CHESTERTON®

ISO 9001
CERTIFIED

280™ Heavy Duty Cartridge Dual Seal

Patented

The new standard for reliability

The only self-centering, self-aligning dual seal with the added feature of vibration-isolated faces.

Thrives in viscous, sticky and polymerizing fluid applications that cause other seals to fail or have short life.

Exclusive, unrestricted dual balance for greater reliability even at elevated pressures.

Tight, concentric tracking for ideal face mating. Prevents wiping or run-out that can shorten seal life.

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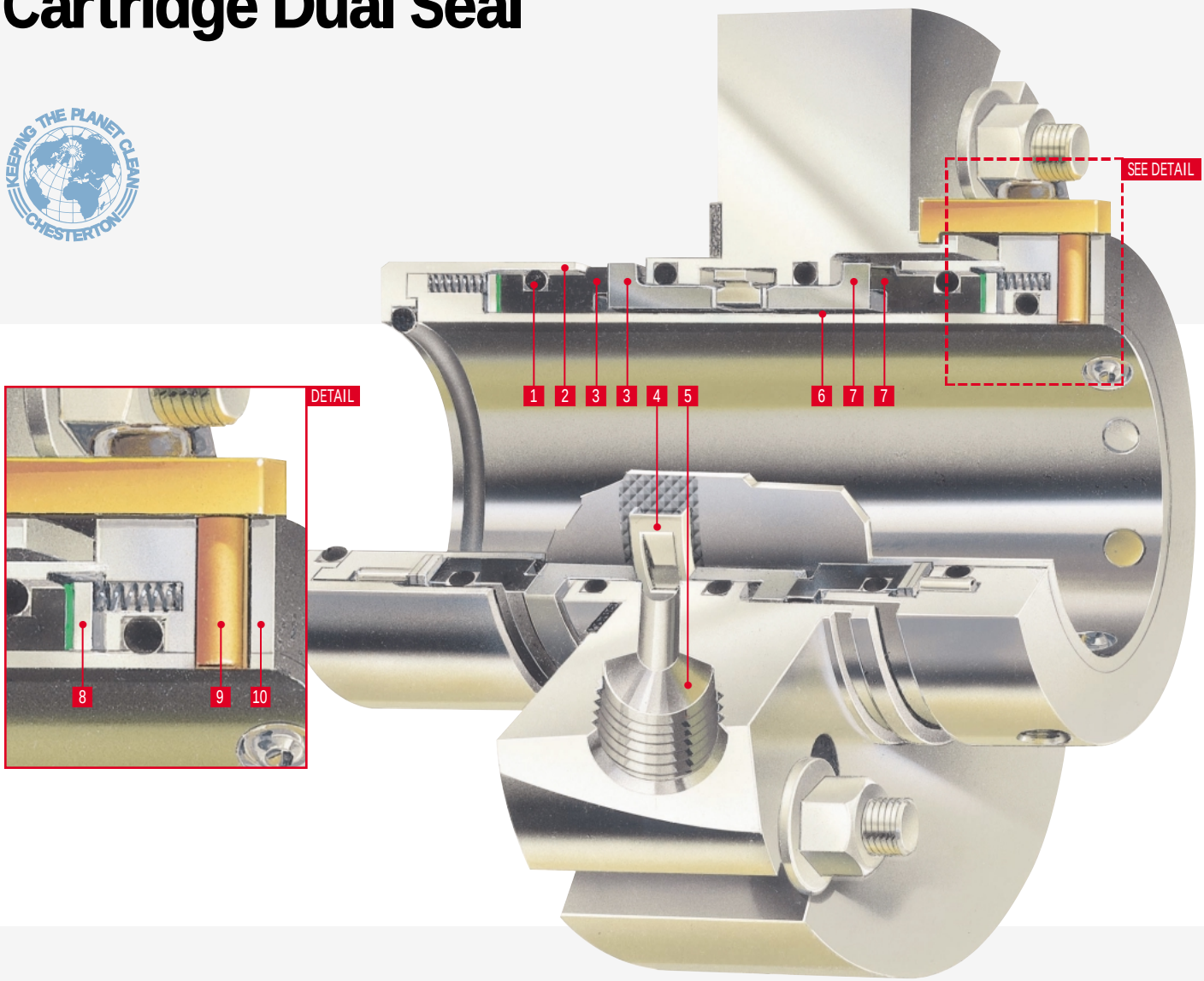


1 Every O-ring is located on the O.D. of the seal rings to prevent compression hang-up under elevated temperatures. All move to a clean micro-polished surface to reduce hystersis.

