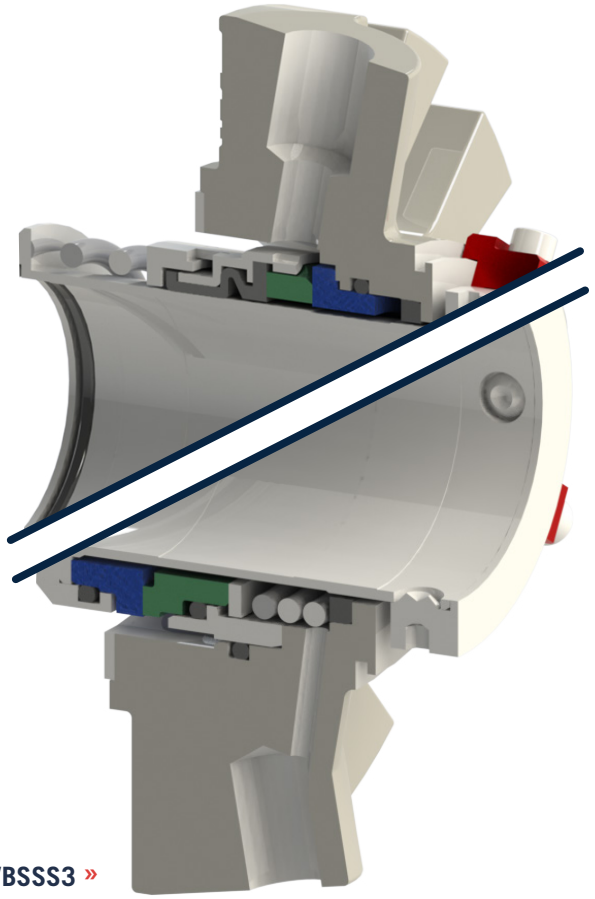
VANTAGE SINGLE-SPRING CARTRIDGE SEAL FEATURES

ANSI Rotating and Stationary Single-Spring Mechanical Seal

PRODUCT LINE FEATURES

- Simple cartridge seal installation.
- Singe-spring design accommodates slight misalignments and shaft deflections while maintaining consistent seal-face tracking.
- With a large single spring, there are fewer moving parts and less chance of spring hangup or clogging.
- ⅜" NPT flush connection allows for cooling and venting of seal.
- ¼" NPT vent and drain connections provide differential sizing to minimize the potential of improper piping.
- Non-sparking throttle bushing is positively retained to avoid pressure blow out, minimizing leakage in the event of seal failure.
- 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.
- Convertible gland design to accept over four (4) design configurations.

« VRSS3 / VBRSS3



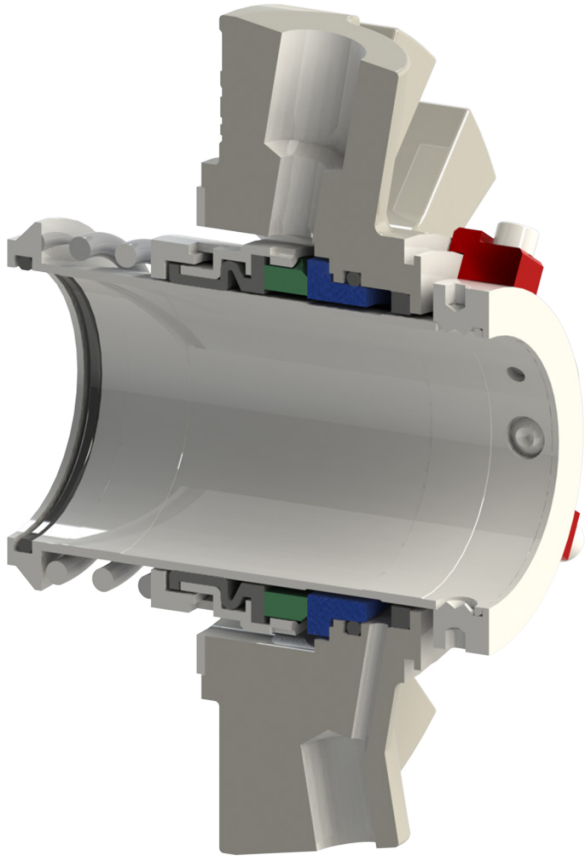
VSSS3 / VBSSS3 »

VRSS3 / VBRSS3

ANSI Rotary Single-Spring Single Cartridge Mechanical Seal

FEATURES

- Robust yet simple rotary single-spring design integrated on the versatile Vantage Seal platform.
- Automatic adjustment to accommodate shaft end play, wear, and equipment tolerances, enhancing service life.
- Offers quench options with carbon ring throttle bushing or lip seal for diverse operational needs.
- Designed with a non-clogging single-coil spring and positive mechanical drive for reliable performance.
- Full convolution elastomeric bellows.
- Available in ANSI Big/Taper and Standard Bore.



