

155™ Cartridge Single Seal

Patented



The new standard for reliability

Exclusive face design for superior emissions control capability.

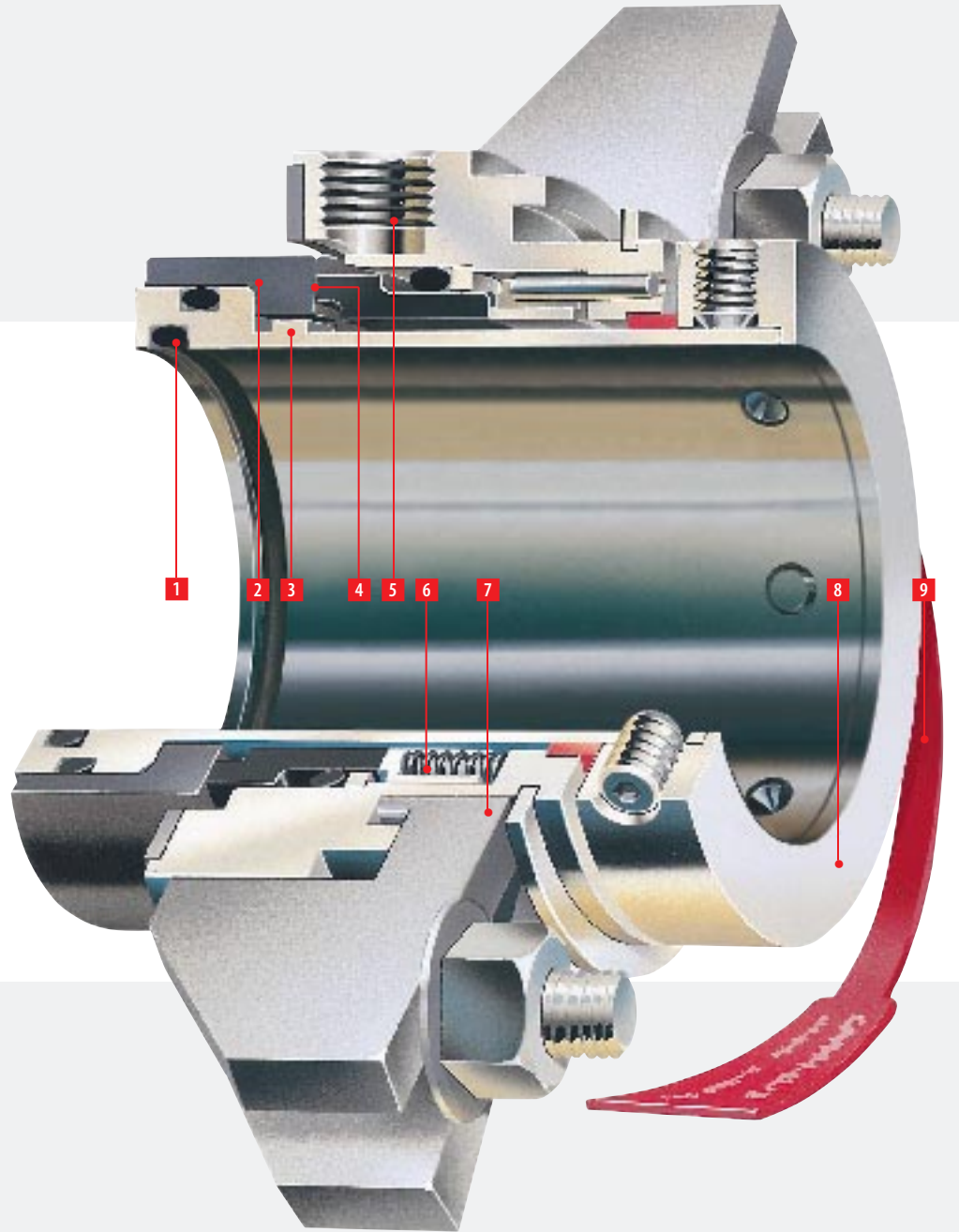
Stable, secure sealing under fluctuating conditions.

