PILLAR Dry Gas Seal

Type PEC®

Pillar non-contact gas seal type PEC is the advanced aerostatic non-contact gas seal for turbine, blower, compressor, mixer, rotary valve and similar equipment.
This seal has superiority in leakage, life, reliability and contamination to conventional labyrinth seal and carbon segment seals.
Those superiority will be proved to meet safety regulation of the plant handling poisoning, flammable and hazardous gases, and contribute to meet environmental regulation.

PATENTS : U.S.A 6135458
EU Pending
JAPAN 3192152
etc...

The seal faces of the PEC® seal consists of a mating ring fixed on a shaft and a seal ring which is movable axially in the casing. The seal ring has several orifices in the body and several debited shallow grooves on the seal face. Each of orifices and grooves is through-holed.
The basic construction is same as that of mechanical face seals. The barrier gas is supplied into the grooves on the seal face from outside through the orifices.

Features

1. Environmental

The process gas is sealed hermetically by this seal with single seal arrangement with the barrier gas at higher pressure than the sealed process gas.

2. Contaminant less

Non-contacting seal faces generate no wearing particles. Therefore this seal can be applied for medical and biochemical machines.

3. Stable performance

The constant seal gap with self restoring mechanism allow low and constant seal gas consumption, and high reliability with low heat generation.

4. Small barrier gas leakage

Leakage of the barrier gas through the narrow seal gap is less than 1/100 of the leakage of labyrinth seal.

5. Long seal life

No wear of the seal faces guarantees a long seal life.

6. Wide operating speed range

The performance of this seal is kept stable from 0 rpm to very high speed range because of Aerostatic non-contacting seal.

7. Seal material

Standard combination of the seal materials is carbon vs. ceramic coated stainless steel. And also SiC or stainless steel can be available.

8. Monitoring system

It is possible to monitor seal conditions by measuring the temperature of the seal ring, the flow rate and the pressure of the barrier gas.

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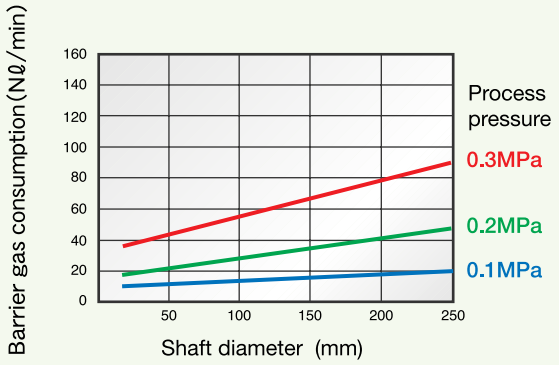
Applications

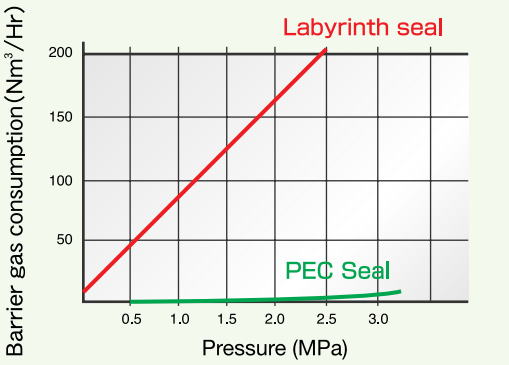
1. Fluid . . . . . .Dry gas, wet gas like steam, etc.
2. Equipment . . . . .Screw compressors, blowers, fans,mixer.
3. Pressure . . . . . .1MPa (Measured value)
4. Velocity . . . . . .0~150m/s (Measured value)
5. Temperature . . . .–40°C~260°C (with jacket)
6. Seal System Arrangement :

   Single . . . . . .Compact design without process gas leakage.

Performance



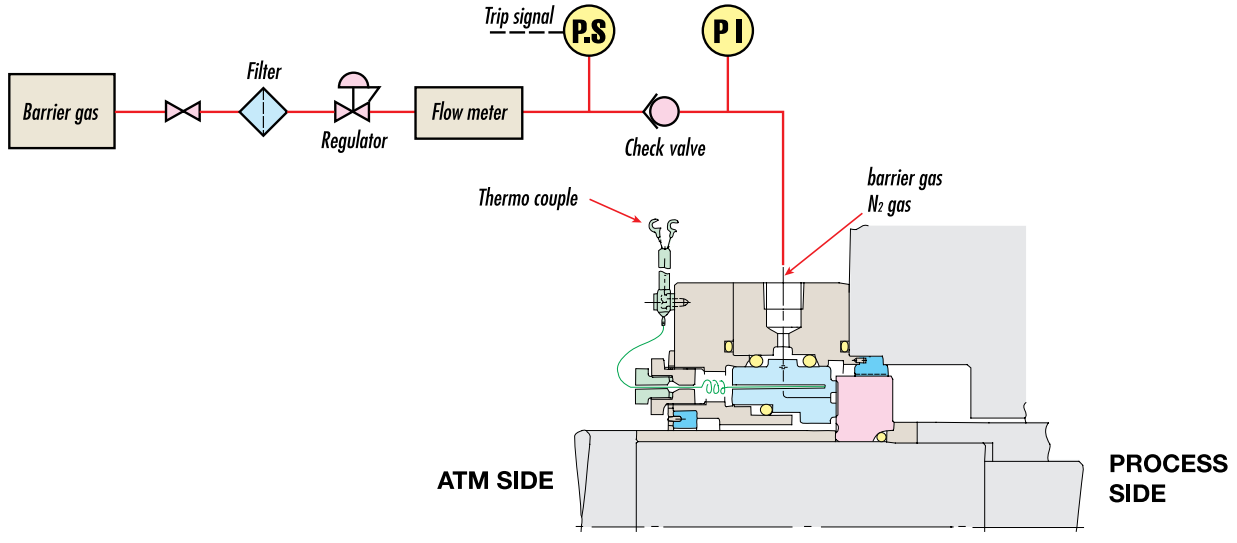
Barrier gas consumption



Barrier gas consumption (PEC vs Labyrinth)

(Barrier gas pressure = Process gas pressure +0.2MPa)

Construction



PILLAR

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