EagleBurgmann
a member of EKK and FREUDENBERG

RELY ON EXCELLENCE

DF-(P)DGS6

Mechanical Seals | Mechanical seals for pumps | Engineered seals

Features

- Dry gas seal for multiphase pump applications
- DiamondFace sliding surface technology
- Ideal for applications with Ethane, CO2, and similar media with low vapor margins
- Shrouded rotating ring
- Bi-directional
- Ready-to-fit cartridge unit
- Single, double, tandem, and tandem with intermediate labyrinth available

Notes

Dimensions on request.

Sealing CO2 reliably with conventional mechanical seals is challenging due to the difficulty of maintaining the fluid in a phase appropriate for the seal type. With CO2, the phases range from liquid, supercritical to vapor, depending on the process parameters.

EagleBurgmann has performed extensive analysis, calculations, and testing, and developed with the DF-PDGS6 an effective and efficient sealing solution.

Advantages

- DiamondFace sliding surface technology for maximum operational performance under multiphase process conditions (liquid, vapor, supercritical)
- Ideal upgrade solution for wet mechanical seals with dry running issues
- Simple set-up: seal gas heating and nitrogen buffer are not required
- Stiff sealing gap creates necessary heat and doesn´t require additional heating
- Significantly lower leakage rate avoids icing problems with CO2 (Joule Thomson effect) and keeps emission rate low
- High film stiffness in all operating modes
- Proven reliable and economical solution
- Adjustable to extreme narrow installation space - retrofits are easy to implement

Operating range

Shaft diameter:
D = 32 ... 154 mm (1.26" ... 6.06")

Pressure (static und dynamic):
DF-DGS6: p = 0 ... 120 bar (1,450 PSI)
DF-PDGS6: p = 0 ... 250 bar (3,625 PSI)

Temperature:
DF-DGS6: t = -46 °C ... +150 °C
(-51 °F ... +302 °F)
DF-PDGS6: t = -100 °C ... +200 °C
(-148 °F ... +392 °F)

Sliding velocity:
vg = 0,6 ... 140 m/s (2 ... 459 ft/s)

For applications outside the standardized operating range mentioned, please contact us.

Materials

Primary seat and seal face: Silicon carbide with DiamondFace technology
Secondary seat and seal face: Silicon carbide with DLC coating (optional: DiamondFace technology)
Secondary seals: FKM, FFKM, PTFE (DF-PDGS6). Other elastomers available, depending on product gas composition
Metal parts: 1.4006 (410) and other stainless steels

Standards and approvals

- NACE

Recommended applications

- NGL (Natural Gas Liquids) processes
- Flashing hydrocarbon applications
- Liquid and supercritical CO2-applications
- Oil and gas industry
- Refining technology
- Petrochemical industry
- LNG
- CCUS
- Hydrogen
- Power generation

Recommended piping plans

API Plan 76

Optional:
API Plan 02
API Plan 12
API Plan 13
API Plan 32
API Plan 72
API Plan 75

Not recommended: Plan 11 and plans with cooler e.g. 21, 22, 23

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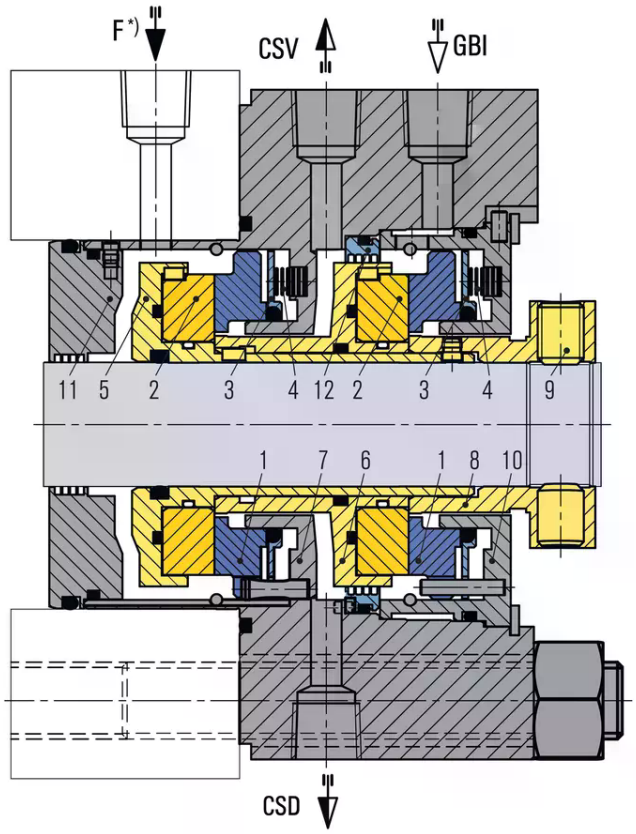
All technical specifications are based on extensive tests and our many years of experience. The diversity of possible applications means, however, that they can serve only as guide values.
We must be notified of the exact conditions of application before we can provide any guarantee for a specific case. Subject to change.

In our white paper "Advanced turbomachinery dry gas seal design solution for multiphase CO2 pump applications", we take a closer look at the special characteristics of CO2 and why they effect the safety and reliability of a seal. For more information, please feel free to contact us or download the whitepapger directly.

The DF-(P)DGS6 product brochure can be found in our Download Center.



DF-DGS6 Tandem seal with intermediate labyrinth

1	Seal face
2	Seat
3	Thrust ring
4	Spring
5	Shaft sleeve
6	Intermediate sleeve
7	Housing
8	Clamping sleeve
9	Set screw
10	Adapter
11	Process side labyrinth
12	Internal labyrinth
F	Flush - optional
CSV	Containment seal vent
CSD	Containment seal drain
GBI	Gas buffer inlet

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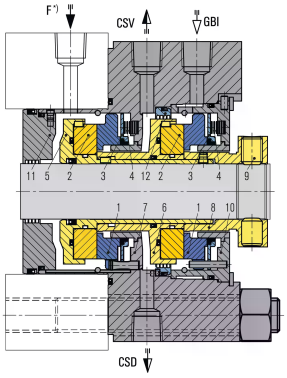
Product variants



DF-PDGS6

For multiphase pump applications (especially with CO2) with high pressure and both low and high temperature applications (see operating range). With U-cups and special dynamic sealing elements. Secondary seals made of PTFE.

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