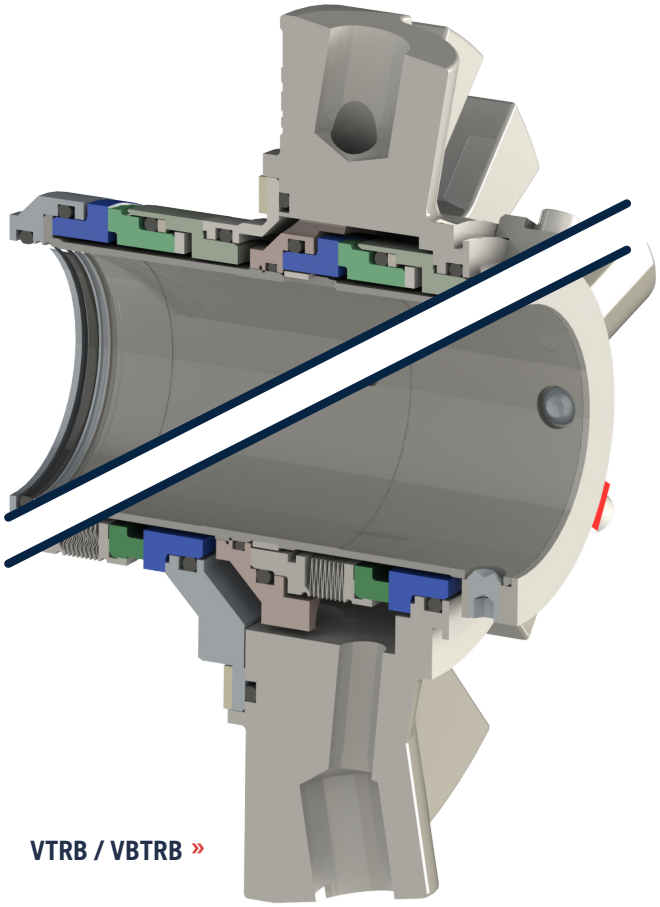
VANTAGE DUAL TANDEM CARTRIDGE SEAL FEATURES

ANSI Multi-Spring and Welded Metal Bellows Mechanical Seal

PRODUCT LINE FEATURES

- Simple cartridge seal installation.
- Sleeve is isolated from process fluid.
- ⅜" NPT barrier connection allows for cooling.
- Vantage tandem seal glands include four (4) barrier in and out connections for maximum piping flexibility.
- Angled gland connections allow for easier pipe fitting.
- Setting clips provide positive axial and radial setting of the Vantage cartridge seal to ensure proper seal installation. The Vantage setting clips are easy to access for simple removal.
- Only one Allen wrench required to tighten screws and remove the setting clips.
- Convertible gland design to accept over twelve (12) design configurations.

« VTSMS / VBTSMS



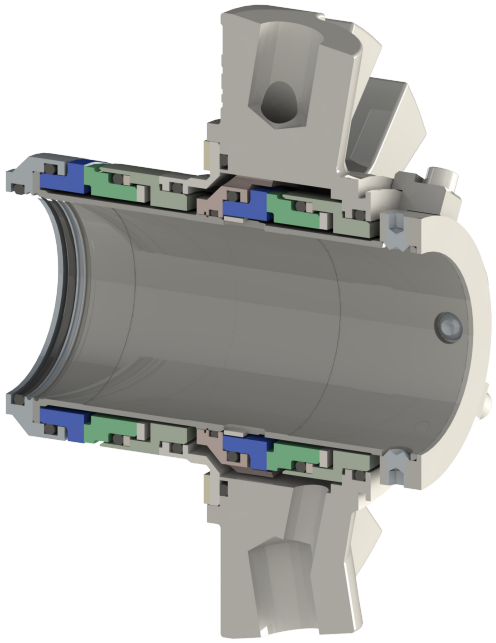
VTRB / VBTRB »

VTSMS / VBTSMS

ANSI Dual TANDEM Stationary Multi-Spring Cartridge Mechanical Seal

FEATURES

- Stationary springs and drive pin mechanism isolated from process fluids to minimize corrosion, clogging, and stress-related failures.
- Dynamic Drive Ring eliminates primary face hang up and reduces face to pin fretting.
- Flat Drive System eliminates face drive pins enhancing face stability and reducing face fractures.
- Dynamic elastomer moves on non-metallic, smooth surface eliminating fretting.
- Stationary design for optimal face alignment.
- Pumping ring included as standard.
- Available in ANSI Big/Taper and Standard Bore.



