

CAR-FB™ Multi-Segment Ring

Multi-segment ring is comprises of three or more ring segments, they are lock together by a garter spring on the outer circumference. Very close attentions are paid to the concentricity and tight fitness between ring segments during every step of the production process, end result is a highly wear-resisting and precisely produce Multi-segments ring that can provide longer than average service life. **Multi-segment ring's coefficient of friction is 90% less than traditional packing material**, greatly reducing equipment's energy consumption, less friction also mean much less wear on the shaft and sleeve, drastically lowering the equipments' operation cost. SCENIC® has technical expertise, manufacture experience, and capacity to provide various engineered components and any industrial requirements



SCENIC® SP™ Series Carbon Graphite - SP-G230™



With over two decades of mechanical seal design and manufacturing experience, SCENIC® develops the SP™ series of carbon and carbon graphite in order to offer customer an alternative choice of high wear resistance, excellent quality consistency and great value material. The SP™ series material was originally developed to meet a customer's unique operation requirement. The SP™ series of material are now offers in Carbon and Carbon Graphite grade with either Resin or Antimony impregnated. The unique formulation of the SP™ series resulting in excellent mechanical properties such as better self-lubrication, better wear resistance, less heat generated by kinetic friction and lower equipment's electrical power consumption. Our SP-G230™ is an Antimony impregnated Carbon is specifically developed for the CAR-FB™ series seal application, SP-G230™'s unique formula provide a strong yet great vibration absorption capability, especially suitable in dry running applications, it cans drastically increase the mechanical seal's service life. Please contact us for more products detail or an evaluation of your unique application requirement.

Images of SP-G 230™ surface wear pattern against different materials viewing under electron microscope



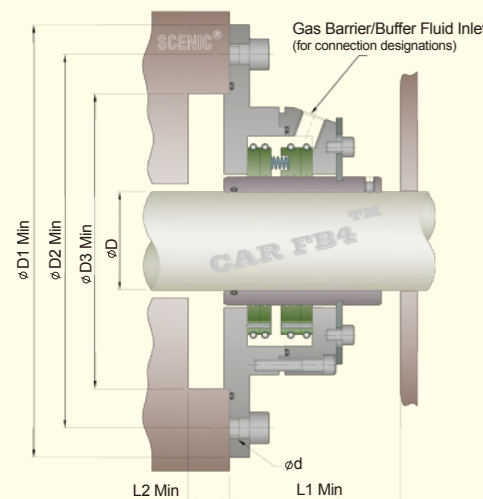
SP-G 230™ vs. S-SiC



SP-G 230™ vs. R-SiC



SP-G 230™ vs. Tungsten Carbide



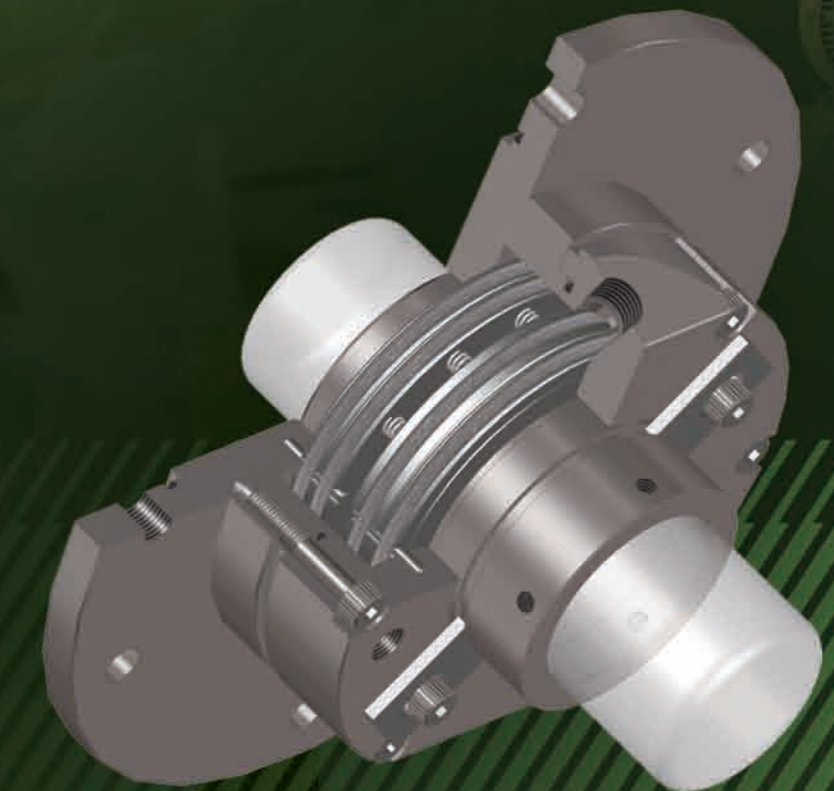
Installation Dimensions

- D—Shaft Size _____
- D1—Max. Gland Diameter _____
- D2—Min. Slot Bolt Circle _____
- D3—Stuffing Box Inside Diameter _____
- L1—Min. To Nearest Obstruction _____
- L2—Min. Stuffing Box Depth _____

★ There are standard size seals of these type, they are fully engineered to fit in accordance with the equipment's specifications.

