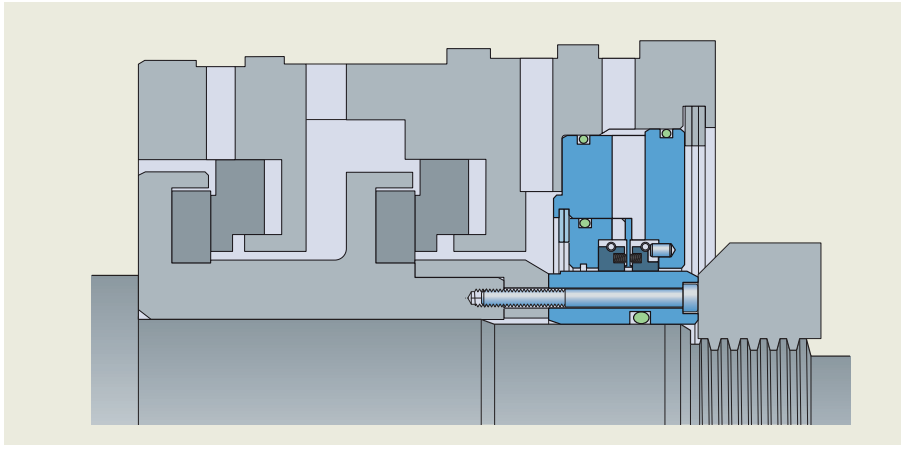
Circumferential barrier seals for hydrocarbon processing equipment

Kaydon pioneered the use of circumferential barrier sealing (K·CBS) technology for compressor separation seals, isolating dry gas seal cavities from bearing lubricating oil. Today, Kaydon continues to advance the design and manufacturing techniques for circumferential compressor shaft seals through research and development activities, tackling the most demanding applications and remaining at the forefront in product performance and reliability.

Isolation seal or backup seal

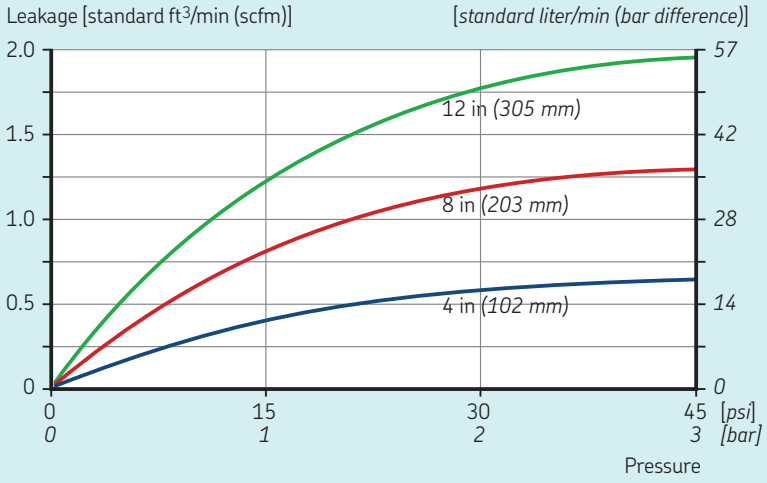
For optimal performance, the circumferential barrier seal employs two segmented carbon seal rings buffered with a low-pressure, clean gas, typically set at 5–15 psid *(0,33–1 bard)*. Each seal ring is pre-loaded with a light spring force in both the axial and radial direction. Gas sealing occurs between each seal ring and its corresponding housing surface, as well as with a hard coated shaft or shaft sleeve. Leakage rates are approximately 0.1 ft^3/min per inch diameter *(0,11 liter/min per mm diameter)* per seal ring.



Circumferential barrier seals highlighted in a typical dry gas seal system

In addition to its role as a bearing isolation seal, the circumferential barrier seals will serve as an emergency backup seal in the event of a dry gas face seal failure. Testing has shown that the circumferential barrier seals will remain intact after being subjected to over 800 psi *(55,2 bar)* gas pressure. The bearing side seal ring will experience excessive wear due to the increased loads, but will continue to provide resistance to gas escape.

Leakage rates



Kaydon's separation seal application group has the experience and expertise to help with new seal designs, upgrades, retrofits, and troubleshooting of Kaydon and other brand seals, and control systems.

Contact us today at kcbs@kaydon.com

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