2 Inboard shroud provides physical protection to the seal ring and a smooth surface for O-ring travel.

3 Inboard rotary and stationary faces. Dynamic stress-relieving seal rings with rotating narrow face designed to prevent contaminant intrusion.

4 Barrier fluid channel with built-in cutwaters for enhanced pumping action and fluid exchange.

5 Large bore barrier fluid ports provide high capacity cooling.

6 Increased radial clearances provide efficient barrier fluid flow and heat removal.

7 Outboard stationary and rotary faces, identical to inboard set for simple assembly, low replacement inventory.

8 Cushioned Drive prevents face damage from high torque start-ups and viscous shearing forces.

9 Centering clips locate the stationary seal rings directly to the shaft for a truly centered seal. No risk of sleeve contact with stationary seal parts.

10 Patented Self-Centering Lock Ring™ mechanism locks the 280 to the shaft, automatically aligning the faces with the shaft.

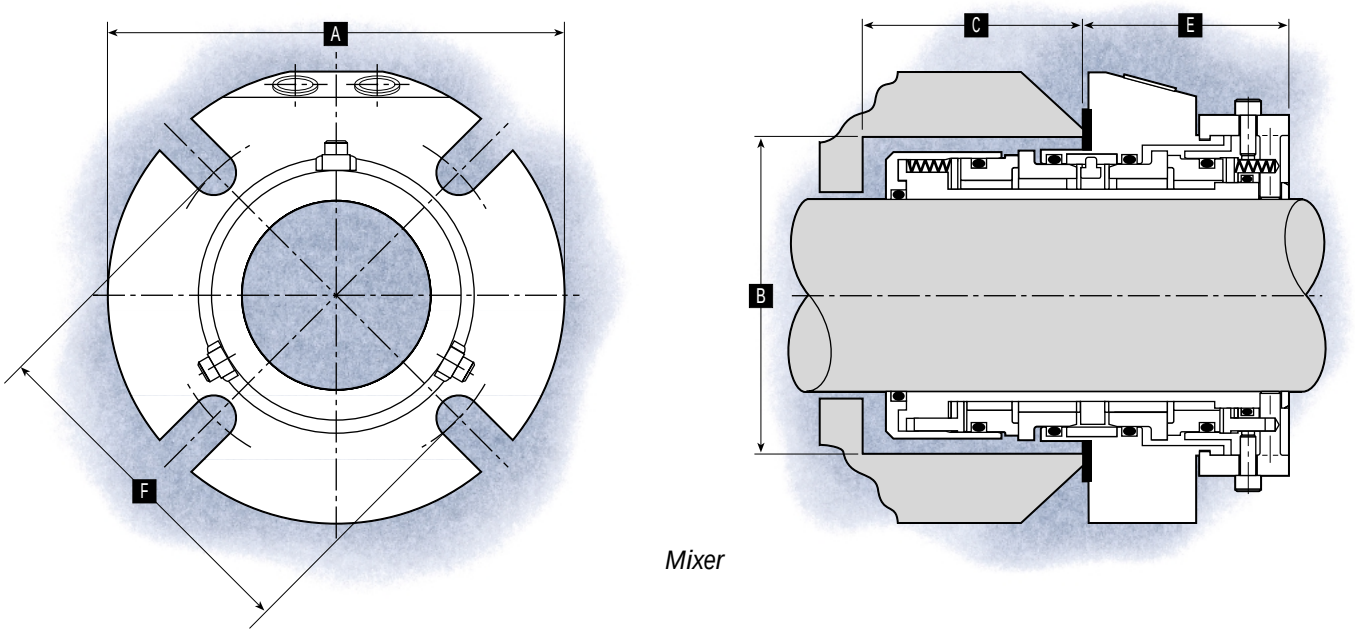
■ Unrestricted, double-balance. 75% ratio for double or tandem barrier mode. Instantaneous shift prevents opening under system upset conditions.