MULTI-SEGMENTS RINGS CARTRIDGE SEAL FOR LOW PRESSURE APPLICATION

CAR-FB™ SERIES



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CAR-FB™ Series PATENT

Back-to-Back Design Multi-Segments Rings Cartridge Seal for Low Pressure Application.
 CAR-FB2™ — Single-Stage Multi-Segments Ring of Cartridge Seal
 CAR-FB4™ — Double-Stages Multi-Segments Ring of Cartridge Seal

Operating Conditions

Temperature: 0 ~ 400°C (32 ~ 752°F)

Process Pressure: up to 21.34 psig(1.47 bar)

Barrier Fluid Pressure: up to 42.7 psig(2.9 bar)

Speed: up to 5000 fpm (25m/s)

Standard Materials

Metal Parts: 410SS / 304SS / 316SS / Titanium / Hastelloy® C / Duplex / Monel®

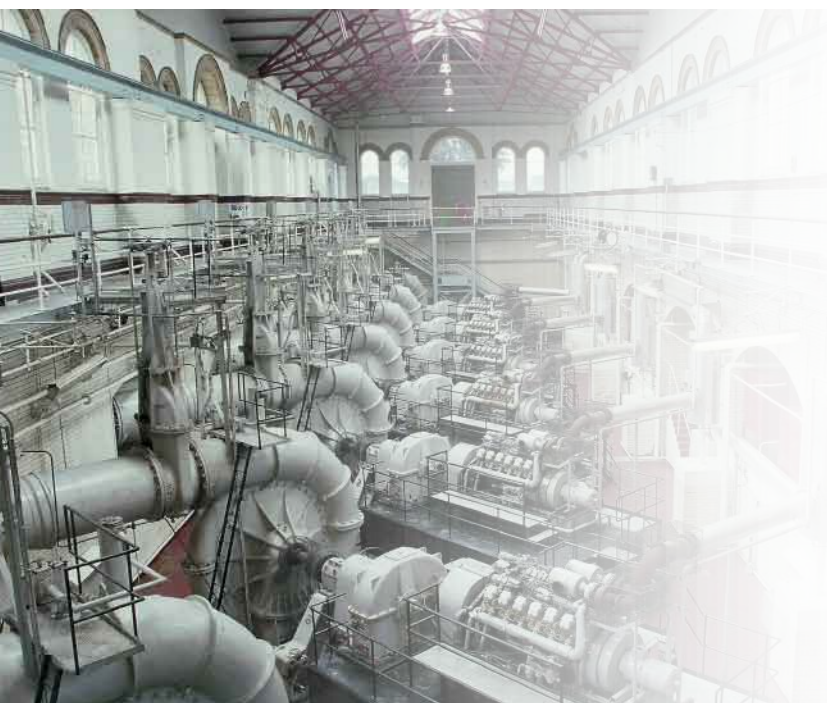
Multi-Segment Rings: SCENIC SP-G230™ / CB#4 / CB#2 / CB#8

Elastomers: Viton® / Chemraz® / Kalrez® / NBR / T.V. / EPDM /Other

Springs: 304SS / 316SS / Hastelloy® C

Applications

- High speed rotating equipments such as blowers, fans.
- Low speed rotating equipments such as mixers, conveyors, dry running agitators, windmills, powder and granule grinders, and rotary valve.
- Applicable on volatile, corrosive, toxic gas and fine particles processes.
- Extensively used on chemical, pulp and paper, electrical, gas, granular processing Industries.



Characteristics

1. Cartridge Seal Designed

Simplified structure design, flexible in application. Provide excellent sealing effect to help improve the work environment. **Very easy to install and maintained.**

2 Multi-Segments Seal Ring

Garter spring locks the three or more precisely produced segments forming the seal ring, which is constantly adjust to **provide the optimum wear resistance, precision, self-align ability, and sealing effect.** Top priorities were putted into the engineering of these seal segments to **ensure the minimum of shaft wear and energy consumption** while operating the seal.

