

Dry Gas Seals

Reducing gas leakage

Depending on the diameter of the rotor, work pressure, temperature of the packed gas and the frequency of the rotor speed, the leakage through every DGS can be from 0,01 to 0,15 m³/min.

Although the value is equivalent to the intensity of the leakage through the oil seals, need to consider that at installed oil seals an additional gas leakage occurs from degassing of circulating oil. Usually gas from oil is released into the atmosphere, doubling the total volume of leakage through the seal up to 6 m³/min.



Reduction of the energy consumption

At dry gas seals installation the pumping systems for oil circulating are excluded, consuming the electricity, and hence the energy is saved. The power consumption of the oil seals is from 50 to 100 kW, while the losses do not exceed 5 kW in DGS.

Exclusion of oil leakages

Replacement of oil seals into dry eliminates seal oil leakage in the flow part of the compressor and that is why there is no gas pollution and the pipeline's technical characteristics deterioration.

Less volume of maintenance

Dry gas seal systems have low time spending on maintenance, because they do not have assemblies, which are necessary at the oil circulation (pumps, control valves, relief valves) in comparison to oil seal systems.

Simplification of the software system

DGS systems do not require the installation of sophisticated components, which provide oil circulation, and devices for its processing and cleaning.

Higher reliability

Most of idles of compressor with oil seals caused by problems in the sealing system.

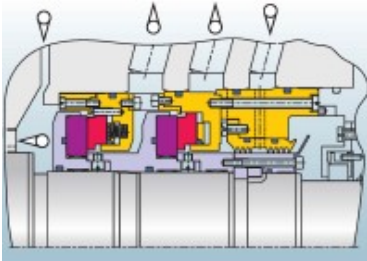
Short term of payback

The term of payback of DGS systems in average is from 12 to 16 months. If there is a trend of the prices increase on energy sources the term of payback will reduce.

Main Types of Dry Gas Seals

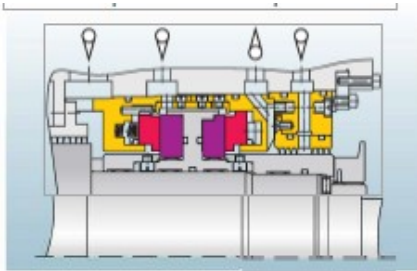
Tandem gas seal with labyrinth seal

Used on compressors jointly with oil bearings or bearings with the magnetic suspension.



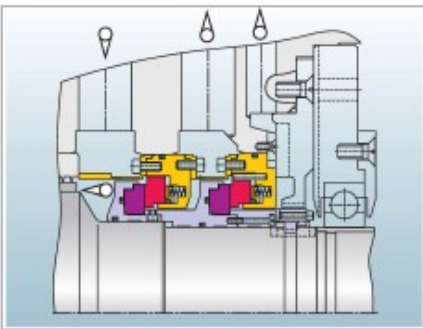
Double dry seal with labyrinth seal

Used on compressors of different production.



Tandem gas seal with single labyrinth seal and ejector

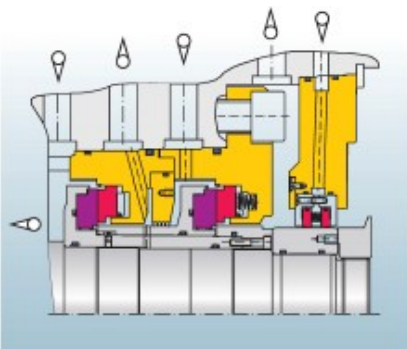
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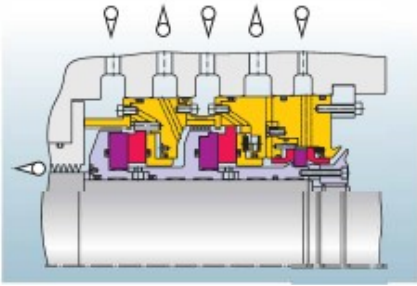
- Clean process gas I nitrogen
- Separation (barrier) gas
- Primary leakage
- Gas seal secondary leakage
- Process gas leakage into the cylinder Secondary seal gas

Tandem gas seal with dry-running barrier seal

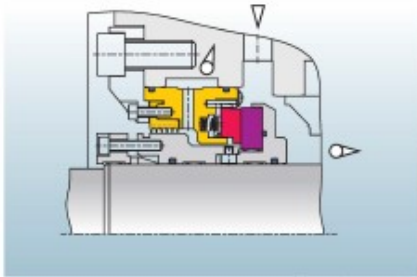
Used on the compressors jointly with oil bearings or bearings with the magnetic suspension.



- Sealing pressure, bar - 300
- Rotational speed, m/sec - 200
- Temperature, C° - 250
- The shaft size under the seal, mm - 28 . . 300



Tandem gas seal with DGS barrier seal
Used on the high-pressure compressors.



Single dry seal with labyrinth seal
Used on compressors of chemical production.