

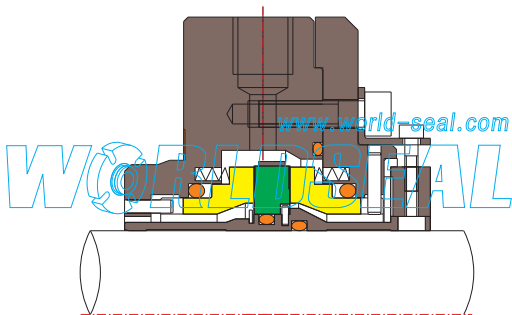
Dry gas seal catalogue

From the first dry gas seal technology was proposed, it has been more than 30 years. Now the dry gas seal has been widely used not only in centrifugal compress, but also agitator, centrifugal pump, turbine and fans.

World seal (www.world-seal.com) is the leading dry gas seal designer and manufacturer in the world, the specially designed dry gas seal can be:

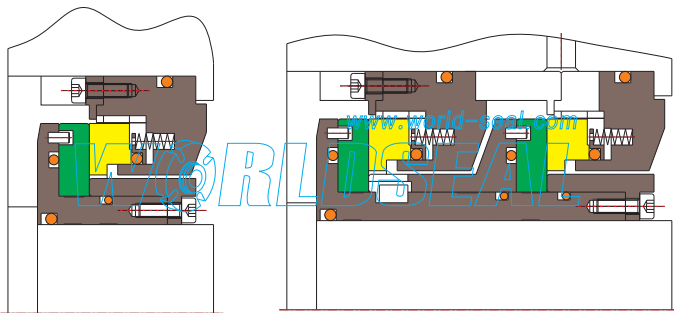
Speed: up to 200 m/s
Pressure: up to 30 MPa
Temperature: up to 400

DGS-J10



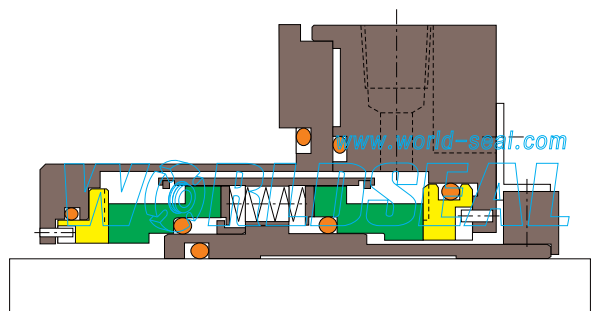
Temperature: $-20^{\circ}\text{C} \sim 260^{\circ}\text{C}$
Pressure: $\leq 1.6\text{MPa}$
Speed: $\leq 25\text{m/s}$

DGS-J02



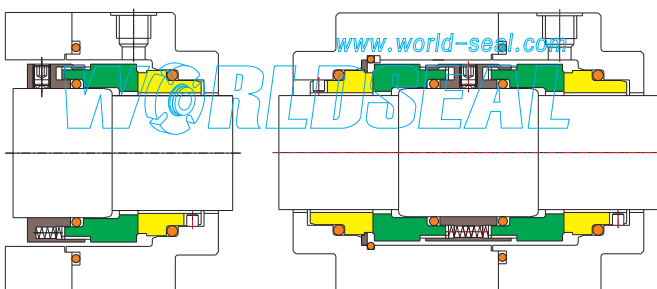
Temperature: $-20^{\circ}\text{C} \sim 260^{\circ}\text{C}$
Pressure: $\leq 12.4\text{MPa}$
Speed: $\leq 180\text{m/s}$

DGS-J03



Temperature: $-20^{\circ}\text{C} \sim 260^{\circ}\text{C}$
Pressure: $\leq 2.1\text{MPa}$
Speed: $\leq 1450\text{rpm}$

DGS-B01/B02



Temperature: $-20^{\circ}\text{C} \sim 260^{\circ}\text{C}$
Pressure: $\leq 2.5\text{MPa}$
Speed: $\leq 25\text{m/s}$

Technical information about dry gas seal

Dry gas seals are non-contacting, dry-running mechanical face seals consist of a mating (rotating) ring and a primary (stationary) ring. When operating, grooves in the rotating ring generate a fluid-dynamic force causing the stationary ring to separate and create a gap between the two rings. Dry gas seals are mechanical seals but use other chemicals and functions so that they do not contaminate a process. These seals are typically used in a harsh working environment such as oil exploration, extraction and refining, petrochemical industries, gas transmission and chemical processing.

The dry gas seal has spiral grooves, with provides for lifting and maintaining separation of seal faces during operation. Grooves on one side of the seal face direct gas inward toward a non-grooved portion of the face. The gas that is flowing across the face generates a pressure that maintains a minute gap between the faces, optimizing fluid film stiffness and providing the highest possible degree of protection against face contact. The seal's film stiffness compensates for varying operations by adjusting gap and pressure to maintain stability.

Grooves on the seal direct gas inward toward the non-grooved portion. The action of the gas flowing across the seal generates pressure that keeps a minute gap, therefore optimizing fluid film stiffness and providing protection against face contact.

Normally there are some uniform distribute grooves with certain depth. When the rotary ring parts is rotating, the gas in the high pressure side move into the groove. When the gas reach the groove boots, the effect of the gas stagnation make the pressure rise. Also because the groove area became smaller, it also make the pressure rise. When the pressure is strong enough to overcome the pressure in the seal camber, spring force and secondary seal resistance, the stationary ring and rotary is apart, there will be small gaps between this two parts.

The use of these seals in centrifugal compressors has increased significantly in the last two decades because they eliminate contamination and do not use lubricating oil. Non-contacting dry gas seals are often used on compressors for pipelines, off-shore applications, oil refineries, petrochemical and gas processing plants. Dry Gas Seal configurations: there are many dry gas seal configurations base on their application. 1- Single gas seal 2- Tandem gas seal 3- Tandem gas seal with intermediate labyrinth 4- Double opposed gas seal. Also the dry gas seal can be unidirectional or bidirectional.

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