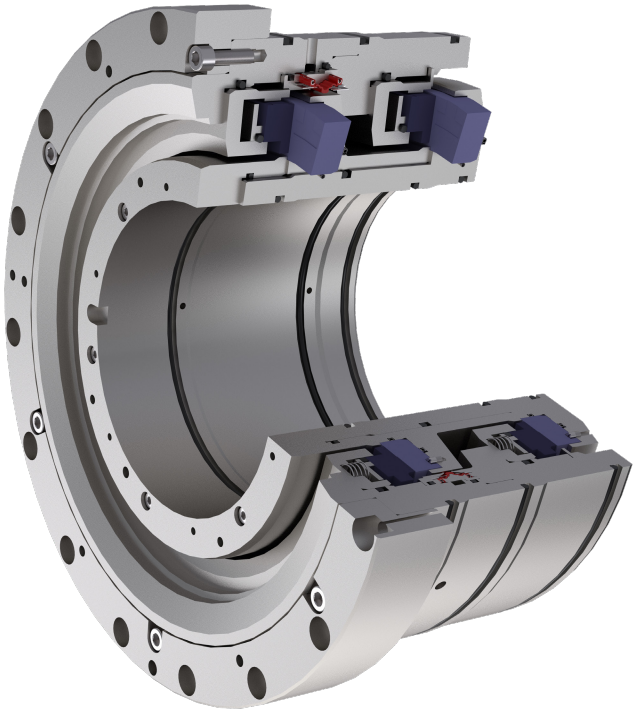
Gaspac® ZE

Zero emissions from blowdowns

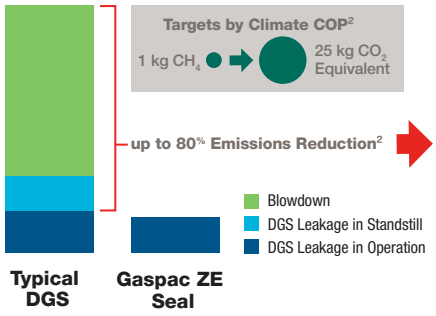
Eliminate the need for blowdowns in intermittently operated compressors with our integrated isolation seal technology

Governments globally are working to implement aggressive 2030 targets for emissions reduction. To comply with regulations, pipeline operators need new solutions to stay ahead of the impending changes.

To empower our customers, Flowserve has created a unique patent-pending[1] technology that eliminates static leakage, achieving zero emissions at standstill. We have combined this new technology with the industry-leading Gaspac low-emissions dry gas seal and created the Gaspac ZE seal.



CO_2 Equivalent Emissions Reduction



Emission Savings per Compressor

~100,000 Nm³/year

Customer benefits

- A **zero-emissions solution** at standstill is now achievable in combination with a dry gas seal.
- **Reduce total emissions** with the standstill technology.
- **Stay ahead** of emissions regulatory changes and requirements with this one-of-a-kind solution.
- **Save valuable natural gas** by eliminating blowdowns.

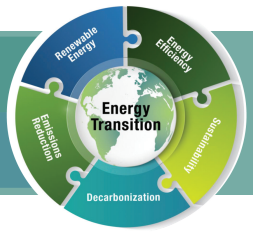
Reduce emissions with these dry gas seals from Flowserve

- **Gaspac —** Retrofit wet seals to dry gas seals for 100x fewer emissions.
- **Gaspac LE —** Change out to the best-in-class dry gas seal for emissions at 0.2 to 2.5 SCFM per centrifugal compressor.
- **Gaspac ZE —** This seal is designed with additional hardware for zero emissions at standstill.