MATERIALS OF CONSTRUCTION

Rotating Seal Face	Sintered Silicon Carbide
Stationary Seal Face	Carbon, Sintered Silicon Carbide
Springs	Hastelloy® C276
Metallurgy	316 SS
Elastomers	Viton®, Ethylene Propylene, Aflas®, Buna, Neoprene, Perfluorelastomer
Gland Gasket	Glass-Filled Teflon™
Throttle Bushing	Glass-Filled Teflon™

OPERATING PARAMETERS

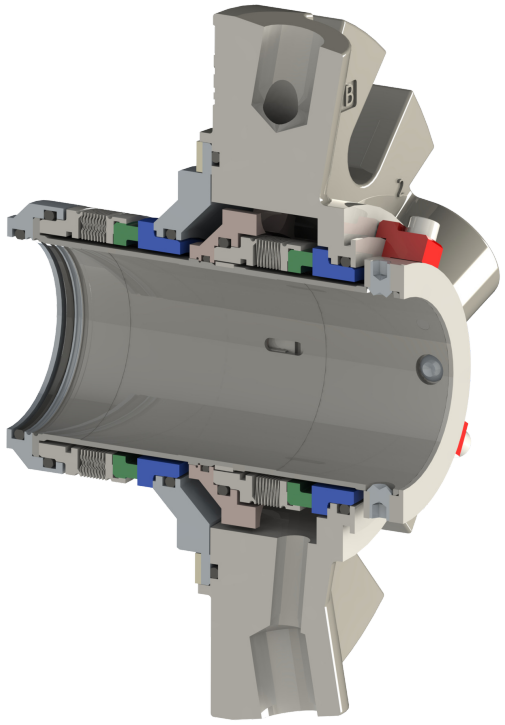
Temperature	400 °F (200 °C)
Pressure	300 psi (20 bar)
Speed	4,500 fpm

VTRB / VBTRB

ANSI Dual TANDEM Rotating Welded Metal Bellows Cartridge Mechanical Seal

FEATURES

- Rotating design uses centrifugal force for self-cleaning.
- Uniform 360° transfer of torque to the rotating face.
- Welded metal bellows replace the dynamic elastomer which can hang up the seal faces.
- No springs to clog or break.
- No fretting.
- Static elastomers – eliminate seal failures caused by dynamic O-ring "hang up" and offers cost savings when upgrading to Perfluorelastomers.
- Available in ANSI Big/Taper and Standard Bore.



MATERIALS OF CONSTRUCTION

Rotating Seal Face	Carbon, Tungsten Carbide, Sintered Silicon Carbide
Stationary Seal Face	Sintered Silicon Carbide
Bellows	Hastelloy® C276
Metallurgy	316 SS
Elastomers	Viton®, Ethylene Propylene, Aflas®, Buna, Neoprene, Perfluorelastomer
Gland Gasket	Glass-Filled Teflon™
Throttle Bushing	Glass-Filled Teflon™

OPERATING PARAMETERS

Temperature	400 °F (200 °C)
Pressure	300 psi (20 bar)
Speed	6,000 fpm

*Maximum temperature / speed / pressure / runout indicates operating extremes independently and does not imply the seal will function at these extremes at the same time.

Registered Trademarks:

Viton® - Dupont Performance Elastomers; Aflas® - Asahi Glass Co.;
Teflon® - E.I.Dupont de Nemours and Co; Hastelloy ® - Haynes International, Inc.

VANTAGE TANDEM CARTRIDGE FEATURES

DESIGN FEATURES & BENEFITS

Setting Clips provide positive axial and radial setting of the Vantage cartridge seal to ensure proper seal installation. The Vantage setting clips are easy to access for simple removal.

Stationary Design for optimal face alignment.

⅜" NPT Barrier Connections can be plumbed at 12/6 o'clock or 3/9 o'clock positions.

Dynamic Drive Ring eliminates primary face hang up and reduces face to pin fretting.

