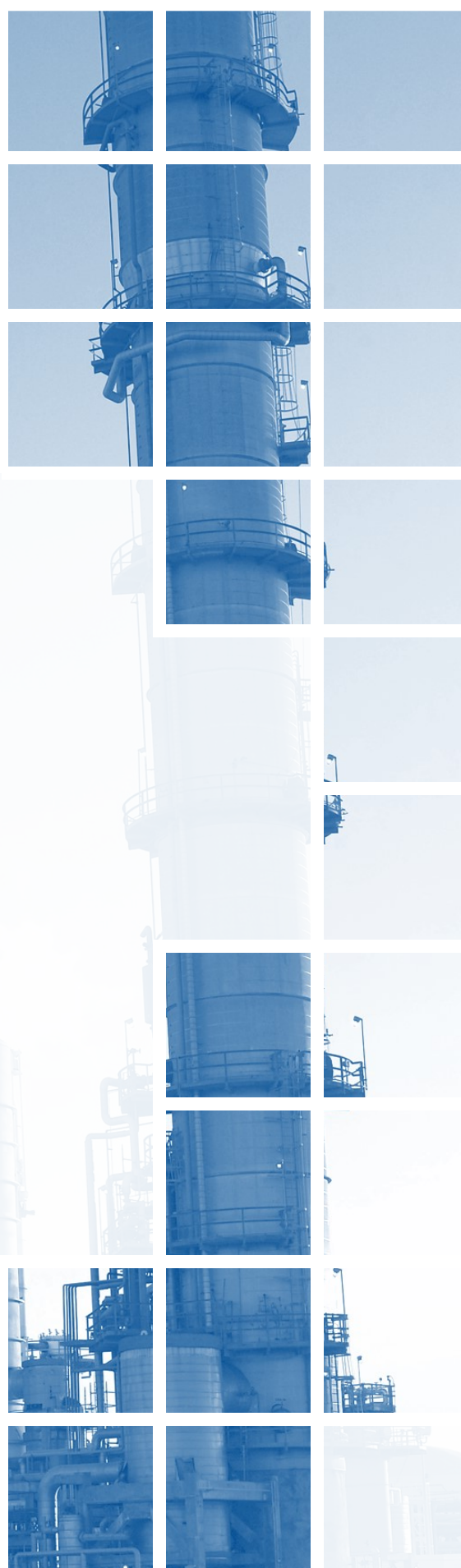
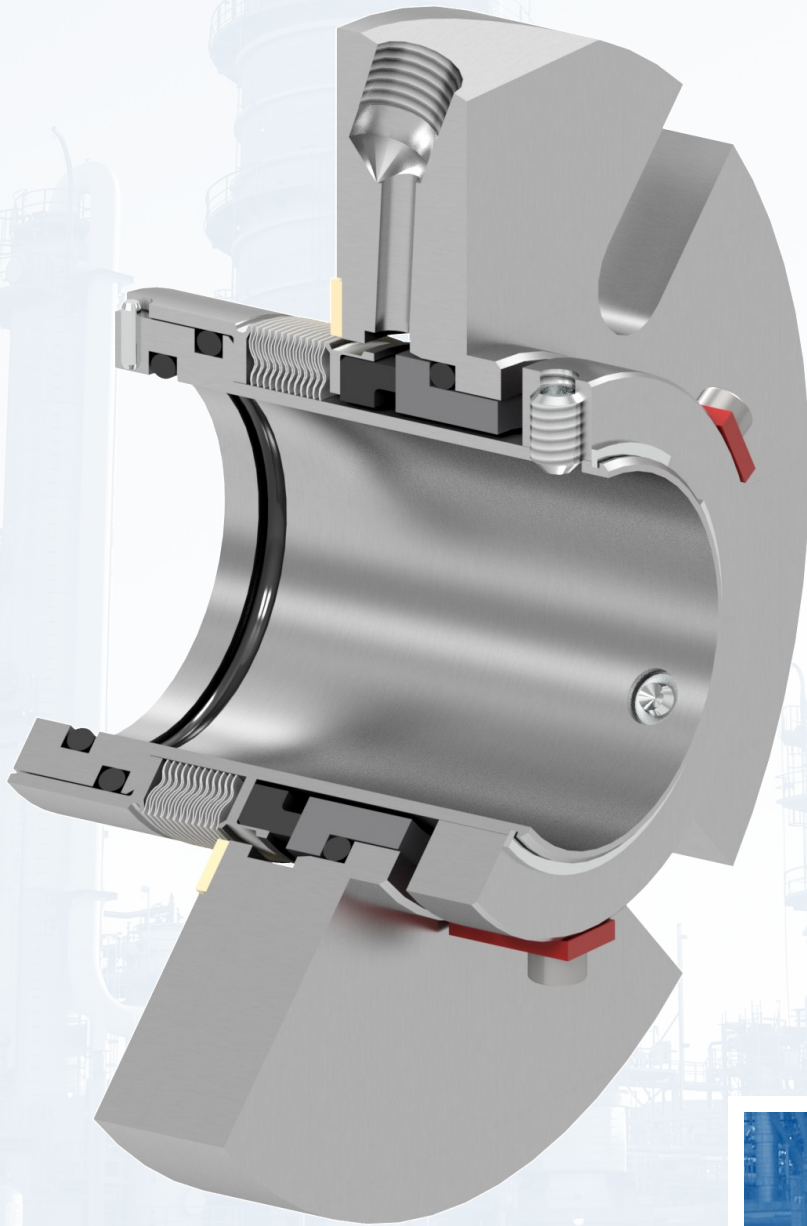