Patented features assure precision alignment from start-up.

The most versatile, cost-effective single seal available.

CHESTERTON®

155™ Cartridge Single Seal



1 All O-rings are either static or move on non-metallic, non-fretting surfaces.

2 Seal face support shoulder is precisely square.

3 Integral drive pads cannot fall out.

4 Hydraulically balanced faces for low frictional heat.

5 Flush port can be rotated 360° for ease of piping as required.

6 Stationary springs, isolated from fluid to prevent clogging.

7 Patented Adjustable Gland™ fits common bolt arrangements without modification.

8 Self-Centering Lock Ring™ for superior concentricity.

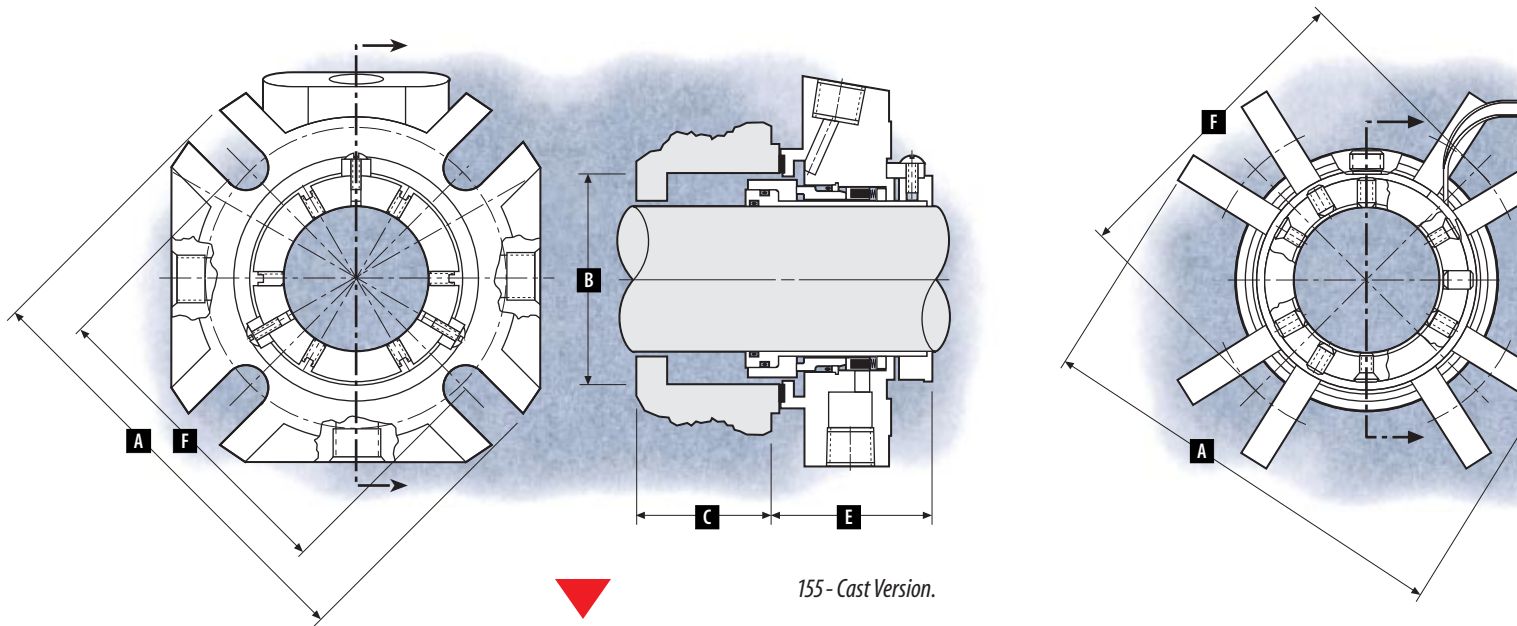
9 Centering strap for simple installation.