■ ***The 280 Dual Seal is an ideal selection for services such as black liquor, monomers, VCM, acrylonitrile and polycarbonates.***

280 Mixer Dimensional Data

	Seal Size Inch (1.00 – 3.500)																				
	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500
A – MAX	4.11	4.11	4.36	4.49	4.99	5.49	5.49	5.49	5.99	5.99	5.99	6.49	7.70	7.83	7.94	7.99	8.19	8.30	8.44	8.49	8.71
B – MIN	2.00	2.12	2.25	2.37	2.50	2.62	2.75	2.87	3.00	3.12	3.25	3.37	4.00	4.12	4.25	4.37	4.50	4.62	4.75	4.87	5.00
B – MAX	2.04	2.27	2.33	2.44	2.69	2.81	2.94	3.19	3.44	3.56	3.62	3.81	4.44	4.56	4.69	4.81	4.94	5.06	5.19	5.31	5.44
C – MIN	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
E – MAX	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
F – MIN 3/8"	2.88	3.14	3.14	3.33	3.53	3.65	3.78	4.03	4.28	4.40	4.46	4.65	–	–	–	–	–	–	–	–	–
F – MIN 1/2"	–	–	3.26	3.46	3.66	3.78	3.91	4.16	4.41	4.53	4.59	4.78	5.42	5.50	5.65	5.80	5.93	6.02	6.18	6.31	6.38
F – MIN 5/8"	–	–	–	–	–	–	–	–	4.53	4.65	4.71	4.90	5.55	5.62	5.77	5.92	6.05	6.14	6.31	6.44	6.51
F – MIN 3/4"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6.27	6.43	6.56	6.63
F – MIN 7/8"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 1"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 1 1/8"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

KEY:
A – Gland Diameter
B – Stuffing Box Inside Diameter
C – Minimum Stuffing Box Depth
E – Outboard Seal Length
F – Minimum Bolt Circle By Bolt Size



Mixer

280 Mixer Dimensional Data

	Seal Size Metric																				
	35	38	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180	190	200
A – MAX	114	127	165	199	202	208	211	216	225	228	228	241	279	292	298	311	323	330	342	349	361
B – MIN	60	63	86	102	108	114	117	124	130	133	140	149	171	184	191	203	216	222	235	241	254
B – MAX	62	68	97	116	119	125	129	135	141	144	151	160	–	–	–	–	–	–	–	–	–
C – MIN	49	49	49	64	64	64	64	64	64	64	64	64	102	102	102	102	102	102	102	102	102
E – MAX	54	54	54	63	63	63	63	63	63	63	63	63	104	104	104	104	104	104	104	104	104
F – MIN 8 mm	85	90	118	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 10 mm	88	93	121	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 12 mm	–	–	124	140	144	151	153	160	166	169	176	185	–	–	–	–	–	–	–	–	–
F – MIN 16 mm	–	–	–	143	147	154	156	164	169	172	179	188	–	–	–	–	–	–	–	–	–
F – MIN 20 mm	–	–	–	–	–	–	159	167	172	176	182	191	227	239	246	258	271	277	290	296	309
F – MIN 24 mm	–	–	–	–	–	–	–	–	–	–	–	–	230	242	249	261	274	280	293	299	312
F – MIN 30 mm	–	–	–	–	–	–	–	–	–	–	–	–	236	248	255	267	280	286	299	305	318

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280 Mixer Dimensional Data

	Seal Size Inch (3.625 – 8.000)																					
	3.625	3.750	3.875	4.000	4.125	4.250	4.375	4.500	4.750	5.000	5.250	5.500	5.750	6.000	6.250	6.500	6.750	7.000	7.250	7.500	7.750	8.000
A – MAX	8.84	8.96	8.99	8.99	9.33	9.49	9.49	10.49	10.98	11.23	11.48	11.73	11.98	12.23	12.48	12.73	12.98	13.23	13.48	13.73	13.98	14.23
B – MIN	5.12	5.25	5.37	5.50	5.62	5.75	5.87	6.00	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.50	8.75	9.00	9.25	9.50	9.75	10.00
B – MAX	5.56	5.69	5.81	5.94	6.06	6.19	6.31	6.44	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C – MIN	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
E – MAX	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09
F – MIN 3/8"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 1/2"	6.52	6.66	6.79	6.91	7.03	7.18	7.28	7.40	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 5/8"	6.64	6.78	6.90	7.05	7.15	7.30	7.40	7.53	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 3/4"	6.77	6.91	7.03	7.16	7.28	7.43	7.53	7.65	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 7/8"	–	–	–	–	–	–	–	–	8.92	9.17	9.42	9.67	9.92	10.17	10.42	10.67	10.92	11.17	11.42	11.67	11.92	12.17
F – MIN 1"	–	–	–	–	–	–	–	–	9.04	9.29	9.54	9.79	10.04	10.29	10.54	10.79	11.04	11.29	11.54	11.79	12.04	12.29
F – MIN 1 1/8"	–	–	–	–	–	–	–	–	9.17	9.42	9.67	9.92	10.17	10.42	10.67	10.92	11.17	11.42	11.67	11.92	12.17	12.42