Ultraseal 151 & 151Q Cartridge Seals

Universal single bellows seals



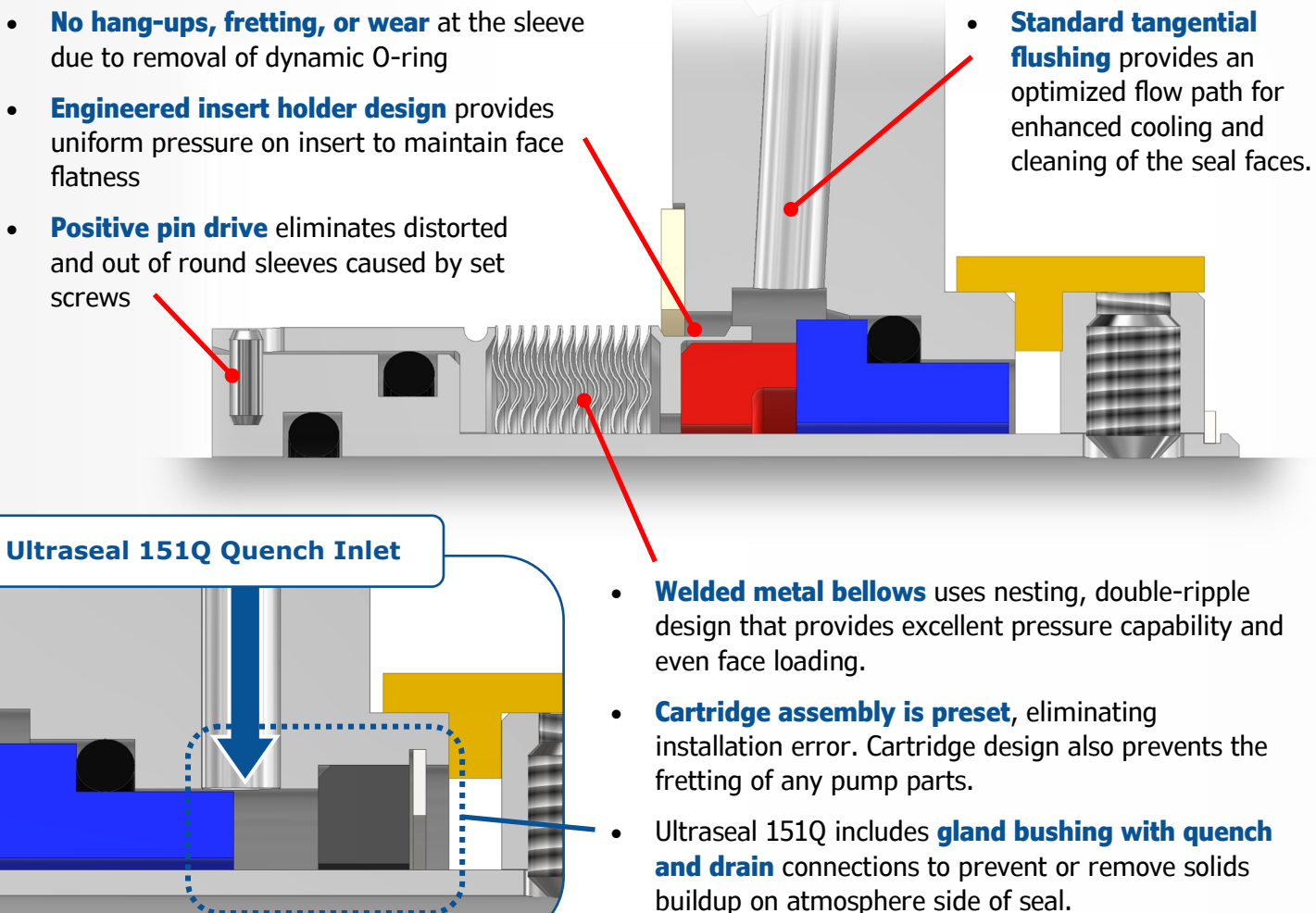
CREATING SEALING SOLUTIONS THROUGH INNOVATIVE ENGINEERING
MADE IN THE USA

DESCRIPTION

The Ultraseal 151 & 151Q are PPC's universal single cartridge type bellows seals. The advantages of a metal bellows design are many, first is the elimination of the dynamic O-ring in the mechanical seal. The welded bellows acts as the spring element and the dynamic seal all rolled into one. This allows the seal to be utilized in many applications where chemical attack or high heat affect the O-rings. Second, the bellows is inherently hydraulically balanced for minimal heat generation at the faces. A third benefit, less expensive elastomers may be utilized given all of the applications are static. The seal dynamics are not affected by the elastomers swelling in response to the chemicals or heat. The 151Q (Q is for "quench") includes a gland bushing as well as quench and drain NPT connections. This allows for the use of an atmospheric quench (Plan 62) or various setups for leakage containment.

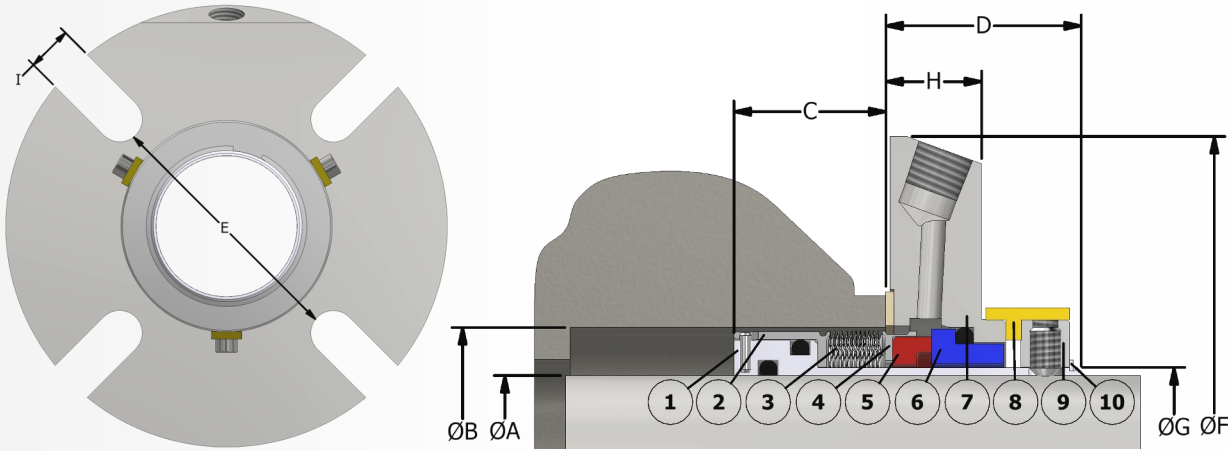
The Ultraseal 151 and 151Q are designed and available in sizes to fit most popular general-duty process pumps including ANSI standard and plus (Ultraseal 151/151Q+) seal chambers. Special designs are also available that may feature a jacketed seal gland or special hardware to fit non-standard equipment.

FEATURES

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- **No hang-ups, fretting, or wear** at the sleeve due to removal of dynamic O-ring
 - **Engineered insert holder design** provides uniform pressure on insert to maintain face flatness
 - **Positive pin drive** eliminates distorted and out of round sleeves caused by set screws
 - **Standard tangential flushing** provides an optimized flow path for enhanced cooling and cleaning of the seal faces.
 - **Welded metal bellows** uses nesting, double-ripple design that provides excellent pressure capability and even face loading.
 - **Cartridge assembly is preset**, eliminating installation error. Cartridge design also prevents the fretting of any pump parts.
 - Ultraseal 151Q includes **gland bushing with quench and drain** connections to prevent or remove solids buildup on atmosphere side of seal.

