4.615	7.19 - 7.25	0.204	0.266	2.726	2.788	5.625	0.880	1.129	1.191

Dimensional items P & Q refer to Single Elastomer Bellows only

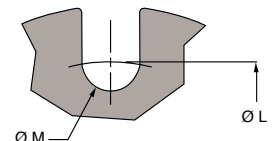
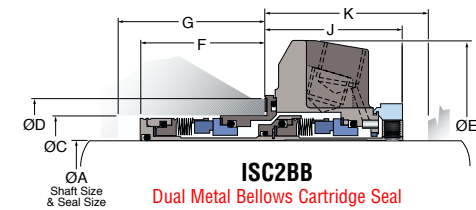
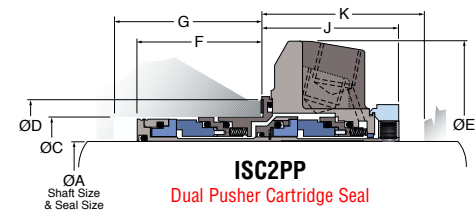


Dual ISC Dimensional Data for Standard Bore Chambers in inches

A	C		D	E	F	G	J	K	L	M
Shaft & Seal Size	Box Bore (Min)	Box Bore (Max)	Gasket OD	Gland OD		Box Depth (Min)	Dist. to Obst. (Min)		Bolt Circle	Bolt Slot Dia.
1.000	1.625	1.875	2.115	3.69 - 3.75	1.838	1.900	2.062	2.124	2.750	0.440
1.125	1.750	2.000	2.240	3.69 - 3.75	1.838	1.900	2.062	2.124	2.875	0.440
1.250	1.890	2.245	2.495	4.19 - 4.25	1.838	1.900	2.062	2.124	3.125	0.562
1.375	2.000	2.375	2.615	3.94 - 4.00	1.838	1.900	2.062	2.124	3.250	0.440
1.437	2.250	2.688	2.775	4.72 - 4.78	1.903	1.965	2.122	2.184	3.750	0.560
1.500	2.250	2.525	2.775	4.69 - 4.75	1.903	1.965	2.122	2.184	3.750	0.560
1.625	2.375	2.780	3.030	4.69 - 4.75	1.903	1.965	2.122	2.184	3.750	0.560
1.750	2.500	2.875	3.150	4.94 - 5.00	1.903	1.965	2.122	2.184	3.875	0.560
1.875	2.625	2.875	3.150	4.94 - 5.00	1.903	1.965	2.122	2.184	3.875	0.560
1.937	2.690	2.920	TBD	TBD	1.903	1.965	2.122	2.184	TBD	TBD
2.000	2.750	3.030	3.280	5.00 - 5.12	1.903	1.965	2.122	2.184	4.120	0.688
2.125	2.875	3.125	3.430	5.94 - 6.00	1.903	1.965	2.122	2.184	4.440	0.750
2.250	3.000	3.280	TBD	TBD	1.903	1.965	2.122	2.184	TBD	TBD
2.375	3.125	3.687	3.975	6.32 - 6.38	1.903	1.965	2.122	2.184	4.875	0.750
2.437	3.375	3.450	TBD	6.32 - 6.38	1.934	1.996	2.091	2.153	4.875	0.750
2.500	3.375	3.687	3.975	6.32 - 6.38	1.903	1.965	2.122	2.184	4.875	0.750
2.625	3.625	4.312	4.615	7.19 - 7.25	2.429	2.491	2.906	2.968	5.625	0.880
2.750	3.750	4.312	4.615	7.19 - 7.25	2.429	2.491	2.906	2.968	5.625	0.880

Quench or Drain tap NPT size: .375" through 2.50" Seal Size
.500" through 2.75" Seal Size

Inlet or Outlet tap NPT size: .375" through 2.00" Seal Size
.500" through 2.75" Seal Size