155 Standard Dimensional Data

	Seal Size - Inch																																	
	1.000	1.125	1.125*	1.250	1.375	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	4.65	4.69	4.69	4.90	5.04	5.04	5.23	5.29	5.41	5.53	5.74	6.04	6.14	6.29	6.41	7.63	7.76	7.88	8.01	8.13	8.26	8.38	8.51	8.63	8.76	8.88	9.01	9.13	9.18	9.30	9.43	9.56	9.76	
B-MIN	1.75	1.88	1.88	2.00	2.13	2.00	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	2.00	2.03	2.03	2.26	2.42	2.42	2.62	2.68	2.80	2.93	3.18	3.43	3.55	3.59	3.80	4.00	4.13	4.25	4.44	4.55	4.69	4.80	4.94	5.05	5.14	5.26	5.44	5.55	5.69	5.81	5.94	6.06	6.22	
C-MIN	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
E	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	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"	2.88	2.92	2.92	3.13	3.27	3.27	3.46	3.52	3.64	3.76	3.97	4.27	4.38	4.52	4.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-MIN 1/2"	3.01	3.05	3.05	3.26	3.40	3.40	3.59	3.65	3.77	3.89	4.10	4.40	4.51	4.65	4.78	5.35	5.48	5.60	5.73	5.85	5.98	6.10	6.23	6.35	6.48	6.60	6.73	6.85	6.89	7.02	7.14	7.27	7.47	
F-MIN 5/8"	3.13	3.17	3.17	3.38	3.52	3.52	3.71	3.77	3.89	4.01	4.22	4.53	4.63	4.77	4.90	5.48	5.60	5.73	5.85	5.98	6.10	6.23	6.35	6.48	6.60	6.73	6.85	6.98	7.02	7.14	7.27	7.39	7.60	
F-MIN 3/4"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.60	5.73	5.85	5.98	6.10	6.23	6.35	6.48	6.60	6.73	6.85	6.98	7.10	7.14	7.27	7.39	7.52	7.72	

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
 * – 155T Sizes

KEY:
A – Gland Dia
C – Minimum



155 Cast Dimensional Data

	Seal Size - Inch												
	1.000	1.125	1.250	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	
A-MAX	4.13	4.13	4.13	5.01	5.01	5.51	5.51	5.51	6.01	6.01	6.01	6.52	
B-MIN	1.75	1.88	2.00	2.25	2.38	2.50	2.63	2.75	2.88	3.00	3.13	3.25	
B-MAX	2.00	2.03	2.26	2.62	2.66	2.80	2.93	3.18	3.28	3.55	3.59	3.80	
C-MIN	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
E	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	
F-MIN 3/8"	2.88	3.01	3.13	3.38	3.51	3.63	3.76	4.01	4.26	4.38	4.42	4.64	
F-MIN 1/2"	3.01	3.13	3.26	3.51	3.64	3.76	3.88	4.13	4.38	4.51	4.55	4.76	
F-MIN 5/8"	-	-	-	-	-	-	-	4.51	4.63	4.67	4.89		

	Seal Size - Metric												
	25	28	30	32	33	38	40	43	45	48	50	55	60
A-MAX	105	105	105	105	114	127	127	127	140	140	140	153	153
B-MIN	44	47	49	51	52	57	59	62	64	67	69	74	79
B-MAX	51	52	57	58	59	67	68	69	73	74	78	83	91
C-MIN	12	12	12	12	12	12	12	12	12	12	12	12	12
E	50	50	50	50	50	50	50	50	50	50	50	50	50
F-MIN 8 mm	72	75	76	78	79	84	86	89	90	93	95	100	111
F-MIN 10 mm	74	77	78	80	81	86	88	91	92	95	97	102	113
F-MIN 12 mm	76	79	80	82	83	88	90	93	94	97	99	104	115

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

Configurations to fit



CPI Gland:
 Quench and drain ports, plus floating throttle bushing, in a slotted, universal gland.