3.Highly Wear-Resistance Material Selective Pair

SCENIC®'s proprietary Carbon Graphite material SP-G 230™ offers **excellent self lubricating and wear resistance properties,** the benefit of self lubrication result in **lower operating temperature** will result in even longer seal service life.

4 Common Spring Designed

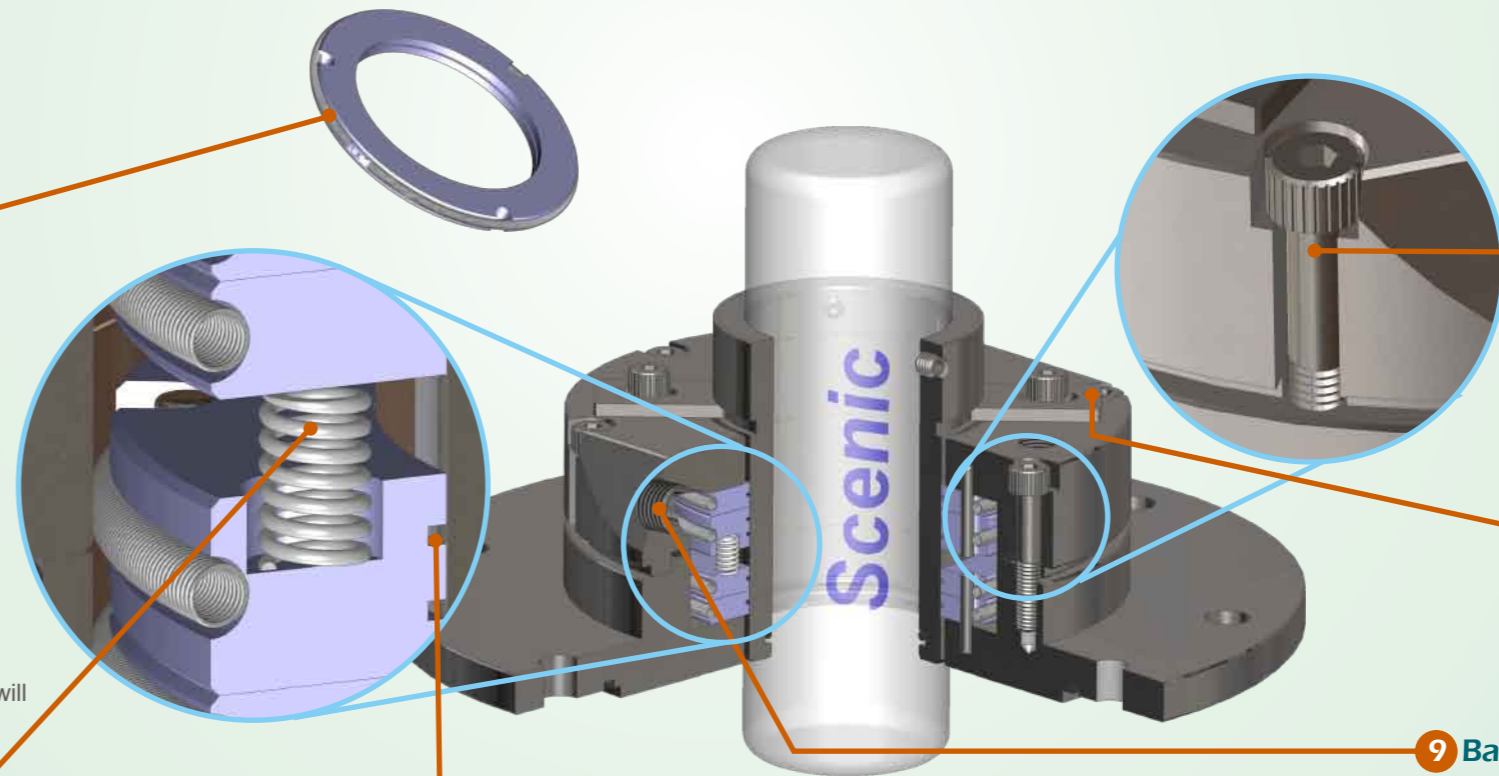
By using the Common Spring Design in Back-to-Back arrangement, the sealing structure cans better compensate for radial shaft movement, **withstands mechanical vibrations,** resulting in a smoother running seal, dramatically **increase MTBF** (Mean Time Between Failure).

5 Distinctive Gas Channel Designed

Gas channel is precisely engineered onto the sealing surface of the seal ring, this channel create a vortex ring between the seal face and the sleeve, further **preventing gas for leaking.** Gas channel's size quantity vary depend upon process and application.