MATERIALS OF CONSTRUCTION

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

OPERATING PARAMETERS

Temperature	400 °F (200 °C)
Pressure	232 psi (16 bar)
Speed	4,500 fpm

VANTAGE FAMILY SINGLE SEAL - TYPICAL ARRANGEMENT

Single Seal VRSS

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	1.025	2.017	1.563	1.625	2.005	1.438	2.080	0.770	4.000	2.862	0.525
1.000	-16	1.025	2.017	1.563	1.625	2.005	1.438	2.080	0.770	4.000	2.862	0.525
1.313	-21	1.125	2.017	1.925	2.000	2.380	1.188	2.080	0.770	4.250	3.250	0.525
1.375	-22	1.125	2.017	1.925	2.000	2.380	1.188	2.080	0.770	4.250	3.250	0.525
1.438	-23	1.375	2.125	2.200	2.300	2.680	1.438	2.188	0.770	4.250	3.574	0.563
1.500	-24	1.375	2.125	2.200	2.300	2.680	1.438	2.188	0.770	4.250	3.574	0.563
1.688	-27	1.375	2.125	2.402	2.500	2.926	1.438	2.188	0.770	5.500	3.820	0.563
1.750	-28	1.375	2.125	2.402	2.500	2.926	1.438	2.188	0.770	5.500	3.820	0.563
1.813	-29	1.375	2.125	2.480	2.675	2.990	1.438	2.188	0.770	5.500	3.875	0.563
1.875	-30	1.375	2.125	2.480	2.675	2.990	1.438	2.188	0.770	5.500	3.875	0.563
2.063	-33	1.438	2.125	2.815	2.875	3.240	1.500	2.188	0.770	6.000	4.375	0.688
2.125	-34	1.438	2.125	2.815	2.875	3.240	1.500	2.188	0.770	6.000	4.375	0.688
2.438	-39	1.562	2.434	3.256	3.375	3.740	1.625	2.497	0.770	6.500	4.750	0.688
2.500	-40	1.562	2.434	3.256	3.375	3.740	1.625	2.497	0.770	6.500	4.750	0.688
2.563	-41	1.562	2.434	3.382	3.625	3.990	1.625	2.497	0.770	6.500	5.019	0.688
2.625	-42	1.562	2.434	3.382	3.625	3.990	1.625	2.497	0.770	6.500	5.019	0.688

Single Seal Big/Taper Bore VBRSS

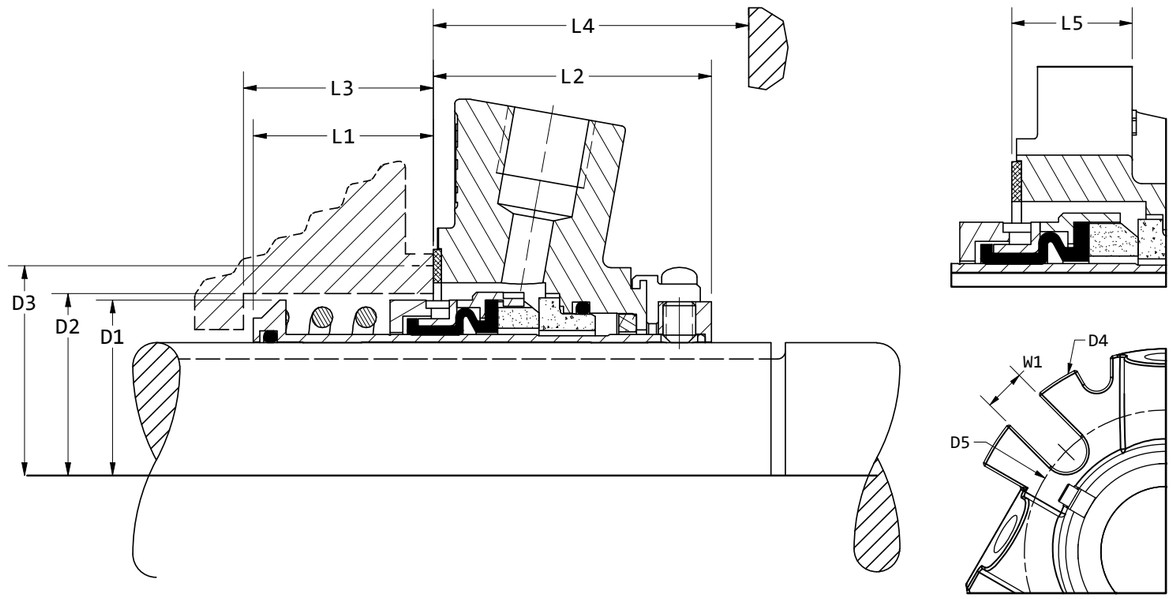
DIMENSIONAL DATA (INCHES)