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					
118	118	124	124	124	128	133	134	134	140	139	145	150	160	194	197	203	207	213	216	222	229	236	248					
44	47	49	51	52	54	57	59	62	64	67	69	74	79	92	95	100	105	110	115	120	127	136	145					
51	52	57	58	59	62	67	68	69	73	74	78	83	91	102	105	113	116	122	125	131	138	148	158					
16	16	16	16	16	16	16	16	16	16	16	16	16	16	22	22	22	22	22	22	22	22	22	22					
48	48	48	48	48	48	48	48	48	48	48	48	48	48	64	64	64	64	64	64	64	64	64	64					
70	70	76	77	76	80	85	86	86	92	91	97	102	112	-	-	-	-	-	-	-	-	-	-					
72	72	78	79	78	82	87	88	88	94	93	99	104	114	132	135	141	144	151	154	160	167	174	186					
74	74	80	81	80	84	89	90	90	96	95	101	106	116	134	137	143	146	153	156	162	169	176	188					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	138	141	147	150	157	160	166	173	180	192					

Standard Materials**

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

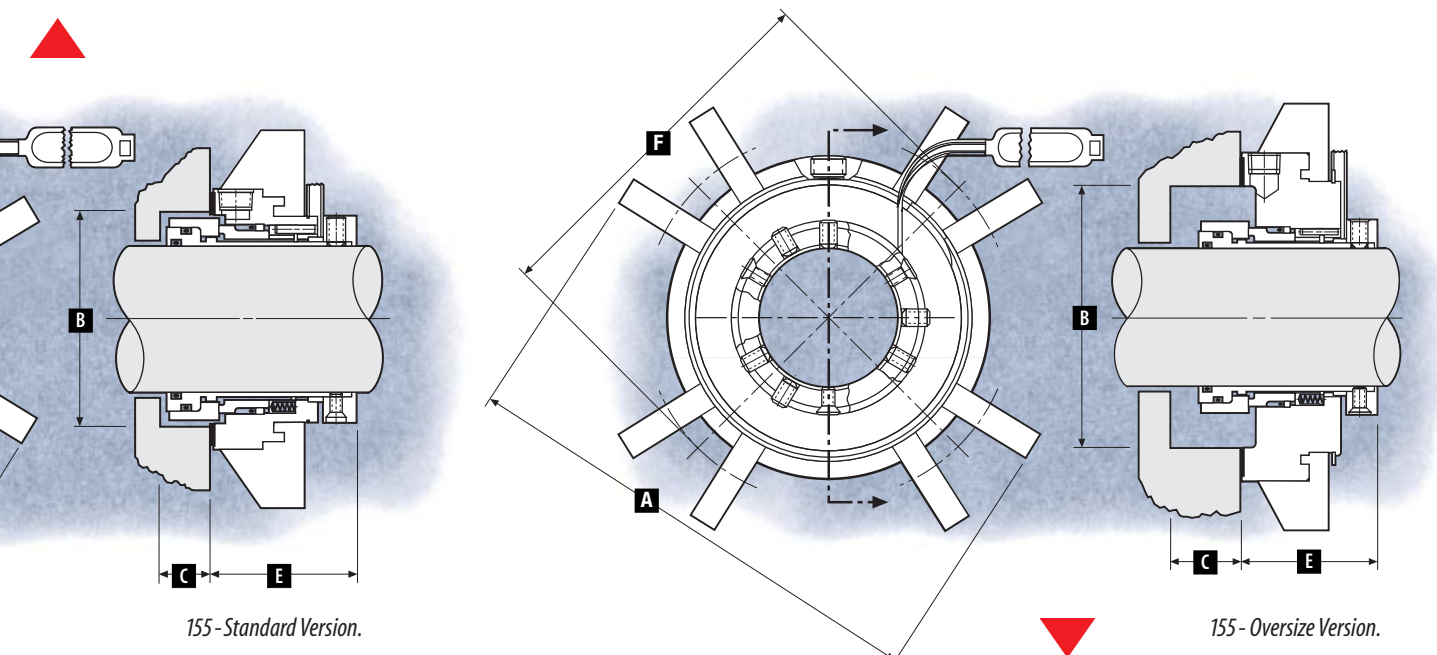
To 4000 RPM (20 mps).