Single ISC Dimensional Data for Standard Bore Chambers in millimeters

A Shaft & Seal Size	C Box Bore (Min) (Max)	D Gasket OD	E Gland OD	F	G Box Depth (Min)	J	K Dist. to Obst. (Min)	L Bolt Circle	M Bolt Slot Dia.	
25mm	41.28	47.50	53.72	93.73 - 95.25	5.38	6.96	48.59	50.17	69.85	11.18
30mm	48.01	57.02	63.37	106.4 - 108.0	5.38	6.96	48.59	50.17	79.38	14.27
33mm	50.80	60.33	66.42	109.7 - 111.3	5.38	6.96	48.59	50.17	82.55	14.27
35mm	50.80	60.33	66.42	109.7 - 111.3	5.38	6.96	48.59	50.17	82.55	14.27
38mm	51.15	64.14	70.49	119.1 - 120.7	5.38	6.96	50.11	51.69	95.25	14.27
40mm	60.33	70.61	76.96	119.1 - 120.7	5.13	6.71	50.11	51.69	95.25	14.27
43mm	63.50	73.03	80.01	125.5 - 127.0	5.13	6.71	50.11	51.69	98.43	14.27
45mm	66.68	73.03	80.01	125.5 - 127.0	5.13	6.71	50.11	51.69	98.43	14.27
48mm	67.06	73.41	80.52	136.4 - 137.9	5.13	6.71	50.11	51.69	97.99	14.27
50mm	69.85	76.96	83.31	127.0 - 130.0	5.13	6.71	50.11	51.69	104.65	17.48
53mm	73.03	79.38	122.17	150.9 - 152.4	5.13	6.71	50.11	51.69	112.78	19.05
55mm	79.38	93.65	100.97	160.5 - 162.1	5.13	6.71	50.11	51.69	123.83	19.05
60mm	79.38	94.62	100.97	160.5 - 162.1	5.13	6.71	50.11	51.69	123.83	19.05
65mm	89.92	98.81	105.16	179.5 - 181.0	1.93	3.51	53.42	54.99	127.00	17.48
70mm	95.25	109.52	117.22	182.6 - 184.2	5.18	6.76	69.24	70.82	142.88	22.35

Dimensional items **P** & **Q** refer to Single Elastomer Bellows only.
Consult your Flowserve representative for dimensions.

Dual ISC Dimensional Data for Standard Bore Chambers in millimeters

A Shaft & Seal Size	C Box Bore (Min) (Max)	D Gasket OD	E Gland OD	F	G Box Depth (Min)	J	K Dist. to Obst. (Min)	L Bolt Circle	M Bolt Slot Dia.	
25mm	41.28	47.50	53.72	93.7 - 95.3	46.69	48.26	52.37	53.95	69.85	11.18
30mm	48.01	57.02	63.37	106.4 - 108.0	46.69	48.26	52.37	53.95	79.38	14.27
33mm	50.80	60.33	66.42	109.7 - 111.3	46.69	48.26	52.37	53.95	82.55	14.27
35mm	50.80	60.33	66.42	109.7 - 111.3	46.69	48.26	52.37	53.95	82.55	14.27
38mm	51.15	64.14	70.49	119.1 - 120.7	48.34	49.91	53.90	55.47	114.00	14.27
40mm	60.33	70.61	76.96	119.1 - 120.7	48.34	49.91	53.90	55.47	95.25	14.27
43mm	63.50	73.03	80.01	125.5 - 127.0	48.34	49.91	53.90	55.47	98.43	14.27
45mm	66.68	73.03	80.01	125.5 - 127.0	48.34	49.91	53.90	55.47	98.43	14.27
48mm	67.06	73.41	80.52	136.4 - 137.9	48.34	49.91	53.90	55.47	97.99	14.27
50mm	69.85	76.96	83.31	127.0 - 130.0	48.34	49.91	53.90	55.47	104.65	17.48
53mm	73.03	79.38	90.40	150.9 - 152.4	48.34	49.91	53.90	55.47	112.78	19.05
55mm	79.38	93.65	100.97	160.5 - 162.1	48.34	49.91	53.90	55.47	123.83	19.05
60mm	79.38	94.62	100.97	160.5 - 162.1	48.34	49.91	53.90	55.47	123.83	19.05
65mm	89.92	98.81	105.16	179.5 - 181.0	45.06	46.63	57.20	58.78	127.00	17.48
70mm	95.25	109.52	117.22	182.6 - 184.2	61.70	63.27	73.81	75.39	142.88	22.35

Quench or Drain tap NPT size: .375" through 65mm Seal Size
.500" for 70mm Seal Size

Inlet or Outlet tap NPT size: .375" through 50mm Seal Size
.500" through 70mm Seal Size



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