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	1.125	2.017	1.925	2.875	3.125	1.188	2.080	0.770	5.250	4.000	0.525
1.750	-28	1.375	2.125	2.402	3.500	3.820	1.438	2.188	0.770	6.500	4.750	0.625
1.875	-30	1.375	2.125	2.480	3.625	3.945	1.438	2.188	0.770	5.875	5.000	0.625
2.125	-34	1.438	2.125	2.815	3.875	4.195	1.500	2.188	0.770	7.250	5.750	0.750
2.500	-40	1.562	2.434	3.256	4.750	5.070	1.625	2.497	0.770	8.000	6.375	0.750
2.625	-42	1.562	2.434	3.382	4.625	4.945	1.625	2.497	0.770	7.000	6.000	0.625

Single Seal VRSS

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	26.0	51.2	39.7	41.3	50.9	36.5	52.8	19.6	101.6	72.7	13.3
25mm	26.0	51.2	39.7	41.3	50.9	36.5	52.8	19.6	101.6	72.7	13.3
33mm	28.6	51.2	48.9	50.8	60.5	30.2	52.8	19.6	108.0	82.6	13.3
35mm	28.6	51.2	48.9	50.8	60.5	30.2	52.8	19.6	108.0	82.6	13.3
38mm	34.9	54.0	55.9	58.4	68.1	36.5	55.6	19.6	108.0	90.8	14.3
43mm	34.9	54.0	61.0	63.5	74.3	36.5	55.6	19.6	139.7	97.0	14.3
45mm	34.9	54.0	61.0	63.5	74.3	36.5	55.6	19.6	139.7	97.0	14.3
48mm	34.9	54.0	63.0	67.9	75.9	36.5	55.6	19.6	139.7	98.4	14.3
53mm	36.5	54.0	71.5	73.0	82.3	38.1	55.6	19.6	152.4	111.1	17.5
63mm	39.7	61.8	82.7	85.7	95.0	41.3	63.4	19.6	165.1	120.7	17.5
65mm	39.7	61.8	85.9	92.1	101.3	41.3	63.4	19.6	165.1	127.5	17.5

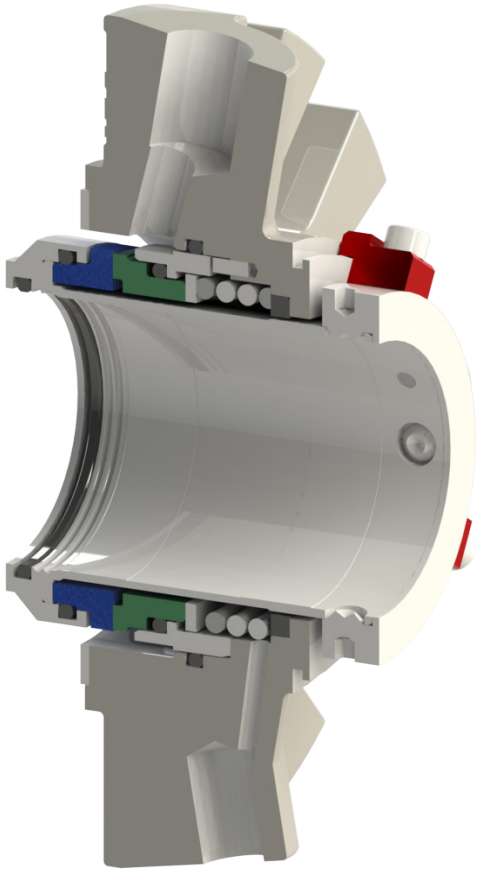


VSSS3 / VBSSS3

ANSI Stationary Single-Spring Single Cartridge Mechanical Seal

FEATURES

- Heavy-duty drive design with stationary single-spring isolated from process media.
- Stationary external spring significantly improves performance in applications prone to clogging or sticking.
- Offers quench options with carbon ring throttle bushing for diverse operational needs.
- Designed with a non-clogging single-coil spring and positive mechanical drive for reliable performance.
- Available in ANSI Big/Taper and Standard Bore.



MATERIALS OF CONSTRUCTION

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

OPERATING PARAMETERS

Temperature	400 °F (200 °C)
Pressure	300 psi (20.7 bar)
Speed	4,500 fpm

VANTAGE SINGLE CARTRIDGE FEATURES

DESIGN FEATURES & BENEFITS

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

Seal Faces are driven by large surface area drive flats in retainers to reduce stress and face fracture common with drive pins.

Angled Gland Connections allow for easy pipe fitting.