Pressure

To 600 psi (40 BAR)

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

meter B – Stuffing Box Inside Diameter
 Stuffing Box Depth E – Outboard Seal Length F – Minimum Bolt Circle By Bolt Size



For your application needs



155A API:
 155 with factory installed glands having piloting, quench, drain and floating carbon throttle bushing to meet API 610.



ANSI Oversized Gland:
 Patented Adjustable Gland™ available for large bore seal chambers.

155B Stationary Bellows:
 Configured with CHESTERTON welded metal bellows. Patented Z-shape face.

155T:
 All of 155 features in a compact configuration suited for Duriron Mark II Group I, Goulds 3196ST and similar pumps.

155V:
 Specially designed to fit Viking Pumps.

155P:
 Specially designed for flushless sealing of paper stock up to 3%.

155 Oversize Dimensional Data

	Seal Size - Inch													
	1.125	1.375	1.750	1.875	2.125	2.500	2.625	2.750	3.000	3.375	3.750	4.125	4.750	
A-MAX	5.29	5.57	6.64	6.58	7.31	8.14	8.04	8.04	8.65	8.54	9.63	9.54	11.25	
B-MIN	2.50	2.68	3.37	3.42	3.75	4.37	4.38	4.28	4.75	4.78	5.78	5.78	7.03	
B-MAX	2.75	3.00	3.75	3.81	4.25	4.75	4.78	4.78	5.39	5.27	6.40	6.27	7.65	
C-MIN	0.63	0.63	0.63	0.63	0.63	0.63	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
E	1.89	1.89	1.89	1.89	1.89	1.89	2.50	2.50	2.50	2.50	2.50	2.50	2.50	
F-MIN 3/8"	3.59	3.86	4.93	4.88	5.60	6.43	-	-	-	-	-	-	-	
F-MIN 1/2"	3.72	3.99	5.06	5.01	5.73	6.56	5.83	5.83	6.44	6.33	7.41	7.33	9.04	
F-MIN 5/8"	3.84	4.11	5.18	5.13	5.85	6.68	5.96	5.96	6.57	6.46	7.54	7.46	9.17	
F-MIN 3/4"	-	-	-	-	-	-	6.08	6.08	6.69	6.58	7.66	7.58	9.29	
F-MIN 7/8"	-	-	-	-	-	-	6.21	6.21	6.82	6.71	7.79	7.71	9.42	

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

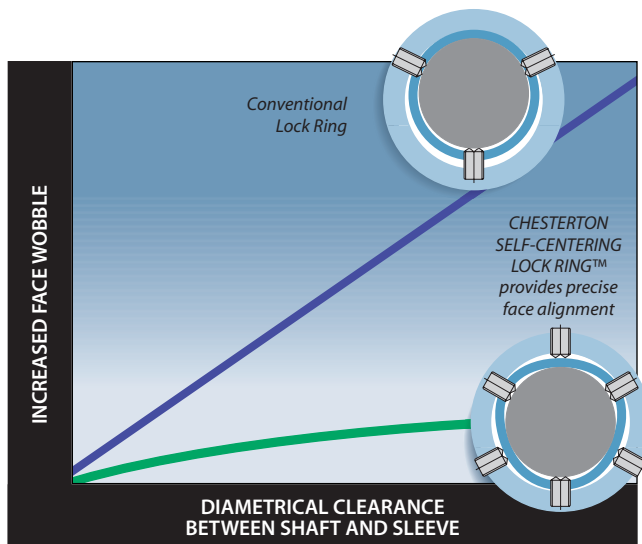
Engineered to prevent common failure modes