TOGETHER, WE CREATE EXTRAORDINARY FLOW CONTROL SOLUTIONS TO MAKE THE WORLD BETTER FOR EVERYONE

Reducing our own carbon emissions by 40% by 2030

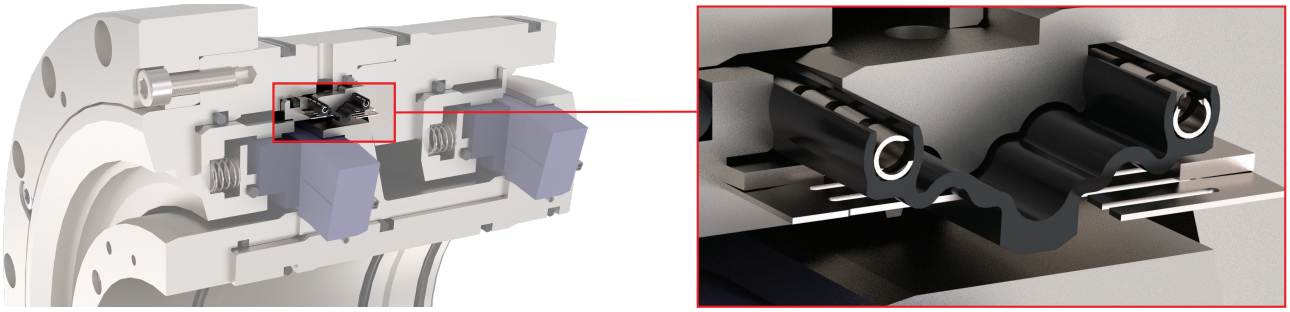
Enabling our customers to reduce their carbon emissions and increase energy efficiency



FLOWSERVE

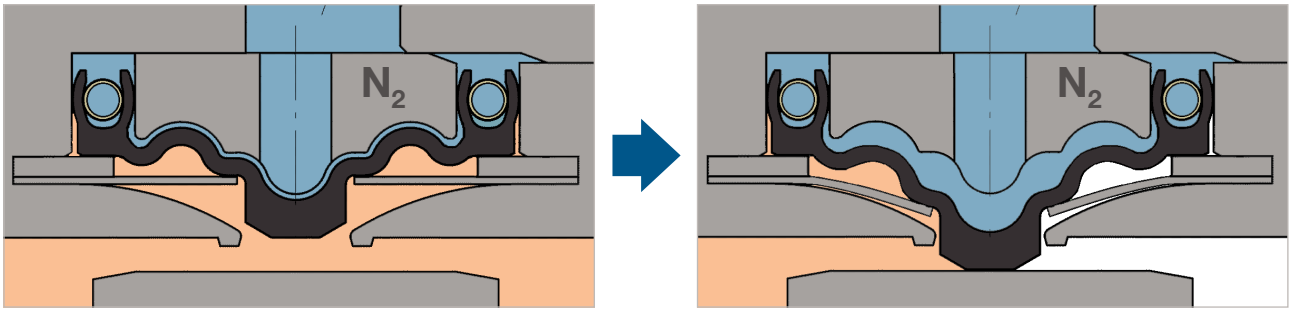
Gaspac® ZE

The standstill seal technology



Patent-pending[1] standstill seal technology

Zero emissions at standstill seal activation



Deactivated during equipment operation

Activated during equipment standstill

N_2 activation system

Ask your Flowserve representative about how we support the Gaspac ZE seal with N_2 activation systems.

- **Clean gas** for standstill seal activation
- **Zero-emissions** deactivation
- **Package solution** offered by Flowserve
- **Simple** HAZOP safety studies and ATEX certifiability

Operating parameters

• **Seal pressure**	Up to 120 bar (1,740 psi)
• **Activation pressure**	Up to 140 bar (2,030 psi)
• **Temperature**	-40°C to 180°C (-40°F to 356°F)
• **Speed**	0 m/s (standstill)
• **Shaft size**	~100 to 205 mm (3.9 to 8 in.)

Materials of construction

• **Metal components**	Stainless steels
• **Standstill feature**	PTFE composite
• **Chemical compatibility**	Natural gas, CO_2, H_2, H_2S

Industries

- Gas transportation (pipeline)
- Gas storage (tank farm)
- Any compressor with frequently pressurized standby conditions

[1] **U.S. patent-pending:** US20230366469A1 **Europe patent-pending:** EP4295063A1

[2] 30% Utilization; 75 Blowdowns per Year; 1,000 Nm^3 Blowdown Vol.; 2 DGSs per Compressor; eCO_2 = 25x CH_4

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