6 Isolated and Stationary Springs Designed

Opting for a Static Spring Design has eliminated the effect of centrifugal force and shields the springs from possible stress



corrosion, crystallization, congestion brought on by the process, another step in **extending the seal's service life.**

7 Slotted Seal Cover

Minimizing down time was one of the main goal during the design of this seal, this extra effort resulting in the seal faces can be access by simply un-bolting the seal cover, there is no need for removal of the cartridge or further removal of associated parts, greatly improving the service speed.

8 Sliding Set Plates

Complete removal of Set Plates are not required, Set Plates are slotted to allow for sliding in and out of locking position, it allows for reduce installation time and **prevent for lost of set plates resulting in future service inconvenience.**

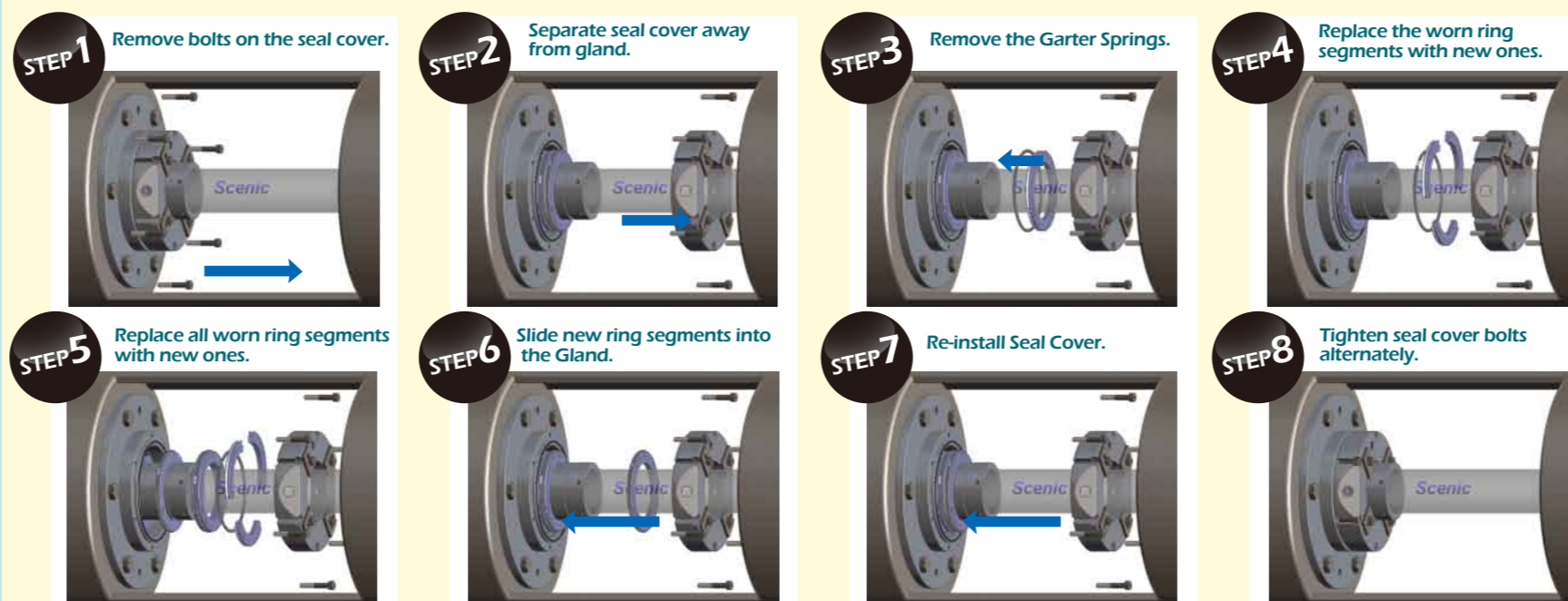
9 Barrier Gas Inlet Port

Should the process is volatile, poisonous, corrosive or with the pressure of greater than 0.1Mpa (14.50 psi), CAR-FB4™ has build-in gas inlet port allowing the introduction of barrier gas into the seal as an auxiliary sealing feature **providing better leak containment.**

10. Interchangeable Seal Ring

Operation cost of our CAR-FB™ series is also taken into consideration, seal rings are interchangeable within the CAR-FB™ series family's seals, greatly reducing the stocking of parts. Design structure is also similar within the same seal family, greatly **reducing the learning curve for technicians hence cutting equipments downtime.**

CAR-FB™ Re-Building Procedure



Recommended Seal Selection and Plan System