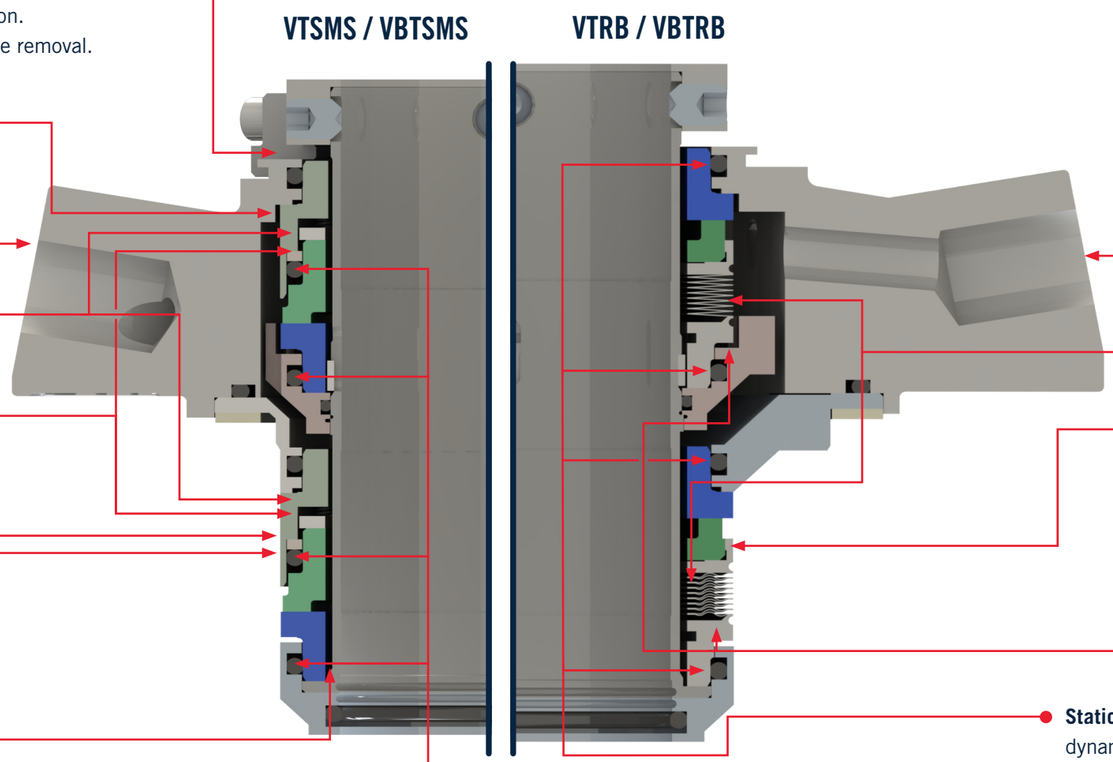
Stationary Springs isolated from process fluids to minimize corrosion, clogging.

Stationary Design for optimal face alignment.

Dynamic Elastomer moves on non-metallic, smooth surface eliminating fretting.

Sleeve is isolated from process fluid.

Unique Flat Drive System Seal faces are driven by large surface area drive flats in retainers to reduce stress and face fracture common with drive pins.



- No fretting.
- No springs to clog or break.

Angled Gland Connections allow for easier pipe fitting.

Welded Metal Bellows replace the dynamic elastomer which can hang up the seal faces.

Uniform 360° transfer of torque to the rotating face.

Rotating Design uses centrifugal force for self-cleaning.

Static Elastomers eliminate seal failures caused by dynamic O-ring "hang up" and offers cost savings when upgrading to Perfluorelastomers.

VANTAGE FAMILY DUAL SEAL - TYPICAL ARRANGEMENT

Dual Seal VTSMS, VTRB, VDRBSMS

DIMENSIONAL DATA (INCHES)