Self Centering Lock Ring™ ensures reliability

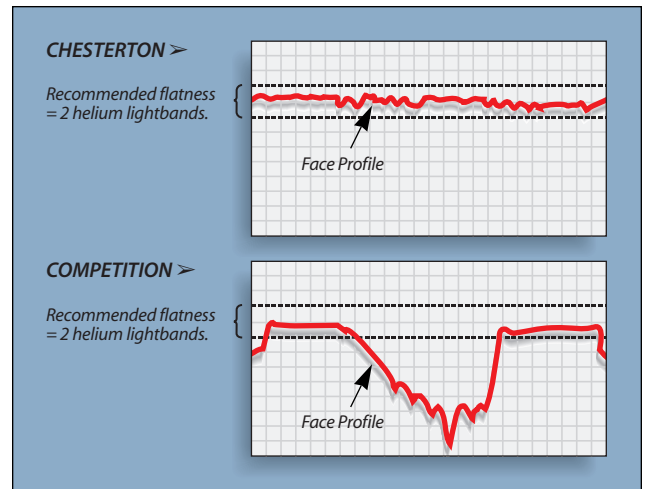
The patented Self-Centering Lock Ring makes installation precise for correct face mating and sustainable sealing. Cloverleaf 3-point contact ensures concentricity to the shaft. Faces start out square and stay square to prevent the intrusion of contaminants or abrasives. Also, constant face squareness reduces opportunities for fluid leakage and uneven wear.

Dynamic stress relief keeps faces closed

Many common conditions create dynamically changing stresses on the seal faces. Consider changes in temperature or pressure, fluid phase changes, or water hammer. Common face geometries distort at the mating surface under such conditions and create drastic wear. CHESTERTON face geometry compensates for stresses in the body of the seal ring, away from the critical face mating surfaces. Faces stay flat, preventing intrusion of contaminants or fluid leakage for long term reliability.



Faces start out square and stay square with the patented Self-Centering Lock Ring.



Actual profilometer graphs show deep, uneven wear of a competitor's seal face compared to the fine, even wear of ours.

Superior reliability during system variations

Pressure surges at start-up and shut down can create seal reliability problems. The 155 Seal is able to handle 50% to 100% greater transient pressure than conventional seals. This provides a "margin of safety" during normal surges. It also ensures long term reliability without undue stress or strain on the seal.



CHESTERTON 155 Seal ■
Conventional Seal ■

Face material interchangeability

Changing face materials in the field is easy with the 155. This makes it practical and cost-effective to use the ideal face combination for a given application. With the 155, the process is fast and easy, with seal function and reliability assured. Standard face materials are silicon carbide vs. carbon. The carbon can be swapped for silicon carbide, tungsten carbide or Duplex Carbide™, which provides the utility of two hard faces but with lower frictional heat. All faces are interchangeable with the 225 and 255 Dual seals.



CHESTERTON®

155™ Cartridge Single Seal



The most flexible, reliable, general service seal

Highly effective emissions control

The advanced design of the 155 and the ability to keep faces square and flat ensures superior emissions control capability. The 155 has proven in independent tests to be able to meet or exceed the most stringent USA emissions standards.

Of course, for total emissions control or hazardous fluids, use CHESTERTON new generation dual seals.



Contact your local **CHESTERTON Pump and Sealing Specialist for precise system recommendations**

CHESTERTON is the only company in the world with integrated engineering of both pumps and seals. While others are just beginning to understand the complex interactions of pumps and seals, our engineers have been working for over a decade to create a synergistic system. Let us help you identify opportunities for cost-savings and greater efficiency around the plant.

The following are trademarks of A.W. CHESTERTON COMPANY: 155, Self-Centering Lock Ring, Adjustable Gland and Duplex Carbide.

A. W. CHESTERTON CO.

Middlesex Industrial Park, 225 Fallon Road
Stoneham, Massachusetts 02180-9101 USA
Telephone: 781-438-7000
Telex: 94-9417 • Fax: 781-438-8971
Cable: Chesterton Stoneham, Mass.
Web Address: <http://www.chesterton.com>

© A.W. CHESTERTON CO., 1998. All rights reserved.
© Registered trademark owned and licensed by
A.W. CHESTERTON CO. in USA and other countries.

DISTRIBUTED BY:

FORM NO. 075690 REV. 6

PRINTED IN USA 4/98