SEAL DIMENSIONAL DATA

Ultraseal 151 Seal



Item	Description
1	Sleeve
2	Bellows Collar
3	Bellows
4	Insert Holder
5	Insert (Rotary Face)
6	Stationary Face
7	Gland
8	Setting Spacers
9	Drive Collar
10	Retaining Ring

ULTRASEAL 151 DIMENSIONS FOR STANDARD BORE SEAL CHAMBER

A SEAL SIZE	B (MIN)	B (MAX)	C	D	E	F	G	H	I
1.000	1.750	2.010	1.09	1.53	2.31	4.11	1.125	0.75	0.44
1.125	1.750	2.040	1.06	1.53	2.44	4.24	1.250	0.75	0.44
1.250	2.000	2.270	1.13	1.53	2.69	4.36	1.375	0.75	0.56
1.375	2.000	2.430	1.13	1.53	2.81	4.36	1.500	0.75	0.56
1.500	2.250	2.630	1.13	1.53	2.94	4.98	1.625	0.75	0.56
1.625	2.375	2.690	1.13	1.53	3.06	4.99	1.750	0.75	0.56
1.750	2.500	2.810	1.19	1.53	3.19	5.48	1.875	0.75	0.56
1.875	2.625	2.940	1.19	1.53	3.31	5.48	2.000	0.75	0.56
2.000	2.750	3.190	1.19	1.53	3.44	5.49	2.125	0.75	0.56
2.125	2.875	3.440	1.25	1.59	3.81	5.99	2.250	0.78	0.69
2.250	3.000	3.560	1.25	1.59	3.94	6.24	2.375	0.78	0.69
2.375	3.250	3.590	1.25	1.59	4.06	6.24	2.500	0.78	0.69
2.500	3.375	3.810	1.31	1.66	4.19	6.48	2.625	0.84	0.69
2.625	3.500	4.070	1.31	1.66	4.75	7.62	2.750	0.84	0.69
2.750	3.688	4.190	1.38	1.72	4.88	7.75	2.875	0.84	0.69
2.875	3.812	4.315	1.38	1.72	5.00	7.89	3.000	0.84	0.69
3.000	4.062	4.440	1.44	1.72	5.13	8.02	3.250	0.84	0.69
3.125	4.188	4.565	1.44	1.72	5.25	8.14	3.375	0.84	0.69
3.250	4.312	4.690	1.56	1.72	5.38	8.27	3.500	0.84	0.69
3.375	4.438	4.815	1.56	1.72	5.50	8.38	3.625	0.84	0.81
3.500	4.562	4.940	1.56	1.72	5.63	8.50	3.750	0.84	0.81
3.625	4.688	5.065	1.56	1.72	5.75	8.63	3.875	0.84	0.81
3.750	4.812	5.190	1.56	1.72	5.88	8.75	4.000	0.84	0.81