Nominal Shaft Size	FAS Dash Size (16ths)	Inboard length (L1)	Outboard length (L2)	Seal Outer Diameter (D1)	Min. Bore (D2)	Max. Bore (D3)	Min. Depth (L3)	Min. Dist. to Nearest Obstruction (L4)	Bolt suface (L5)	Gland OD (D4)	Slot Diameter (D5)	Slot width (W1)
0.938	-15	1.840	2.017	1.575	1.625	2.005	1.903	2.080	0.770	4.000	2.963	0.525
1.000	-16	1.840	2.017	1.575	1.625	2.005	1.903	2.080	0.770	4.000	2.963	0.525
1.063	-17	1.840	2.017	1.700	1.750	2.130	1.903	2.080	0.770	4.250	2.963	0.525
1.125	-18	1.840	2.017	1.700	1.750	2.130	1.903	2.080	0.770	4.250	2.963	0.525
1.188	-19	1.840	2.017	1.825	1.875	2.255	1.903	2.080	0.677	4.250	3.111	0.525
1.250	-20	1.840	2.017	1.825	1.875	2.255	1.903	2.080	0.677	4.250	3.111	0.525
1.313	-21	1.840	2.017	1.950	2.000	2.380	1.903	2.080	0.770	4.250	3.250	0.525
1.375	-22	1.840	2.017	1.950	2.000	2.380	1.903	2.080	0.770	4.250	3.250	0.525
1.438	-23	1.930	2.125	2.200	2.250	2.680	1.994	2.188	0.770	4.500	3.574	0.563
1.500	-24	1.930	2.125	2.200	2.250	2.680	1.994	2.188	0.770	4.500	3.574	0.563
1.563	-25	1.930	2.125	2.320	2.374	2.800	1.994	2.188	0.750	5.000	3.620	0.563
1.625	-26	1.930	2.125	2.320	2.374	2.800	1.994	2.188	0.750	5.000	3.620	0.563
1.688	-27	1.930	2.125	2.445	2.500	2.926	1.994	2.188	0.770	5.500	3.820	0.563
1.750	-28	1.930	2.125	2.445	2.500	2.926	1.994	2.188	0.770	5.500	3.820	0.563
1.813	-29	1.930	2.125	2.575	2.625	2.990	1.994	2.188	0.770	5.500	3.875	0.563
1.875	-30	1.930	2.125	2.575	2.625	2.990	1.994	2.188	0.770	5.500	3.875	0.563
1.938	-31	1.930	2.125	2.700	2.750	3.240	1.994	2.188	0.761	5.500	4.260	0.688
2.000	-32	1.930	2.125	2.700	2.750	3.240	1.994	2.188	0.761	5.500	4.260	0.688
2.063	-33	1.930	2.125	2.825	2.875	3.240	1.994	2.188	0.770	6.000	4.375	0.688
2.125	-34	1.930	2.125	2.825	2.875	3.240	1.994	2.188	0.770	6.000	4.375	0.688
2.188	-35	1.930	2.125	2.950	3.000	3.365	1.994	2.188	0.770	6.500	4.500	0.688
2.250	-36	1.930	2.125	2.950	3.000	3.365	1.994	2.188	0.770	6.500	4.500	0.688
2.313	-37	2.173	2.434	3.195	3.250	3.615	2.236	2.497	0.770	6.375	4.625	0.688
2.375	-38	2.173	2.434	3.195	3.250	3.615	2.236	2.497	0.770	6.375	4.625	0.688
2.438	-39	2.173	2.434	3.320	3.375	3.740	2.236	2.497	0.770	6.500	4.750	0.688
2.500	-40	2.173	2.434	3.320	3.375	3.740	2.236	2.497	0.770	6.500	4.750	0.688
2.563	-41	2.173	2.434	3.485	3.625	3.990	2.236	2.497	0.770	6.500	5.019	0.688
2.625	-42	2.173	2.434	3.485	3.625	3.990	2.236	2.497	0.770	6.500	5.019	0.688
2.688	-43	2.507	2.100	3.650	4.000	4.115	3.620	2.163	0.770	6.875	5.268	0.688
2.750	-44	2.507	2.100	3.650	4.000	4.115	3.620	2.163	0.770	6.875	5.268	0.688
2.813	-45	2.194	2.612	3.775	3.875	4.240	2.257	2.675	1.015	7.000	5.312	0.688
2.875	-46	2.194	2.612	3.775	3.875	4.240	2.257	2.675	1.015	7.000	5.312	0.688
2.938	-47	2.194	2.612	3.900	4.000	4.450	2.257	2.675	0.948	7.750	5.720	0.813
3.000	-48	2.194	2.612	3.900	4.000	4.450	2.257	2.675	0.948	7.750	5.720	0.813

Dual Seal Big/Taper Bore VBTSMS, VBTRB, VBDRBSMS

DIMENSIONAL DATA (INCHES)