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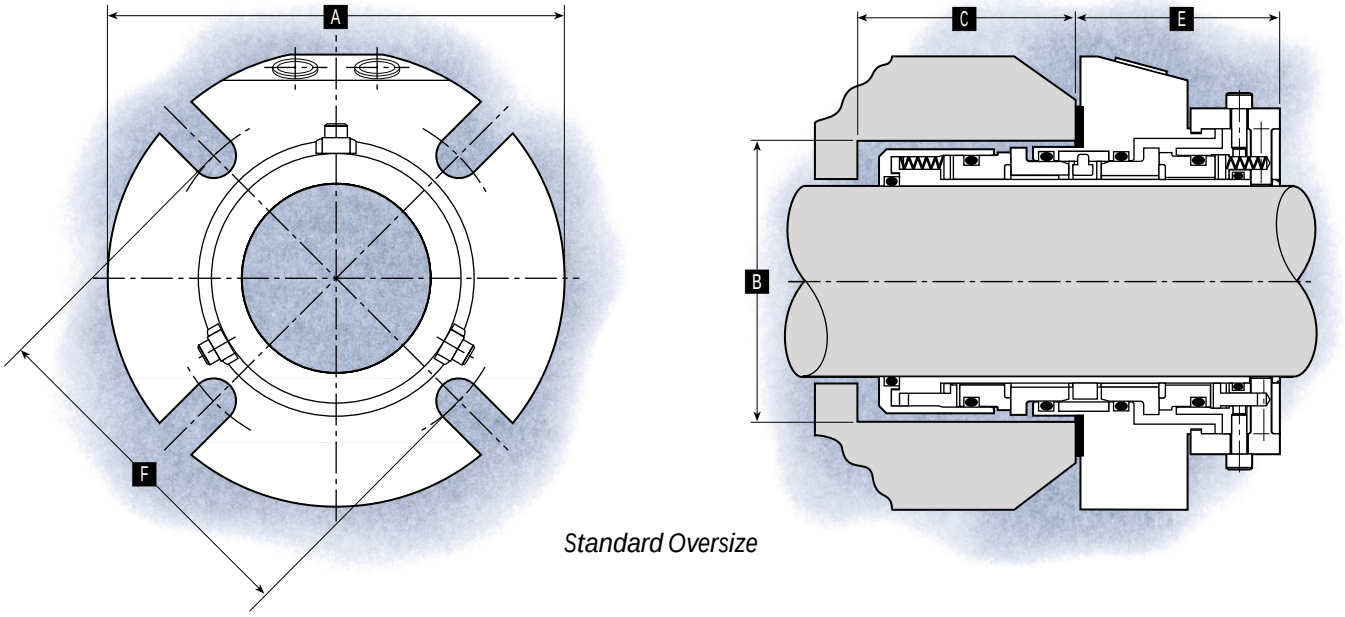

