Rexnord Aerospace Seal Applications

Since 1946, Rexnord Aerospace has been designing high-quality seals for many different aerospace and industrial applications. Rexnord Seals are designed to provide optimum leak protection in many different operating environments and are found in:

- Gas turbine engines
- Auxiliary power units
- Gearboxes and accessories
- Hydraulic power systems
- Environmental control systems
- Rockets and weapon systems
- Pumps and compressors
- Industrial turbines
- Many other rotating components

Rexnord engineers design optimum solutions for some of the most complex operating parameters. Our designs are intended to bring significant customer value, long life and product life services.

Rexnord Controlled Gap Seals

Identify a customized solution to fit your specific application.

Rexnord® Controlled Gap Seals offer minimal leakage in an exceptionally large range of temperatures (-400 F (-240 C) to 1,600 F (871 C)), making them ideal for sealing cryogens and hot gases from bearings. The basic design of our seals can be customized for demanding applications providing outstanding performance, longevity and extraordinary value.

Theory of operation

Rexnord Controlled Gap Seals are designed with a carbon insert encased in a metal retaining band. The assembly of these two parts, commonly referred to as the labyrinth ring assembly, is designed to match the thermal and centrifugal growth of the shaft or sleeve being sealed. As the temperature rises, the floating carbon ring assembly expands at a rate similar to that of a shaft or sleeve.

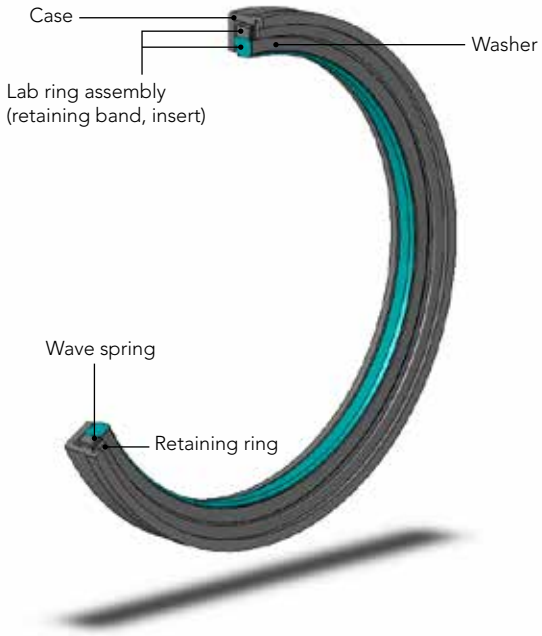
The pressure drop between the lateral sealing faces provides the closing force needed to maintain contact between the carbon and the mating surface under dynamic conditions, while a wave spring is used to maintain face contact during static conditions. For high-pressure applications, the labyrinth ring assembly is pressure balanced to reduce the face pressure and allow close dynamic tracking.

To ensure the lowest possible leakage, our engineers conduct a computer-aided analysis to determine the:

- Optimum clearance and thermal expansion between the labyrinth ring assembly and the shaft
- Stress and centrifugal growth of the labyrinth ring assembly
- Labyrinth ring stability
- Thermal gradients in the seal

Our team understands that different conditions present different problems which they resolve through modifications of the basic design and careful selection of appropriate material grades. We are able to provide additional analysis as needed to evaluate the seal assembly and special shaft or sleeve configurations.

Materials of construction



Features and benefits

- Metallic retaining ring controls carbon thermal expansion rate to match the shafting and assure low leakage during full range of temperature
- Compact construction to assure good seal performance when space is limited
- Spring-loaded designs to provide a positive sealing barrier during static conditions
- Wide variety of material options to meet the demands of specialized operating conditions
- Design flexibility to allow a wide range of variations
- More than 60 years of proven design application experience to provide you and your customers with a high level of confidence

Since 1946, Rexnord Aerospace has satisfied the needs and critical demands of the aerospace industry with exceptional, high-quality products and innovative engineering. Choose Rexnord Aerospace products and solutions for your designs. Speak with our engineering sales staff to address your questions and design inquiries.

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