Nominal Shaft Size	FAS Dash Size (16ths)	Inboard length (L1)	Outboard length (L2)	Seal Outer Diameter (D1)	Min. Bore (D2)	Max. Bore (D3)	Min. Depth (L3)	Min. Dist. to Nearest Obstruction (L4)	Bolt suface (L5)	Gland OD (D4)	Slot Diameter (D5)	Slot width (W1)
1.375	-22	1.840	2.017	1.950	2.875	3.125	1.903	2.080	0.770	5.250	4.000	0.525
1.750	-28	1.930	2.125	2.445	3.500	3.820	1.994	2.188	0.770	6.500	4.750	0.625
1.875	-30	1.930	2.125	2.575	3.625	3.945	1.994	2.188	0.770	5.875	5.000	0.625
2.125	-34	1.930	2.125	2.825	3.875	4.195	1.994	2.188	0.770	7.250	5.750	0.750
2.500	-40	2.173	2.434	3.320	4.750	5.070	2.236	2.497	0.770	8.000	6.375	0.750
2.625	-42	2.173	2.434	3.485	4.625	4.945	2.236	2.497	0.770	7.000	6.000	0.625

Dual Seal VTSMS, VTRB, VDRBSMS

DIMENSIONAL DATA (MM)

Nominal Shaft Size	Inboard length (L1)	Outboard length (L2)	Seal Outer Diameter (D1)	Min. Bore (D2)	Max. Bore (D3)	Min. Depth (L3)	Min. Dist. to Nearest Obstruction (L4)	Bolt suface (L5)	Gland OD (D4)	Slot Diameter (D5)	Slot width (W1)
24mm	46.7	51.2	40.0	41.3	50.9	48.3	52.8	19.6	101.6	75.3	13.3
25mm	46.7	51.2	40.0	41.3	50.9	48.3	52.8	19.6	101.6	75.3	13.3
28mm	46.7	51.2	43.2	44.5	54.1	48.3	52.8	19.6	108.0	75.3	13.3
30mm	46.7	51.2	46.4	47.6	57.3	48.3	52.8	17.2	108.0	79.0	13.3
32mm	46.7	51.2	46.4	47.6	57.3	48.3	52.8	17.2	108.0	79.0	13.3
33mm	46.7	51.2	49.5	50.8	60.5	48.3	52.8	19.6	108.0	82.6	13.3
35mm	46.7	51.2	49.5	50.8	60.5	48.3	52.8	19.6	108.0	82.6	13.3
38mm	49.0	54.0	55.9	57.2	68.1	50.6	55.6	19.6	114.3	90.8	14.3
40mm	49.0	54.0	58.9	60.3	71.1	50.6	55.6	19.1	127.0	93.8	14.3
43mm	49.0	54.0	62.1	63.5	74.3	50.6	55.6	19.6	139.7	97.0	14.3
45mm	49.0	54.0	62.1	66.7	74.3	50.6	55.6	19.6	139.7	97.0	14.3
48mm	49.0	54.0	65.4	66.7	75.9	50.6	55.6	19.6	139.7	98.4	14.3
50mm	49.0	54.0	68.6	69.9	82.3	50.6	55.6	19.3	139.7	108.2	17.5
53mm	49.0	54.0	71.8	73.0	82.3	50.6	55.6	19.6	152.4	111.1	17.5
55mm	49.0	54.0	74.9	76.2	85.5	50.6	55.6	19.6	165.1	114.3	17.5
58mm	55.2	61.8	81.2	82.6	91.8	56.8	63.4	19.6	161.9	117.5	17.5
60mm	55.2	61.8	81.2	82.6	91.8	59.9	63.4	19.6	161.9	117.5	17.5
63mm	55.2	61.8	84.5	85.7	95.0	56.8	63.4	19.6	165.1	120.7	17.5
65mm	55.2	61.8	88.5	92.1	101.3	56.8	63.4	19.6	165.1	127.5	17.5
68mm	63.7	53.3	92.7	101.6	104.5	91.9	54.9	19.6	174.6	133.8	17.5
70mm	63.7	53.3	92.7	101.6	104.5	91.9	54.9	19.6	174.6	133.8	17.5
75mm	55.7	66.3	99.1	101.6	113.0	57.3	67.9	24.1	196.9	145.3	20.6

VANTAGE FAMILY DUAL SEAL - TYPICAL ARRANGEMENT

Reference Diagrams