Standard Oversize

280 Standard Oversize Dimensional Data

	Seal Size Inch												
	1.375	1.750	1.875	2.125	2.500	2.625	2.750	3.000	3.375	3.750	4.125	4.500	4.750
A – MAX	5.40	6.64	5.99	6.99	7.77	6.98	7.89	8.64	8.39	9.76	9.76	12.49	11.39
B – MIN	2.82	3.51	3.57	3.89	4.51	4.55	4.45	4.93	4.95	5.08	5.95	6.76	7.20
B – MAX	2.99	3.74	3.80	4.24	4.74	4.56	4.56	5.17	5.06	6.18	6.06	7.26	7.42
C – MIN	1.94	1.94	1.94	1.94	1.94	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
E – MAX	2.13	2.13	2.13	2.13	2.13	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
F – MIN 3/8"	4.03	5.21	–	–	–	–	–	–	–	–	–	–	–
F – MIN 1/2"	–	5.33	5.00	–	–	–	–	–	–	–	–	–	–
F – MIN 5/8"	–	5.46	–	5.95	6.75	6.00	–	7.00	–	8.25	–	–	9.88
F – MIN 3/4"	–	–	–	–	–	–	6.38	7.13	6.88	–	–	10.76	10.00
F – MIN 7/8"	–	–	–	–	–	–	–	7.25	–	–	8.00	–	–

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Standard Materials**

All Metal Parts: 316 SS.
Springs: Hastelloy C*.
O-Rings: Fluorocarbon, AFLAS† or EPR installed.
Rotary Face: Carbon, Silicon Carbide, Tungsten Carbide.
Stationary Face: Silicon Carbide, Tungsten Carbide.

Temperature

To 300°F (150°C) Ethylene Propylene.
To 400°F (205°C) Fluorocarbon, AFLAS.
To 500°F (260°C) Perfluoroelastomer.

Speed

To 4000 FPM (20 mps).

Pressure

To 600 psi (40 BAR) inboard, 250 psi (17 BAR) outboard, up to 4.750" (120 mm) shaft size.
To 300 psi (20 BAR) inboard, 200 psi (13 BAR) outboard, up tp 8.00" (200 mm) shaft size.

* Haynes International, Inc. Registered Trademark.
** Other materials available upon request.
† Asahi Glass Company Ltd. Registered Trademark.

280 Standard Dimensional Data

	Seal Size Inch																														
	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000	4.125	4.250	4.375	4.500	4.625	4.750
A – MAX	4.11	4.11	4.11	4.36	4.49	4.99	5.49	5.49	5.49	5.99	5.99	5.99	6.49	6.44	7.70	7.83	7.94	7.99	8.19	8.30	8.44	8.49	8.71	8.84	8.96	8.99	8.99	9.33	9.49	9.49	10.49
B – MIN	1.75	1.88	2.00	2.13	2.25	2.38	2.50	2.63	2.75	2.88	3.00	3.13	3.25	3.63	3.75	3.88	4.00	4.13	4.25	4.38	4.50	4.63	4.75	4.88	5.00	5.13	5.25	5.38	5.50	5.63	5.75
B – MAX	2.01	2.04	2.27	2.33	2.44	2.69	2.81	2.94	3.19	3.44	3.56	3.62	3.81	3.93	4.44	4.56	4.69	4.81	4.94	5.06	5.19	5.31	5.44	5.56	5.69	5.81	5.94	6.06	6.19	6.31	6.44
C – MIN	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
E – MAX	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
F – MIN 3/8"	2.89	2.89	3.14	3.14	3.33	3.53	3.65	3.78	4.03	4.28	4.40	4.46	4.65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F – MIN 1/2"	–	–	–	3.26	3.46	3.66	3.78	3.91	4.16	4.41	4.53	4.59	4.78	5.02	5.42	5.50	5.65	5.80	5.93	6.02	6.18	6.31	6.38	6.52	6.66	6.79	6.91	7.03	7.18	7.28	7.40
F – MIN 5/8"	–	–	–	–	–	–	–	–	–	4.53	4.65	4.71	4.90	5.15	5.55	5.62	5.77	5.92	6.05	6.14	6.31	6.44	6.51	6.64	6.78	6.90	7.04	7.15	7.30	7.40	7.53
F – MIN 3/4"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6.27	6.43	6.56	6.63	6.77	6.91	7.03	7.16	7.28	7.43	7.53	7.75