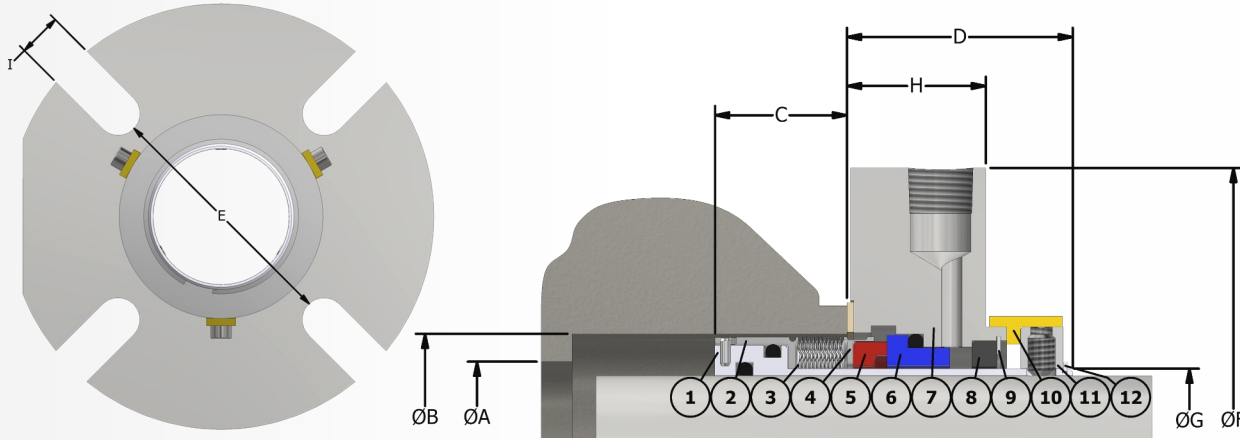
ULTRASEAL 151+ DIMENSIONS FOR BIG BORE SEAL CHAMBER

A SEAL SIZE	B (MIN)	B (MAX)	C	D	E	F	G	H	I
1.375+	2.781	3.219	1.13	1.53	3.56	5.31	1.500	1.03	0.44
1.750+	3.469	4.188	1.19	1.53	4.50	6.31	1.875	0.75	0.56
1.875+	3.406	4.062	1.19	1.53	4.41	5.97	2.000	0.75	0.56
2.125+	3.437	4.375	1.25	1.59	4.81	7.13	2.250	0.75	0.69
2.625+	4.156	4.812	1.31	1.66	5.44	7.50	2.750	0.84	0.56

Note: For complete dimensional data, request a copy of typical drawing T-1816 from a PPC Mechanical Seals representative.

SEAL DIMENSIONAL DATA

Ultraseal 151Q Seal



Item	Description
1	Sleeve
2	Bellows Collar
3	Bellows
4	Insert Holder
5	Insert (Rotary Face)
6	Stationary Face
7	Gland
8	Bushing
9	Retaining Ring
10	Setting Spacers
11	Drive Collar
12	Retaining Ring

ULTRASEAL 151Q DIMENSIONS FOR STANDARD BORE SEAL CHAMBER

A SEAL SIZE	B (MIN)	B (MAX)	C	D	E	F	G	H	I
1.000	1.750	2.010	1.09	2.03	2.31	4.11	1.125	1.25	0.44
1.125	1.750	2.040	1.06	2.03	2.44	4.24	1.250	1.25	0.44
1.250	2.000	2.270	1.13	2.03	2.69	4.36	1.375	1.35	0.56
1.375	2.000	2.430	1.13	2.03	2.81	4.36	1.500	1.25	0.56
1.500	2.250	2.630	1.13	2.03	2.94	4.98	1.625	1.25	0.56
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1.750	2.500	2.810	1.19	2.03	3.19	5.48	1.875	1.25	0.56
1.875	2.625	2.940	1.19	2.03	3.31	5.48	2.000	1.25	0.56
2.000	2.750	3.190	1.19	2.03	3.44	5.49	2.125	1.25	0.56
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2.875	3.812	4.315	1.38	2.16	5.00	7.89	3.000	1.38	0.69
3.000	4.062	4.440	1.44	2.16	5.13	8.02	3.250	1.38	0.69
3.125	4.188	4.565	1.44	2.16	5.25	8.14	3.375	1.38	0.69
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3.750	4.812	5.190	1.56	2.16	5.88	8.75	4.000	1.38	0.81

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1.750+	3.469	4.188	1.19	2.03	4.50	6.31	1.875	1.25	0.56
1.875+	3.406	4.062	1.19	2.03	4.41	5.97	2.000	1.25	0.56
2.125+	3.437	4.375	1.25	2.09	4.81	7.13	2.250	1.28	0.69
2.625+	4.156	4.812	1.31	2.16	5.44	7.50	2.750	1.38	0.56

Note: For complete dimensional data, request a copy of typical drawing T-1978 from a PPC Mechanical Seals representative.

Metallurgy: 316 SS Standard
Other materials available, including Duplex SS, Alloy C-276 & Titanium

Seal Face Options:

Stationary	Rotary
Sintered Silicon Carbide	Carbon (Resin-filled)
Tungsten Carbide	Sintered Silicon Carbide
	Tungsten Carbide

Other materials available upon request

Elastomers: Fluoroelastomer (FKM), EPDM, AFLAS®, Perfluoroelastomer (FFKM)
Other materials available upon request

Gland Gasket: GYLON® (Filled PTFE)

Metal Bellows: Alloy C-276, AM 350® SS, Alloy 20

AFLAS® is a registered trademark of Asahi Glass Co., Ltd.
GYLON® is a registered trademark of Garlock Sealing Technologies LLC
AM 350® is a registered trademark of ATI Properties LLC

OPERATING CONDITIONS

Seal Chamber Pressure: Up to 300 psig (20 bar g)
Dependent on size, speed, and sealed fluid properties

Process Temperature: -40 to 400 °F (-40 to 204 °C)
Dependent on application and elastomer material
Contact PPC for specific applications outside these parameters

Surface Speed: Up to 4500 fpm (23 m/s)

APPLICATIONS

- Chemical Processing
- Pulp and Paper
- Petrochemicals
- Corn and Grains
- Water/Wastewater Treatment
- Pharmaceutical
- Biofuels
- Food



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