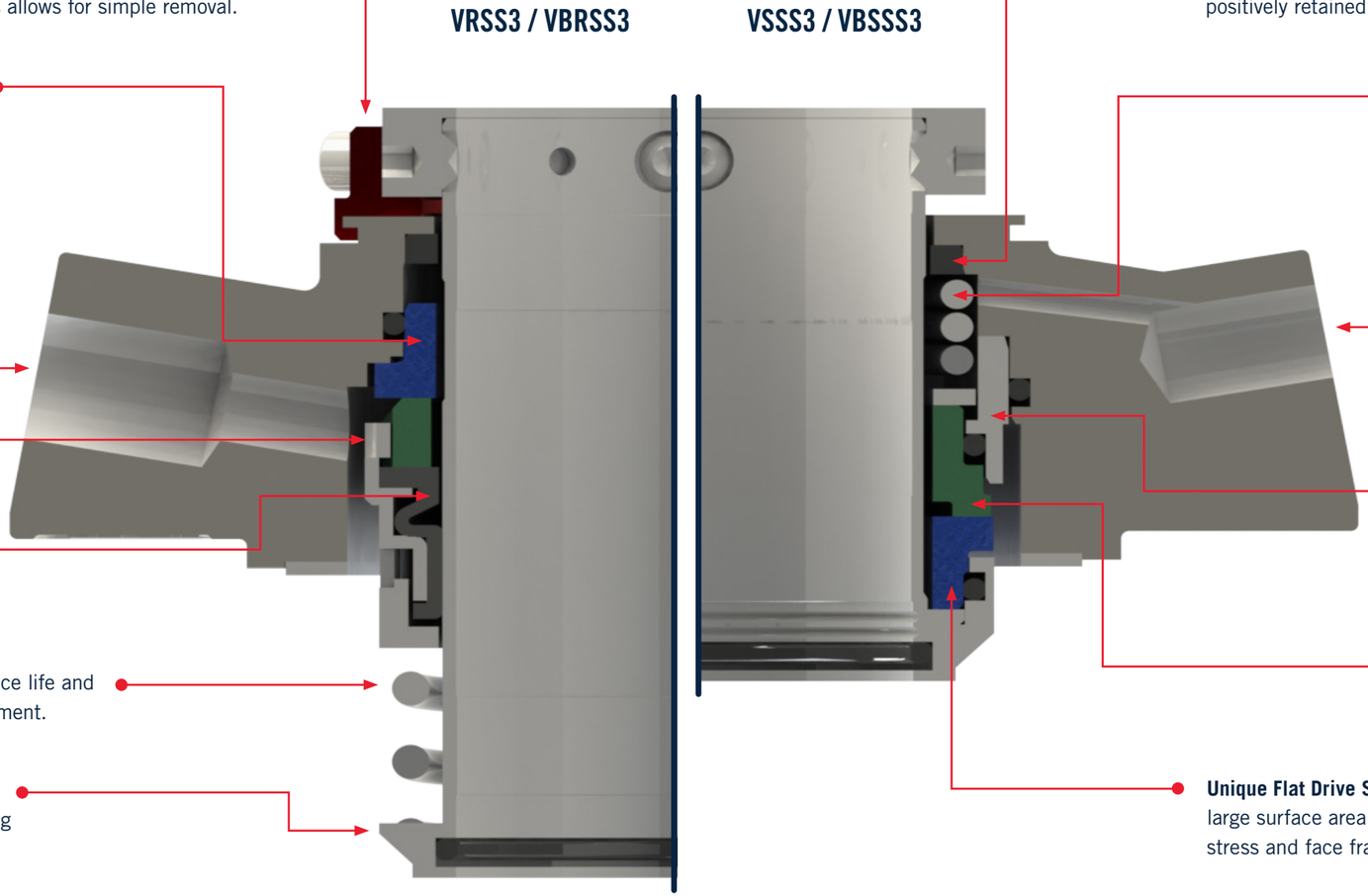
⅜" NPT Flush Connection allows for cooling and venting of seal.

Seal Face is protected from process debris by metal carrier.

Flexibility of Elastomeric Bellows prevents seal face hang-up while improving radial and axial movement and promoting consistent face contact.

Robust Single Spring Design promotes extended service life and prevents clogging. Also allows for greater axial movement.

Centrifugal Force from rotating assembly promotes self-cleaning and removal of debris.



Non-Sparking Throttle Bushing minimizes leakage in the event of seal failure and is positively retained to avoid blow out.

Rugged Single Spring allows for extended seal life and greater axial movement.

Angled Gland Connections allow for easy pipe fitting.

¼" NPT Vent and Drain Connections provide differential sizing to minimize the potential of improper piping.

Stationary Design isolates flexible elements from process, reducing the chance for clogging, corrosion, or damage as well as optimizing face loading and alignment.

Monolithic Faces provide robust, proven performance

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.