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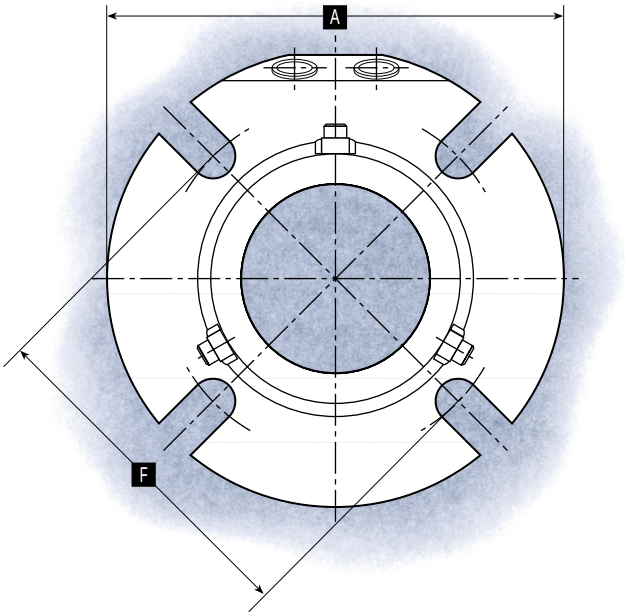

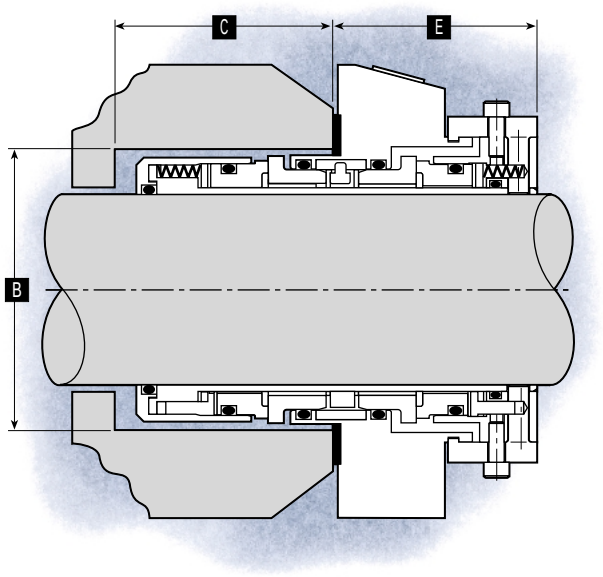

280 Standard Dimensional Data

	Seal Size Metric																								
	25	28	30	32	33	35	38	40	43	45	48	50	55	60	65	70	75	80	85	90	95	100	110	120
A – MAX	104	104	104	104	113	111	114	127	127	139	139	139	152	152	164	196	202	203	211	214	221	228	237	266
B – MIN	44	47	49	51	52	54	57	59	62	64	67	69	74	79	92	96	102	106	111	116	121	127	137	146
B – MAX	51	52	57	58	59	59	62	68	69	73	74	78	83	92	100	113	119	122	129	132	138	144	154	163
C – MIN	49	49	49	49	49	49	49	49	49	49	49	49	49	49	64	64	64	64	64	64	64	64	64	64
E – MAX	54	54	54	54	54	54	54	54	54	54	54	54	54	54	63	63	63	63	63	63	63	63	63	63
F – MIN 10 mm	73	73	78	80	81	80	85	90	91	95	96	100	105	114	–	–	–	–	–	–	–	–	–	–
F – MIN 12 mm	–	–	–	–	83	82	87	92	93	97	98	102	107	116	127	137	143	150	152	160	161	168	178	187
F – MIN 16 mm	–	–	–	–	–	–	–	–	–	–	–	–	111	120	131	141	147	154	156	164	165	172	182	191
F – MIN 20 mm	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	161	168	170	177	186	195

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** Other materials available upon request.
† Asahi Glass Company Ltd. Registered Trademark.

CHESTERTON®

280™ Heavy Duty Cartridge Dual Seal

280 Mixer Seal option puts high reliability in motion
All of the high reliability features that make the standard 280 Seal such a strong performer under adverse conditions are augmented by extended motion handling capability.

Radial motion capabilities:
- *Small sizes .060" (1,50 mm) TIR*
- *Large sizes .188" (5,00 mm) TIR*
- *Extra large sizes .250" (6,00 mm) TIR*

Axial motion capabilities:
- *Small sizes ± .060" (1,50 mm)*
- *Large sizes ± .075" (1,90 mm)*
- *Extra large sizes ± .125" (3,00 mm)*

Also, the instantaneous pressure shift capability of the double balanced 280 eliminates mixer and pressure vessel sealing worries even under jarring purge and pressure cycles.

The following are trademarks of A. W. CHESTERTON COMPANY: 280, and Self-Centering Lock Ring.

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